

Summary

1. Although many companies engage in anticompetitive practices, such practices are unethical. To understand why anticompetitive practices are unethical requires an understanding of why market competition is desirable and of what happens when markets are not competitive.
2. A market is "perfectly competitive" when it consists of numerous buyers and sellers, none of whom can dictate prices, and each of whom is free to enter or leave the market. The demand curve of a market is a line indicating the price buyers are willing to pay for a unit of a product when a given quantity of the product is available. Prices on the demand curve are just (in terms of capitalist justice) for the buyer because they equal what the buyer believes the product is worth at each given quantity. The supply curve indicates the price sellers must get to cover the costs (including a normal profit) of supplying a given quantity of a product. Prices on the supply curve are just (in terms of capitalist justice) for the seller because they equal what the seller knows the value of the product is in terms of what it costs to produce it.
3. The point at which supply and demand curves cross is the equilibrium point, and it is the only point at which prices are just from both the buyer's and the seller's perspective. In a perfectly competitive market, prices continually move to this equilibrium point for the following reasons: if prices rose above equilibrium, surpluses would appear that would drive prices down to equilibrium; if prices fell below equilibrium, shortages would appear that would drive prices up to equilibrium; if the quantity of goods being sold were less than equilibrium, profits would rise, which would attract more sellers into the market, thereby increasing the quantity up to the equilibrium level; and if the quantity of goods being sold were more than equilibrium, prices would fall, which would drive sellers out, thereby bringing the quantity down to the equilibrium level.
4. In a perfectly competitive market, since prices and quantities always move toward the equilibrium point, they always move toward the point at which the price is just for both the seller and the buyer. In other words, a perfectly competitive market tends to produce just prices. Perfectly competitive markets also satisfy the utilitarian principle by allocating resources efficiently, pressuring companies to use their resources efficiently, and allowing consumers to efficiently purchase the most satisfying bundle of goods they can. Finally, perfectly competitive markets respect the rights of participants to freely choose the business they will enter, respect the rights of consumers to make their buying and selling decisions freely, and ensure that no single seller dictates the prices, quantities, or kinds of goods consumers must buy.
5. The opposite of a perfectly competitive market is the monopoly market. A monopoly market has no competition because there is only one seller and there are barriers to entry that keep other sellers out. The monopoly seller can limit the quantity of goods released into the market and can force prices to rise above the equilibrium point. In spite of the high monopoly profits, other sellers cannot enter the market to establish equilibrium because of the barriers to entry. Monopoly markets therefore can violate (capitalist) justice because they enable the monopoly seller to unjustly charge more for products than the monopolist knows they are worth. They also violate the utilitarian principle by creating shortages and by removing incentives to use resources efficiently. They also violate the rights of market participants by letting the monopolist dictate prices and quantities.
6. Imperfectly competitive markets are those with a few sellers and some barriers to entry. Because sellers in an imperfectly competitive market are few, they can join together to act as if they were a single seller (e.g., in an oligopoly). When they do so, they reproduce the effects of a monopoly market and so can violate justice, the utilitarian principle, and the rights of market participants. Some of the unethical anticompetitive practices that imperfectly competitive markets allow include price-fixing, manipulation of supply, market allocation, and bid rigging. Both imperfectly competitive markets and monopoly markets also allow tying arrangements and predatory price discrimination. The "fraud triangle" theory suggests that business people engage in these practices when they are pressured into them, when they have the opportunity to do so, and when they are able to rationalize their actions. Nevertheless, the Sherman Antitrust Act passed in 1890 makes these anticompetitive practices illegal and imposes heavy fines and jail sentences on companies and individuals who engage in them.
7. What should be done to prevent the unethical anticompetitive practices that monopoly markets and imperfectly competitive markets allow? There are three main views on this question. The do-nothing view holds that market forces exist that limit unethical anticompetitive practices, so nothing needs to be done about them. The antitrust view holds that when monopolies or large oligopoly firms become anticompetitive, they should be broken up into smaller, more competitive firms. The regulation view holds that large monopoly and oligopoly firms can be beneficial, so they should not be broken up but restrained by government regulations.

Chapter 5

Ethics and the Environment



Workers clean the beach after the BP Deepwater Horizon oil well exploded in the Gulf of Mexico on April 20, 2010.



Learning Objectives

- 5.1** Identify environmental threats related to the production of consumer goods
- 5.2** Examine the important ethical considerations of pollution control
- 5.3** Assess the approaches to internalizing the external costs of pollution
- 5.4** Evaluate the ethics related to the conservation of resources for future generations

The process of producing goods forces businesses to engage in exchanges and interactions with two main external environments: the natural environment and the consumer environment. It is from the natural environment that business ultimately draws the raw materials that it transforms into its finished products. These finished products are then externally promoted and sold to consumers.

Thus, the natural environment provides the raw material input of business, whereas the consumer environment absorbs its finished output. This chapter discusses the two basic issues related to the natural environment: pollution and resource depletion. We will evaluate the main environmental threats; identify ethical issues raised by pollution from commercial and industrial enterprises; and

examine our obligations to conserve Earth's resources. The next chapter will look at consumer issues.

5.1: The Dimensions of Pollution and Resource Depletion

OBJECTIVE: Identify environmental threats related to the production of consumer goods

Modern industry has provided us with a material prosperity unequalled in our history. It has also created unparalleled environmental threats to ourselves and to future generations. The very technology that has enabled us to manipulate and control nature has also polluted our environment and rapidly depleted our natural resources. According to the U.S. Environmental Protection Agency (EPA) emissions inventories, the United States in 2013 pumped more than 94 million tons of common air pollutants (such as smoke, lead, and carbon monoxide) into the air, in addition to the 6.6 billion tons of carbon dioxide emissions with which we seem to be heating up our atmosphere. We produced 3.9 billion tons of toxic wastes, of which 247 million pounds was released as surface water discharge. Our total energy consumption for the year was 100 quadrillion British thermal units (BTUs), which is equivalent to about 17.24 billion barrels of oil or 721 billion gallons of gasoline.¹ Each U.S. citizen annually accounts for the consumption of about 1,300 pounds of metal and 18,500 pounds of other minerals, and each produces over 7 pounds of garbage every day of the year.

Although the nation has made some progress in controlling certain types of pollution and in conserving energy, significant environmental problems remain, especially at an international level. In the introduction to the Worldwatch Institute's *State of the World 2015* report, Michael Renner describes many of these problems and suggests that they are rooted in our economic system and the commitment to growth by business and political leaders:

Endless economic growth driven by unbridled consumption is so central to modern economies and is so ingrained in the thinking of corporate and political leaders that environmental action is still often seen as in conflict with the economy, and is relegated to inferior status. . . . The challenge, therefore, is broader than merely a set of technological changes. As activist Naomi Klein has argued, saving the climate requires revisiting the central mechanisms of the world's pre-eminent economic system: capitalism. . . .

Humanity's climate predicament is only the latest—if by far the most challenging—manifestation of its collision

course with planetary limits. Ecological stress is evident in many ways, from species loss, air and water pollution, and deforestation to coral reef die-offs, fisheries depletion, and wetland losses. The planet's capacity to absorb waste and pollutants is increasingly taxed.

[E]ven a decade ago, more than 60 percent of the world's major ecosystem goods and services were degraded or used unsustainably. Some 52 percent of commercial fish stocks are now fully exploited, about 20 percent are overexploited, and 8 percent are depleted. The number of oxygen-depleted dead zones in the world's oceans that cannot support marine life has doubled each decade since the 1960s; in 2008, there were more than 400 such zones, affecting an area equivalent in size to the United Kingdom. The decline of bees and other pollinators is jeopardizing agricultural crops and ecosystems. Urban air pollution causes millions of premature deaths each year. The World Health Organization recently revised its estimates of global deaths from air pollution to about 7 million people in 2012—more than double previous estimates and making air pollution the world's single worst environmental health risk. . . .

Global resource extraction—of fossil fuels, metals, minerals, and biomass—grew 50 percent in the 25 years between 1980 and 2005, to about 58 billion tons of raw materials (and another 40 billion tons of material removed simply to gain access to coveted resources). . . .

We have gradually come to comprehend that we are depleting resources at unsustainable rates, spreading dangerous pollutants, undermining ecosystems, and threatening to unhinge the planet's climate balance. . . .

Economic growth drives most environmental problems, and it has produced a world in which human activities have grown too large for the planet to accommodate them sustainably. Forests are scalped, rivers run dry, species are going extinct, and humans are changing the climate, all driven by the pursuit of growth.²

5.1.1: Essential Questions and Issues

The severity of the environmental problems Renner describes is exacerbated by the continuing growth of the world's population, which stood at about one billion in 1800, increased to 3 billion by 1960, to 7.3 billion by 2015, and is predicted to reach about 9.7 billion by 2050.³ As environmental stresses put pressure on our capacity to sustain humanity, population growth can only add to those pressures. So intractable and difficult are the problems raised by these environmental threats that many observers believe that they cannot be solved. For example, William Pollard, a physicist, despaired of our ability to deal with these problems:

My own view is that [mankind] will not do so until he has suffered greatly and much that he now relies upon

has been destroyed. As the earth in a short few decades becomes twice as crowded with human beings as it is now, and as human societies are confronted with dwindling resources in the midst of mounting accumulations of wastes, and a steadily deteriorating environment, we can only foresee social paroxysms of an intensity greater than any we have so far known. The problems are so varied and so vast and the means for their solutions so far beyond the resources of the scientific and technological know-how on which we have relied that there simply is not time to avoid the impending catastrophe. We stand, therefore, on the threshold of a time of judgment more severe, undoubtedly, than any mankind has ever faced before in history.⁴

Environmental issues, then, raise large and complicated ethical, economic, and technological questions for our business society. What is the extent of the environmental damage produced by the processes through which we manufacture our products, grow our food, and power our cities? How large a threat does this damage pose to our well-being? What values must we give up to halt or slow such damage? Whose rights are violated by pollution, and who should be responsible for paying for the costs of polluting the environment? How long will our natural resources last? What obligations do firms have to future generations to preserve the environment and conserve our resources?

This chapter explores these environmental issues. It begins with an overview of various technical aspects of environmental resource use. This overview is followed by a discussion of the ethical basis of environment protection. The final sections discuss two controversial issues: our obligations to future generations and the prospects for continued economic growth.

Environmental damage inevitably threatens the welfare of human beings as well as plants and animals. Threats to the environment come from two sources: pollution and resource depletion.

Pollution refers to the undesirable and unintended contamination of the environment by human activities, such as manufacturing, waste disposal, burning fossil fuels, etc.

Resource depletion refers to the consumption of finite or scarce resources.

In a certain sense, pollution is really a type of resource depletion because contamination of air, water, or land

diminishes their beneficial qualities. However, for purposes of discussion, we keep the two issues distinct.

5.1.2: Air Pollution

Air pollution is not new—it has been with us since the Industrial Revolution introduced the world to the belching factory smokestack. However, the costs of air pollution increased exponentially as industrialization expanded. Today, air pollutants affect vegetation, decreasing agricultural yields and inflicting losses on the timber industry; they deteriorate exposed construction materials through corrosion, discoloration, and rot; they are hazardous to health and life, raising medical costs and lessening the enjoyment of living; and they threaten catastrophic global damage in the form of **global warming** and destruction of the stratospheric ozone layer.⁵

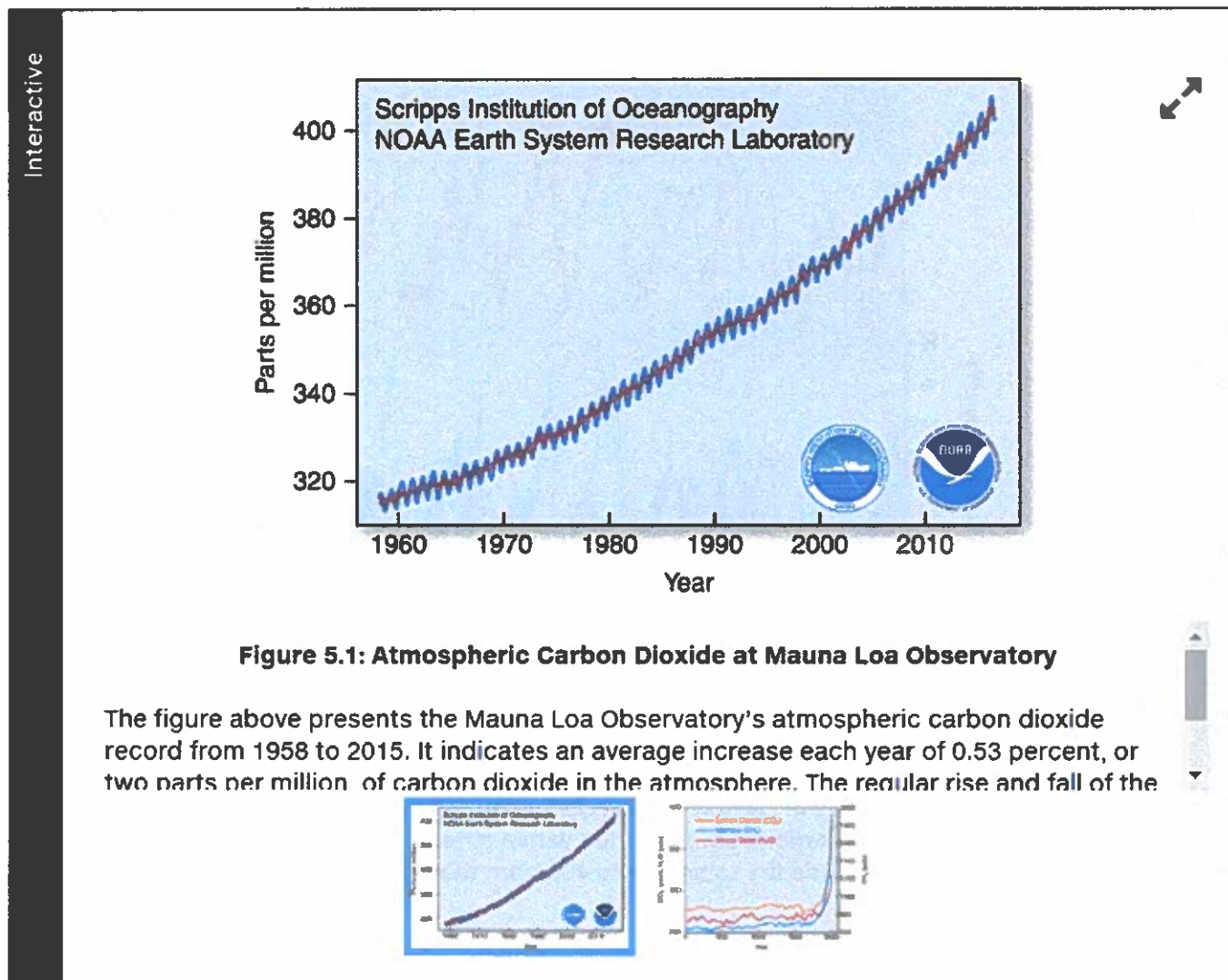
GREENHOUSE GASES AND GLOBAL WARMING *Greenhouse gases*—carbon dioxide (CO₂), nitrous oxide, methane, and chlorofluorocarbons—are gases that absorb and hold heat from the sun, preventing it from escaping back into space, much like a greenhouse absorbs and holds the sun's heat. Of these gases, methane is able to capture more heat than an equal amount of any of the others, but there is much more carbon dioxide, so it is the gas that actually makes the greatest contribution to heating the atmosphere. Greenhouse gases occur naturally in the atmosphere and, in fact, they have kept Earth's temperature about 33 °C warmer than it would otherwise have been, enabling life to evolve and flourish. However, industrial, agricultural, and other human activities have been increasing the levels of carbon dioxide in the atmosphere.

CARBON DIOXIDE LEVELS AND FOSSIL FUELS The rising levels of carbon dioxide are primarily the result of our continued burning of increasing amounts of fossil fuels such as oil, gas, and coal, all of which emit carbon dioxide. Samples of air trapped in ice cores dug from the ice that covered the Antarctica thousands of years ago show that there is now more carbon dioxide in the atmosphere than the range of 180 to 300 ppm that prevailed during the last 800,000 years. We have known since the late nineteenth-century work of scientist Svante Arrhenius that carbon dioxide traps heat, which gradually increases global temperatures.

STUDIES AND FORECASTS OF CLIMATE CHANGE The UN Intergovernmental Panel on Climate Change (IPCC) is an international group of scientists that studies and monitors global warming.⁶ The IPCC's studies confirm that our carbon emissions are responsible for the unequivocal heating of the atmosphere that we have witnessed, and they

Atmospheric Carbon Dioxide Levels and Greenhouse Gas Concentration Trends

Measurements at Mauna Loa, Hawaii, conducted since 1958, indicate that carbon dioxide in the atmosphere is currently increasing at the rate of about 2 parts per million (ppm) a year (see Figure 5.1). As a result, since the beginning of the industrial era 150 years ago, the amount of carbon dioxide in the atmosphere has increased by about 40 percent, from 280 to 400 ppm as of 2015 (see Figure 5.2).^{7,8,9}



indicate that it is imperative that global temperatures not rise more than 2°C higher than preindustrial levels:

[H]uman influence on the climate system is clear and growing, with impacts observed across all continents and oceans. Many of the observed changes since the 1950s are unprecedented over decades to millennia. The IPCC is now 95 percent certain that humans are the main cause of current global warming. In addition, [the IPCC] ... finds that the more human activities disrupt the climate, the greater the risks of severe, pervasive and irreversible impacts for people and ecosystems, and long-lasting changes in all components of the climate system. . . . [S]tabilizing temperature increase to below 2°C relative to pre-industrial levels will require an urgent and fundamental departure from business

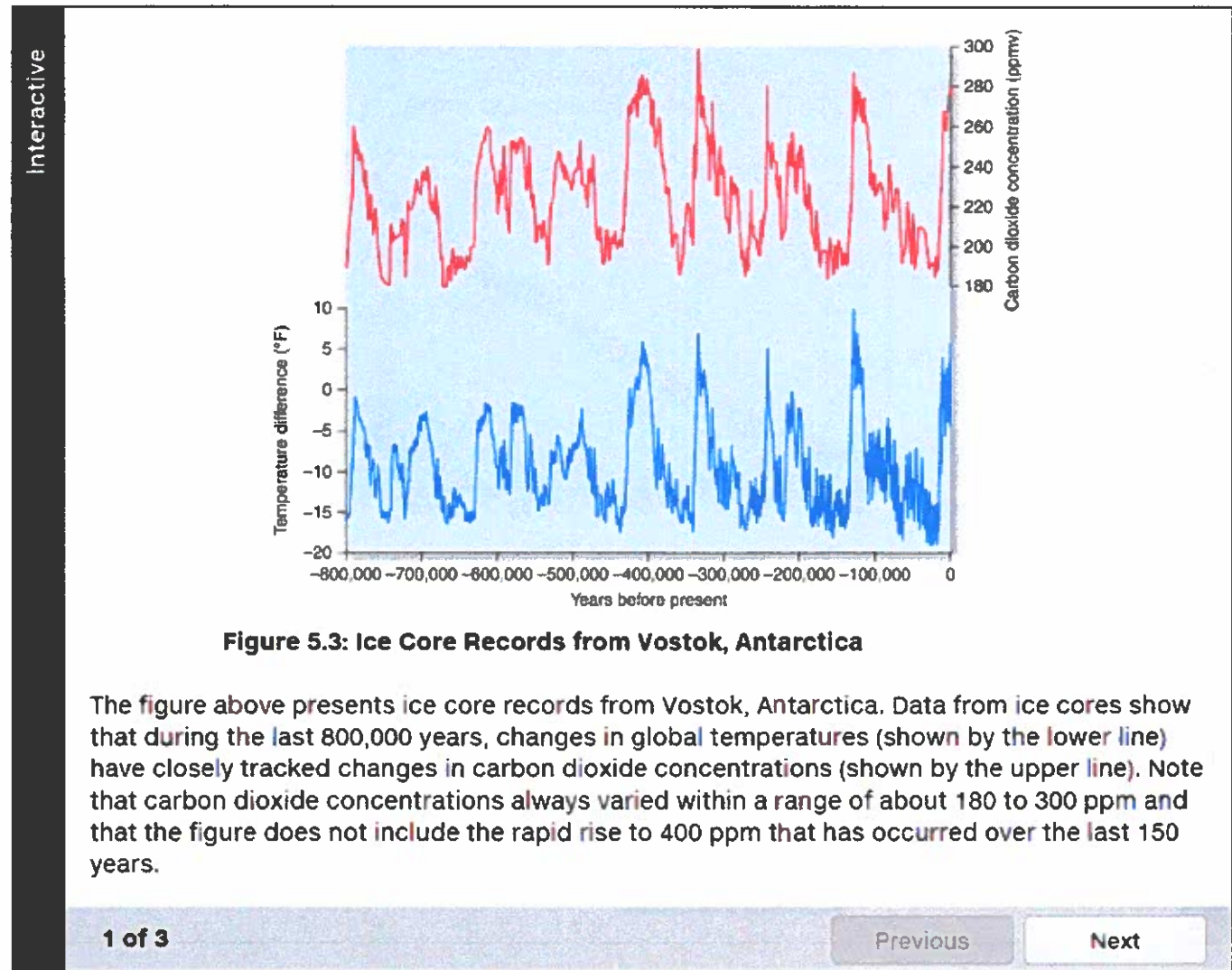
as usual. Moreover, the longer we wait to take action, the more it will cost and the greater the technological, economic, social and institutional challenges we will face.¹⁰

Although its effects are increasingly visible all around us, global warming is an extremely difficult problem to solve for technological, political, and economic reasons.

OZONE DEPLETION Chlorofluorocarbons (CFCs) are gases that gradually break down ozone gas in the stratosphere above us. This layer of ozone in the stratosphere screens life on Earth from the harmful ultraviolet radiation the sun emits. The ozone layer is destroyed by CFC gases, which were once widely used in aerosol cans, refrigerators, air conditioners, industrial solvents, and industrial

Changes in Global Temperatures

Average global temperatures today are already 0.85°C (1.53°F) higher than in 1880 and are expected to rise an additional 1.5°C to 4.5°C by the year 2100 as they continue to track our growing carbon emissions. This rising heat is expanding the world's deserts; it is melting glaciers and the polar ice caps; it is causing sea levels to rise; it is intensifying heat waves, droughts, and other extreme weather events; and it is driving species of plants and animals into extinction. Figures 5.3 to 5.5 provide more details.^{11, 12, 13, 14}



foam blowers. When released into the air, CFC gases rise, and in 7 to 10 years they reach the stratosphere, where they destroy ozone molecules and remain for 75 to 130 years, continuing all the while to break down additional ozone molecules. Studies predict that the shrinking of the ozone layer and the subsequent increase of ultraviolet rays may cause several hundred thousand new cases of skin cancer and injure the 75 percent of the world's major crops that are sensitive to ultraviolet light. Other studies suggest that the plankton that float on the surface layers of the Earth's oceans and on which the entire food chain of the world's oceans ultimately depends, is sensitive to ultraviolet light and may suffer widespread destruction.

International agreements to which the United States is a party pledged to gradually phase out the use of CFC gases by 2000, and emissions of CFCs have dropped by 87 percent from their peak in 1988.¹⁵ However, scientists warn that even if the use of CFC gases were completely halted, CFC levels in the atmosphere would still continue their dangerous upward climb because those gases already released will continue to rise upward for many years and will persist for perhaps a century.¹⁶ Moreover, not all countries have agreed to cease making and producing CFC gases, and CFC gases are still sometimes released when refrigeration or air-conditioning systems built many years ago are repaired or disposed of.¹⁷

Effects of Climate Change

The IPCC forecasts large shifts of vegetation into higher latitudes and elevations and rapid changes in the mix of species in these areas, as a result of global warming. Because forest species grow, reproduce, and evolve much more slowly than the climate is changing, entire forests and woodlands will likely die, burn, and disappear, as is already happening in much of the southwest United States and other parts of the world. Bodies of water, such as lakes and oceans will warm, which will dramatically shift the geographical distribution of fish and other marine species.^{18, 19, 20, 21, 22}

Interactive

Decrease in Safe Drinking Water and Agricultural Yields

Currently, some 750 million people (two and one half times the population of the United States) do not have safe supplies of drinking water, which results in about 1.6 million deaths a year (of which 1.4 million are of children). Rising temperatures increase the frequency and magnitude of droughts, thereby increasing the number of people without water. Currently, 795 million people in poor countries do not have enough food to eat. Climate changes will decrease agricultural yields in the tropics and subtropics, worsening famine in these areas.

Increase in Natural Disasters

Increase in Diseases

On the Edge

Ford's Toxic Wastes

Making cars produces a steady stream of toxic liquids and solids, and from the mid-1950s to about 1980 Ford Motor Company dumped thousands of tons of its Mahwah factory wastes on a wooded hilly 500-acre area of Ringwood, NJ, including unused paints, solvents, paint thinners, battery acids, and other chemicals. It was legal to dump wastes on bare land then, and Ford owned the wooded area. Yet a memo written at

the time by a Ford executive said, "The area used as a dumpsite for many years is leaching into a public water supply and represents a contingent liability."²³ The colorful sludge, which contained benzene, lead, arsenic, antimony, xylenes, and other poisonous substances—some carcinogenic, like chromium which causes nosebleeds—was dumped on what locals call "Sludge Hill." The slippery goo attracted local children who played with it and often came home with bad nosebleeds. A resident, Wayne Mann, said in 2009: "I was one of those children who used to go up on Sludge Hill . . . [I would] take a car hood and ride down, hand steering in the wet sludge. You paint your face. You lick it, whatever."²⁴ Many

residents, including Mann, are sick. Some have already died of cancer. Adults and children suffer mysterious rashes, rare blood disorders, cancers, asthma, and other unusual diseases. The 600 people living in the area think the toxic sludge caused their illnesses and that too many are sick or dying to blame the sicknesses on chance. The area is populated by Ramapough, an impoverished Indian group who say they are victims of **environmental injustice**.

Although Ford admits they dumped the chemicals, John Holt, a company spokesperson, insists that the chemicals are not causing the sicknesses: "They've found no higher incidence of cancer or anything else here besides lung cancer."²⁵ Federal officials have reported that bladder cancer and non-Hodgkin's lymphoma rates are also elevated but their numbers are too small to rule out coincidence. Statistics do not show cause-and-effect, so there is no way to know for sure what caused the diseases.

Holt points out that Ford spent 10 years cleaning up the site and in 1994, the U.S. EPA and the New Jersey Department of Environmental Protection certified Ford did an adequate job. However, in 2006, the EPA found Ford's cleanup had left much of the wastes behind, so they relisted the site as contaminated. Ford was forced to agree to another cleanup, which by late 2015 they had yet to complete. Holt argued that the company had done a good job the first time: "This site was done and excavated and restored to its natural state . . . [according to] the requirements of the state of New Jersey and the EPA."²⁶ However, federal officials say that much of the

sludge remains. A state official said, "Ford made false or misleading submissions to federal regulators" about their earlier cleanup.²⁷ Rain has now carried the chemicals into streams, rivers, and underground. They have also entered the local food chain. By 2015 Ford had hauled out more than 40,000 tons of the sludge,²⁸ but tens of thousands more remain. Much of the sludge had been poured into deep underground caves that are now almost impossible to access. Ringwood is just one of the country's 1,300 Superfund (most contaminated) sites. Twelve million Americans live within 1 mile of a similarly contaminated Superfund site, and about 53 million live within 3 miles of one.²⁹

WRITING PROMPT

Evaluate Ford's Business Ethics

1. Should Ford be held responsible for the sicknesses of the residents? Why or why not?
2. Check the videos at <http://toxiclegacy.northjersey.com>. Do the videos suggest that the contamination should concern you? If yes, why?
3. What would the various forms of environmental ethics described in this chapter say about Ford's actions?



The response entered here will appear in the performance dashboard and can be viewed by your instructor.

Submit

ACID RAIN *Acid rain* occurs when coal containing high levels of sulfur is burned and releases large quantities of sulfur oxides and nitrogen oxides into the atmosphere. Coal-burning electric power plants account for 70 percent of annual sulfur oxide emissions and 30 percent of nitrogen oxides.³⁰ When these gases are carried into the air, they combine with water vapor in clouds to form nitric acid and sulfuric acid. These acids are then carried down in rain, which often falls hundreds of miles away from the original sources of the oxides. The acidic rainfall—Sometimes as acidic as vinegar—gets carried into lakes and rivers, where it raises the acidity of the water. Consider the effects of acid rain:

- Many fish populations and other aquatic organisms—including algae, zooplankton, and amphibians—are unable to survive in lakes and rivers that have become highly acidic due to acid rain.³¹
- Acid rain directly damages or destroys trees, plants, lichens, and mosses.
- Acid rain leaches toxic metals—cadmium, nickel, lead, manganese, and mercury—from soil and carries them into waterways, where they contaminate drinking water or fish.

- Acid rain corrodes and damages buildings, statues, and other objects, particularly those made of iron, limestone, and marble.

While regulations and limits imposed on power plant emissions have lowered emissions of sulfur oxides down to half of what they were in 1990, some areas of the northeastern United States still experience acid rain.

AIRBORNE TOXICS Less catastrophic but still worrisome air pollution threats are the 4 billion pounds of airborne toxic substances released annually into our nation's atmosphere, including phosgene, a nerve gas used in warfare, and methyl isocyanate, which killed more than 2,000 people in Bhopal, India. The chemical brew released into the air annually includes more than 230 million pounds of carcinogens, such as benzene and formaldehyde, and over 500 million pounds of neurotoxins, such as toluene and trichloroethylene. Although levels of most airborne toxics have been declining gradually across the nation, some states have registered increases in the levels of several carcinogenic toxics in the air.³² The EPA has estimated that 20 of the more than 329 toxics released into the air alone cause more than 2,000 cases of cancer each year and that living near chemical plants significantly raises a person's

Technological, Political, and Economic Factors

Interactive

Technological

Political

Economic

The IPCC calculates that halting the increase in levels of greenhouse gases would require reducing current worldwide emissions of greenhouse gases by 60 to 70 percent—an amount that would seriously affect the economies of both developed and developing nations and that would require the development of new energy sources and technologies. This kind of reduction is so large, in fact, that few governments are ready to attempt the political negotiations required to mandate it, and so most nations are still increasing their carbon dioxide emissions by substantial amounts.

chances of cancer. Exceptionally high cancer rates have been found near plants in several states, including West Virginia and Louisiana.

COMMON AIR POLLUTANTS The most prevalent forms of air pollution, however, are the six kinds of gases and particulates spewed out by autos and industrial processes that the EPA calls “common air pollutants.” These six affect the quality of the air we breathe, injure human health, harm the environment, and damage property.

More recent long-range studies have indicated that the deterioration of lung function in human beings caused by their chronic exposure to air pollutants, whether it be auto smog or industrial smokestack emissions, is long lasting and often irreversible.³³ Some of the 2,500 subjects in the studies suffered as much as 75 percent loss of lung capacity during a 10-year period of

living in Los Angeles communities—a region with very high levels of air pollution—leaving them vulnerable to respiratory disease, emphysema, and impairment of their stamina. Damage to the still-developing lungs of children was especially serious. The health, environmental, and climate effects associated with various air pollutants appear in Table 5.1.

Quick Review 5.1**Major Types of Air Pollution**

- Greenhouse gases: carbon dioxide, methane, nitrous oxide
- Ozone depleting gases: chlorofluorocarbons
- Acid rain gases: sulfur oxides
- Airborne toxics: benzene, formaldehyde, toluene, trichloroethylene, and 329 others
- Common air pollutants: carbon monoxide, sulfur oxides, nitrogen oxides, airborne lead, ozone, particulates.

Table 5.1 Health, Environmental, and Climate Effects of Air Pollutants

The six common air pollutants are carbon monoxide, sulfur oxides, nitrogen oxides, airborne lead, ozone (or “smog”), and particulates (airborne mixtures of extremely small particles and liquid droplets). The effects of these pollutants and others, which were recognized more than four decades ago, are summarized below.³⁴

Pollutant	Health Effects	Environmental and Climate Effects
Ozone (O ₃)	Decreases lung function and causes respiratory symptoms, such as coughing and shortness of breath; aggravates asthma and other lung diseases leading to premature mortality.	Damages vegetation and decreases crop yields. Ozone damage to plants may alter ecosystems, reduce biodiversity, and decrease plant uptake of CO ₂ . Ozone is also a greenhouse gas that contributes to global warming.
Particulate Matter (PM)	Short-term and long-term exposures can cause or aggravate heart or lung diseases leading to premature mortality.	Impairs visibility, and damages soils structures and property. Black carbon particles absorb heat and lead to warming. Also change the timing and location of traditional rainfall patterns.
Lead (Pb)	Damages the nervous system, resulting in IQ loss and impacts on learning, memory, and behavior in children. Cardiovascular and renal effects in adults and early effects related to anemia.	Harms plants and wildlife, accumulates in soils, and adversely impacts both terrestrial and aquatic systems.
Oxides of Sulfur (SO _x)	Aggravate asthma; very high levels can cause respiratory symptoms in people without lung disease.	Contributes to the acidification of soil and water. Causes injury to vegetation and local species losses in aquatic and terrestrial systems.
Oxides of Nitrogen (NO _x)	Aggravate lung diseases leading to respiratory symptoms and increased susceptibility to respiratory infection.	Contributes to the acidification and eutrophication of soil and surface water. Leads to biodiversity losses.
Carbon Monoxide (CO)	Reduces the amount of oxygen reaching the body's organs and tissues; aggravates heart disease, resulting in chest pain and other symptoms.	Contributes to the formation of CO ₂ and other greenhouse gases that warm the atmosphere.
Ammonia(NH ₃)	Contributes to particle formation with associated health effects.	Contributes to eutrophication of surface water and nitrate contamination of ground water.
Volatile Organic Compounds (VOCs)	Some are toxic air pollutants that cause cancer and other serious health problems. Contribute to ozone formation with associated health effects.	Contributes to ozone formation with associated environmental and climate effects. Contributes to the formation of greenhouse gases.
Mercury (Hg)	Causes liver, kidney, and brain damage and neurological and developmental damage.	Deposits into rivers, lakes, and oceans where it accumulates in fish, resulting in exposure to humans and wildlife.
Other Toxic Air Pollutants	Cause cancer; immune system damage; and neurological, reproductive, developmental, respiratory, and other health problems.	Harmful to wildlife and livestock. Some toxic air pollutants accumulate in the food chain.

AIR QUALITY IMPROVEMENTS The major sources of the six common air pollutants are utilities, industrial smokestacks, and automobiles. In congested urban areas such as Los Angeles, automobiles cause about 80 percent of the air pollution. Industrial pollution is derived principally from power plants and plants that refine and manufacture basic metals. Electrical power plants that depend on fossil fuels—such as oil, coal, or natural gas—throw tons of sulfur oxides, nitrogen oxides, and ashes into the air. The last decade has seen considerable improvement in the air quality of most regions of the United States, primarily as a result of environmental legislation and regulation.³⁵ See Figure 5.6 for more details.

The health costs of low air quality are known to be high. Studies have indicated that when the concentrations of sulfur oxides over our major cities were cut in half from their 1960 levels, this added an average of one year to the life of each resident.³⁶ If air quality in urban areas were similar to the levels of rural regions with

clean air, the death rates for asthma, bronchitis, and emphysema would drop by about 50 percent, and deaths from heart disease would drop by about 15 percent.³⁷ Improvements in air quality since 1970, it is believed, now save about 14,000 lives per year.³⁸ Each year since 1997, the U.S. Office of Management and Budget (OMB) has issued a report calculating the benefits and costs associated with environmental laws and regulations. In 2014, the OMB reported that regulations that reduced or eliminated air pollution annually produced benefits of \$162 to \$840 billion, while imposing costs of only \$38 to \$45 billion, which means that the benefits of air quality regulations and laws outweighed their costs to a significant degree.³⁹

5.1.3: Water Pollution

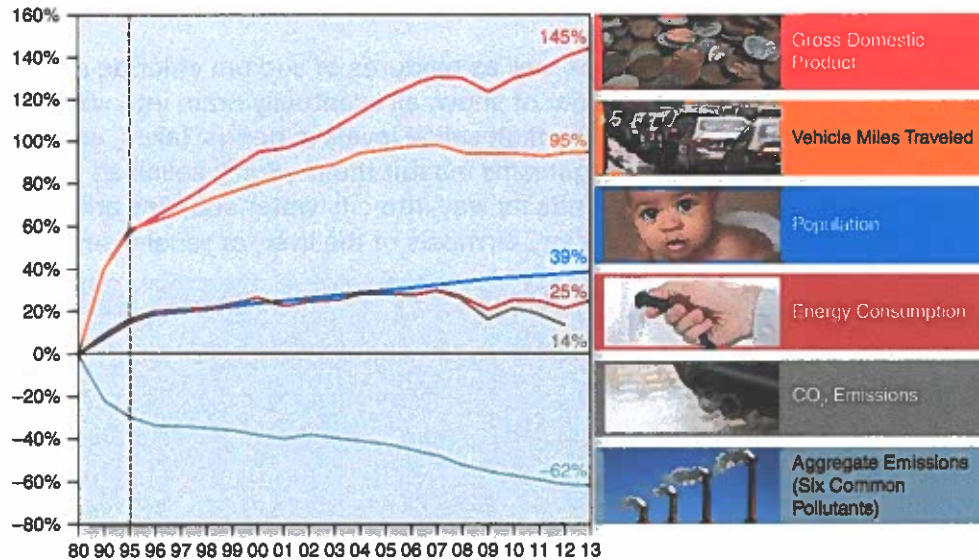
The contamination of water sources is an old problem—one that has been with us since civilization began using water to dispose of its wastes and sewage. Water pollutants today,

Figure 5.6 Air Quality Trends

Emissions of four of the six common air pollutants have been substantially reduced, particularly airborne lead (78 percent reduction from 1990 levels), sulfur dioxide (59 percent reduction), and carbon monoxide (68 percent reduction), although reductions in ozone (14 percent), particulates (31 percent), and nitrogen oxide (35 percent) were smaller.⁴⁰

Between 1980 and 2013, aggregate emissions of the six common air pollutants fell by 62 percent.

The reduction in aggregate emissions (bottom line) is compared with increases in CO₂ emissions, energy consumption, population, vehicle miles travelled, and gross domestic product during the same period.



however, are much more diverse, consisting of not only **organic wastes** but also dissolved salts, metals, and radioactive materials, as well as suspended materials such as bacteria, viruses, and sediments. These pollutants can impair or destroy aquatic life, threaten human health, and foul the water. In 2015, the EPA reported that about 40 percent of our surface water was too polluted to fish or swim in.⁴¹

Ethical Application

Oil Spills

There are numerous examples of oil spills, during the last decade alone. In 2005, Hurricane Katrina struck New Orleans and released more than 7 million gallons of oil from various oil storage sites. On July 15, 2006, Israeli bombs hit a power station near Beirut, Lebanon, causing it to leak between 3 million and 10 million gallons of oil into the sea. In 2007, a ship off of South Korea's coast hit a steel cable and spilled 2.8 million gallons of crude oil, destroying 12 miles of South Korean beaches. On July 25, 2008, a barge collided with a tanker ship and spilled most of the 419,000 gallons of oil it was carrying into the Mississippi River near New Orleans. In January 2010, the oil tanker Eagle Otome collided with a barge and spilled 462,000 gallons of oil into the bay at Port Arthur, Texas. On April 20, 2010, the explosion of a BP oil rig in the Gulf of Mexico released between 92 million and 184 million gallons of

crude oil into the waters of the Gulf, making it the largest oil spill in U.S. history. In February 2012, a ruptured pipeline in Venezuela spilled as much as 13 million gallons of oil into the Guarapiche River. A derailed train pulling tanker cars full of crude oil spilled 1.5 million gallons of light crude oil into the downtown area of Lac-Mégantic in Canada on July 6, 2013, killing 47 people and destroying virtually the entire town's center in multiple explosions and fires. In December 2014, the Trans-Israel Pipeline ruptured, spilling between 640,000 and 1.2 million gallons of oil into Israel's Evrona Nature Reserve. On May 19, 2015, a ruptured oil pipeline spilled about 105,000 gallons of crude oil onto the beaches of Santa Barbara county in California.⁴² The contamination produced by oil spills is directly lethal to sea life, including fish, seals, plants, and aquatic birds. Oil spills also require expensive cleanup operations for residents and impose costly losses on nearby tourist and fishing industries.

Coastal estuaries and marine sediments have been found to contain unusually high concentrations of cadmium, chromium, copper, lead, mercury, and silver.⁴³ Polychlorinated biphenyls (PCBs), which were used as cooling fluids in electrical transformers, as lubricants, and as flame retardants until banned in 1979, and polyfluorinated compounds (PFCs), which are still used in breathable rainproof cloth, in leak-proof fast-food paper packaging, and in non-stick coatings such as Teflon, have become widespread in

Types of Water Pollutants and Their Effects

Water pollutants enter surface water or underground water basins either from a single point source, such as a pipe or a well carrying sewage or industrial wastes, or from a diffused or nonpoint source covering a large area, such as crop pesticides or animal wastes carried in rainwater or runoff.

Interactive

Salt Brines

Salt brines from mines and oil wells, as well as mixtures of sodium chloride and calcium chloride used to keep winter roads clear of snow, all eventually drain into water sources where they raise the saline content. The high saline levels in ponds, lakes, and rivers kill whatever fish, vegetation, or other organisms inhabit them. Highly salinized water also poses major health hazards when it finds its way into city water supplies and is drunk by persons with heart disease, hypertension, cirrhosis of the liver, or renal disease.

Iron and Sulfate Particles

Organic Wastes

Phosphorus Compounds

Inorganic Water Pollutants

the environment and have gradually accumulated in the oceans, especially in coastal areas. Minute amounts of PCBs are deadly to human beings and other life forms, and traces can engender a variety of toxic effects, including reproductive failures, birth defects, tumors, liver disorders, skin lesions, and immune suppression. PFCs cause liver damage. Moreover, some types are carcinogenic and others cause fetal damage. PCBs (which still are often improperly disposed of in the United States) and PFCs are a cause of profound concern because they are persistent and become increasingly concentrated as they move up the food chain.⁴⁴

SHORTAGE OF SAFE DRINKING WATER Underground water supplies are also becoming more polluted.⁴⁵ The sources of contamination include landfills, waste piles, legal and illegal dumps, and surface reservoirs. More than

50 percent of the U.S. population depends on underground sources for drinking water. Underground water contaminants have been linked to cancers, liver and kidney diseases, and damage to the central nervous system. Unfortunately, exposure often occurs unknowingly over periods of years because contaminated groundwater is usually odorless, colorless, and tasteless.

Today, about 750 million people in the world lack access to safe drinking water. About a third of them live in sub-Saharan Africa, and most of the rest live in rural areas of poor developing countries.⁴⁶ Fresh water is essential not only to human life, plant life, and animal life but also to agriculture, industry, and economic development.⁴⁷ There is no substitute for water in most of its uses. Nevertheless, the world's *per capita* supply of fresh water (of which only

a small part is safe drinking water) declines as population rises because the total annual supply of fresh water is fixed. Increases in population, farming, and economic activity have increased the demands put on our water resources, while pollution, climate change, and aquifer depletion have reduced the supply. As urban areas have grown and increased their demands for water, water has been increasingly diverted from agricultural irrigation to provide water for cities, a conflict that is predicted to expand.

How much does water pollution cost us, and what benefits might we expect from its removal? The OMB estimates that on average in each of the 10 years between 2003 and 2013, clean water regulations cost between \$0.4 and \$0.5 billion (in 2010 dollars) and produced benefits (in the form of pollution costs avoided) ranging somewhere between \$1.0 and \$4.0 billion, not counting important non-quantifiable benefits.⁴⁸

Quick Review 5.2

Major Types of Water Pollution

- Organic wastes: human sewage, animal wastes, bacteria, oil
- Inorganic pollutants: salt brines, acids, phosphates, heavy metals, asbestos, PCBs, radioactive chemicals

5.1.4: Land Pollution

Land pollution includes the formation and release of toxic substances, solid wastes, and nuclear waste. Toxic substances include acids, heavy metals, solvents, pesticides, herbicides, and phenols. Solid wastes include residential garbage, industrial wastes, agricultural wastes, and mining wastes. Nuclear wastes are categorized as high-level (cesium, strontium, plutonium), transuranic (diluted high-level wastes), and low-level (contaminated reactor equipment, uranium mine tailings).

TOXIC SUBSTANCES Hazardous or toxic substances are those that can cause an increase in mortality rates or irreversible or incapacitating illness or those that have other seriously adverse health or environmental effects. Toxic substances that have been released on land include acidic chemicals, inorganic metals (such as mercury or arsenic), flammable solvents, pesticides, herbicides, phenols, and explosives. (Radioactive wastes are also classified as hazardous substances, but we will discuss these wastes separately.) Silvex and 2, 4, 5-T, for example, are two widely used herbicides that contain dioxin—a deadly poison (100 times more deadly than strychnine) and a carcinogen.

Coal ash from coal-fired power plants that collect the ash before it escapes through exhaust stacks contains several toxic metals and other cancer-causing wastes. There are about 500 coal-fired electric utilities in the United States

today, and together they generate about 110 million tons of coal ash each year. Yet coal ash was unregulated until late 2010, when the EPA issued the first national regulations covering coal ash. In Caledonia, Wisconsin, residents discovered in June 2010 that their wells were contaminated with molybdenum, a toxic ingredient of coal ash, that probably leaked from a nearby landfill or a nearby coal plant; that same month, the residents of Colstrip, Montana, discovered that their well water—which they drank although it had tasted bad for years—was also contaminated by toxic coal ash wastes stored in waste ponds by a local coal plant.⁴⁹ In 2007, the EPA published a report listing 24 other neighborhoods around the nation that had been proven to have been contaminated by coal plant or oil plant toxic wastes, and an additional 43 neighborhoods that were also contaminated by coal plant toxic wastes but where the wastes had not yet “migrated to the extent that they could cause human health concerns.”⁵⁰ It is estimated that scattered across the nation, there are about 1,300 coal plant waste dumps containing billions of gallons of water and coal ash slurry. Until 2010, most of these dumps were neither regulated nor monitored, and all contain significant amounts of toxic heavy metals, such as arsenic, cadmium, lead, mercury, boron, thallium, and selenium, that can migrate into groundwater and surrounding areas.⁵¹

SOLID WASTES Americans today produce more residential garbage than do the citizens of any other country in the world. Each year people living in U.S. cities produce 250 million tons of municipal solid waste—enough to fill a 226,000-mile-long convoy of 10-ton garbage trucks, about the distance from the Earth to the Moon.⁵² Each person reading this text produces, on average, more than three-fourths of a ton of garbage a year—about 4.5 pounds a day. Only about a third of residential wastes are recovered through recycling—a low proportion that is due to the lack of financial backing for recycling operations, the small size of markets for recycled products, and toxic chemicals present in recyclable garbage.

NUCLEAR WASTES Light-water nuclear reactors use radioactive materials and produce “high-level” radioactive wastes, including known carcinogens such as strontium 90, cesium 137, barium 140, and iodine 131. Extremely high doses of radiation from these elements can kill a person; lower dosages (especially if radioactive dust particles are inhaled or ingested) can cause thyroid, lung, or bone cancer as well as genetic damage that can be transmitted to future generations. Plutonium is produced as a waste by-product in the spent fuel of light-water reactors. A 1,000-megawatt light-water reactor, for example, will generate about 265 pounds of plutonium wastes each year. Plutonium is highly toxic and carcinogenic. A particle weighing 10 millionths of a gram, if inhaled, can cause death within a few weeks. Twenty pounds, if properly

Common Toxic Chemicals

About 70,000 different chemical compounds are now used in the United States, of which well over a thousand are probably toxic. Their number is growing each year.^{53, 54, 55, 56}

Interactive

Start Over

Swap

0/3 REVIEWED · 0 MASTERED

Benzene

Previous

Next

Got It!

distributed, could give lung cancer to everyone on Earth. Cesium 137 and strontium 90 remain hazardous for about 1,000 years, and plutonium for 250,000 to 1,000,000 years. It is uncertain whether there is a safe and permanent method for disposing of these long-lived and dangerous wastes.⁵⁷ Moreover, the plutonium produced by reactors is the basic ingredient of atomic bombs, so if it should fall into the hands of terrorists it could be used to construct an atomic weapon or to lethally contaminate large, populated areas.⁵⁸

To date, nuclear plants in the United States, and in most other countries, have operated safely without any catastrophic release of large quantities of radioactive materials. Estimates of the probable risk of such a catastrophic accident are highly controversial, and significant doubts surround these risk estimates, especially in light of

the accidents at Three Mile Island in the United States, Chernobyl in Russia, and the earthquake- and tsunami-induced accident in Fukushima, Japan, all of which defied earlier probability estimates.⁵⁹ Even without catastrophic accidents, however, small amounts of radioactive materials are routinely released into the environment during the normal operations of a nuclear plant and during the mining, processing, and transporting of nuclear fuels. The U.S. government has estimated that, by the year 2000 (about four decades after nuclear plants began to be built in the United States), about 1,000 Americans had died of cancer from these routine emissions.⁶⁰ A more recent study estimated that worldwide deaths from nuclear power plant emissions and accidental releases (such as at Chernobyl and Fukushima) between 1971 and 2009 totaled about 5,000.⁶¹

Residential and Industrial Garbage

Residential garbage is 250 million tons a year. Yet the quantity of residential garbage that Americans produce is dwarfed by the quantities of solid waste produced through industrial, agricultural, and mining processes.^{62, 63, 64, 65, 66, 67, 68, 69}

Residential Garbage

Although the total amount of garbage we produce has been increasing each year, the facilities to handle our garbage have decreased. In 1978, about 20,000 municipal garbage dumps were in operation; by 1989, there were fewer than 8,000; in 1995, there were 3,500; and by 2009, there were only about 1,900. Many have had to be closed for safety reasons. Florida, Massachusetts, New Hampshire, and New Jersey are a few of the states that closed most of their garbage dumps during the 1990s. Moreover, fewer and fewer dumps are opened each year.

City garbage dumps are significant sources of pollution, containing toxic substances such as cadmium (from rechargeable batteries), mercury, lead (from car batteries and TV picture tubes), vanadium, copper, zinc, and PCBs (from refrigerators, stoves, engines, and appliances built before 1980 and since dumped). Only about one-fourth of all city dumps test groundwater for possible contamination, less than 16 percent have insulating liners, only 5 percent collect polluting liquid wastes before they percolate into groundwater, and less than half impose any restrictions on the kinds of liquid wastes that can be poured into them. Not surprisingly, almost one-fourth of the nonmilitary sites identified in the Superfund National Priorities List as posing the greatest chemical hazards to public health and the environment are city dumps.

Industrial Garbage

Although the risks of nuclear power wastes are significant, and they have caused a number of deaths, these costs must be balanced against the benefits of using nuclear power plants to provide for our energy needs. Currently, most of our energy needs are met by burning fossil fuels such as coal and natural gas. The United States generates only about 20 percent of its electricity with nuclear plants, although other countries have a much higher stake in nuclear power, including France (76 percent), Belgium (54 percent), Armenia (44 percent), Hungary (37 percent), Slovakia (56 percent), Slovenia (42 percent), Sweden (42 percent), Switzerland (39 percent), and Ukraine (47 percent). If these nuclear power plants did not exist, fossil fuel-based power plants would certainly have been built in their place. Yet fossil fuel-based power plants also produce wastes and pollution that also cause diseases and deaths. Studies have shown that if the power produced by nuclear

plants between 1971 and 2009 had instead been produced by fossil fuel-based plants, the wastes and pollution produced by those plants would have killed 1.84 million people.⁷⁰ Compare this number of deaths with the approximately 5,000 deaths estimated to have been caused by the nuclear power plants that actually took the place of those fossil fuel-based plants. In other words, a fossil fuel-based plant kills about 370 times more people than a nuclear power plant. Moreover, fossil fuel-based electricity plants are the major source of the greenhouse gases that are rapidly warming the planet. In the United States, about a third of all greenhouse gases are produced by fossil fuel-based electricity plants.

Nuclear wastes produced by nuclear power plants present humanity with large risks.⁷¹ Yet those risks appear to be far less than the risks produced by the conventional fossil fuels from which we produce most of our electricity.

Quick Review 5.3**Major Types of Land Pollution**

- Toxic substances: acids, heavy metals, solvents, pesticides, herbicides, and phenols
- Solid wastes: residential garbage, industrial wastes, agricultural wastes, and mining wastes
- Nuclear wastes: high-level (cesium, strontium, plutonium), transuranic (diluted high-level wastes), and low-level (contaminated reactor equipment, uranium mine tailings)

5.1.5: Depletion of Species and Habitats

Human activity has rendered dozens of plant and animal species extinct. Since 1600, at least 96 specific species of mammals and 88 specific species of birds are known to have become extinct.⁷² However, scientists believe that these data represent only the tip of the iceberg and that the number of species that are going extinct today is many times larger. In addition, several hundred other species, such as whales and salmon, today find themselves threatened and on the brink of extinction. Forest habitats on which the bulk of species depend are also being decimated by the timber industry. Between the years 1600 and 1900, half of the forested land area in the United States was cleared.⁷³ Experts estimate that the planet's rain forests are being destroyed at the rate of about 1 percent a year.⁷⁴ The loss of forest habitats combined with the effects of pollution is thought to have led to the extinction of hundreds of unidentified species. The International Union for Conservation's "Red List of Threatened Species," the most comprehensive database of species and subspecies known to be extinct or threatened with extinction, concludes that out of the 47,978 species (all identified life forms including birds, animals, plants, insects, fungi, mollusks, etc.) specifically identified and known to have existed during the last 500 years, 17,315 (36 percent) were threatened with extinction, and 840 are now extinct.⁷⁵

Nowhere has the depletion of living organisms been as significant as in the oceans. Fish stocks around the world have collapsed because of over-fishing, resulting in a serious decline in the fish protein available to local populations. In the Northwest Atlantic, for example, the stocks of haddock, red hake, and Atlantic cod all collapsed during the 1990s. In 2015, a study by the World Wide Fund for Nature (WWF) found that fish populations in general had declined by 49 percent since 1970 and several fish species had declined by almost 75 percent.⁷⁶ Polluted runoff that has entered the oceans has also created large "dead zones" devoid of most fish and shellfish. More than 400 dead zones have been documented off the

coasts of countries around the world.⁷⁷ Since about 3 billion people living in coastal communities rely on fish as their major source of protein, the rapid and continuing destruction of fish species poses a major threat to those coastal people.

5.1.6: Depletion of Fossil Fuels

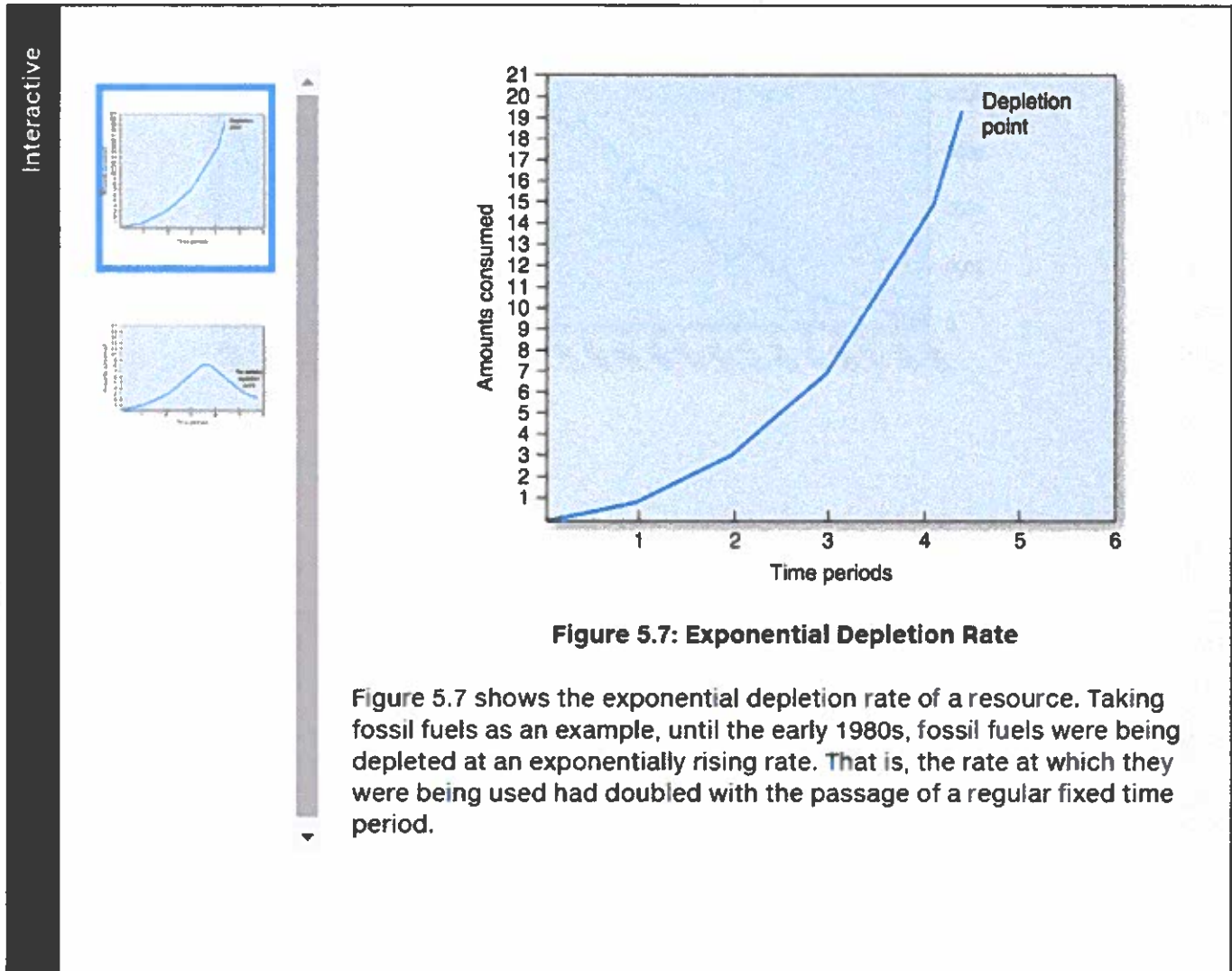
Some early predictions of resource depletion assumed that fossil fuels would continue to be depleted at exponentially rising rates. If continued, an exponentially rising rate of depletion would end with the complete and catastrophic depletion of the resource in a relatively short time.⁷⁸ Estimated world reserves of coal would be depleted in about 100 years from the time of the estimates, estimated world reserves of oil would be exhausted in about 40 years, and estimated reserves of natural gas would last only about 25 years.⁷⁹ These time periods were calculated by taking estimates of the world's reserves of a resource, and dividing it by the amount that was being consumed each year. The "estimated reserves" of a resource consist of the estimated amount of the resource that we have the technology to extract from the earth, and that we can extract at a cost that is less than the value of the resource. In other words, "reserves" are the amount of a resource that it is technologically and economically feasible to extract.

The rate at which we deplete our resources is more adequately mirrored by the Hubbert model than by the exponential model. For example, fossil fuels will not be depleted within the short time frame predicted by earlier exponential growth models. The extraction of estimated reserves of coal will probably peak in about 150 years and then continue, but at a declining rate coupled with rising prices, for another 150 years. The conventional extraction of U.S. reserves of natural gas peaked in 1973, and then began to decline as the Hubbert model had predicted. The conventional extraction of U.S. reserves of oil peaked in 1970 and subsequently declined, also as the Hubbert model predicted.

FRACKING AND NEWER TECHNOLOGIES After this peak and decline in the conventional extraction of oil and gas in the United States, the production of oil and gas began to rise again. This increase in the U.S. production of oil and natural gas was not predicted by the Hubbert model. What happened? The major factor that instituted a new rise in U.S. oil production was the development of a new technology, now popularly known as "fracking." Unlike the conventional extraction of oil and natural gas, fracking is accomplished by pumping a water mixture into the ground at such high pressure that the rock beneath the ground is fractured, releasing the oil and natural gas that were trapped within the rock. Conventional drilling methods cannot extract oil and gas trapped in rock. So until fracking methods were developed and used, oil and gas

Exponential and Peaked Depletion Rate

Experts have pointed out that our consumption of a resource cannot continue rising at exponential rates. As reserves of any resource shrink, they become increasingly difficult, and therefore more costly, to extract. The rising costs of extraction in turn will slow down their depletion rates. Consequently, although the rates at which reserves of a resource are depleted may rise exponentially for a period (see Figure 5.7), the rising costs of extraction eventually cause the rates to slow, then peak and then begin to decline without complete depletion ever being attained (see Figure 5.8).^{80, 81}



resources trapped within rock were not accessible. The use of fracking allowed the large oil and natural gas reserves trapped in rock to be extracted, thereby allowing U.S. oil and natural gas production to increase once again.

The example of oil and gas production in the United States is a dramatic illustration of a problem with trying to predict the production peak or limit of any natural resource. The problem is that we do not know whether new technologies will be developed in the future that will allow us to extract resources that we cannot recover at the present. Resources that are not technologically recoverable at present are not taken into account when estimating the total reserves of any natural resource because

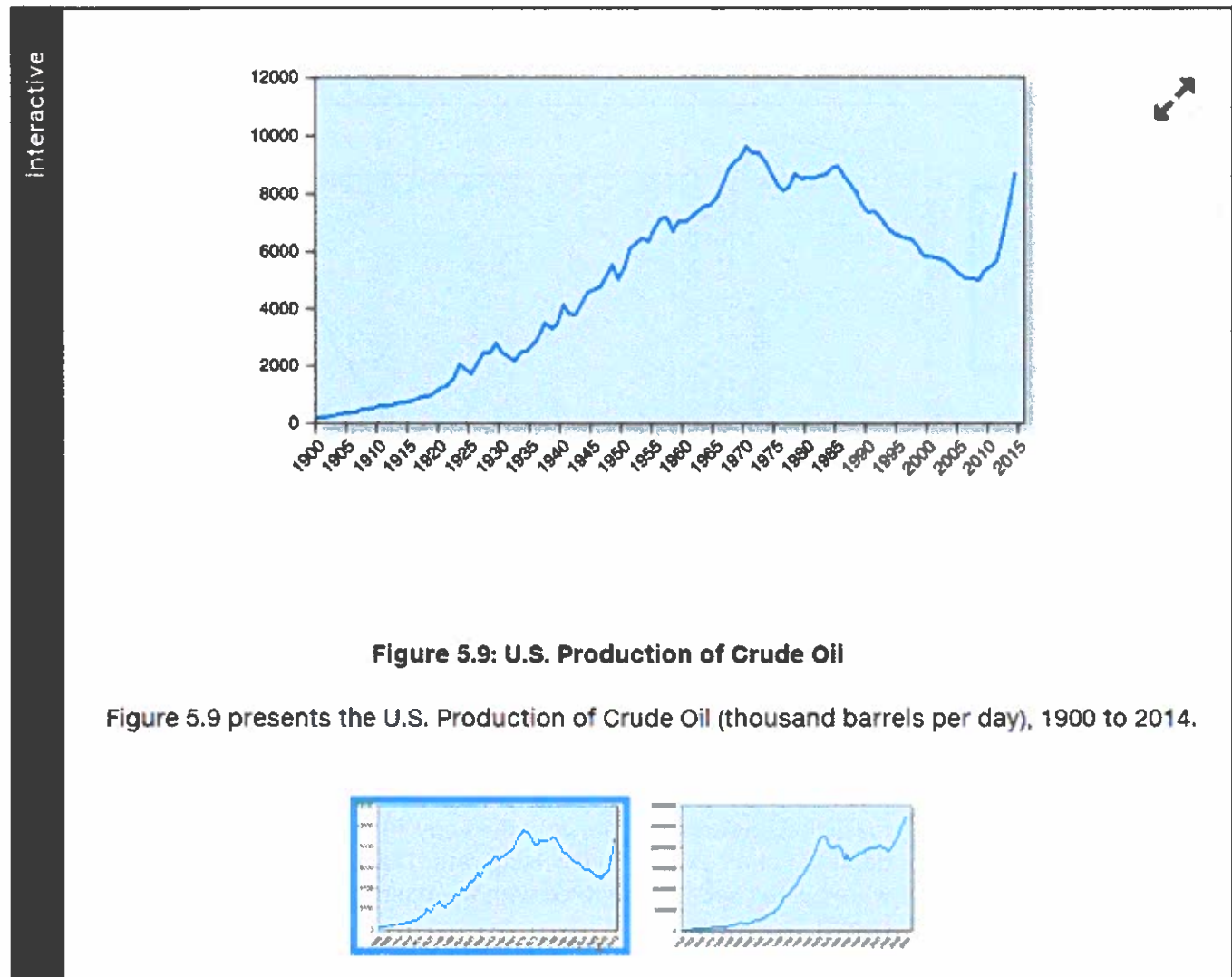
reserves consist of what is technologically (and economically) possible to extract. The possibility that new technologies like fracking may be discovered, then, makes it difficult to predict when the peak or the limit of a resource will be reached.

Experts argue, however, that oil and natural gas production in the United States will eventually begin to follow the Hubbert curve again. That is, production of oil and natural gas through fracking will reach a peak sometime in the future and then begin to decline. It is unknown at this time, however, when their peaks will occur.

What about the extraction of fossil fuels outside the United States? When will they begin to decline? Estimates

U.S. Production of Crude Oil and Natural Gas

Natural gas production began rising steadily again in 2007 (see Figure 5.9), and oil production began rising steadily in 2009 (see Figure 5.10).



of the depletion rates of world reserves of oil have been even more controversial than those of the United States and have varied widely.⁸² Several experts had estimated that world production of oil would peak by 2010.⁸³ But these estimates were made before the adoption of fracking methods. Fracking has allowed worldwide production of oil to continue on an upward trajectory, a trajectory that was interrupted only briefly by the decline in demand caused by the great recession of 2008. Moreover, the estimated reserves of fossil fuels have increased tremendously because deposits that were not technologically feasible to extract were not counted as part of the world's reserves. Now estimates of reserves must be revised to take into account these deposits that it is now technologically possible to extract. Nevertheless, according to experts, this upward trajectory will eventually hit a peak and then

begin a slow and inevitable decline as it once again adheres to the Hubbert curve.

5.1.7: Depletion of Minerals

The depletion of mineral reserves, like the depletion of fossil fuels, can also be calculated either on the basis of an exponential growth model or on the basis of a peaked growth model. If earlier exponentially rising rates of depletion continued, then aluminum would have been scheduled for exhaustion in the year 2003, iron in 2025, manganese in 2018, molybdenum in 2006, and nickel in 2025.⁸⁴

Yet, as with fossil fuels, the rate at which minerals are depleted will not continue to grow exponentially, but should peak in a Hubbert curve and then decline as metals

become rarer, and more difficult and more expensive to extract. Using this peaked model, a 2007 study of several essential minerals estimated that, depending on how much consumption rates increase from 2007 rates, the production of indium, a key component of flat-screen TVs and certain solar cells, has peaked; antimony, which is used in certain drugs and flame-retardant materials will peak in about 30 years; tantalum, a component of cell phones and camera lenses, in 20 to 116 years; uranium, which will be in high demand if the world begins building more nuclear power plants, in 19 to 59 years; tin in 17 to 40 years; silver in 9 to 29 years; gold in 36 to 45 years; zinc in 34 to 46 years; and nickel in 57 to 90 years.⁸⁵

According to this 2007 study, then, although the extraction rates of some important minerals have peaked, none

has been completely depleted and all continue to be mined, although their extraction costs have been rising.⁸⁶ Moreover, new mining and refining technologies have made it technology feasible to extract some mineral deposits that it was not technologically and/or economically feasible to extract several years ago.

Quick Review 5.4

Depletion of Nonrenewable Resources

- Several species have lost habitats and become extinct.
- Natural resources are depleted at a peaked rate, not an exponential rate.
- Fossil fuel depletion: coal will likely peak in 150 years, but the peak dates for natural gas and oil are unknown due to the expanded production of both by the use of fracking.

Mineral Resources: Finite and Limited

Like fossil fuels, mineral resources are also finite and limited. So the depletion rates of the world's supply of minerals will also eventually peak and then gradually decline as remaining supplies become harder and more expensive to mine.^{87, 88, 89, 90}

Impact of Limited Mineral Resources

The precise impact the limitations of world supplies will have on us are exceedingly difficult to predict. Mining technologies may continue to develop, which will reduce the difficulty and costs of mineral extraction and extend the period of decline. This has been the case for most minerals up to the present. Increased recycling may further reduce the need for intensive mining of remaining mineral reserves. Substitutes may also be found for many of the minerals whose supply is limited, and technological development may make many current uses of these minerals obsolete.

Mineral Resources Rapidly Becoming Scarce

Rate of Depletion of Mineral Resources

Physical Limits to Natural Resources

- Mineral depletion: indium has peaked, tantalum will peak in 20 to 116 years, antimony in about 30 years, aluminum during the twenty-first century, and copper and mercury in about 2100.

5.2: The Ethics of Pollution Control

OBJECTIVE: Examine the important ethical considerations of pollution control

For centuries, business institutions were able to ignore their impact on the natural environment, an indulgence that has a couple of causes:

1. Business was able to treat air and water as free goods—that is, as goods that no one owns and that each firm can therefore use without reimbursing anyone for their use. Because such resources are not privately owned, they lack the protection that a private owner would normally provide, and businesses were able to ignore the damages they inflicted on them.
2. Businesses have seen the environment as an unlimited good. That is, the carrying capacity of air and water is relatively large, and each firm's contribution of pollution to these resources seems relatively small and insignificant.⁹¹ When the effects of its activities are seen as so slight, a firm will tend to ignore these effects. However, when every firm reasons in this way, the combined negligible effects of each firm's activities may become enormous and potentially disastrous. The carrying capacity of the air and water is soon exceeded, and these free and unlimited goods rapidly deteriorate.

Of course, pollution problems are not rooted only in business activities. Pollution also results from the use that consumers make of products and from human waste products.⁹²

Ethical Application

Ignoring Environmental Impact

On the point of air and water as free goods, for several years, a DuPont plant in West Virginia had been dumping 10,000 tons of chemical wastes each month into the Gulf of Mexico until it was forced to stop. The waters of the Gulf provided a free dumping site for whose damages DuPont did not have to pay. On the point of the environment as an unlimited good, the amount of chemicals DuPont was dumping into the Gulf was relatively small compared with the size of the Gulf, and the effects were seen as negligible by the company.

5.2.1: Consumer Responsibility

A primary source of air pollution is automobile use, and a primary source of water pollution is sewage. We are truly all polluters.⁹³ Because every human being pollutes, pollution problems have increased as our population has multiplied. The world's population grew from 1 billion in 1800 to 3 billion in 1960 to 7.3 billion in 2015 and is projected to grow to 9.7 billion by 2050.⁹⁴ This population explosion has put severe strains on the air and water resources into which we dump our share of pollutants. Moreover, these strains have been aggravated by our tendency to concentrate our populations in urban centers. All over the world, urban areas are growing rapidly, and the high-population densities that urbanization has created multiplies the pollution burdens placed on air and water resources.⁹⁵

The problems of pollution, then, have a variety of origins, and their treatment requires a similarly variegated set of solutions. Our focus in what follows, however, concentrates on a single range of problems: the ethical issues raised by pollution from commercial and industrial enterprises.

On the Edge

The Auto Industry and Its Effects in China

In 2000, China's car market began to expand dramatically due to the increasing wealth of the country, the encouragement of the government, and a growing middle class that wanted the comfort, convenience, and pride of car ownership. Foreign car companies eagerly flocked to help China expand its car industry, including Volkswagen, General Motors (GM), Honda, Toyota, Ford, Citroen, and BMW, who together invested more than

\$20 billion to kick-start China's auto industry. By 2010, China had become the largest car market in the world with over 18 million cars sold that year. With a population of 1.2 billion people and double-digit growth rates, China estimated that by 2035 as many as 300 million cars would be traveling on its highways. In 2011, Volkswagen announced it had sold 2 million cars in China the previous year, and in 2015 GM announced it had sold 3.4 million the previous year.

Critics suggested, however, that the overzealous auto companies unwittingly might have inflicted serious harm on the global environment. To begin with, the pollution from so many new cars promised to have severe environmental impacts. Even "clean" cars will generate carbon dioxide as they burn fuel, thus

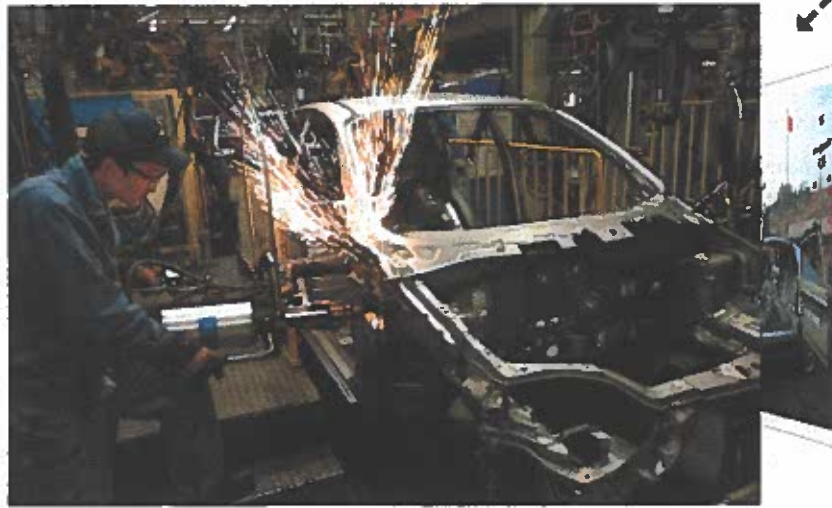
worsening the greenhouse effect. Cars also produce smog and other health hazards (tuberculosis cases will double; emphysema and lung cancers will rise), and China's form of gasoline contains lead, a toxic metal. Expanding China's car production will increase oil consumption, placing heavy pressures on the world's dwindling oil resources. China's rising oil consumption was partly responsible for continuing oil prices of over \$85 a barrel in 2014. If car ownership in China continues to rise, by 2020 China's oil consumption could be two-thirds of the United States' (the

United States consumes one-fourth of the world's oil), a level the world's oil supplies probably cannot support. Some experts claim world oil production would be insufficient to meet the rising demands of China, the United States, and the rest of the industrialized world, and promising future economic disruptions and political or military conflicts. If China were to substitute electric vehicles for gas-fueled cars, as it plans to, it will have to expand its coal-powered electric plants, which in turn will increase its carbon dioxide emissions.

Making and Buying Cars in China

China acknowledges that by 2020, the number of cars on its roads will triple.

Interactive



A worker on an assembly line in Shandong Province, China, builds the GM Chevrolet Sail.



WRITING PROMPT

Contributing to Another Country's Industrialization--and Pollution

1. Was it wrong for the car companies to help China expand its auto industry? Why or why not?

The response entered here will appear in the performance dashboard and can be viewed by your instructor.

Submit

5.2.2: Ecological Ethics

Concern for the environment has a long history. During the thirteenth century, for example, Arabic thinkers discussed air and water pollution and how these were linked to human health.⁹⁶ While in England, King Edward I outlawed the burning of sea coal because its smoke polluted the air of London. Early concern for the environment was for the most part *anthropocentric* (human-centered); that is, concern for the environment was based on how it affected the interests of human beings. The natural environment was largely seen as a resource that should serve the interests of human beings and which has only an instrumental value; that is, it is valuable to the extent that it serves human interests. Examples include:

- In the Old Testament book of *Genesis*, for example, God declares that humans are to “have dominion over the fish of the sea, and over the birds of the air, and over every living thing that moves upon the earth.”
- Ancient Greek philosopher Aristotle wrote that “nature has made all things specifically for the sake of man.”
- Thomas Aquinas, a thirteenth century philosopher-theologian, wrote that nonhumans are “ordered to man’s use.”⁹⁷

The view that nature has value to the extent that it serves human interests continued into the modern period (with a few exceptions). Philosopher Immanuel Kant, for example, famously wrote that the reason why it is wrong for a person to be cruel to animals is because “cruelty to animals is contrary to man’s duty to *himself*, since it deadens in him the feeling of sympathy for their sufferings and thus weakens a natural tendency that is very useful to morality in relation to other humans.”⁹⁸

The idea here is that a person’s cruelty toward animals is not wrong because of the pain it inflicts on the animal itself, but because of the effect it has on the person’s moral relationships with other humans.

ANTHROPOCENTRIC VIEWS TODAY As we will see shortly, the view that the natural environment is valuable only because it serves human interests continues. Many people today, in fact, work to protect the environment precisely because they hold this view. To them, damage to the environment is morally wrong because it ultimately harms human beings. Those who hold an anthropocentric view of the environment can still believe that air, water, and land pollution, the extinction of species, climate change, the release of radioactive wastes, and the destruction of the ozone layer are all harmful to us and for that reason we must work to stop them. However, environmental critics of anthropocentric views argue that holding an anthropocentric view is itself part of the problem. Because we see nature as something that is there to serve us, we pollute and consume it as if it has no value in itself.

Critics of anthropocentric views claim that if we do not change our anthropocentric views, we will continue to

exploit, pollute, and consume nature until it is too late. We will take care of nature only if we accept the view that nature is valuable in itself and that by virtue of its intrinsic value we are obligated to respect and preserve it.

ECOLOGICAL ETHICS Ecological ethics are based on the idea that at least some nonhuman parts of nature have an intrinsic value that is not related in any way to their usefulness or value to humans. Several supporters of this approach have formulated their views in a platform consisting of the following statements:

1. The well-being and flourishing of human and nonhuman life on earth have value in themselves. . . . These values are independent of the usefulness of the nonhuman world for human purposes.
2. Richness and diversity of life forms contribute to the realization of these values and are also values in themselves.
3. Humans have no right to reduce this richness and diversity except to satisfy vital needs.
4. The flourishing of human life and cultures is compatible with a substantial decrease of the human population. The flourishing of nonhuman life requires such a decrease.
5. Present human interference with the nonhuman world is excessive, and the situation is rapidly worsening.
6. Policies must therefore be changed. The changes in policies affect basic economic, technological, and ideological structures. The resulting state of affairs will be deeply different from the present.
7. The ideological change is mainly that of appreciating life quality . . . rather than adhering to an increasingly higher standard of living.
8. Those who subscribe to the foregoing points have an obligation directly or indirectly to participate in the attempt to implement the necessary changes.⁹⁹

THE LAST MAN ARGUMENT AND THE VALUE OF NON-HUMANS An ecological ethic is thus an ethic that claims that because at least some nonhuman beings are intrinsically valuable, we humans have a duty not to harm them without a sufficiently serious reason. Philosopher Richard Routley proposed a “mental experiment” to show that nature is intrinsically valuable and should not be harmed without serious reason. Suppose some catastrophic event has killed all human beings but one.¹⁰⁰ Suppose this “last man” had the power to do something that would ensure that every other living thing on Earth, and all Earth’s landscapes, would be destroyed after he himself died. From an anthropocentric view, it would not be wrong for him to carry out such a destructive act since no humans would be affected. Yet, Routley argued, we recognize that it would indeed be wrong for the “last man” to destroy everything on the Earth’s surface. This means that we must feel that nonhuman life has intrinsic value that is independent of its value to humans. The claims of an ecological ethic then must be correct: we are forced to admit that at least some nonhuman life is intrinsically valuable and that we

Ecological Systems and Ecological Ethics

Some opponents of anthropocentrism claim that the problem of pollution (and environmental issues in general) can best be framed in terms of our duty to recognize and preserve the **ecological systems** we live in.^{101, 102, 103, 104, 105}

Interactive

Ecological Systems

An ecological system is an interrelated and interdependent set of organisms and environments, such as a lake in which the fish depend on small aquatic organisms, which in turn live off decaying plant and fish waste products. Because the various parts of an ecological system are interdependent, the activities of one of its parts will affect all the other parts and the well-being of each part depends on the well-being of the other parts.

Business firms (and all other social institutions) are parts of a larger ecological system, "spaceship earth." Business firms depend on the natural environment for their energy, material resources, and waste disposal, and that environment in turn is affected by the commercial activities of business firms. For example, the activities of eighteenth-century European manufacturers of beaver hats led to the wholesale destruction of beavers in the United States, which in turn led to the drying up of the innumerable swamp lands that had been created by beaver dams. Businesses must recognize the interrelationships and interdependencies of the ecological systems within which they operate.

Ecological Ethics

have a moral duty to refrain from harming it without a sufficiently weighty reason. The claims of ecological ethics clearly have significant implications for those businesses whose activities affect the natural environment and its nonhuman organisms, as "Ethical Application" shows.

Ethical Application

Ecological Ethics and Activism

In the early 1990s, environmentalists successfully petitioned the U.S. Fish and Wildlife Service to bar the timber industry from logging potentially lucrative old-growth forests of northern California to save the habitat of an endangered species, the dark-brown northern spotted owl that lived in the lush "old growth"

200-year-old forests of the Pacific Northwest.¹⁰⁶ The decision of the U.S. Fish and Wildlife Service (and the U.S. "Endangered Species Act" on which it was based) was consistent with ecological ethics, although it was estimated to have cost the timber industry millions of dollars, to have lost as many as 36,000 lumber jobs, and to have raised the costs of consumer prices for fine wood products such as furniture and musical instruments. Members of the Sea Shepherd Conservation Society have sabotaged whale-processing plants, sunk several ships, and otherwise imposed costs on the whaling industry to protect whales.¹⁰⁷ Members of Earth First! have driven nails into randomly selected trees of forest areas scheduled to be logged so that power logging saws are destroyed when they bite into the spiked trees in order to protect forests. All these activities are based on the idea that nature and its parts have an intrinsic value that we have a moral duty to protect and that this value is at least sometimes more weighty than human interests.

VERSIONS OF ECOLOGICAL ETHICS There are several varieties of ecological ethics, some more radical and far-reaching than others. Perhaps the most popular version claims that, in addition to human beings, other animals have intrinsic value and are deserving of our respect and protection. Some utilitarians, such as Peter Singer, for example, have claimed that pain is an evil, whether it is inflicted on humans or on members of other animal species. In fact, Singer argues, the pain experienced by an animal is as great an evil as a *comparable* pain experienced by a human being. He grants that a human may be more sensitive to pain than an animal, and a human may suffer more from anticipating the pain than an animal would, so an

animal's pain may have to be more intense to be "comparable to" a human's pain. Nevertheless, at some level of intensity, the pain of the animal would become comparable to the pain of the human being, and at that level the animal's pain would be as great an evil as the human's pain. It follows, Singer concludes, that if it is morally wrong to inflict the pain on a human, it is equally wrong to inflict the comparable pain on an animal. It is a form of *speciesism* (akin to racism or sexism, i.e., a prejudice against members of another group) to think that the moral duty to avoid inflicting pain on members of other species is not equal to our duty to avoid inflicting comparable pain on members of our own species.¹⁰⁸

Ecological Ethics: Different Arguments and Versions

Certain nonutilitarians have reached conclusions similar to Peter Singer's by appealing to rights instead of utilitarianism. They claim that the life of every animal "itself has value" apart from the interests of human beings and because of the intrinsic value of its life, each animal has certain moral rights. In particular animals have the right to be treated with respect. Humans have a duty generally to respect this right, although in some special cases a human's right might override an animal's right.^{109, 110, 111, 112, 113, 114, 115, 116, 117}

Utilitarian and Rights Arguments

Ecological Ethics: Broader Versions

Broader versions of ecological ethics would extend our duties beyond the animal world to include plants. Thus, some ecological ethicists have claimed that it is arbitrary and hedonistic to confine our duties to creatures that can feel pain. Instead, they urge, we should acknowledge that all living things including plants have "an interest in remaining alive" and that consequently they deserve moral consideration for their own sakes. Other environmentalists such as Aldo Leopold have claimed that not only living things but also a natural species or a natural structure—such as a lake, a wild river, a mountain, and even an entire "biotic community"—has a right to have its "integrity, stability, and beauty" preserved. If correct, these views would have important implications for businesses engaged in strip-mining or logging operations.

Albert Schweitzer's Version

Paul Taylor's Version

Attempts to extend moral rights to nonhumans or claim that an attitude of respect for all nature is morally demanded are still controversial, and some authors have labeled them “incredible.”¹¹⁸ It is difficult, for example, to see why the fact that something *is* alive implies that it *ought to be* alive and that we, therefore, have a duty to keep it alive or to express respect or even reverence for it. It is also difficult to see why the fact that a river or a mountain exists implies that it *ought to exist* and that we have a duty to keep it in existence or revere it. Facts do not imply values in this easy way.¹¹⁹ It is also controversial whether we can claim that animals have rights or intrinsic value.¹²⁰ However, we do not have to rely on these views to develop an

environmental ethic. As we mentioned earlier, there are other more traditional, although anthropocentric, approaches to environmental issues.¹²¹ One is based on a theory of human rights, and the other is based on utilitarian considerations.

5.2.3: Environmental Rights and Absolute Bans

In an influential article, William T. Blackstone argued that the possession of a livable environment is not merely a desirable state of affairs, but something to which each human being has a right.¹²²

William T. Blackstone and Environmental Rights

A livable environment is not merely something that we would all like to have. It is something that others have a duty to allow us to have. They have this duty, Blackstone argued, because we each have a right to a livable environment, and our right imposes on others the correlative duty of not interfering in our exercise of that right. Moreover, this right should be incorporated into our legal system. Why do human beings have this right?^{123, 124}

Interactive

According to Blackstone, a person has a moral right to a thing when possession of that thing is “essential in permitting him to live a human life” (i.e., in permitting him to fulfill his capacities as a rational and free being). At this time in our history, it has become clear that a livable environment is essential to the fulfillment of our human capacities. Consequently, human beings have a moral right to a decent environment, and it should become a legal right. Moreover, Blackstone added, this moral and legal right should override people’s legal property rights. Our great and increasing ability to manipulate the environment has revealed that, unless we limit the legal freedom to engage in practices that destroy the environment, we shall lose the very possibility of human life and the possibility of exercising other rights, such as the right to liberty and equality.

Several states have introduced amendments to their constitutions that grant to their citizens an environmental right, much like Blackstone advocated. Article One of the Constitution of Pennsylvania, for example, was amended several years ago to read:

The people have a right to clean air, pure water, and to the preservation of the natural scenic, historic, and aesthetic values of the environment. Pennsylvania’s natural resources . . . are the common property of all the people, including generations yet to come. As trustee of these resources, the commonwealth shall preserve and maintain them for the benefit of all people.

IS THERE A RIGHT TO A CLEAN ENVIRONMENT? If we return to Blackstone's claim that we have a right to a clean environment, we can see that the basis of this right is the more basic right to "live a human life"; that is, a right to fulfill our capacities as free and rational persons. This reasoning suggests that the right to a clean environment is a right to an environment that is clean enough to allow all of us to live a full human life; that is, an environment in which pollution does not prevent us from living healthy and fulfilled lives.

Quick Review 5.5 Environmental Rights

- Blackstone argued that humans have a right to fulfill their capacities as free and rational beings, and a livable environment is essential to such fulfillment.

- Blackstone also argued that humans have a right to a livable environment, which is violated by practices that destroy the environment.
- Critics claim that Blackstone's concept of environmental rights can lead to absolute bans on pollution, even when the costs far outweigh the benefits.

5.2.4: Markets and Partial Controls

One way to answer the questions that Blackstone's theory of environmental rights raises is to see environmental problems as market defects. If an industry pollutes the environment, the market prices of its commodities will no longer reflect the full costs of producing the commodities; the result is a misallocation of resources, a rise in waste, and an inefficient distribution of commodities.

At What Point Is the Environment "Safe" Enough?

The idea that the environment must be cleaned only up to the point at which it allows us to live healthy and fulfilled human lives has sometimes been called the "safety standard". It implies that once the environment is safe enough for us to live healthy and fulfilled lives, more cleansing is not morally required.^{125, 126, 127, 128, 129}

Safety Measurement

Governments have struggled with the problem of how safe is safe enough, and have attempted to implement many laws that seem to require absolutely no pollution. The U.S. government has often decided that when exposure to pollution during one year poses a risk of death of 1 in 1 million or less, it is safe enough; and when, during a year, exposure poses a risk of death of 3 in 10,000 or more, it is unsafe and must be cleaned up. Risks that lie in-between are handled on a case-by-case basis. This means that when pollution kills no more than 1 person out of a million who were exposed to it during a year, it is safe enough; when it kills 3 or more persons out of 10,000 who were exposed to it during a year, it is unsafe and must be addressed. However, this way of dealing with the problem of how safe is safe enough has not been acceptable to everyone. Many people claim that if 1 person out of a million dies every year from exposure to pollution, then the pollution is still too high: that one person also had a right to a healthy environment, and that right was violated. Is this claim justified? It seems unrealistic to demand the complete elimination of absolutely all risks to life and health because fulfilling that demand would impose unacceptable costs and burdens on all of us.

Consequently, society as a whole is harmed as its overall economic welfare declines.¹³⁰ Thus, individuals should avoid pollution because they should avoid harming society's welfare. We will next explain this argument in greater detail and examine the more nuanced approach to pollution that this market analysis is said to provide.

PRIVATE COSTS AND SOCIAL COSTS Economists often distinguish between what it costs a private manufacturer to make a product and what the manufacture of that product costs society as a whole.

Suppose, for example, that an electric firm consumes a certain amount of fuel, labor, and equipment to produce 1 kilowatt of electricity. The cost of these resources is its **private cost**: the price it must pay out of its own pocket to manufacture 1 kilowatt of electricity.

However, producing the kilowatt of electricity may also involve other external costs for which the firm does not pay.¹³¹ When the firm burns fuel, for example, it may generate smoke and soot that settles on surrounding neighbors, who have to bear the costs of cleaning up the grime and paying for any medical problems the smoke creates. From the viewpoint of society as a whole, then, the costs of producing the kilowatt of electricity include not only the internal costs of fuel, labor, and equipment for which the manufacturer pays but also the external costs of cleanup and medical care that the neighbors pay. This sum total of costs (the private internal costs plus the external costs the neighbors must pay) are the **social costs** of producing the kilowatt of electricity: the total price society must pay to manufacture 1 kilowatt of electricity.

Of course, private costs and social costs do not always diverge as in this example; sometimes the two coincide. If a producer pays for all external costs involved in manufacturing a product, for example, or if manufacturing a product imposes no external costs, then the producer's private costs and the total social costs are the same.

However, when a firm pollutes its environment in any way, the firm's private costs are always less than the total social costs involved. Whether the pollution is localized and immediate, as in the neighborhood effects described in this example, or whether the pollution is global and long range, as in the hot-house effects predicted to follow from introducing too much carbon dioxide into the atmosphere, pollution always imposes external costs—that is, costs for which the party who produces the pollution does not have to pay. Pollution is fundamentally a problem of this divergence between private and social costs.

POLLUTION INVALIDATES THE MARKET SYSTEM

When a market is no longer allocating resources and distributing commodities so as to maximize utility, three ethical deficiencies can be noted:

1. The allocation of resources in markets that do not take all costs into account is not optimal because, from the

point of view of society as a whole, more of the commodity is being produced than society would demand if society had an accurate measure available of what it is actually paying to produce the commodity. Because the commodity is being overproduced, more of society's resources are being consumed to produce the commodity than is optimal. The resources being consumed by overproduction of the commodity are resources that could be used to produce other commodities for which there would be greater demand if prices accurately reflected costs. Resources are thereby being misallocated.

2. When external costs are not taken into account by producers, producers ignore these costs and make no attempt to minimize them like they minimize their other costs. Because the firm does not have to pay for external costs, it uses up and wastes the resources being consumed by these external costs (such as clean air). There may be technologically feasible ways of producing the same commodities without polluting or by polluting less, but the producer will have no incentive to find them.
3. When the production of a commodity imposes external costs on third parties, goods are no longer efficiently distributed to consumers. External costs introduce effective price differentials into markets: everyone does not pay equal prices for the same commodities. The neighbors who live near our imaginary electric plant, for example, pay not only the prices the plant charges everyone else for electricity but also the costs the smoke from the burning fuel imposes on them in the form of extra cleaning bills, medical bills, painting bills, and so forth. Because they must pay for these extra external costs, they have fewer funds to pay for their share of market commodities. Consequently, their share of goods is not proportioned to their desires and needs as compared with the shares of those who do not have to pay the extra external costs.

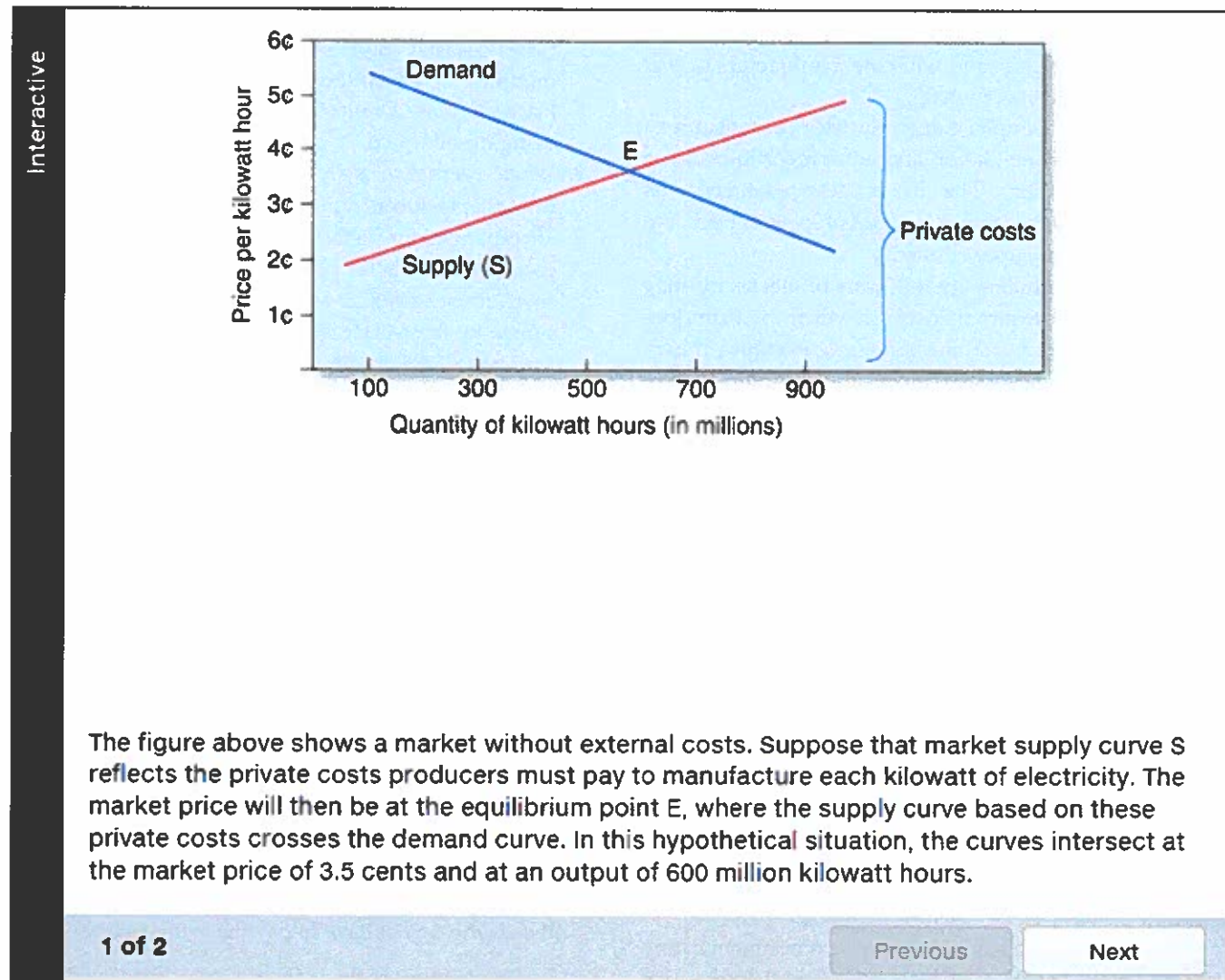
Pollution imposes external costs, which means that the private costs of production are less than the social costs. As a consequence, markets with pollution do not impose an optimal discipline on producers, and the result is a drop in social utility. Pollution of the environment, then, is a violation of the utilitarian principles that underlie a market system.

Quick Review 5.6 Markets and Pollution

- The total costs of making a product include a seller's internal private costs and the external costs of pollution paid by society.
- A supply curve based on all costs of making a product lies higher than one based only on sellers' internal private costs, and the higher supply curve crosses the demand curve at a lower quantity and a higher price than the lower supply curve.

Why Should the Divergence between Private and Social Costs Be a Problem?

The divergence is a problem because when the private costs of manufacturing a product diverge from the social costs involved in its manufacture, markets no longer price commodities accurately. Consequently, they no longer allocate resources efficiently. As a result, society's welfare declines. To understand why markets become inefficient when private and social costs diverge, let us suppose that the electrical power industry is perfectly competitive (it is not, but let us suppose it is). Figure 5.11 depicts a market without external costs, and Figure 5.12 depicts a market with all costs.



- When sellers' costs include only private costs, too much of the product is produced and the price is too low (compared with when all costs are included), which lowers utility, and violates rights and justice.

POLLUTION VIOLATES JUSTICE AND FAIRNESS Pollution also violates the kind of justice or fairness that characterizes a competitive free market. In a well-functioning competitive free market, the value of what buyers and sellers on average receive from their market exchanges equals the value of what they contribute. However, when a market generates pollution, there are external costs that some people have to pay in addition to what they pay for the goods they receive from the market. These costs are unfair: they

are costs the producer imposes on people (e.g., the people who live near an electric plant that rains coal soot on them, forcing them to pay higher doctor bills and cleaning bills and to accept declining property values) and for which these people unfairly get nothing in return. (Pollution is also related to other forms of justice, as we will see later.)

It is also clear that pollution violates the rights that characterize a competitive free market. All market exchanges are voluntary in a competitive free market, and so the market respects participants' negative right to choose the exchanges they will make. Moreover, people are free to enter or leave the market, and no producer so dominates the market that it can force others to accept its terms. However, when a producer generates pollution, that producer imposes

costs on people that they did not voluntarily choose, thereby violating their right to choose. Moreover, the victims of pollution were never given the choice to enter or leave the “market” in which they find themselves burdened with costs for which they get nothing in return. As well, because the producer dominates the exchange, the producer in effect forces its victims to accept its terms: that is, victims pay the producer’s costs and get nothing in return.

Pollution, then, violates not only utility but also justice and rights.

Quick Review 5.7

Ethical Approaches to Environmental Protection

- Ecological approach: nonhumans have intrinsic value.
- Environmental rights approach: humans have a right to a livable environment.
- Market approach: external costs violate utility, rights, and justice so they should be internalized.

5.3: Remedies and Duties of the Firm

OBJECTIVE: Assess the approaches to internalizing the external costs of pollution

The remedy for external costs, according to the preceding market analysis, is to ensure that the **costs of pollution are internalized**—that is, that they are absorbed by the producer and taken into account when determining the price of its goods.¹³² In this way, goods will be accurately priced, market forces will provide the incentives that will encourage producers to minimize external costs, and some consumers will no longer end up paying more than others for the same commodities. Justice will once more reassert itself because the people who were being victimized by pollution costs no longer have to pay those costs, and people’s rights will no longer be violated because they are no longer forced into exchanges they did not voluntarily choose.

Internalizing the External Costs of Pollution

There are various ways to internalize the external costs of pollution.

Interactive

Impose Costs on the Polluting Agent

One way to internalize the external costs of pollution is for the polluting agent to pay to all of those being harmed, voluntarily or by law, an amount equal to the costs the pollution imposes on them.

When the polluting firm pays those on whom its manufacturing processes impose costs, as Union Oil did, it is led to figure these costs into its own subsequent price determinations. Market mechanisms then lead it to come up with ways of cutting down pollution to cut down its costs. After the Santa Barbara oil spill, for example, Union Oil invested considerable amounts of money in developing methods to minimize pollution damage from its own oil spills. (Yet, as the BP oil spill in the Gulf of Mexico during the summer of 2010 showed, not all oil companies have made similar investments in the technology needed to deal with oil spills.)

A problem with this way of internalizing the costs of pollution, however, is that when several polluters are involved, it is not always clear just who is being damaged by whom. How much of the environmental damage caused by several polluters should be counted as damages to my property and how much should be counted as damages to your property, when the damages are inflicted on things such as air or public bodies of water, and for how much of the damage should each polluter be held responsible? Moreover, the administrative and legal costs of assessing damages for each distinct polluter and granting separate compensation to each distinct claimant (i.e., the transaction costs) can become substantial.

Install Pollution-Control Devices

Ethical Application

Union Oil and Internalized Costs

When Union Oil's drilling in the Santa Barbara channel on the California coast led to an oil spill, the total costs that the spill imposed on local residents and state and federal agencies were estimated at about \$16,400,000 (including costs of cleanup, containment, administration, damage to tourism and fishing, recreational and property damages, and loss of marine life). Union Oil paid about \$10,400,000 of these costs voluntarily by paying for all cleanup and containment of the oil, and it paid about \$6,300,000 in damages to the affected parties as the result of litigation.¹³³ Thus, the costs of the oil spill were internalized, in part voluntarily and in part through legal enforcement.

5.3.1: Remedies and Justice

Dealing with pollution by internalizing costs seems to be consistent with the requirements of distributive justice insofar as distributive justice favors equality. Observers have noted that pollution can increase inequality.¹³⁴ If a firm pollutes, its stockholders benefit because their firm does not have to absorb the external costs of pollution; this leaves them with greater profits. Customers who purchase the firm's products also benefit because the firm does not charge them for all the social costs required to make the product. Therefore, the beneficiaries of pollution tend to be those who are wealthy enough to buy a firm's stock and its products. The burdens of pollution, on the other hand, tend to fall on the poor who cannot afford to buy the firm's stock and who are residents of low-rent polluted neighborhoods. By benefiting the wealthy and burdening poor people, therefore, pollution seems to increase inequality.

Internalizing the costs of pollution, as utilitarianism requires, would rectify matters by removing the burdens of

Environmental Injustice and Environmental Racism

People who cannot afford to invest in a corporation or buy its products are among those for whom pollution is most injurious. These people may be vulnerable to environmental injustice and environmental racism.

Interactive

Start Over

Swap

0/2 REVIEWED · 0 MASTERED

Environmental injustice

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Got It!

external costs from the backs of minorities and the poor and placing them in the hands of the more wealthy: the firm's stockholders and its customers. By and large, therefore, the utilitarian claim that the external costs of pollution should be internalized is consistent with the requirements of distributive justice.

We must add an important qualification, however: if a firm makes basic goods (food products, clothing, gasoline, automobiles) for which the poor must allocate a larger portion of their budgets than the affluent, then internalizing costs may place a proportionately greater burden on the poor than on the affluent because the prices of these basic goods will rise. The poor may also suffer if the costs of pollution control rise so high that unemployment results (although as noted earlier, current studies indicate that the unemployment effects of pollution-control programs are transitory and minimal).¹³⁵ Some rudimentary evidence indicates that current pollution-control measures place greater burdens on the poor than on the wealthy.¹³⁶ This evidence suggests the need to integrate distributional criteria into our pollution-control programs.

Internalizing external costs also seems to be consistent with the requirements of retributive and compensatory justice.¹³⁷ Retributive justice requires that those who are responsible for and benefit from an injury should bear the burdens of rectifying the injury, whereas compensatory justice requires that those who have been injured should be compensated by those who injure them. Taken together, these requirements imply that (1) the costs of pollution control should be paid by those who cause pollution and who have benefited from pollution activities, whereas (2) the benefits of pollution control should flow to those who have had to bear the external costs of pollution. Internalizing external costs seems to meet these two requirements: (1) the costs of pollution control are borne by stockholders and customers, both of whom benefit from the polluting activities of the firm, and (2) the benefits of pollution control flow to those neighbors who once had to put up with the firm's pollution.

5.3.2: Costs and Benefits of Remedies

The technology for pollution control has developed effective, but sometimes costly, methods for reducing pollution. Up to 60 percent of water pollutants can be removed through primary screening and sedimentation processes, up to 90 percent can be removed through more expensive secondary biological and chemical processes, and over 95 percent can be removed through even more expensive tertiary chemical treatment.¹³⁸ Air pollution abatement techniques include the use of fuels and combustion procedures that burn more cleanly; mechanical filters that screen or isolate dust particles in the air; scrubbing processes that pass polluted air through liquids that remove pollutants; and, most expensive of all, chemical treatment that transforms gases into more easily removed compounds.

It is possible, however, for a firm to invest too much in pollution-control devices, an issue that we briefly noted when discussing "absolute bans" on pollution. Suppose, for example, that the pollution from a certain firm causes \$100 worth of environmental damage, and suppose that the only device that can eliminate this pollution would cost the firm at least \$1,000. Then it would seem—at least from a utilitarian point of view—that the firm should not install the device. If it does, the economic utility of society will decline: the costs of eliminating the pollution will be greater than the benefits society will reap, thereby resulting in a shrinkage of total utility. It would seem, therefore, that utilitarianism implies that a firm should invest in pollution control only up to that point where the costs of pollution control are less than the costs its pollution inflicts on society. Utilitarianism, therefore, seems to imply that any pollution the firm generates beyond that point should not be further controlled.

DIFFICULTY IN THE UTILITARIAN APPROACH TO POLLUTION It is at this point that another fundamental difficulty in the utilitarian approach to pollution emerges. The cost-benefit analysis to pollution problems assumes that the costs and benefits of reducing pollution can be accurately measured.¹³⁹ In some cases (limited and local in character), cost-benefit measurements are available. The costs and benefits of cleaning up the oil spilled by Union Oil at Santa Barbara several years ago, for example, were more or less measurable. However, the costs and benefits of pollution removal are difficult to measure when they involve damages to human health and loss of life: What is the price of life?¹⁴⁰

Measurement is also difficult when the effects of pollution are uncertain and, consequently, difficult to predict. What will be the effects of increasing the carbon dioxide content of our atmosphere by burning more coal? In fact, perhaps the major problem involved in obtaining the measurements needed to apply cost-benefit analysis to pollution problems is the problem of estimating and evaluating risk (i.e., the probability of future costly consequences).¹⁴¹ Many new technologies carry with them unknown degrees of risk to present and future generations. Moreover, even if the risk associated with a new technology were known, it is unclear how much weight it should be given in a social cost-benefit analysis.

Imagine, for example, that society currently accepts with some indifference a 0.01 risk of death associated with driving. Does it then follow that society also should be indifferent to accepting a 0.01 risk of death from the introduction of a certain new technology? Obviously not, because risk is cumulative: the new technology will *double* society's risk of death to 0.02. Although society may be indifferent to carrying a 0.01 risk of death, it may find a 0.02 risk unacceptable. Knowing the risk of a certain costly future event does not, then, necessarily tell us the value that society will place on that risk once it is added to the other risks society already runs. To add to the difficulties, individuals differ substantially in their aversion to risk: some individuals like to gamble, whereas others find it distasteful.

How Much Should a Firm Invest in Pollution Control According to Utilitarianism?

Consider that the costs of controlling pollution and the benefits derived from pollution control are inversely related. As one rises, the other falls. Figure 5.13 provides an example.^{142, 143, 144, 145}

Interactive

A Cost-Benefit Analysis for Pollution Control

Think for a moment that if a body of water is highly polluted, it will probably be quite easy and, consequently, quite cheap to filter out a certain limited amount of pollutants. To filter out a few more pollutants, however, will require additional filters that are finer and more expensive. Costs will keep climbing for each additional level of purity desired, and getting out the last few molecules of impurities would require astronomically expensive additional equipment. However, getting out those last traces of impurities will probably not matter much to people and will be of little benefit.

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ALTERNATIVE APPROACHES In view of all the problems raised by market or cost-benefit approaches to pollution, it may be that alternative approaches are more adequate. In particular, in light of all the uncertainties that cost-benefit analysis involves, it may be that the absolute bans on pollution that are still incorporated in many federal laws, and the rights theory on which these absolute bans rest, are a more adequate approach to pollution issues than utilitarian cost-benefit analysis, at least when costs and benefits are uncertain.

Quick Review 5.8

Optimal Level of Pollution Removal in Utilitarian Approach

- The costs of removing pollutants rise as benefits of removal fall.
- The optimal level of removal is the point where its costs equal its benefits.

- However, when costs and benefits are not measurable, the utilitarian approach fails.
- When costs and benefits are not measurable, some use the precautionary principle, others the maximin rule.

5.3.3: Social Ecology, Ecofeminism, and the Demands of Caring

The difficulties inherent in cost-benefit and rights-based approaches to the ethical issues raised by environmental degradation have led many to look for alternative approaches. Some have argued, in fact, that cost-benefit and rights-based theories embody a kind of calculative and rationalistic way of thinking that is responsible for environmental crises. Cost-benefit thinking assumes that nature is to be measured and used efficiently, whereas rights-based theories see humans and other entities in individualistic

Measurement Problems and Other Difficulties of Applying Utilitarianism to Pollution

The almost insurmountable problems involved in getting accurate pollution measurements are illustrated by the few federal estimates of the benefits produced by pollution-control activities.^{146, 147}

Interactive

Difficulty in Evaluating the Benefits of Expenditures

The present financial costs of pollution control are fairly easy to obtain by examining reports on expenditures for pollution equipment. However, the benefits that these expenditures produce are difficult to measure accurately because these benefits are often unquantifiable. For example, each year the OMB compiles estimates of the annual benefits and costs of major federal regulations (entitled *Report to Congress on the Costs and Benefits of Federal Regulations*). The OMB estimated that between 2000 and 2010, regulations limiting air pollution produced annual benefits of \$77,300 to \$535,130 million and imposed costs of \$19,500 to \$24,600 million, while regulations limiting water pollution produced annual benefits of \$1,300 to \$3,900 million and imposed costs of \$1,100 to \$1,200 million. Clearly, the OMB analysis showed that our air pollution laws generate significantly more benefits than costs, and that our water pollution laws probably generate more benefits than costs. Yet, the estimates of the OMB are based on uncertain methodologies, and they omit many of the important effects of pollution. For example, they omit the future costs imposed by long-range global effects of pollution, such as the effects of carbon dioxide buildup and **ozone depletion**, as well as the aesthetic benefits from the elimination of pollution. In addition, many regulations save lives, or extend life, or reduce the risk of death, and in all of these cases, the OMB is forced to make controversial assumptions about the value of human life.

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terms and ignore their relationships with the rest of nature. These ways of thinking, it has been argued, are tightly linked to the kind of society in which we live.

Although social ecology and ecofeminist approaches to the environment are thought provoking, it is unclear what their specific implications may turn out to be. These approaches are still too recent to have been fully articulated. The shortcomings of utilitarian cost-benefit and rights-based approaches to the environment, however, may prompt a much fuller development of these approaches in the future.

Quick Review 5.9

Alternative Approaches to Pollution Problems

- Social ecology says to get rid of social systems of hierarchy and domination.

- Ecofeminism says to change the male pattern of dominating nature and women.
- Some feminists say that we should extend the ethic of care toward nature.

5.4: The Ethics of Conserving Resources

OBJECTIVE: Evaluate the ethics related to the conservation of resources for future generations

Conservation refers to the saving or rationing of natural resources for later uses.

The Precautionary Principle and Maximin Rule of Probability Theory

Some have argued that when the costs and benefits of cleaning up our pollution are uncertain, we should simply require that companies eliminate all the pollution whatever the costs. Some argue that a similarly stringent approach is particularly necessary when the costs of a practice or technology are potentially catastrophic and irreversible (e.g., climate change). When potentially catastrophic and irreversible costs are involved, they claim, we should adopt the “precautionary principle.”

Interactive

Precautionary Principle

The *precautionary principle* says that if a practice or technology carries an unknown risk of catastrophic and irreversible consequences, but we are uncertain how large that risk is (maybe uncertain even whether there is any risk at all), then the practice or technology should be rejected until we are certain that the risk is nonexistent or insignificant. The precautionary principle has been adopted as a legal principle by the European Union (which includes almost all European nations), and has been endorsed in several environmental treaties.

A weak version of the principle says that it does not apply to a practice or technology unless scientific evidence shows some likelihood that the practice or technology will lead to catastrophic harm. A strong version says the principle applies to any proposed practice or technology unless those who propose it provide scientific evidence that the practice or technology carries no risk of catastrophic harm. The weak version places the burden of proof (that there is some risk) on those who want to reject a possibly risky technology, while the strong version places the burden of proof (that there is no risk) on those who want to adopt possibly risky technology.

Others suggest that when risks cannot be assessed, justice requires we identify those who are most vulnerable and who would have to bear the heaviest costs if things should go wrong, and then choose the option that will protect them from having to bear these costs.

For example, future generations and those who are currently children are vulnerable to the choices we now make about greenhouse gas emissions, and they will have to pay the most for global warming, so we should choose now only those options that we know will protect them from having to bear the costs of global warming.

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Conservation looks primarily to the future: to the need to limit consumption now to have resources available for tomorrow.

In a sense, reducing pollution is a form of conservation. Pollution “consumes” pure air and water, and reducing pollution “conserves” them for the future. However, there are basic differences between the problems of pollution and the problems of resource depletion that makes the term *conservation* more applicable to the latter problems than to the former. With some notable exceptions (such as nuclear waste and, perhaps, greenhouse gases), most forms of pollution affect present generations, and reducing them will benefit present generations. The depletion of most scarce resources, however, lies far in the future, and the effects of

their depletion will be felt primarily by posterity and not by present generations. Consequently, our concern over the depletion of resources is to a large extent a concern for future generations and for the benefits that will be available to them. For this reason, conservation is more applicable to the problems of resource depletion than to those of pollution. Moreover (again with notable exceptions), pollution is a problem concerned primarily with “renewable” resources, insofar as air and water can be “renewed” by ceasing to dump pollutants into them and allowing them time to recover. Tomorrow’s supply, therefore, will be created anew over and over if we take the proper precautions. Resource depletion, however, is concerned with finite, nonrenewable resources. The only store of a finite, nonrenewable resource

Three Current Environmental Concepts

Contemporary theorists have developed three alternative approaches to addressing environmental degradation: social ecology, ecofeminism, and an ethic of caring.^{148, 149, 150, 151, 152, 153}

Interactive

Social Ecology: Hierarchy and Domination

Many thinkers have argued that the environmental crises we face are rooted in the social systems of hierarchy and domination that characterize our society. This view, now referred to as **social ecology**, holds that until those patterns of hierarchy and domination are changed, we will be unable to deal with environmental crises. In a hierarchical social system, one group holds power over another and members of the superior group are able to dominate those of the inferior group and get them to serve their ends. Examples of such systems of hierarchy include social practices such as racism, sexism, and caste systems, as well as social institutions such as property rights, capitalism, bureaucracies, and the mechanisms of government. Such systems of hierarchy and domination go hand in hand with the widespread environmental destruction taking place all around us and with economic ways of managing the environment. Murray Bookchin, the most well-known proponent of this view, wrote:

We must look into the cultural forms of domination that exist in the family, between generations, sexes, racial and ethnic groups, in all institutions of political, economic, and social management, and, very significantly, in the way we experience reality as a whole, including nature and nonhuman life forms.

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that will be around tomorrow is that which is left over from today. Conservation, therefore, is the only way of ensuring a supply for tomorrow's generations. Resource depletion forces two main kinds of questions on us: Why should we conserve resources for future generations? How much should we conserve?

5.4.1: The Rights of Future Generations

It might appear that we have an obligation to conserve resources for future generations because they have an equal right to the limited resources of this planet. If future generations have an equal right to the world's resources, then by depleting these resources, we are taking what is actually theirs and violating their right to these resources.

A number of writers, however, have claimed that although we should have concern for future generations, it is a mistake to think that the reason why we should have concern for them is because future generations have rights.¹⁵⁴ Consequently, it is a mistake to think that the reason we should refrain from consuming natural resources is because we are taking what future generations have a "right" to.

If the arguments against attributing rights to future generations are correct, then to the extent that we are uncertain what future generations will exist or what they will be like, they cannot be said to have rights. However, it does not follow that we have no obligations to future generations because we may have obligations that are based not on rights, but on other kinds of moral considerations.

Arguments Related to the Rights of Future Generations

Three main arguments have been advanced to show that it is wrong to justify our concern for future generations by attributing rights to those generations.^{155, 156, 157}

Interactive

Future Generations Do Not Exist, So They Do Not Possess Rights

Future generations cannot coherently be said to have rights because they do not now exist and may never exist. I may be able to think about future people, but I cannot hit them, punish them, injure them, or treat them wrongly. Future people presently exist only in the imagination, and imaginary entities cannot be acted on in any way whatsoever except in the imagination. Similarly, we cannot say that future people possess things now when they do not yet exist to possess or have them. Because there is a possibility that future generations may never exist, they cannot “possess” rights.

Rights for Future Generations May Lead to Risk for Present Generations

Rights Based on the Unknown Do Not Make Sense

Quick Review 5.10

Arguments against Attributing Rights to Future Generations

- Future generations do not now exist and may never exist.
- If future generations have rights, then the present must be sacrificed for the future.
- Because we do not know what interests future generations will have, we cannot say what rights they have.

5.4.2: Justice for Future Generations

John Rawls argued that, although it is unjust to impose disproportionately heavy burdens on present generations for the sake of future generations, it is also unjust for present

generations to leave nothing for future generations. To determine a just way of distributing resources between generations, he suggested, the members of each generation should put themselves in the “original position” and, without knowing what generation they belong to, they should do the following:

[A]sk what is reasonable for members of adjacent generations to expect of one another at each level of (historical) advance. They should try to piece together a just savings schedule by balancing how much at each stage (of history) they would be willing to save for their immediate descendants against what they would feel entitled to claim of their immediate predecessors. Thus, imagining themselves to be parents, say, they are to ascertain how much they would set aside for their children by noting

what they would believe themselves entitled to claim of their own parents.¹⁵⁸

In general, Rawls claims that this method of ascertaining what earlier generations in justice owe to later generations will lead to the conclusion that what justice demands of us is merely that we hand to the next generation a situation no worse than we received from the generation before us:

Each generation must not only preserve the gains of culture and civilization, and maintain intact those just institutions that have been established, but it must also put aside in each period of time a suitable amount of real capital accumulation. . . . (It should be kept in mind here that capital is not only factories, and machines, and so on, but also the knowledge and culture, as well as the techniques and skills, that make possible just institutions and the fair value of liberty.) This . . . is in return for what is received from previous generations that enables the later ones to enjoy better life in a more just society.¹⁵⁹

Justice, then, requires that we hand over to our immediate successors a world that is not in worse condition than the one we received from our ancestors.¹⁶⁰

The demands of caring that arise from an ethic of care would also suggest conservation policies that are similar to those advocated by Rawls's views on justice. Although most people would agree that they have a fairly direct relationship of care and concern with the generation that immediately succeeds their own, such a direct relationship does not exist with more distant and so more abstract generations. The generation that immediately succeeds our own, for example, consists of our own children. The demands of caring, we have seen, imply that one should attempt to see matters from the perspective of those with whom we are thus directly related and that we attempt to care for their specific needs. Such caring would imply that we should at least leave the immediately succeeding generation a world that is not worse than the one we received.

Rawls's conclusion is also supported by some utilitarian reasoning. For example, Robin Attfield, a utilitarian, argued that utilitarianism favors what he called the *Lockean principle* that "each should leave enough and as good for others."¹⁶¹ Attfield interpreted this principle to mean that each generation must leave for future generations a world whose output capacity is no less than that generation received from previous generations.¹⁶² That is, each generation must leave the world no less productive than it found it. Attfield suggested that leaving the world with the same output capacity does not necessarily mean leaving the world with the same resources. Instead, maintaining the same level of output can be achieved either through conservation, recycling, or technological innovation.

On the Edge

Exporting Poison

According to a 2001 study by the Foundation for Advancements in Science and Education in the *International Journal of Occupational and Environmental Health*, U.S. companies export 45 tons of pesticides per hour, including highly toxic chemicals such as alachlor, chlordane, heptachlor, and metribuzin.¹⁶³ The United States banned the use of chlordane and heptachlor as an insecticide on crops or around residences 10 to 20 years ago. Velsicol Chemical Corporation, however, reported in 1997 that it was still manufacturing chlordane and heptachlor for export. It exported these chemicals to Africa for use on roads, to Australia and Far Eastern countries to spray in residences, and to South America to use on crops. Between 1997 and 2000, U.S. companies exported about 65 million pounds of pesticides that are banned or severely restricted in the United States—including captafol, chlordane, isazofos, monocrotophos, and mirex—and about 30 tons a day of pesticides the World Health Organization (WHO) classifies as "extremely hazardous." Every hour, U.S. companies export about 16 tons of pesticides known or suspected to cause cancer. Sixty percent of these pesticides are shipped to developing nations for use in agriculture. Over 75 percent of working children in developing nations work in agriculture, including 80 million in Africa, 152 million in Asia, and 17 million in Latin America. They are exposed daily to U.S. pesticides in the fields, in their drinking water, and on their clothes. Farmers in developing nations pour pesticides labeled "poison" into small containers without labels, which many workers in developing nations cannot read anyway.

WRITING PROMPT

Ethics of Dangerous Exports

1. Does an American company such as Velsicol have any obligation to refrain from selling pesticides that are banned in the United States to developing nations where they are not banned? Why or why not?
2. Does a U.S. company such as Velsicol have an obligation to refrain from exporting chemicals that are only suspected of causing cancer? Why or why not?
3. Whose responsibility is it to ensure citizens of developing nations are not harmed by exports of pesticides, and why?

▶ The response entered here will appear in the performance dashboard and can be viewed by your instructor.

Submit

OTHER UTILITARIAN ARGUMENTS Other utilitarians have reached slightly different but still similar conclusions by relying on other basic utilitarian principles. Utilitarians have argued that each generation has a duty to

maximize the future beneficial consequences of its actions and to minimize their future injurious consequences.¹⁶⁴ However, utilitarians have claimed that these future consequences should be “discounted” (given less weight) in proportion to their uncertainty and to their distance in the future.¹⁶⁵ Together, these utilitarian principles imply that we at least have an obligation to avoid those practices whose harmful consequences for the generation that immediately follows us are certain to outweigh the beneficial consequences our own generation derives from them. Our responsibility for more distant future generations, however, is diminished especially insofar as we are unable to foresee what effects our present actions will have on them because we do not know what needs or technology they will have.

When considering problems of resource depletion, some observers have suggested that we should rely on market forces to determine what we should do with the resources we have. Unfortunately, we cannot rely on market mechanisms (e.g., rising prices) to ensure that scarce resources are conserved for future generations. The market registers only the effective demands of present participants and the actual supplies currently being made available in the market. The needs and demands of future generations, as well as the potential scarcities that lie far in the future, are so heavily “discounted” by markets that they hardly affect prices at all.¹⁶⁶ William Shepherd and Clair Wilcox provide several other reasons why the private choices of businesses in markets will fail to take into account the future scarcity of resources, including the following:

1. Businesses try to consume resources quickly before competitors do.
2. Businesses have short time horizons.
3. The future is difficult for businesses to predict.
4. Businesses tend to ignore externalities.¹⁶⁷

The only means of conserving for the future, then, appear to be voluntary (or politically enforced) policies of conservation.

In practical terms, Rawls’s view implies that, although we should not sacrifice the advances we have made, we should adopt voluntary or legal measures to conserve those resources and environmental benefits that we can reasonably assume our immediate posterity will need if they are to live lives comparable, at least, to our own. In particular, this would mean that we should preserve wildlife and endangered species, that we should take steps to ensure that the rate of consumption of fossil fuels and minerals does not continue to rise, that we should cut down our consumption and production of those goods that depend on nonrenewable resources, that we should recycle nonrenewable resources, and that we should search for substitutes for materials that we are too rapidly depleting.

Quick Review 5.11

Conservation Based on Justice

- Rawls: leave the world no worse than we found it.
- Care ethic: leave our children a world no worse than we received.
- Attfield: leave the world as productive as we found it.

SUSTAINABILITY The conclusion that Rawls, Attfield, and others have arrived at is that we are obligated to do what we can to ensure that we leave the next generation a world that is no worse than the one we received from the generation previous to ours. This conclusion is very similar to what has been characterized as the obligation of sustainability. Unfortunately, there are hundreds of definitions of sustainability.¹⁶⁸

Generally, sustainability refers to the ability to sustain—that is, to continue or to maintain—something into the future. Sustainability, then, means the capacity something (a thing, a quality, an activity, a system, etc.) has to continue to function into the future.

The term *sustainability* was popularized by the UN World Commission on Environment and Development in its 1987 report (the Brundtland Report): “Humanity has the ability to make development sustainable—to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs.”¹⁶⁹ The Brundtland Report specified the kind of functioning that we want to continue into the future when we talk about sustainability, that is, the function of meeting present and future needs. In light of this report, sustainability is now widely understood to refer to the capacity something has to continue to meet the needs of present generations without compromising the ability of future generations to also meet their needs. Here we are concerned with the environment and in this context, we can say that *environmental sustainability* refers to the capacity of the natural environment to continue to meet the needs of present generations without compromising the ability of future generations to meet their needs from that environment.

The concept of sustainability is now commonly interpreted as encompassing more than just environmental concerns. Sustainability is often said to depend on “three pillars”:

- our economic activities
- our social activities
- our environmental activities

These three domains are seen as interrelated and dependent on one another, so that sustainability in any one domain is possible only if the other domains are sustainable. For example, the way that we organize and carry out our economic activities affects the environment, yet what happens to the environment in turn affects our economic activities. We can, for example, pursue economic growth through manufacturing processes that rapidly deplete our natural resources and pollute the natural world, while the depletion of our environmental resources and continued degradation of the environment, in turn, can limit or prevent us from pursuing economic growth. Our social activities similarly affect and are affected by the environment. The lifestyles we adopt, the number of children we have, and the kinds of things our society teaches us to want can all produce levels of consumption that ravage the environment, and, in turn, a ravaged environment can lead to impoverished and unhealthy lives, families, and societies.

Economic sustainability, then, requires structuring our economy so that we produce and distribute goods on a scale and in a way that does not undercut environmental sustainability, and social sustainability requires creating societies that allow us to develop cultures, communities, and ways of life that respect and nurture environmental sustainability so that the environment continues to provide that on which our lives depend.

WHAT DOES SUSTAINABILITY REQUIRE? It is important to see that environmental sustainability depends on social and economic sustainability. It is also important to grasp how our social arrangements—our lifestyles and consumption patterns—as well as our economic practices—the way we manufacture goods and use our resources—all affect the environment. However, in this chapter, our focus has been and will continue to be environmental sustainability.¹⁷⁰

The Obligation of Environmental Sustainability

Interactive

Environmentalist Herman Daly argued that environmental sustainability requires three specific things:

1. Renewable resources should not be depleted at a rate that is greater than their rate of replacement.
2. The emission rate of pollution should not exceed the capacity of the environment to cleanse and assimilate that pollution.
3. Nonrenewable resources should be depleted at a rate no greater than the creation of renewable alternatives.

Although there is some controversy about how sustainability can be achieved, it is clear that the idea of sustainability is consistent with the ethical judgment of Rawls and Attfeld: that we should leave our children a world that is no worse than the one our parents left us. This means, specifically, that we must not consume renewable resources faster than they can renew themselves, and that we must not produce more pollution than the environment can absorb. How we interpret Daly's third point—that we should not deplete nonrenewable resources faster than our technology can develop adequate substitutes—depends on whether you are a technological optimist or a technological pessimist.

Quick Review 5.12

Sustainability

- It is the view that we must deal with the environment, society, and economy so that they have the capacity to continue to meet the needs of present generations without compromising the ability of future generations to meet their own needs.
- Environmental sustainability, economic sustainability, and social sustainability are interdependent.
- Environmental sustainability implies not depleting renewable resources faster than their replacement; not creating more pollution than environment can absorb; not depleting nonrenewable resources faster than we find replacements.
- Technology pessimists say science will not find substitutes for all renewable resources, so we must conserve and reduce consumption to achieve sustainability.
- Technology optimists say science will find such substitutes, so sustainability requires neither conservation nor reducing consumption.

5.4.3: Economic Growth and Environmental Ethics

To many observers, even conservation measures will fall far short of what is needed to ensure sustainability. Several environmentalists have argued that if we are to preserve enough of our limited nonrenewable and nonsubstitutable resources so that future generations can maintain their quality of life at a level similar to ours, we shall have to change our economies substantially, particularly by scaling down our pursuit of economic growth. E. F. Schumacher, for example, claimed that the industrialized nations will have to convert from growth-oriented, capital-intensive technologies to much more labor-intensive technologies in which humans do work machines now do.¹⁷¹ Others argue that economic systems will have to abandon their goal of steadily increasing production and put in its place the goal of decreasing production until it has been scaled down to “a steady state”—that is, a

point at which “the total population and the total stock of physical wealth are maintained constant at some desired levels by a ‘minimal’ rate of maintenance throughout (that is, by birth and death rates that are equal at the lowest feasible level, and by physical production and consumption rates that are equal at the lowest feasible level).”¹⁷² The conclusion that economic growth must be abandoned if society is to be able to deal with the problems of diminishing resources, however, has been challenged.¹⁷³ On the other hand, it is at least arguable that adherence to continual economic growth will end up degrading the quality of life of future generations and possibly the later life of the current generation.¹⁷⁴

RISKS OF ECONOMIC GROWTH The arguments for this last claim are simple, stark, and controversial. If the world's economies continue to pursue the goal of economic growth, the demand for nonrenewable resources will continue to rise. Because the stock of nonrenewable resources is finite and some resources, at least, will have no substitutes, at some point supplies will simply run out, many pessimists claim. At this point, if the world's nations are still based on growth economies, we can expect a collapse of their major economic institutions (i.e., of manufacturing and financial institutions, communication networks, the service industries), which in turn will bring down their political and social institutions (i.e., centralized governments, education and cultural programs, scientific and technological development, health care).¹⁷⁵ Living standards will then decline sharply in the wake of widespread starvation and political dislocations. Various scenarios for this sequence of events have been constructed, all of them more or less speculative and necessarily based on uncertain assumptions.¹⁷⁶

The most famous and oldest doomsday scenarios appeared in the studies of the Club of Rome, which three decades ago projected on computers the catastrophic decline in living conditions that would be the result of continuing the economic growth patterns of the past in the face of declining resources and rising pollution. Later studies came to similar pessimistic conclusions about the future.^{177, 178, 179}

The assumptions on which the doomsday scenarios of the Club of Rome and other groups were based, however, have often been criticized. The computer programs and underlying equations on which the predictions were based made controversial and highly uncertain assumptions about future population growth rates, the absence of future increases in output per unit of input, our inability to find substitutes for nonrenewable resources, and the ineffectiveness of recycling. These assumptions can all be challenged. Although future generations will certainly have fewer of the nonrenewable resources on which we depend, we cannot be sure exactly what impact this will

have on them. Perhaps the impact will not be as catastrophic, nor will it occur as early as the forecasts of the Club of Rome indicated (although the number of researchers predicting a catastrophic future is rising, due particularly to a growing belief that we will not be able to control our emissions of greenhouse gases and the consequent rise in global temperatures). On the other hand, we cannot assume that the impact will be entirely benign, or that there will be no major environmental disruptions in our lifetimes. Some observers are again coming to the conclusion that the Club of Rome may have been substantially correct, even if its timetables were quite obviously mistaken. The increasing pace of species extinctions, the global rise in temperature attributable to rising levels of greenhouse gases, the continuing decimation of forests, and the still increasing rates of population growth all point to a difficult future for us. Given the extreme uncertainties in our situation, at the very least a commitment to conservation seems to be in order. Whether a wholesale transformation of our economy is also necessary if civilization is to survive is a difficult and disturbing question that we may soon have to face.

ENERGY RELATIONSHIP BETWEEN DEVELOPED AND DEVELOPING NATIONS Just as troubling are the moral questions raised by the distribution of dwindling energy supplies and other resources among the world's peoples that policies of economic growth in developed nations have created. The United States, European nations, and Japan are among the world's richest developed nations and the highest consumers of energy. The 6 percent of the world's population that lives within the United States, for example, consumes 25 percent of the world's annual energy supplies, whereas the 50 percent of the world's people who inhabit less-developed nations must get along with about 8 percent of its energy supplies. Each person in the United States, in fact, consumes 15 times more energy than a native South American, 24 times more than a native Asian, and 31 times more than a native African.

The high energy consumption rates of Americans, Europeans, and the Japanese are not paralleled by similarly high rates of energy production. In fact, their energy consumption is subsidized by other countries, in particular

by the Caribbean, the Middle East, and Africa. That is, there is a net flow of energy out of these less-consuming populations and into the high-consumption population of the United States and other developing nations. Moreover, the people of the developed world use much of the energy supplies available to them for inessentials (unneeded products, unnecessary travel, household comforts, and conveniences), whereas the more frugal nations tend to use their supplies to meet basic needs (food, clothing, housing).

In view of the limited nature of all nonrenewable energy resources, these comparisons cannot help but raise the question of whether the high-consumption nations are morally justified in continuing the economic growth policies that lead them to appropriate for their own use the nonrenewable resources of other, more frugal nations that are too weak economically to use these resources or too weak militarily to protect them. Any attempt to answer this question obviously requires a detailed inquiry into the nature of the world's social, economic, and political systems—an inquiry that is beyond the scope of this text. The question, however, is one that events may one day force us to face.^{180, 181}

Quick Review 5.13 Economic Growth

- E. F. Schumacher claims that we must abandon the goal of economic growth if we are to allow future generations to live as we do.
- Some argue that we must achieve a "steady state," where births equal deaths and production equals consumption and these remain constant at their lowest feasible level.
- Club of Rome computer models suggested continued economic growth will deplete resources and increase pollution until industrial output, food production, and services decline, causing catastrophic population loss sometime during the twenty-first century.
- Troubling moral questions are raised by the economic growth policies that have led to high rates of energy and resource consumption in developed nations while developing nations are left to consume at low rates.

Web Resources

Readers who want to conduct online research on environmental issues should begin with the EnviroLink web page, which has links to numerous resources (<http://www.envirolink.org>). The EPA also provides numerous links and its own ample database (<http://www.epa.gov>). The National Ocean Service of NOAA (<http://oceanservice.noaa.gov>) and the UN Environment Programme (<http://www.unep.org>)

provide a variety of resources. Several environmental organizations and journals are accessible through the Essential Organization web page (<http://www.essential.org>). Other links are provided by the Greenmoney fund (<http://www.greenmoney.com>), the Worldwatch Institute (<http://www.worldwatch.org>), and Solcomhouse (<http://www.solcomhouse.com>).

SHARED WRITING

Ecological Ethics and Rights

1. Compare and contrast the views of (a) an ecological ethic, (b) Blackstone's ethic of environmental rights, and (c) a utilitarian ethic of pollution control. Which view seems to you to be the more adequate? Explain your answer.
2. Do you agree with the claims that (a) future generations have no rights, and (2) the future generations to which we have obligations actually include only the generation that will immediately succeed us? Explain your answer. If you do not agree with these claims, state your own views and provide arguments to support them.

A minimum number of characters is required to post and earn points. After posting, your response can be viewed by your class and instructor, and you can participate in the class discussion.

Submit

0 characters | 140 minimum

SHARED WRITING

Moral Behavior and Moral Development

1. In your judgment, should the major decisions on pollution and resource depletion (especially energy policy) be made by government experts? By scientific experts? By everyone? Provide moral arguments in support of your judgment.
2. In their book *Energy Future*, R. Stobaugh and D. Yergin claimed that in the debate over nuclear power, "the resolution of differing opinions over how to deal with uncertainty, over how much risk is acceptable, or how safe is safe enough—all require judgments in which values play as large a role as scientific facts" (p. 100). Evaluate this claim based on ethical arguments you have learned.

A minimum number of characters is required to post and earn points. After posting, your response can be viewed by your class and instructor, and you can participate in the class discussion.

Submit

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Case Study 5.1: The Ok Tedi Copper Mine

Paul Anderson, chief executive officer (CEO) of Broken Hill Proprietary Company Limited (BHP) was unsure what to do. In November 1998, he had left Duke Energy Corporation in the United States and moved to Australia with his wife, Kathy, to take over as CEO of BHP, a global mining company. Only a year and a half later, he was faced with having to decide how to manage what was being called one of the world's greatest ongoing environmental disasters, a pollution catastrophe that was then being created by BHP's Ok Tedi copper mine in the western part of Papua New Guinea. BHP owned 52 percent of the mine, the government of Papua New Guinea owned 30 percent, and Inmet Mining Corporation, a Canadian company, owned 18 percent.¹

For almost two decades, the mine had been discharging 80,000 tons of mine tailings and 120,000 tons of waste rock a day into the Ok Tedi River, which flows into the Fly River, which in turn meanders through the western part of Papua New Guinea before flowing through a large delta into the sea. The ongoing buildup of wastes was destroying the ecology of the tropical rain forests and wetlands through which the rivers flowed; and it had already devastated 120 riverside villages, whose 50,000 inhabitants had depended on the rivers for subsistence fishing and farming. The villagers and the government of Papua New Guinea were now economically dependent on the mine. Because of their dependence on the mine, they did not want the mine to shut down even though it continued to dump 200,000 tons of waste daily into the Ok Tedi River and continued wreaking havoc on the environment. In September 1999, BHP had begun discussing its options with the government of Papua New Guinea, but by January 2000, the company had not yet decided what it would do about the growing tragedy. Anderson was anxious to resolve the issue by the end of the year.

BHP and Papua New Guinea

BHP (renamed BHP Billiton since its 2001 merger with Billiton PLC) was founded in Australia in 1885 as a natural resources

company engaged in the discovery, development, production, and marketing of iron ore, steel, coal, copper, oil and gas, diamonds, silver, gold, lead, zinc, and other natural resources. By the twentieth century, the company had become a global leader in its three main operating businesses: minerals, petroleum, and steel. Headquartered in Melbourne, Australia, the company had about 30,000 employees worldwide.

In 1976, Papua New Guinea chose BHP to develop a mine to exploit the large copper deposits discovered in 1963 on the western side of the country in the interior highlands. Papua New Guinea occupies the eastern half of the island of New Guinea (the other half belongs to Indonesia), just 150 miles from the northernmost tip of Australia. The deposits were located in the Star Mountains region in the center of the island along the border with Indonesia. The mine would be located on Mount Fubilan, located about 1,800 meters above sea level at the headwaters of the Ok Tedi River, whose waters flow south, down into the Fly River, through lowlands, and on over an immense delta to finally empty into the Gulf of Papua on the Coral Sea.

The previous year, in 1975, Papua New Guinea had won its independence from Australia. Its new and inexperienced government was eager to prove itself in the face of high expectations from its people and pressures from the World Bank and the International Monetary Fund. The government wanted to use the income from mining to develop infrastructure and services for its people.

Papua New Guinea is a rugged tropical island covered with rain forests inhabited by several population groups. Isolated from one another by the high rugged mountains and dense forests, the groups had developed fascinating and distinctive tribal cultures and different languages. The tribes living on the southern part of the island, for example, were once notorious for cannibalism and headhunting, whereas the Huli of the interior, who came to be known by the rest of the world in 1954, were peaceful people who wore spectacular wigs embellished with feathers, human hair, flowers, and fur. Many tribespeople today continue to live traditional lives in hundreds of small villages scattered in virtually inaccessible areas throughout the island. Along the Ok Tedi and Fly rivers, drainage area lived an estimated 73,500 villagers whose

subsistence lifestyle was based on traditional gardening, hunting, and river fishing. There were few schools, no health care, and little infrastructure such as paved highways, public buildings, and electricity. Child mortality was high and life expectancy short. Ecologists called the island a "botanical treasure" because its pristine rain forests, mountains, rivers, and surrounding coral reefs are home to a multitude of rare plants, animals, birds, and insects. Fish abounded in its rivers, which are used as waterways by canoeing residents who grow food gardens along the banks.

In 1976, the government of Papua New Guinea passed the Ok Tedi Agreement Mining Act, which defined the obligations and rights related to the development of the Ok Tedi Mine. In 1980, the government officially granted permission for the formation of the group that became Ok Tedi Mining Limited (OTML), a joint-venture company established to develop the Ok Tedi Mine. The mine would use conventional open-pit mining techniques to extract annually about 30 million tons of copper ore and 55 million tons of waste rock. The 1976 Mining Act required that conventional environmental controls would be used by OTML to minimize environmental damage, including a large storage facility

behind a dam that would be used to hold about 80 percent of the tailings and waste produced by the mine. (Tailings are fine sands left over after the ore containing a mineral is crushed and the mineral removed.) Construction of the tailings storage facility began in 1983, about a year before the mine was scheduled to open. However, in 1984, a large landslide destroyed the foundations of the storage dam. OTML proposed to the government that it be allowed to proceed temporarily without the storage facility since otherwise the mine would not be able to open as scheduled. The government of Papua New Guinea agreed and passed the Interim Tailings License Act, which allowed the mine to begin operation without a waste storage facility.

Detrimental and Beneficial Effects over Time

In 1984, the mine started operating and began discharging its waste rock and tailings into the Ok Tedi River. The ore not only contained copper but also had significant quantities of gold and silver. BHP now commissioned a study of the area where the

The Effects of Mining Operations on Rain Forests, Rivers, and the Economy

All water, rock, and tailings produced by the Ok Tedi Mine's operations flowed directly into the Ok Tedi River and downstream into the Fly River.

The Effect on Rain Forests

The effects on the rain forests surrounding the Ok Tedi and Fly rivers were evident by the late 1980s, when the sediment levels of the rivers more than quadrupled from their previous natural level of 100 parts per million to 450 to 500 parts per million. In many places, the sediment and rock raised the level of the riverbed by 5 to 6 meters, increasing the frequency of flooding and overflows. Over the years, repeated rains and floods carried the sediment onto the floor of the forests surrounding the rivers. The sediment on the forest floors was waterlogged, reducing the oxygen level in the soil, starving the roots of trees and vegetation, and gradually killing them (an effect called dieback). The area of forest dieback grew from 18 square kilometers in 1992 to 480 square kilometers in 2000 and was predicted to eventually increase to between 1,278 square kilometers and 2,725 square kilometers.

Since the mining operations extracted only 80 percent of the copper, the rest was flowing into the river, where dissolved copper levels now rose, sometimes exceeding 0.02 milligrams per liter. Fish in the rivers declined by 90 percent, a possible result of the increased copper levels, or of sedimentation, or of a loss of food supplies.

The Effect on Rivers

The Effect on the Economy

storage facility was to be built and discovered that a storage dam built in the vicinity would probably collapse again. The area was prone to landslides, frequent earthquakes of magnitude 7.0 on the Richter scale, and huge quantities of rainfall throughout the year. The company reported this to the government, which agreed in 1986 to pass the "Eighth Supplemental Agreement," which licensed the company to defer construction of a permanent waste storage facility; this license was renewed in 1988 and was never revoked.

Environmental Study

In 1989, a number of the landowners living along the polluted Ok Tedi and Fly rivers began petitioning the government to take some action to prevent the discharge of the tailings into the river and to provide them with some compensation for their losses.

In 1992, over 30,000 of these landowners joined together and sued BHP, the major nongovernment owner of the mine. After a great deal of legal wrangling, the case was settled out of court on June 12, 1996, when BHP agreed to give the landowners a total of \$500 million: \$90 million would be paid in cash to the 30,000 people who were living along the Ok Tedi and Fly rivers; \$35 million would be paid to the villagers living along the lower Ok Tedi River, the area that had been most devastated by the mine. Further, a 10 percent ownership share in the mine, valued at about \$375 million, would be held by the government of Papua New Guinea in trust for the people of the Western Province, the province where the mine and the rivers were located. In addition, BHP agreed to implement a tailings containment plan if practical, after commissioning a two-year study to assess the practicality of a containment facility and to recommend a plan for the mine.

The study examining the engineering, environmental, social, and risk aspects of managing the mine and its wastes was launched in 1996. As part of the study, a dredging operation was begun in 1998 along the lower section of the Ok Tedi River to see if dredging could mitigate the effects of the sediment accumulations.

On June 4, 1999, several months past the deadline, OTML announced that it had received a draft of the study of the environmental and social aspects of the mine operations. The report was passed on to Paul Anderson at BHP's headquarters. The study had found that the environmental impact of the mine, as well as the area affected by the pollution, was significantly greater than had been indicated by earlier studies the mine had commissioned. In addition, the study found that even if the mine were to close immediately, the sediments already deposited in the river would continue to kill the surrounding forests for perhaps 40 more years. Over the next 10 to 15 years, dieback would expand from the Ok Tedi River well into the forests of the downstream Fly River. The study had examined four possible options:

1. Continue operating the mine, and continue the current dredging in the lower Ok Tedi River
2. Continue operating the mine, continue dredging, and construct a new storage facility for future mine tailings
3. Continue operating the mine and do nothing else
4. Close down the mine immediately

Table 5.2 Basic and Potential Additional Costs in Millions of 1999 U.S. Dollars

The environmental study of the Ok Tedi Mine also estimated the costs the mine would bear under each of the options by first calculating the basic cost of the option, then adding to it the potential additional costs that the option risked. The following table summarizes these costs in millions of 1999 U.S. dollars.

Option	Basic Cost	Potential Added Costs	Total Likely Costs
Mine and dredge	\$294	\$20–\$70	\$300–\$400
Mine only	\$177	\$30–\$140	\$200–\$300
Mine and dredge and store	\$426	\$20–\$70	\$400–\$500
Early closure	\$479	\$30–\$90	\$500–\$600

None of these four options offered a good solution to the environmental impacts of the mine.

The study found that the ongoing dredging would lower the sand levels in the Ok Tedi River, which would decrease flooding. However, sediment would continue to accumulate downstream from the dredging, and dredging would not significantly halt the continuing degradation of the forests. In addition, dredging absorbed funds that could be invested in health, education, or worker training.

Construction of a new storage facility would involve significant expenses (see Table 5.2) and would also create social problems because the amount of land required would destroy the whole area of one of the tribal clans. In addition, a storage facility might rupture, creating even more damage, and the stored tailings would generate acids that themselves would become an environmental threat.

To continue operating the mine while doing nothing would allow the environmental damage to continue unabated. If the mine continued operating until its originally scheduled date of 2010, an extra 200 to 300 million tons of tailings and rock would be created, and they would be added to the sediments already in the rivers. This additional discharge would significantly lengthen the already long period before the rivers would recover.

Closing down the mine immediately would limit the environmental damage that continued operations would create and would shorten the time the river would need to recover. However, the immediate closing of the mine would be an economic and social blow to national, provincial, and local communities. The study predicted that if the mine closed immediately, the many workers who had migrated into the mine area would suffer shortages in food supply resulting from overhunting and increases in store food prices. The high population around the mine would probably not decline until driven away by rising hunger and malnutrition. The national government would see its exports decline by almost 20 percent, its gross national product would decline by 10 percent, and its annual tax revenues would drop by more than 100 million dollars. The provincial government of the Western Province would lose half of its revenues, which came from the mine, and this loss would degrade its education

and health services. In short, the economic, health, and social benefits that the mine was producing would end, and because the area had become dependent on the mine and had not prepared itself for life without the mine, the risk of social and economic decline was high.

Weighing the Options

When Paul Anderson and BHP were presented with these options, Anderson was uncertain how to weigh them. By now the situation at Ok Tedi Mine had become international news. Anderson convened a committee of top-level managers from BHP and initiated a series of discussions with them. The committee discussed the four options proposed in the study and suggested others, such as simply walking away from the mine, giving the government of Papua New Guinea the 52 percent share of the mine that BHP still owned, gradually phasing down operation of the mine over several years, and so on. As the discussions progressed through the summer of 2000, however, the BHP managers came to feel that if the company was to limit the environmental disaster that its operations were creating, the best option was to immediately close the mine. Only this option, Anderson believed, was consistent with the environmental stewardship that he wanted BHP to demonstrate during his tenure as CEO. This option was also the option that various international groups were recommending, including the World Bank and virtually every environmental group familiar with the issues.

In August 1999, Anderson communicated to the government of Papua New Guinea BHP's view that the best option was to close the mine. The government, however, was not favorable to his view. The view of the government of Papua New Guinea was that the mine had to continue to operate because of the human and economic costs that closing the mine would inflict on the people. Villagers downriver from the mine supported the government's view. As one villager put it: "If the mine shuts, I will revert to wearing penis gourds [the traditional form of male dress.]"² The government also favored continued dredging, since it would mitigate flooding for people living along the rivers. However, because constructing a storage facility carried additional risks and would absorb a major portion of the profits the mine would produce, the government did not support building a storage facility for tailings. In this, too, the villagers supported their government. Said one tribesman: "If it [the water] is safe for people, then they should continue to dump tailings into the river. They will never fix this river—it is already dead. They should give us money instead."³

The Decision

In November 2000, BHP reported that although it understood why the government wanted the mine to remain open, BHP's own continued involvement with the mine "would not be appropriate," and so the company had decided to "exit" its stake in the mine "in a way that ensures a smooth transition, minimizes the environmental impact, maximizes the social benefits," and ensures that BHP "does not incur liabilities for the future operations of the mine."^{4,5} On February 8, 2001, BHP announced that it had reached an agreement with the

government of Papua New Guinea and with the other shareholders of the Ok Tedi Mine. BHP had agreed to transfer its entire share of the mine (52 percent) to a trust (the Papua New Guinea Sustainable Development Program) that would use the money generated by BHP's former share of the mine to fund social projects for the government of Papua New Guinea. The mine would continue to operate at least until 2010 (with dredging but without a containment facility for tailings). It was expected that the next several years of the mine would be its most productive and lucrative years. BHP wrote down the transfer of its share of mine revenues as a one-time loss. In return, the government of Papua New Guinea passed legislation releasing BHP from any and all liability stemming from its past actions at the mine.

In 2011 the government of Papua New Guinea announced the mine would continue operating until 2013 and possibly until 2022, which would allow it to produce an additional 700,000 tons of copper and 2.3 million ounces of gold. The mine continued to discharge about 90 million tons of waste rock and tailings into the Ok Tedi River each year, raising the riverbed by several more meters and causing the dieback area to expand. It was expected that dieback would eventually cover about 3,000 square meters and would take about two centuries years to recover. A statement on the Ok Tedi Mine website indicated that despite the mine's impact on the "river system and their subsistence livelihoods," the people of the Ok Tedi and Fly rivers "strongly endorsed its continued operation" and their losses were "compensated under a number of compensation arrangements."

Case Notes

1. Sources used throughout this case include: International Institute for Environment and Development, "Ok Tedi Riverine Disposal Case" in *Mining for the Future*, ed. Dirk van Zyl, et al., a report commissioned by the Mining, Minerals and Sustainable Development Project of the International Institute for Environment and Development, accessed June 2, 2004, http://www.iiied.org/mmsd/mmsd_pdfs/068a_mfff-h.pdf; Polly Ghazi, "Ok Tedi Mine: Unearthing Controversy," in *World Resources 2002–2004: Decisions for the Earth: Balance, Voice and Power*, ed. World Resources Institute (Washington, DC: World Resources Institute, 2003), http://www.wri.org/sites/default/files/pdf/wr2002_fullreport.pdf; World Bank, *Ok Tedi Mining Ltd. Mine Waste Management Project Risk Assessment and Supporting Documents*, 1999, accessed June 2, 2004, http://www.mpi.org.au/oktedi/world_bank_full_report.html; and the Ok Tedi Mining website, <http://www.oktedi.com>, accessed April 15, 2011.
2. Kevin Pamba, "Ok Tedi: What to Do about the Damage Done," *Asia Times*, September 17, 1999, <http://www.atimes.com/oceania/A17Ah01.html>.
3. Stuart Kirsch, "An Incomplete Victory at Ok Tedi," accessed June 15, 2004, https://www.carnegiecouncil.org/publications/archive/dialogue/2_02/articles/614.html/pf_printable.
4. Broken Hill Proprietary Company Limited, "Case Study: Ok Tedi," *BHP Environment and Community Report 2000*, November 2000, accessed June 19, 2004, <http://www.envcommreport.bhp.com/Closure/okTedi.html>.
5. November 1999: BHP consults with the government of PNG.

Case Study 5.2: Gas or Grouse?

During the summer of 2008, people living near the Pinedale Mesa (sometimes called the Pinedale Anticline) in Wyoming were anxiously waiting for the federal Bureau of Land Management (BLM) to issue a decision regarding whether Questar Corporation and other energy companies would be allowed to drill thousands of ugly natural gas wells all over the serene wilderness that lay atop the mesa. The Pinedale Mesa is a 40-mile-long, 300-square-mile plateau extending north and south along the eastern side of Wyoming's Green River Basin, an area that is famous as the gateway to the hunting, fishing, and hiking treasures of the Bridger-Teton wilderness. The city of Pinedale, which sits below the mesa, a short distance from its northern end, was already surrounded by hundreds of recently drilled wells that ceaselessly pumped natural gas from the vast pockets that are buried underneath the region and which are estimated to contain 25 trillion cubic feet of gas worth billions of dollars.

Questar, an energy company with assets valued at about \$4 billion, is the main developer of the gas wells around Pinedale and had already drilled several wells up on the mesa that overlooked the city. Occasionally elk, mule deer, pronghorn antelope, and other wildlife, including the imperiled greater sage grouse, descend from their habitats atop the mesa and gingerly pick their way around and between the wells Questar drilled around Pinedale. Not surprisingly, environmentalists were at war with Questar and the other energy companies, whose plans to expand their operations on the mesa, they claimed, would have serious negative effects on the wildlife on the mesa as well as on the beauty of the area.

The BLM was responsible for deciding what was done with the acreage on the mesa. Of 198,034 acres on the mesa, the federal government owns 158,000, Wyoming owns 9,800, and 29,800 are privately owned. In 2000, the BLM had authorized limited drilling on the mesa, but had imposed several restrictions that protected wildlife from the full impact of the drilling. In 2008, Questar and the other companies who wanted to drill on the mesa asked the BLM to remove its limits on drilling by allowing more than 4,300 additional wells, as well as to lift one of the restrictions that cushioned the drilling's impact on wildlife but had proven very costly to the companies.

Case Background

Headquartered in Salt Lake City, Questar drilled its first successful test well on the Pinedale Mesa in 1998.

Energy experts around the country welcomed the new supply of natural gas, which, because of its simple molecular structure (CH_4), burns much more cleanly than any other fossil fuels. Moreover, because natural gas is extracted in the United States, its use reduces U.S. reliance on foreign energy supplies. Businesses in and around Pinedale also welcomed the drilling activity, which brought numerous benefits, including jobs, increased tax revenues, and a booming local economy. Wyoming's state government likewise supported the activity, since 60 percent of the state budget is based on royalties the state receives from coal, gas, and oil operations.

Questar's wells on the mesa averaged 13,000 feet deep and cost \$2.8 to \$3.6 million each, depending on the amount of fracturing that had to be done.⁶ Drilling a well typically required clearing and leveling a 2- to 4-acre "pad" to support the drilling rig and other equipment. One or two wells could be drilled at each pad. Access roads had to be run to the pad, and the well had to be connected to a network of pipes that drew the gas from the wells and carried it to where it could be stored and distributed. Each well produced waste liquids that had to be stored in tanks at the pad and periodically hauled away on tanker trucks.

The BLM, however, had imposed a significant restriction on Questar's operations on the mesa.

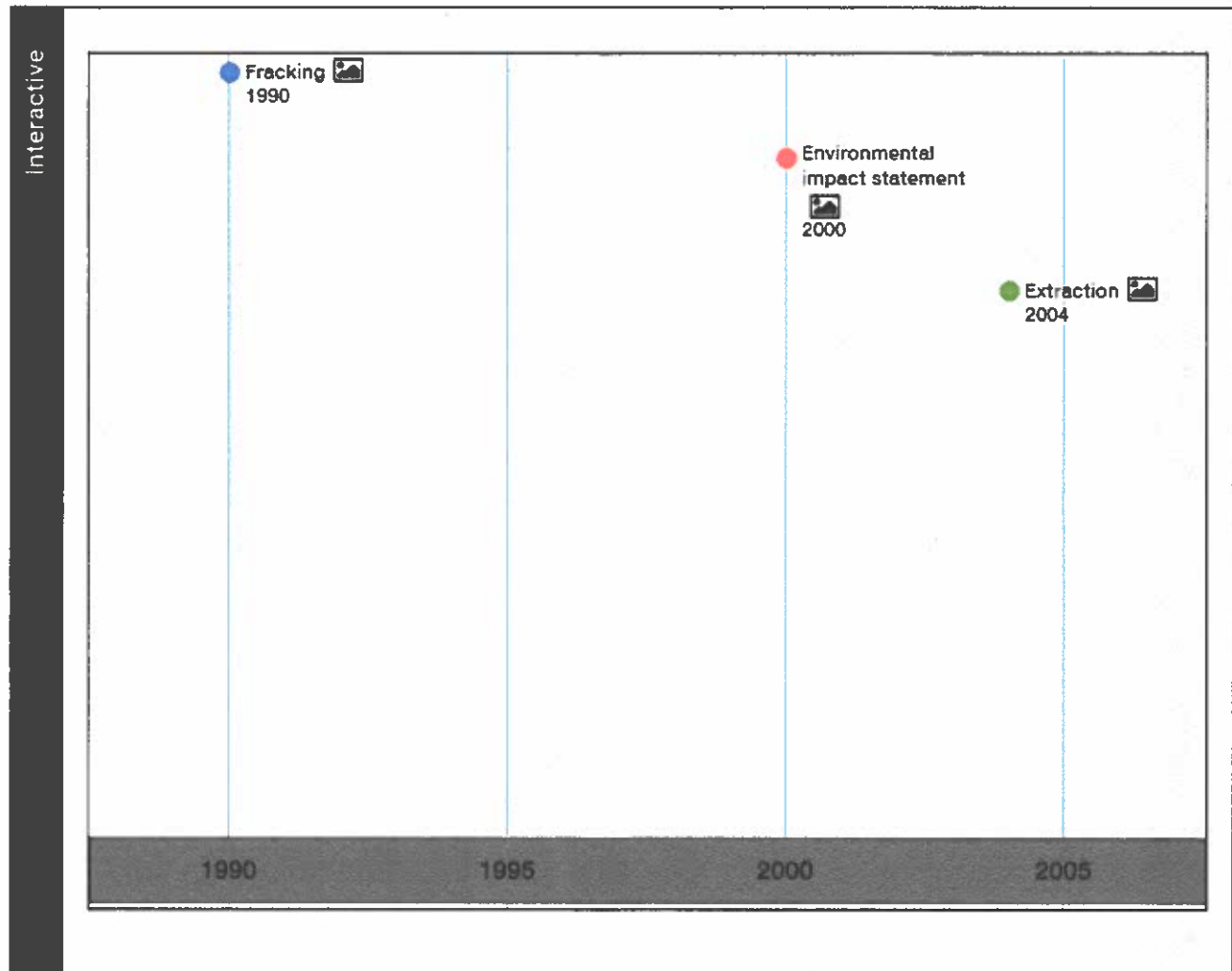
Large areas of the mesa provide habitat for mule deer, pronghorn sheep, sage grouse, and other species, and the BLM imposed drilling rules that were designed to protect these species. Chief among these species was the sage grouse.

The sage grouse is a colorful bird that today survives only in scattered pockets in 11 states. The grouse, which lives at elevations of 4,000 to 9,000 feet and is dependent on increasingly rare old-growth sagebrush for food and to screen itself from predators, is extremely sensitive to human activity. Houses, telephone poles, or fences can draw hawks and ravens, which prey on the ground-nesting grouse. It is estimated that 200 years ago the birds—known for their distinctive spring "strutting" mating dance—numbered about 15 million and were common across the western United States. By the 1970s, their numbers had fallen to about 400,000. A study completed in June 2004 by the Western Association of Fish and Wildlife Agencies concluded that there were only between 140,000 and 250,000 of the birds left and that "we are not optimistic about the future." The dramatic decline in their number was blamed primarily on the destruction of 50 percent of their sagebrush nesting and mating grounds (called *leks*). The destruction of sage grouse leks was in turn blamed on farming, new home construction, fires, and the expanding acreage being given over to gas drilling and other mining activities. Biologists believe that if its sagebrush habitats are not protected, the bird will be so reduced in number by 2050 that it will never recover. According to Pat Deibert, a U.S. Fish and Wildlife Service biologist, "they need large stands of unbroken sagebrush" and anything that breaks up those stands such as roads, pipelines, or houses, affects them.⁷ Moreover, the sage grouse was considered an "umbrella species" because protecting them and their feeding and breeding ranges also protected other species of wildlife. Studies had shown, for example, that much of the area used by mule deer overlapped the areas populated by sage grouse. So measures to protect sage grouse would also tend to protect mule deer.⁸

In order to protect the sage grouse, whose last robust population had nested for thousands of years on the ideal sagebrush fields up on the mesa, the BLM required that Questar's roads, wells, and other structures be located a quarter mile or more from grouse breeding grounds, and at least 2 miles from nesting leks during breeding season. Some studies, however, concluded that these protections were not sufficient to arrest the decline in the grouse population. As wells proliferated in the area, they were increasingly taking up land on which the grouse foraged and nested and were disturbing the sensitive birds. Conservationists

The Process of Gas Extraction

Extracting the gas under the mesa was not feasible before 1998 because the gas was trapped in tightly packed sandstone that prevented it from flowing to the wells, and no one knew how to get it out.



said that the BLM should increase the quarter-mile buffer areas around the grouse breeding grounds to at least 2-mile buffers.

Questar's Proposal

In 2002, Questar had submitted a proposal to the BLM. Questar proposed to invest in a new kind of drilling rig that allowed up to 16 wells to be dug from a single pad, instead of the traditional one or two. The new technology (called *directional drilling*) aimed the drill underground at a slanted angle away from the pad, so that by placing wells around the perimeter of the pad, all at an underground slant leading away from the pad—like the outstretched tentacles on an octopus—multiple distant locations could be tapped by several wells branching out from a single pad. This kind of drilling minimized the surface land occupied by the wells: while traditional drilling required 16 separate 2- to 4-acre pads to support 16 wells, the new directional drilling technology allowed a single pad to hold 16 wells. The technology also reduced the number of required roadways and distribution

pipes, since a single access road and pipe could now service the same number of wells that traditionally required 16 different roads and 16 different pipes. Questar also proposed that instead of carrying liquid wastes away from operating wells on noisy tanker trucks, the company would build a second pipe system that would pump liquid wastes away automatically. These innovations, Questar pointed out, would substantially reduce any harmful impact that drilling and pumping had on the wildlife inhabiting the mesa. Using the new technology for the additional 400 wells the company wanted to drill would require 61 pads instead of 150, and the pads would occupy 533 acres instead of 1,474.

The new directional drilling technology added about \$500,000 to the cost of each well and required investing in several new drilling rigs. The added cost for the 400 additional wells Questar planned would total \$185 million. Questar noted, however, that "the company anticipates that it can justify the extra cost if it can drill and complete all the wells on a pad in one continuous operation" that continued through the winter.⁹ If the company was allowed to drill continuously through the winter,

Arguments around Sage Grouse and Questar's Drilling Operations

Questar and other companies formed a coalition—the Partnership for the West—to lobby the Bush administration to keep the grouse off the endangered species list.^{10, 11, 12, 13}

Interactive

Led by Jim Sims, a former communications director for President George W. Bush's Energy Task Force, the coalition established a website where they called on members to lobby “key administration players in Washington” and to “unleash grass-roots opposition to a listing, thus providing some cover to the political leadership at Department of Interior and Throughout the administration.” The coalition also suggested “funding scientific studies” that would be designed to show that the sage grouse was not endangered. According to Sims, the attempt to categorize the grouse as an endangered species was spearheaded by “environmental extremists who have converged on the American West in an effort to stop virtually all economic growth and development. They want to restrict business and industry at every turn. They want to put our Western lands off-limits to all of us.” Dru Bower, vice president of the Petroleum Association of Wyoming, said, “[endangered species] listings are not good for the oil and gas industry, so anything we can do to prevent a species from being listed is good for the industry. . . . If the sage grouse is listed, it would have a dramatic effect on oil and gas development in the state of Wyoming.”

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it would be able to finish drilling all its wells in 9 years instead of 18, thereby almost doubling the company's revenues from the project over those 9 years. This acceleration in its revenues, coupled with other savings resulting from putting 16 wells on each pad, would enable it to justify the added costs of directional drilling. In short, the company would invest in the new technology that reduced the impact on wildlife, but only if it was allowed to drill on the mesa during the winter months.

In addition, Questar had requested that it be allowed to increase the number of wells it was allowed to drill on the mesa. By now, several other energy companies were trying to get permission to drill on the mesa, including Ultra Resources, Shell, BP, Stone Energy, Newfield Exploration, Yates Petroleum, and Anschutz. Together, the companies asked the BLM that they be allowed to drill an additional 4,399 natural gas wells on the mesa. All of them also requested that they be allowed to drill through the winter.

Government's Response

Although environmentalists welcomed Questar's willingness to invest in directional drilling, they strongly opposed allowing it or

the other companies to operate on the mesa during the winter when mule deer and antelope were there foraging for food and struggling to survive. The Upper Green River Valley Coalition, a coalition of environmental groups, issued a statement that read: “The company should be lauded for using directional drilling, but technological improvements should not come at the sacrifice of important safeguards for Wyoming's wildlife heritage.”

The Outcome for Gas

Questar and the other companies were pleased with the outcome. They had, essentially, gotten what they had asked for, even if there were limits to where they could drill their wells. The companies quickly moved into the core areas of the grouse habitat where they were allowed to drill, and began building and drilling. Questar implemented the directional drilling method it had suggested in 2002 and successfully tested during the following years. The directional drilling method enabled it to drill wells from a relatively small number of pads that could each support up to 52 wells. This method, the company stated, minimized disturbances on the mesa.

From Approval to a Final Decision

The following steps were involved in the BLM's final decision on whether to grant directional drilling rights in Pinedale.^{14, 15}

Interactive

Approval Granted to Questar to Test Directional Drilling

In order to allow Questar to test the feasibility of directional drilling and to study its effects on wintering deer herds, the BLM decided to let Questar drill wells at a single pad through the winter of 2002/2003 and again through the winter of 2003/2004. The BLM would launch a five-year study of the impact of the drilling, which would continue until 2007 (later extended beyond 2010). Questar was glad it was at least being given the chance to show that drilling through the winter was compatible with the wildlife living on the mesa.

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Then in a surprise move, Questar announced in 2010 that it would no longer be involved in the Pinedale project because it was spinning off a new company, QEP Resources, which would own and operate the Pinedale project. In the summer of 2010, therefore, QEP Resources began to operate as a separate stand-alone company drilling the Pinedale gas field as the successor of Questar.

Another surprise came on October 28, 2010, when Western EcoSystems Technology, the group monitoring wildlife on the Pinedale Mesa, announced that in 2009 mule deer on the mesa had declined by 60 percent compared with their numbers in 2001, and by 28 percent compared with their number in 2005.¹⁶ The Western EcoSystems Technology study also found that in 2009, less than 70 percent of adult female mule deer survived the winter on the mesa, compared with a normal survival rate of 85 percent. A representative of Shell, one of the companies drilling on the mesa, reacted by saying more research was needed: "Let's see what the results are before we start reacting too much to what could be naturally caused variation."¹⁷ But a local BLM official responded that since the decline in deer numbers had passed the threshold of 15 percent, "aggressive and positive action" on mitigation measures was required. Reacting to the declining number of mule deer, BLM

officials instituted the first step of "mitigation measures" outlined in the 2008 agreement: improving the habitat in the "flank area" surrounding the core wildlife habitat, mainly by planting more vegetation and fertilizing the area to encourage more plant growth. Using funds given by the oil companies, the BLM also purchased conservation easements—land that could be used only for grazing cattle—around the areas where drilling was continuing. The BLM, however, stopped short of imposing any limits on drilling operations. According to a government spokesperson, "Modifications of [drilling] operations are the final step. It is implemented after we do the final things and we find it doesn't produce an adequate result."¹⁸ Kevin Williams, the district manager for QEP Resources' Pinedale project, acknowledged that the drilling was affecting wildlife on the mesa: "There's no way we can say we have not had an impact at all."¹⁹

Lobbying for Gas

In May 2004, the U.S. Fish and Wildlife Service had announced that it was studying whether the sage grouse should be categorized as an endangered species, which would bring it under the protection of the Endangered Species Act. The actions of the Fish and Wildlife Service were the result of petitions it had

received from several environmental organizations in 2002, demanding that the sage grouse be placed on the endangered species list. Questar and other gas, oil, and mining companies adamantly opposed having the grouse listed as an endangered species because once listed, the grouse would make large areas of federal land off-limits to drilling, mining, and development and would impose restrictions on wells that were already operating. Since almost 80 percent of Wyoming is considered sage grouse habitat, including much of the Pinedale Mesa, Questar's drilling plans would be severely compromised.

The Outcome for Grouse

In March 2010, the Department of the Interior issued its revised finding on whether the sage grouse should be put on the endangered species list. The Department announced that it had found that the sage grouse "warrants federal protection" throughout its range. However, the Department added, other species that were also candidates for the endangered species list had "higher priority," and that precluded placing the grouse on the list at that point in time. The decision of the Department angered environmental groups who sued the Department. In 2011, the Department agreed to issue a definitive decision on whether to place the grouse on the list by September 30, 2015.

But before the Department could make its decision, a Republican-dominated Congress intervened in 2014 and passed a spending bill that contained a rider that blocked the Interior Department from spending any money on proceedings to protect the sage grouse or change its legal status. Congress's new rule, which tied the hands of the Interior Department, was the result of intensive lobbying by QEP Resources and the other energy companies and industry groups such as Partnership for the West. The new congressional rule, however, did not apply to other government agencies, and in August 2015 the U.S. Department of Agriculture announced that "[t]he federal government plans to spend more than \$200 million over the next three years on programs to protect greater sage grouse in Western states."²⁰ About half of the money would be spent to buy conservation easements, and the other half would be spent on improving existing sage grouse habitats. States and conservation groups had pledged to add several million more dollars to protect the grouse's habitat. It was projected that between 2010 and 2018, more than \$750 million would have been spent on the sage grouse.

The Department of the Interior was still bound by its 2011 agreement to issue a definitive decision on whether the grouse should be placed on the endangered species list. The 2014 congressional rule, however, blocked it from spending any money on proceedings that would give the sage grouse more legal protections. In October 2015, therefore, it announced that it had found that listing the greater sage grouse as an endangered species was "not warranted at this time." At the same time, the BLM unveiled a plan to protect sage grouse habitat on 67 million acres of public lands across 11 western states, including 12 million acres of core habitat where oil and gas drilling would be severely restricted.²¹ The energy companies immediately sued the government, arguing that the new restrictions on mining and drilling were too onerous and would stifle needed development. The decision not to list the grouse as endangered was a major disappointment to environmental groups, and on February 25, 2016, they sued to force the government to do more to protect the bird from extinction.

WRITING PROMPT

Ethics of Protecting a Species

1. What are the systemic, corporate, and individual issues raised in this case?
2. How should wildlife species such as grouse or deer be valued, and how should that value be balanced against the economic interests of a society or of a company like Questar? What principles or rules would you propose we use to balance the value of wildlife species against economic interests?
3. In light of the fact that natural gas reduces the United States' undesirable dependence on foreign oil and the fact that natural gas produces less greenhouse gases than coal, oil, and other fuels, should Questar have continued its drilling operations? Should QEP Resources now stop its operations? Does the environmental impact of Questar's and QEP Resources's drilling operations imply that they were and are morally obligated to stop drilling wells on the Pinedale Mesa? Explain.
4. What, if anything, should QEP Resources and the other companies drilling on the Pinedale Mesa be doing differently?
5. From an ethical point of view, was alternative 4 the best option among those from which the BLM chose? Is another alternative better from an ethical point of view? Explain your answer.
6. Should the loss of species produced by the drilling operations of Questar and its successor be considered a problem of pollution or a problem of conservation? Can the loss of species be evaluated as an "external cost"? Explain.
7. Was it ethical for the energy companies to lobby government as they did?

The response entered here will appear in the performance dashboard and can be viewed by your instructor.

Submit

Case Notes

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Summary

1. Environmental problems can be classified as problems of pollution and resource depletion. Both are major ethical issues.
2. Pollution can be found in the air and water, and on land. Air pollution can consist of greenhouse gases that cause global warming, chlorofluorocarbons that deplete the ozone layer that protects us from ultraviolet radiation, sulfur oxides that cause acid rain, a variety of airborne toxics, and the six "common air pollutants" generated by cars and industry. Water pollution includes organic wastes and a variety of inorganic pollutants such as salt brines, acids, heavy metals, asbestos, and polychlorinated biphenyls (PCBs). Land pollution can consist of toxic chemicals and solid wastes such as household garbage and industrial wastes.
3. A number of nonrenewable resources are being, or are in danger of being, depleted. For example, many animal and plant species are becoming extinct due to climate change and habitat loss; fossil fuels are being depleted and are likely to follow the Hubbert curve and peak sometime within this century; and the reserves of minerals such as copper, aluminum, indium, tantalum, and antimony, which are essential to several industrial processes, are being depleted.
4. There are several ethical approaches to the environmental problems related to pollution. Some appeal to ecological ethics, which include any view that claims that environmental destruction is wrong because the environment has value, regardless of its benefits to human beings. The "last man" argument supports such ecological ethics by arguing that since we recognize that it would be wrong for the last human survivor to completely destroy the environment, we must recognize that the environment has value even when it could no longer benefit us. A second approach appeals to the human benefits of an unpolluted environment. William T. Blackstone, for example, argued that pollution is wrong because humans have a basic human right to a livable environment. A third approach treats pollution as an "external cost" that distorts markets because it leads to overproduced and underpriced goods, and so should be "internalized" by the makers of those goods. Yet other approaches see environmental degradation as rooted in social systems of hierarchy and domination (social ecology) or in the male domination of nature and women (ecofeminism), and so these root sources must be overcome.
5. Conservation is generally proposed as the solution to resource depletion. Several ethicists have argued that conservation is an ethical obligation. John Rawls, for example, claimed that in the "original position" behind the "veil of ignorance," people would adopt the principle that each generation has an obligation to leave the world no worse than we received it from the previous generation; proponents of care ethics argue that we should leave our children a world no worse than we found it; Robin Attfield suggested that we have an obligation to leave the world as productive as we found it.
6. The principle of sustainability is another response to environmental degradation and resource depletion. The principle of sustainability holds that we should deal with the environment, society, and the economy in such a way that they can meet our own needs without compromising their ability to meet the needs of future generations. Some have suggested that economic growth is incompatible with sustainability and with the other approaches to environmental issues we have discussed. However, if we continue seeking the economic growth patterns of the past and dealing with the environment as we have, others have argued, the result will be a global catastrophe.

Chapter 6

The Ethics of Consumer Production and Marketing



A Coca-Cola delivery truck in the streets of Hainan, China.

Learning Objectives

- 6.1** Identify risks that may occur with the use of consumer products
- 6.2** Evaluate the arguments for and against consumer protection within markets
- 6.3** Explain how a firm's moral duties to consumers may be held in a contractual relationship
- 6.4** Describe the manufacturer's responsibilities to consumers as presented by the due-care view
- 6.5** Examine the broader role of manufacturer responsibility as expressed by the social costs view
- 6.6** Assess the ethical concerns associated with information and persuasion in advertising
- 6.7** Outline ethical and unethical business practices as they relate to the consumer's right to privacy

Americans are exposed daily to astonishingly high levels of risk from the use of consumer products. In a single year, about 15.6 million people suffer injuries related to consumer products (not counting motor vehicles) and about 4,000 of them are killed.¹ It is estimated that the total cost of product-related nonfatal injuries in a single year is about \$900 billion.² However, product injuries make up only one category of costs imposed on unwary consumers. Consumers must also bear the costs of deceptive selling practices, shoddy product construction, products that immediately break down, and warranties that are not honored. Advertising and marketing practices must be examined ethically as well. This chapter examines the many ethical questions raised by product quality and advertising, including those related to product safety, the relationship between a business and its customers (including a business's responsibility to customers), and concerns about advertising and consumer privacy.

6.1: Everyday Consumer Risks

OBJECTIVE: Identify risks that may occur with the use of consumer products

We begin with a focus on what is perhaps the most urgent issue: consumer product injuries and the responsibilities of manufacturers.

Motor vehicles annually kill about 30,000 Americans, including pedestrians (traffic crashes are the leading cause of death for Americans between 2 and 34 years of age), incapacitate 260,000, and injure 2.2 million others,³ while firearms kill 32,000 and injure an additional 65,000.⁴ The cigarettes that Phillip Morris, American Brands, R.J. Reynolds, B. A. T., Imperial Tobacco, Loews, and Liggett companies sell kill about 450,000 of their U.S. customers each year, almost as many Americans as AIDS killed during its first three decades.⁵ Worldwide, cigarettes kill almost 6 million customers a year, more than twice what AIDS kills.⁶ In the United States, prescription painkillers cause

about 14,000 deaths each year and hospitalize 300,000 people.⁷ About 200,000 children are injured annually by playground equipment, and 147 die of their injuries.⁸ All-terrain vehicles (ATVs) kill between 600 and 800 people a year and injure about 100,000.⁹

Although inarguably not on the same level as injury and death, deceptive business practices, such as a company not honoring a warranty, wears out consumers' patience as well as their wallets. For example, several years ago, the engine of Martha and George Rose's GM station wagon began hissing, and white smoke poured out of the tailpipe as Martha drove it 6 miles to work. When their mechanic inspected it, he found a crack in the engine block, so the car needed an expensive new engine. The Roses were not worried, since the engine was still under GM's "5-year or 50,000-mile" warranty. However, when a GM mechanic inspected their car, he concluded that the radiator thermostat had stuck shut so no coolant had reached the engine. Because the thermostat was only under a "12-month or 12,000-miles" warranty that had by then expired, and because the faulty thermostat had caused the engine to overheat and the engine block to crack, GM concluded it had no responsibility under its "5-year or 50,000-mile" warranty.¹⁰

Cramming, a tactic used by some of the large cell phone companies, illustrates another kind of difficulty consumers face. Cramming is the practice of adding charges to a customer's cell phone bill for services from a third party that the customer never approved or never received.

According to the U.S. Federal Trade Commission, *cramming*

occurs when consumers are signed up and billed for third-party services, such as ringtones and recurring text messages containing trivia or horoscopes, without the consumers' knowledge or consent. Companies that place crammed charges sometimes obtain consumers' phone numbers without any contact with consumers. . . . These unauthorized charges often appear buried in phone bills and have generic descriptors such as "usage charges." As a result, many consumers do not notice the charges or do not understand that they are unrelated to their phone service.¹¹

Ethical Application

Inflating Mobile Phone Bills

In May 2015, the Federal Communications Commission (FCC) announced that it was fining Verizon and Sprint a combined \$158 million for *cramming* onto customers' phone bills unauthorized charges at the request of companies who sent customers ringtones or monthly text messages, such as horoscopes, love

tips, or celebrity gossip. In 2014, AT&T and T-Mobile were fined \$217 million for doing the same. Verizon received 30 percent of each unauthorized charge that it billed, while Sprint, T-Mobile, and AT&T received 35 percent in return for hiding the charges within "usage charges," a line item that also included charges for the mobile phone companies' own legitimate text services. Individual charges averaged about \$9.99 a month and ultimately cost consumers hundreds of millions of dollars. It is estimated that about 20 million mobile phone customers were victims of these

charges each year. The companies continued to charge their customers even after being notified by many customers that the charges were unauthorized.

In another kind of mobile phone scam, AT&T was accused of "fraud and deceit" in a 2010 class-action lawsuit that claimed the company "intentionally, knowingly and artificially inflates the data usage" of its cell phone customers by "an amount that is three to five times the actual data usage . . . then bills the customer based upon the inflated data usage . . . not the actual data used . . . by that customer."¹² According to the lawsuit, when Guardian Corporation, an AT&T customer, became suspicious of its cell phone bills, it hired an expert to go through AT&T's internal engineering reports and discovered that Guardian's "actual data usage and

data transfer . . . were, as a matter of corporate policy, being misrepresented by AT&T's system." By inflating a customer's usage, the suit said, AT&T was also able to charge higher "overage" fees for usage beyond the amount the customer's plan contract allowed, even when the customer stayed within the usage allowed by the plan. Ordinary consumers could not check the accuracy of their bills because they did not have access to either AT&T's internal engineering reports or an expert who could understand those reports. The company settled the case in 2013 for \$152 million. AT&T has had to settle other charges of deceptive consumer practices in New York, Florida, Washington, Texas, Louisiana, West Virginia, North Carolina, and several other states as well as charges of nationwide deceptive practices.

Recalls of Defective and Dangerous Products

The number of product deaths and injuries would be much greater if the U.S. government did not regularly require companies to recall defective or harmful products. Here is a small sample from among the millions of defective products that have to be recalled each year.^{13, 14, 15, 16, 17}

Takata Auto Airbags (2016)

On April 13, 2016, U.S. regulators announced that some 85 million airbags installed in cars still had potentially defective inflators that could explode and spray shrapnel through the car's passenger compartment. Takata had already recalled 29 million of the airbags that were installed in cars made by 14 different car companies between 2002 and 2015. At least 10 people had already been killed and several more injured.

General Motors Automobiles (2014)

Gree Dehumidifiers (2014)

Blair Women's Chenille Robes (2010)

Nestlé Toll House Cookie Dough (2009)

6.2: Markets and Consumer Protection

OBJECTIVE: Evaluate the arguments for and against consumer protection within markets

Consumers are also bombarded daily by an endless series of advertisements urging them to buy numerous products. Although sometimes defended as sources of information, advertisements are also criticized on the grounds that they rarely do more than give the barest indications of the basic function a product is meant to serve and sometimes misrepresent and exaggerate its qualities. Economists argue that advertising expenditures are a

waste of resources and sociologists bemoan the cultural effects of advertising.¹⁸

Consumer advocates point out that each year there are more than 350,000 injuries requiring hospital treatment inflicted on youngsters and adults using nursery equipment and toys; another 350,000 people are mangled using home workshop equipment; about 4,400,000 people are injured using sports and recreational equipment; over 3,000,000 people need emergency treatment for injuries involving home furnishings; and over 4,000,000 people require treatment for injuries involving home construction materials.¹⁹ Nonfatal injuries from motor vehicle accidents in 2013 averaged 44,000 each week, and deaths averaged over 60 people per day.²⁰ A 2015 study concluded that the financial losses from motor vehicle accidents total more than \$242 billion a year.²¹

Arguments for the Free Market Approach to Consumer Protection

Arguments in favor of allowing free markets to provide consumer protection claim that market forces will lead manufacturers to provide safe products if that is what consumers demand, without forcing manufacturers to provide safety that consumers may not think is worth the cost.

Interactive

More Demand for Safety Encourages More Safety

The market approach to consumer protection argues that consumer safety can be provided efficiently through the free market because sellers must respond to consumer demands if they are to make a profit. If consumers want products to be safer, they will indicate this preference in markets by willingly paying more for safer products and showing a preference for manufacturers of safe products while turning down the goods of those who make unsafe products. Manufacturers will respond to this demand by building more safety into their products, or they risk losing customers to competitors who cater to the safety preferences of consumers. Thus, if consumers want safety, the market will provide it and sellers will price it according to how much it costs to provide it (indicated by their supply curve) and how much consumers think its worth (indicated by their demand curve). As a result, the market will provide safety at a fair price, in a way that respects customers' free choices, and with an efficient use of society's resources.

Less Demand for Safety Means Government Should Not Interfere

6.2.1: The Market Approach to Protecting Consumers

It is sometimes argued that consumers will be protected from injury by the operations of the free market and that neither governments nor business people should intervene in markets to require product safety.²²

Quick Review 6.1

Consumer Protection and the Market

- Safety is considered a commodity that should not be mandated by government.
- Safety should instead be provided through the market.
- In a market, sellers will provide safety if consumers demand it.

- In a market, the price of safety and the amount sellers provide will be determined by the costs of providing it and the value consumers place on it.
- Government intervention in consumer markets makes them unfair, inefficient, and coercive.

6.2.2: Criticisms of the Market Approach to Protecting Consumers

Critics of the market approach to consumer protection respond that the market approach assumes that consumer markets are perfectly competitive, but in fact they rarely are. We can claim that markets are fair, respectful of negative rights, and efficiently maximize utility only when they have the seven features that make them perfectly competitive

Why Markets May Not Provide the Safety Consumers Want

Consumers are not always adequately informed about the goods they are buying nor are they always rational, and most markets lack the defining features of perfectly competitive markets.^{23, 24, 25, 26, 27}

Uninformed Consumers

Consumers are often uninformed about the products they buy simply because many products are so complex that only an expert can be knowledgeable about them; also, the manufacturer, who is most knowledgeable about the product, may not voluntarily share this knowledge with consumers. It may be too expensive and impractical for consumers to conduct the research needed to learn enough about a particular product to make an informed purchase decision.

Irrational Purchase Decisions

Lack of Competition

(see Chapter 4). When markets are not perfectly competitive because they lack one or more of these defining features, it's hard to say whether they are fair, are respectful of rights, or maximize utility. In particular, we can say that consumer markets will respond efficiently and fairly to consumer preferences only if buyers have adequate information about what they are buying, are **rational utility maximizers**, and have the other features of a perfectly competitive market.

Quick Review 6.2

Problems with the Market Approach to Consumer Protection

It assumes that markets are perfectly competitive, but they are not for the following reasons:

- Consumers do not have adequate information when products are complex and information is costly and hard to find.
- Consumers are often not rational about product risk or probabilities and are often inconsistent.
- Many consumer markets are monopolies or oligopolies.

6.2.3: Beyond Market Forces

On balance, it does not appear that market forces by themselves can deal with all consumer concerns for safety, freedom from risk, and value. Market failures, characterized by inadequate consumer information, irrationality in the choices of consumers, and concentrated markets undercut arguments that try to show that markets alone can provide adequate consumer protection. Instead, consumers must be protected through the legal structures of government and through the voluntary initiatives of responsible businesspeople. We turn then to examining several views about the responsibilities of businesses toward consumers—views that have formed the basis of many of our consumer laws and of increased calls for greater acceptance of responsibility for consumer protection on the part of business.

It is clear, of course, that part of the responsibility for consumer injuries must rest on consumers. Individuals are often careless in their use of products. “Do-it-yourselfers” use power saws without guards attached or use flammable liquids near open flames. People often use tools and instruments that they do not have the skill, knowledge, or experience to handle. But consumer responsibility is only part of the story. Injuries also arise from flaws in product design, in the materials out of which products are made, and in the processes used to construct products. Insofar as manufacturing defects are the source of product-related injuries, consumer advocates claim, minimizing injuries is the responsibility of manufacturers because they are in the best position to know the hazards a product carries and to eliminate the hazards at the point of manufacture.

Where, then, does the consumer's duty to protect his or her own interests end, and where does the manufacturer's duty to protect consumers' interests begin? Three different theoretical views on the ethical duties of manufacturers have been developed, each of which strikes a different balance between consumers' duty to protect themselves and the manufacturer's duty to protect consumers:

- contractual view
- due-care view
- social costs view

The contractual view places the greater responsibility on the consumer, whereas the due-care view and social costs view place the greater responsibility on the manufacturer. We examine each of these views in turn.

6.3: The Contractual View of the Manufacturer's Duties to Consumers

OBJECTIVE: Explain how a firm's moral duties to consumers may be held in a contractual relationship

According to the *contractual view of the business firm's duties to its customers*, the relationship between a business firm and its customers is essentially a contractual relationship, and the firm's moral duties to customers are those created by this contractual relationship.²⁸ When a consumer buys a product or a service, this view holds, the consumer voluntarily enters into a “sales contract” with the business firm. The firm freely and knowingly agrees to give the consumer a product or service with certain characteristics, and the consumer in turn freely and knowingly agrees to pay a certain sum of money to the firm for the product or service. By virtue of having voluntarily entered this agreement, the firm then has a duty to provide a product or service with those characteristics, and the consumer has a correlative right to get a product or service with those characteristics.

The contractual view of the business firm's duties to its customers rests on the idea that a contract is a free agreement that imposes on parties the basic duty of complying with the terms of the agreement. Recall from Chapter 5 the two justifications Immanuel Kant provided for the view: a person has a duty to do what the person contracts to do because failure to adhere to the terms of a contract is a practice that (1) cannot be universalized, and (2) treats the other person as a means and not as an end.²⁹ John Rawls's theory also provided a justification for the view, but one that is based on the idea that our freedom is expanded by

the recognition of contractual rights and duties: an enforced system of social rules that requires people to do what they contract to do will provide them with the assurance that contracts will be kept. Only if they have such assurance will people feel able to trust each other's word and, on that basis, to secure the benefits of the institution of contracts.³⁰

Traditional moralists have argued that the act of entering into a contract is subject to several secondary moral constraints, which are as follows:

1. Both of the parties to the contract must have full knowledge of the nature of the agreement they are entering.
2. Neither party to a contract must intentionally misrepresent the facts of the contractual situation to the other party.
3. Neither party to a contract must be forced to enter the contract under duress or undue influence.

These secondary constraints can be justified by the same sorts of arguments that Kant and Rawls used to justify the basic duty to perform one's contracts. Kant, for example, easily showed that misrepresentation in the making of a contract cannot be universalized. Rawls argued that if misrepresentation were not prohibited, fear of deception would make members of a society feel less free to enter contracts. Moreover, these secondary constraints can also be justified on the grounds that a contract cannot exist unless these constraints are fulfilled. A contract is essentially a free agreement struck between two parties. Because an agreement cannot exist unless both parties know what they are agreeing to, contracts require full knowledge and the absence of misrepresentation. Because freedom implies the absence of coercion, contracts must be made without duress or undue influence.

Hence, the contractual view of business firms' duties to consumers claims that a business has four main moral duties:

1. The basic duty of complying with the terms of the sales contract and the secondary duties of
2. Disclosing the nature of the product or service
3. Avoiding misrepresentation
4. Avoiding the use of duress and undue influence

By acting in accordance with these duties, a business respects the right of consumers to be treated as free and equal persons—that is, in accordance with their right to be treated only as they have freely consented to be treated.

6.3.1: The Duty to Comply

The most basic moral duty that a business firm owes its customers, according to the contractual view, is the duty to provide consumers with a product or service that lives up to those claims that the firm expressly made about the

product or service, which led the customers to enter the contract freely and which formed the customers' understanding concerning what they were agreeing to buy.

Winthrop Laboratories, for example, marketed a painkiller that it advertised as nonaddictive. Subsequently, a patient using the painkiller became addicted to it and shortly died from an overdose. A court found Winthrop Laboratories liable for the patient's death because, although it had expressly stated that the drug was nonaddictive, Winthrop Laboratories had failed to live up to its duty to comply with this express contractual claim.³¹ As this example suggests, our legal system has incorporated the moral view that firms have a duty to live up to the express claims they make about their products. The Uniform Commercial Code (a model set of laws regulating commercial transactions that have been completely or partially adopted by all 50 states), for example, states in section 2-314:

Any affirmation of fact or promise made by the seller to the buyer that related to the goods and becomes part of the basis of the bargain creates an express warranty that the goods shall conform to the affirmation or promise.

In addition to the duties that result from the express claims a seller makes about products and services, the contractual view also holds that the seller has a duty to carry through on any implied claims knowingly made about its products and services. For example, the seller has the moral duty to provide a product that can be used safely for the ordinary and expected purposes for which the customer, relying on the seller's judgment, has been led to believe it can be used. Sellers are morally bound to provide whatever service they know the buyers understood the sellers were promising to provide, and at the point of sale, sellers should correct any customer misunderstandings of which they are aware.³² This idea of an implied agreement has also been incorporated into the law. Section 2-315 of the Uniform Commercial Code, for example, reads as follows:

Where the seller at the time of contracting has reason to know any particular purpose for which the goods are required and that the buyer is relying on the seller's skill or judgment to select or furnish suitable goods, there is . . . an implied warranty that the goods shall be fit for such purpose.

The express or implied claims that a seller might make about the qualities possessed by a product cover a variety of areas and are affected by a number of factors.

6.3.2: The Duty of Disclosure

An agreement cannot be binding unless both parties to the agreement know what they are doing and freely choose to do it. This point implies that the seller who intends to enter a contract with a customer has a duty to

The Duty to Comply with Express or Implied Product Claims

Frederick Sturdivant claimed that sellers have a duty to comply with claims they make about four key product features: reliability, service life, maintainability, and safety.^{33, 34}

Interactive

Reliability

Claims of *reliability* refer to the probability that a product will function as the consumer is led to expect that it will function. If a product incorporates a number of interdependent components, then the probability that it will function properly is equal to the result of multiplying together each component's probability of proper functioning. As the number of components in a product multiplies, therefore, the manufacturer has a corresponding duty to ensure that each component functions in such a manner that the total product is as reliable as it is implicitly or expressly claimed to be. This is especially the case when malfunction poses health or safety hazards. The U.S. Consumer Product Safety Commission lists hundreds of examples of product hazards on its website (<https://www.cpsc.gov>).

1 of 5

Previous

Next

disclose exactly what the customer is buying and what the terms of the sale are. At a minimum, the seller has a duty to inform the buyer of any characteristics of the product/service that could affect the customer's decision to purchase it. For example, if a product a customer is buying possesses a defect that poses a risk to the user's health or safety, the customer should be so informed. Some have argued that sellers should also disclose a product's components or ingredients, performance characteristics, costs of operation, product ratings, and any other applicable standards.³⁵

Behind the claim that entry into a sales contract requires full disclosure is the idea that an agreement is free only to the extent that one knows what alternatives are available: freedom depends on knowledge. The more the buyer knows about the various other products and services available on the market and the more comparisons

the buyer is able to make among them, the more one can say that the buyer's agreement is voluntary.³⁶

The view that sellers should provide a great deal of information for buyers has been criticized on the grounds that information is costly and, therefore, should itself be treated as a product for which the consumer should either pay or do without. In short, consumers should freely contract to purchase information as they freely contract to purchase goods, and producers should not have to provide it for them.³⁷ The problem with this criticism is that the information on which a person bases a decision to enter a contract is a rather different kind of entity from the product exchanged through the contract. Because a contract must be entered into freely and free choice depends on knowledge, contractual transactions must be based on an open exchange of information. If consumers had to bargain for such information, the resulting contract would hardly be free.

6.3.3: The Duty Not to Misrepresent

Misrepresentation, even more than the failure to disclose information, renders freedom of choice impossible. That is, misrepresentation is coercive: the person who is intentionally misled acts as the deceiver wants the person to act and not as the person would freely have chosen to act if the person had known the truth. Because free choice is an essential ingredient of a binding contract, intentionally misrepresenting the nature of a commodity is ethically wrong.

Sellers misrepresent a commodity when they represent it in a way deliberately intended to deceive the buyer into thinking something about the product that the seller knows is false. The deception may be created by a verbal lie, as when a used model is described as new, or it may be created by a gesture, as when an unmarked used model is displayed together with several new models. The deliberate intent to misrepresent by false implication is as wrong as the explicit lie.

The varieties of misrepresentation seem to be limited only by the ingenuity of the greed that creates them.³⁸

- A computer software or hardware manufacturer may market a product it knows contains “bugs” without informing buyers of that fact.
- A manufacturer may give a product a name that the manufacturer knows consumers will confuse with the brand name of a higher-quality competing product.
- The manufacturer may write *wool* or *silk* on material made wholly or partly of cotton.
- The manufacturer may mark a fictitious “regular price” on an article that is always sold at a much lower “sale” price.
- A business may advertise an unusually low price for an object that the business actually intends to sell at a much higher price once the consumer is lured into the store.

- A store may advertise an object at an unusually low price, intending to “bait and switch” the unwary buyer over to a more expensive product.
- A producer may solicit paid “testimonials” from professionals who have never really used the product.

Sellers can be astonishingly creative. We return to some of these issues when we discuss advertising, later in the chapter.

6.3.4: The Duty Not to Coerce

People often act irrationally when under the influence of fear or emotional stress. When a seller takes advantage of a buyer’s fear or emotional stress to extract consent to an agreement that the buyer would not make if the buyer were thinking rationally, the seller is using duress or undue influence to coerce. An unscrupulous funeral director, for example, may skillfully induce guilt-ridden and grief-stricken survivors to invest in funeral services they cannot afford. Because entry into a contract requires freely given consent, the seller has a duty to refrain from exploiting emotional states that may induce buyers to act irrationally against their own best interests. For similar reasons, the seller also has the duty not to take advantage of gullibility, immaturity, ignorance, or any other factors that reduce or eliminate the buyer’s ability to make free rational choices.

Quick Review 6.3

Moral Duties to Consumers under the Contractual View

- The duty to comply with express and implied claims of reliability, service life, maintainability, and safety
- The duty of disclosure
- The duty not to misrepresent
- The duty not to coerce

On the Edge

Mr. Trump’s University

Donald Trump incorporated Trump University in 2004 in New York City as an online company offering web-based classes and CD-ROMs that, according to advertisements, would teach students Trump’s “secrets” to making money through real estate investments.³⁹ On May 27, 2005, the New York State Department of Education notified Trump’s company that “use of the word ‘university’ by your corporation is misleading and violates New York Education Law.” The company continued to call itself a university, however, until a few weeks before it went out of business.

In May 2007 the company began offering live “seminars” that, like the online classes, were supposed to teach Trump’s “method” of real estate investment. Some ads promised students would “learn from the master—Donald Trump.” One advertisement for a live seminar read:

Come to this FREE introductory class and you’ll learn from Donald Trump’s handpicked instructors a systematic method for investing in real estate that anyone can use effectively. . . . [by using] the kind of proven expertise contained in Donald Trump’s powerful techniques and strategies.

Later, however, when asked under oath about his “hand-picked instructors,” Mr. Trump stated that he “didn’t personally select these instructors,” nor did he know, he said, what the

instructors told the students at the events. He himself, he said, did not supply the content of the courses; they were developed by an outside adult-education company. Although he was intimately involved in the marketing of the seminars, he said, he was “completely absent” from the operations of the university. Many of his instructors had little or no experience in real estate.

Although the first “introductory seminar” was free, people who attended were urged to sign up for a \$1,495 three-day workshop entitled “Profit From Real Estate.” Attendees who purchased the three-day workshop were exhorted at the workshop to sign up for one of three “Trump Elite Packages.” These included the “Trump Gold Elite” package for \$34,995, the “Trump Silver Elite” package for \$19,495, or the “Trump Bronze Elite” package for \$9,995. The Trump Gold package included four “retreats,” during which participants would be given “advanced training” in real estate investing, and three days with a “Trump Mentor” who would “fly into your market and in three action-packed days walk you through every step of a real estate transaction.” The Silver package included four retreats but no time with a mentor, while the Bronze package included two retreats and no mentor. Afterward students claimed, however, that they did not receive the kind of mentorship they were promised and that the mentorships petered out after a few meetings.

Corinne Sommer, who worked for a time at Trump University’s headquarters as manager of the live events and coordinator of seminars and training, testified under oath that:

In my experience, the focus of Trump University was on making sales rather than on providing quality educational services. Trump University would lure consumers into the initial free course based upon the name and reputation of Donald Trump, and then once they were there, Trump University personnel would try to up-sell consumers to the next course using high-pressure sales tactics. Far from providing a “complete real estate education,” as advertised, Trump University personnel only provided enough information to get students to sign up for the next seminar or program. . . . During the time that I was employed at Trump University, many of the speakers, instructors, and mentors lacked real estate experience. Many of them did not even own houses, and had no experience buying or selling real estate. For example, I recall that David Stamper had no real estate experience; he was a jewelry salesman. However, after working for Trump University for approximately a year on the sales team, he began speaking as an instructor at seminars. Trump University instructors and mentors were not hand-picked by Donald Trump. I believe that in

many instances Donald Trump had neither met the instructors or mentors, nor did he know who they were. . . . These people did not necessarily have real estate experience, but were skilled at high-pressure sales. . . . I do not believe that Trump University taught Donald Trump’s investing “secrets.” Donald Trump came from a wealthy family and had resources at his disposal to purchase real estate—that is the secret—one that the average consumer could not replicate.

While it operated—the company stopped accepting students in 2010—Trump University enrolled some 7,000 people who collectively paid his company more than \$40 million. Thousands of those students, and the New York attorney general, launched lawsuits against Trump University that just started coming to trial in 2016. Former students claimed that the promises made in advertising were not fulfilled, and that the instructors/sales people pressured them—a large portion of them senior citizens—into using their retirement savings, or into taking on credit card debt they could not afford, and buy more Trump University courses. Mr. Trump argued that 98 percent of students reported in surveys that the seminars and mentorships were valuable. However, students filled out the surveys with instructors/mentors standing in front of them and while they still needed their mentors to finish teaching them “every step of a real-estate transaction.” Moreover, 32 percent of students were so dissatisfied with the \$1,495 three-day seminar they immediately demanded their money back, while 16 percent were so dissatisfied with the \$34,995 program they too immediately wanted their money back. So the claim that 98 percent were satisfied does not appear valid.

WRITING PROMPT

The Contractual View and Trump University

1. Which of the allegations made against Trump University do you believe are the most serious? Why?
2. Evaluate the ethics of the allegations you believe are most serious; use the standards of the contractual view of the seller’s duties to the buyer.



The response entered here will appear in the performance dashboard and can be viewed by your instructor.

Submit

6.3.5: Problems with the Contractual View

The main objection to the contractual view focuses on the unreality of the assumptions on which the view is based. First, critics argue, the view unrealistically assumes that sellers make direct agreements with buyers. That is not quite what happens in modern economies. Normally, a series of wholesalers and retailers stands between the producer and the ultimate buyer, the consumer. A manufacturer, for example, may sell a product to the

wholesaler, who sells it to the retailer, who finally sells it to the consumer. The manufacturer therefore never enters into any direct contract with the consumer. How then can one say that manufacturers have any contractual duties to the consumer? This lack of any direct contract between the manufacturer and the ultimate consumer was long accepted as a sufficient reason to absolve the manufacturer of any duties toward the ultimate consumer. Suppose, for example, that a manufacturer made a machine the manufacturer knew carried a dangerous defect, and sold it to a retailer, from whom a consumer purchased it. Also suppose that the

consumer was seriously injured by the machine. Then the consumer could not hold the manufacturer responsible for the injury because the manufacturer made no contractual promises or guarantees of safety to the consumer. Nor could the consumer hold the retailer responsible because the retailer had no knowledge of the dangerous defect!

Advocates of the contractual view of manufacturers' duties have tried to respond to this criticism by arguing that manufacturers enter into *indirect* agreements with consumers. Manufacturers promote their products through their own advertising campaigns. These advertisements supply the promises that lead people to purchase products from retailers, who merely function as "conduits" for the manufacturer's product. Consequently, through its advertisements, a manufacturer forges an indirect contractual relationship not only with the immediate retailers who purchase the manufacturer's product but also with the ultimate consumers of the product.

Ethical Application

Broadened Indirect Contractual Relationships

The most famous application of the doctrine of broadened indirect contractual relationships appears in the now classic court opinion of *Henningsen v. Bloomfield Motors*.⁴⁰ Mrs. Henningsen was driving a new Chrysler automobile when it suddenly gave off a loud cracking noise. The steering wheel spun out of her hands and the car lurched to the right and crashed into a brick wall. Mrs. Henningsen sued the manufacturer, Chrysler Corporation. The court opinion read as follows:

Under modern conditions the ordinary layman, on responding to the importuning of colorful advertising, has neither the opportunity nor the capacity to inspect or to determine the fitness of an automobile for use; he must rely on the manufacturer who has control of its construction, and to some degree on the dealer who, to the limited extent called for by the manufacturer's instructions, inspects and services it before delivery. In such a marketing milieu his remedies and those of persons who properly claim through him should not depend "upon the intricacies of the law of sales. The obligation of the manufacturer should not be based alone on privity of contract [that is, on a direct contractual relationship]. It should rest, as was once said, upon "the demands of social justice" *Mazetti v. Arnous & Co.* (1913). "If privity of contract is required," then, under the circumstances of modern merchandising, "privity of contract exists in the consciousness and understanding of all right-thinking persons. . . ." Accordingly, we hold that under modern marketing conditions, when a manufacturer puts a new automobile in the stream of trade and promotes its purchase by the public, an implied warranty that it is reasonably suitable for use as such accompanies it into the hands of the ultimate purchaser.

Thus, the car manufacturer, Chrysler, was found liable for Mrs. Henningsen's injuries on the grounds that its advertising had created a contractual relationship with Mrs. Henningsen, and this contract created an "implied warranty" for the car, which the manufacturer had a duty to fulfill.

A second objection to the contractual view focuses on the fact that a contract is a two-edged sword. If a consumer can freely agree to buy a product with certain qualities, the consumer can also freely agree to buy a product without those qualities. That is, freedom of contract allows a manufacturer to be released from contractual obligations by explicitly disclaiming that the product is reliable, serviceable, safe, and so on. Many manufacturers put such disclaimers on their products. The Uniform Commercial Code, in fact, stipulates the following in section 2-316:

- a. Unless the circumstances indicate otherwise, all implied warranties are excluded by expressions like "as is," "with all faults," or other language that in common understanding calls the buyer's attention to the exclusion of warranties and makes plain that there is no warranty.
- b. When the buyer before entering into the contract has examined the goods or the sample or model as fully as he desired, or has refused to examine the goods, there is no implied warranty with regard to defects that on examination ought in the circumstances to have been revealed to him.

The contractual view, then, implies that if the consumer has ample opportunity to examine the product and the seller's disclaimers of responsibility, and voluntarily consents to buy the product anyway, the consumer assumes the responsibility for the defects disclaimed by the manufacturer, as well as for any defects the customer may carelessly have overlooked. Disclaimers can effectively nullify all contractual duties of the manufacturer.

A third objection to the contractual view criticizes the assumption that buyer and seller meet each other as equals in the sales agreement. The contractual view assumes that buyers and sellers are equally skilled at evaluating the quality of a product and that buyers are able to adequately protect their interests against the seller. This assumption is built into the requirement that contracts must be freely and knowingly entered into: both parties must know what they are doing and neither must be coerced into doing it. This equality between buyer and seller that the contractual view assumes derives from the *laissez-faire* ideology that accompanied the historical development of contractual theory.⁴¹ Classical *laissez-faire* ideology held that the economy's markets are competitive and that in competitive markets, the consumer's bargaining power is equal to that of the seller's. Competition forces the seller to offer the consumer terms that are as good

as or better than those the consumer could get from other competing sellers, so the consumer has the power to threaten to take business to other sellers. Because of this equality between buyer and seller, it was considered fair to allow each to try to outbargain the other and unfair to place restrictions on either. In practice, this laissez-faire ideology gave birth to the doctrine of *caveat emptor*: let the buyer beware.

Yet in the real world, sellers and buyers do not exhibit the equality that these doctrines assume. A consumer who must purchase hundreds of different kinds of commodities cannot hope to be as knowledgeable as a manufacturer who specializes in producing a single product and who has greater bargaining power. Consumers generally have neither the expertise nor the time to acquire and process the information on which they must base their purchase decisions. Consequently, consumers usually must rely on the word and the judgment of the seller in making their

purchase decisions and are particularly vulnerable to being harmed by the seller. Equality, far from being the rule (as the contractual view assumes), is usually the exception.

6.4: The Due-Care View of the Manufacturer's Duties to Consumers

OBJECTIVE: Describe the manufacturer's responsibilities to consumers as presented by the due-care view

The due-care view of the manufacturer's duties to consumers is based on the idea that consumers and sellers do not meet as equals and that the consumer's interests are

Support for the Due-Care View of Business Responsibility

What does the due care view require and what arguments have been developed in support of the view that producers must take due care not to harm consumers.^{42, 43, 44, 45}

Manufacturer Has a Positive Duty to Ensure Due Care

The due-care view holds that consumers must depend on the greater expertise of the manufacturer. Thus, the manufacturer has a duty not only to deliver a product that lives up to the express and implied claims made about it but also to exercise due care to prevent others from being injured by the product even if the manufacturer explicitly disclaims such responsibility and the buyer agrees to the disclaimer. The manufacturer violates this duty and is negligent when there is a failure to exercise the care that a reasonable person could have foreseen would be necessary to prevent others from being harmed by use of the product. Due care must enter into the design of the product; the choice of reliable materials for constructing the product; the manufacturing processes involved in putting the product together; the quality control used to test and monitor production; and the warnings, labels, and instructions attached to the product. In each of these areas, according to the due-care view, the manufacturer, in virtue of a greater expertise and knowledge, has a positive duty to take whatever steps are necessary to ensure that when the product leaves the plant it is as safe as possible, and the customer has a right to such assurance. Failure to take such steps is a breach of the moral duty to exercise due care and a violation of the injured person's right to expect such care—a right that rests on the consumer's need to rely on the manufacturer's expertise.

Vulnerability of the Customer Calls for Due Care

Principle of Non-Harm Is Behind Due Care

Solid Ethical Perspectives Underlie Due Care

particularly vulnerable to being harmed by the manufacturer who has a knowledge and an expertise that the consumer lacks. Because manufacturers are in a more advantaged position, they have a duty to take special care to ensure that consumers' interests are not harmed by the products that they offer. The doctrine of *caveat emptor* is replaced with a weak version of the doctrine of *caveat vendor*: let the seller beware. A New York court decision neatly described the advantaged position of the manufacturer and the consequent vulnerability of the consumer:

Today as never before the product in the hands of the consumer is often a most sophisticated and even mysterious article. Not only does it usually emerge as a sealed unit with an alluring exterior rather than as a visible assembly of component parts, but its functional validity and usefulness often depend on the application of electronic, chemical, or hydraulic principles far beyond the ken of the average consumer. Advances in the technologies of materials, of processes, of operational means have put it almost entirely out of the reach of the consumer to comprehend why or how the article operates, and thus even farther out of his reach to detect when there may be a defect or a danger present in its design or manufacture. In today's world it is often only the manufacturer who can fairly be said to know and to understand when an article is suitably designed and safely made for its intended purpose. Once floated on the market, many articles in a very real practical sense defy detection of defect, except possibly in the hands of an expert after laborious, and perhaps even destructive, disassembly. By way of direct illustration, how many automobile purchasers or users have any idea

how a power steering mechanism operates or is intended to operate, with its "circulating work and piston assembly and its cross shaft splined to the Pitman arm"? We are accordingly persuaded that from the standpoint of justice as regards the operating aspect of today's products, responsibility should be laid on the manufacturer, subject to the limitations we set forth.⁴⁶

6.4.1: Components of Due Care

According to the due-care view, manufacturers or producers exercise sufficient care only when they take adequate steps to prevent whatever injurious effects they can foresee that the use of their product may have on consumers after having conducted inquiries into the way the product will be used and after having attempted to anticipate possible misuses of the product. A manufacturer is not morally negligent, however, when others are harmed by a product and the harm was not one that the manufacturer could have possibly foreseen or prevented. Nor is a producer morally negligent after having taken all reasonable steps to protect the consumer and ensure that the consumer is informed of any irremovable risks that might still attend the use of the product. For example, a car manufacturer cannot be said to be negligent from a moral point of view when people carelessly misuse the cars the manufacturer produces. A car manufacturer would be morally negligent only if it had allowed unreasonable dangers to remain in the design of the car; that is, dangers that consumers cannot be expected to know about or cannot guard against on their own.

On the Edge

Tobacco Companies and Product Safety

On June 28, 2010, a mammoth case that had begun more than 10 years earlier finally came to a definitive end.⁴⁷ The case, *United States of America v. Philip Morris et al.*, pitted the U.S. Department of Justice (DOJ) against Philip Morris and eight other cigarette companies, and had the DOJ asking that the companies be forced to "disgorge" and give to the government the hundreds of billions of dollars they had earned since 1953. The DOJ argued that since 1953 the companies had conspired to deceive the public about the risks of smoking and its addictive nature, and so had operated as outlaw companies as defined by the Racketeer Influenced and Corrupt Organizations Act (RICO) which requires convicted companies to "disgorge" the profits they had earned. The DOJ showed that the companies met in New York in 1953 and formed a group called the Tobacco Industry Research Committee (TIRC) that began a conspiracy "to deny that smoking caused disease and to maintain that whether smoking caused disease was an 'open question,' despite having actual knowledge that smoking did cause disease." In the 1950s, despite

published research showing that smoking causes cancer, the group spent millions of dollars advertising that "there is no proof that cigarette smoking is one of the causes" of lung cancer. For example, one ad virtually shouted: "MORE DOCTORS SMOKE CAMELS THAN ANY OTHER CIGARETTE! Family physicians, surgeons, diagnosticians, nose and throat specialists, doctors in every branch of medicine . . . a total of 113,597 doctors . . . were asked the question: "What cigarette do you smoke?" And more of them named Camel as their smoke than any other cigarette! Three independent research groups found this to be a fact."

From the 1960s to the 1990s, the companies spent hundreds of millions more advertising that "a cause and effect relationship between smoking and disease has not been established." According to the DOJ's evidence, the tobacco companies advertised that nicotine is not addictive even though they knew it was and even as they adjusted the amount of nicotine in cigarettes and "controlled the nicotine delivery of cigarettes so that they could addict new users." The DOJ also provided evidence showing the companies "researched how to target their marketing at children and actively marketed cigarettes to children." Finally, the DOJ claimed that the companies had a duty to test their product, to design a safe product, and to warn users of its dangers, yet the companies instead did no research and tried to suppress research on smoking risks, even as they marketed a product that killed 400,000 to

500,000 Americans a year. Until forced to do so in 1969, they did not warn smokers of the health risks and addictive nature of smoking and they targeted children who could not adequately assess the true risks of smoking. In 2006, in a 1,652-page opinion, Judge Gladys Kessler of the U.S. District Court for the District of Columbia ruled that the DOJ had fully proved its case against the tobacco companies. However, she also ruled against the DOJ's demand that the companies should be forced to turn over all the profits they had made by conspiring to deceive and harm the public since 1953. Instead, she ruled, the companies would only be "prevented and restrained" from "committing future RICO violations." Almost immediately after Judge Kessler's decision, both the DOJ and the tobacco companies appealed her decision to the U.S. Supreme Court. Four years later, on June 28, 2010, the U.S. Supreme Court ruled that Judge Kessler's decision should not be overturned and so rejected the appeals, bringing the decade-long case to an end.

WRITING PROMPT

Apply Due Care to the Tobacco Industry

1. If the DOJ claims are true, as Judge Gladys Kessler determined, what does the due-care view of the manufacturer's duties imply with respect to the ethical obligations of the tobacco companies? To what extent did the tobacco companies meet these obligations?
2. Should the tobacco companies have been forced to turn over the profits they made from their "conspiracy"? Why or why not?

The response entered here will appear in the performance dashboard and can be viewed by your instructor.

Submit

The Manufacturer's Due-Care Responsibilities

What specific responsibilities does the duty to exercise due care impose on the manufacturer? In general, the manufacturer's responsibilities would extend to the three areas described below.⁴⁸

Interactive

Due Care in Design

The manufacturer should ascertain whether the design of an article conceals any dangers, whether it incorporates all feasible safety devices, and whether it uses materials that are adequate for the purposes the product is intended to serve. The manufacturer is responsible for being thoroughly acquainted with the design of the item and to conduct research and tests extensive enough to uncover any risks that may be involved in employing the article under various conditions of use. This research requires analyzing consumers and their behavior, testing the product under different conditions of consumer use, and selecting materials strong enough to stand up to all probable usages. The effects of aging and wear should also be analyzed and taken into account in designing a product.

In determining the safeguards that should be designed into a product, the manufacturer must also take into consideration the capacities of the persons who will use the product. If a manufacturer anticipates that a product will be used by persons who are immature, mentally deficient, or too inexperienced to be aware of the dangers attendant on the use of the product, the manufacturer owes them a greater degree of care than if the anticipated users were of ordinary intelligence and prudence. For example, children cannot be expected to realize the dangers involved in using electrical equipment. Consequently, if a manufacturer anticipates that an electrical item will probably be used by children, steps must be taken to ensure that a person with a child's understanding will not be injured by the product.

Due Care in Production

Due Care in Marketing

6.4.2: Difficulties with Due Care

The basic difficulty raised by the due-care view is that no clear method exists for determining when one has exercised enough due care. That is, there is no hard-and-fast rule for determining how far a firm must go to ensure the safety of its product. Some authors have proposed this general utilitarian rule: the greater the probability of harm and the larger the population that might be harmed, the more the firm is obligated to do. However, this rule fails to resolve some important issues. Every product involves at least some small risk of injury. If the manufacturer should try to eliminate even low-level risks, the manufacturer would be required to invest so much in each product that the product would be priced out of the reach of most consumers. Moreover, even attempting to balance higher risks against added costs involves measurement problems; for example, how does one quantify risks to health and life?

A second difficulty raised by the due-care view is that it assumes that the manufacturer can discover the risks that attend the use of a product before the consumer buys and uses it. In fact, in a technologically innovative society, new products whose defects cannot emerge until years or decades have passed will continually be introduced into the market. Only years after thousands of people used and were exposed to asbestos, for example, did a clear correlation emerge between the incidence of cancer and exposure to asbestos. Although manufacturers may have greater expertise than consumers, their expertise does not make them omniscient. Who, then, is to bear the costs of injuries sustained from products whose defects neither the manufacturer nor the consumer could have uncovered beforehand?

The due-care view appears to some to be paternalistic: it assumes that the manufacturer should be the one who makes the important decisions for the consumer, at least with respect to the levels of risks that are proper for consumers to bear. One may wonder whether such decisions should not be left up to the free choice of consumers, who can decide for themselves whether they want to pay for additional risk reduction.

Quick Review 6.4

Problems with the Due-Care View

- No method exists to determine how much due care a manufacturer should exercise and how much it should spend doing so.
- It does not indicate who should pay for product injuries that cannot be foreseen.
- It puts the manufacturer in a paternalistic position of deciding how much risk is best for consumers.

6.5: The Social Costs View of the Manufacturer's Duties to Consumers

OBJECTIVE: Examine the broader role of manufacturer responsibility as expressed by the social costs view

A third view of the duties of the manufacturer extends the manufacturer's duties beyond those imposed by contractual relationships and beyond those imposed by the duty to exercise due care in preventing injury or harm. The *social costs view of the manufacturer's duties to consumers* holds that a manufacturer should pay the costs of any injuries sustained through any defects in the product, even when the manufacturer exercised all due care in the design and manufacture of the product and has taken all reasonable precautions to warn users of every foreseen danger. According to the social costs view, a manufacturer has a duty to assume the risks of even those injuries that arise out of defects in the product that no one could reasonably have foreseen or eliminated. The social costs view is a strong version of the doctrine of *caveat vendor*: let the seller beware.

6.5.1: Utilitarian Arguments Underlying the Social Costs View

The social costs view, which has formed the basis of the legal doctrine of **strict liability**, is founded on utilitarian arguments.⁴⁹ The utilitarian arguments for this view hold that the "external" costs of injuries resulting from unavoidable defects in the design of an artifact constitute part of the costs society must pay for producing and using an artifact. By having the manufacturer bear the external costs that result from these injuries as well as the ordinary internal costs of design and manufacture, all costs are internalized and added on as part of the price of the product. Internalizing all costs in this way, according to proponents of this view, will lead to a more efficient use of society's resources for three main reasons:

1. Because the price will reflect all the costs of producing and using the artifact, market forces will ensure that the product is not overproduced and resources are not wasted on it. (By contrast, if some costs were not included in the price, then manufacturers would tend to consume resources to produce more than is needed.)
2. Because manufacturers have to pay the costs of injuries, they will be motivated to exercise greater care and

thereby reduce the number of injuries. Therefore, manufacturers will strive to cut down the social costs of injuries, which means a more efficient use of our resources. To produce the maximum benefits possible from our limited resources, therefore, the social costs of injuries from defective products should be internalized by passing them on to the manufacturer even when the manufacturer has done all that could be done to eliminate such defects.

3. Internalizing the costs of injury in this way enables the manufacturer to distribute losses among all the users of a product instead of allowing losses to fall on a few injured individuals who otherwise would have

to bear all the costs of injury. Such a distribution of costs would seem to be more fair than imposing the costs on a few victims.

Underlying this third view of the duties of the manufacturer are the standard utilitarian assumptions about the value of efficiency. This view assumes that an efficient use of resources is so important for society that social costs should be allocated in whatever way will lead to a more efficient use and care of our resources. On this basis, the social costs view argues that a manufacturer should bear the social costs for injuries caused by defects in a product even when no negligence was involved and no contractual relationship existed between the manufacturer and user.

On the Edge

Selling Personalized Genetics Directly to Consumers

About 250 companies on the Internet now sell genetic tests directly to consumers. These companies include 23andMe, Navigenics, GenePlanet, Gene by Gene, DNA Tribes, Genelex, Genova Diagnostics, Sure Genomics, Suracell, African Ancestry.⁵⁰ The companies ask customers to collect a sample of their genetic DNA with a cheek swab and send it to them for testing. During testing, most companies put the customer's gene sample on a small flat "DNA microarray chip" that already contains pieces of DNA matching known genes (or gene mutations). If one of the customer's genes matches one of the pieces of DNA on the chip, it binds to the DNA fragment, which creates a tiny fluorescent glow showing that the gene indicated by the DNA fragment is in the sample. A computer then analyzes the pattern of glowing spots on the chip and prints out a list of the genes (or gene mutations) in the customer's sample. Scientists have discovered a few genes that are associated with specific diseases or personal characteristics. Studies found, for example, genes or gene mutations that are linked to cystic fibrosis, Tay Sachs disease, and Lou Gehrig's disease, genes that increase the risk of certain breast, colon, and thyroid cancers, and genes associated with sensation seeking, eye color, obesity, and lactose intolerance. They also found that some genes are more often found in people whose ancestors came from certain regions of the world. The gene-testing companies say that based on these studies and their own genetic research, they can give customers valuable personalized information (for a price, of course).

Critics say that some companies make claims that have little scientific validity. One company, Gene Planet, advertises on its website that it provides "an individually tailored diet and life-style plan based on a genetic analysis of each individual . . . based on the fact that each individual possesses a

specific genetic makeup and therefore each individual has specific nutritional needs." Another site promises: "Based upon . . . [genetic] analysis, Suracell recommends to each client a personalized regimen of nutraceuticals [vitamin supplements]." Thirty companies offer to identify people's ancestry based on their genetic profiles. One company, for example, states: "DNA Tribes . . . uses genetic material . . . to measure your genetic connections to individual ethnic groups and major world regions." Several companies offer paternity testing and "infidelity" tests, including a British company named "Who's the Daddy?" Thirty-eight companies claim they test for genes related to athletic performance, such as DNA Fit, which advertises that "we test your DNA for 20 key genes to help you truly understand your body, and how best to train for your genetics." For \$1,500 Map My Gene offers to test for 46 distinct talents and character traits such as optimism and shyness.

A couple of companies offer to test for compatibility between lovers. Instant Chemistry, Inc., for example, claims on its website that "scientific research has shown that relationship markers—a combination of genetics and psychology—strongly affect who we are attracted to and how successful our relationships are. . . . Complementary genes result in a higher level of physical attraction and a higher likelihood of a long-term stable relationship." Some companies, like Chemlaba, claim to do it all: "With a simple saliva sample we'll help you gain insight into your traits, from baldness to muscle performance. Discover risk factors for 95 diseases. Know your predicted response to drugs, from blood thinners to coffee. And uncover your ancestral origins." Critics claim, however, that with a few exceptions, most studies have shown only weak connections between genes and specific traits, disease risks, drug responses, nutritional or vitamin needs, talents, athletic performance, compatibility, or ancestral origins. Many studies that link specific genes to a disease are only preliminary, and the full picture has not yet been worked out, while other studies conclude that many traits are the result of complex and unclear interactions among many genes and the environment.

Moreover, critics say, it is wrong to tell customers their genes put them at risk of a deadly disease without proper counseling, especially when the scientific studies are weak and many other environmental, demographic, and lifestyle factors determine actual onset of a disease. Some critics argue that unexpected information about one's ancestry or paternity or susceptibility to a disease could have a profound and potentially harmful impact on a person. Ordinary consumers, critics conclude, are being sold a product that they do not have the expertise to interpret. However, defenders of the tests say consumers have a right to know what genes they carry and what science has learned about those genes. Besides, some companies claim, much of the information they provide is something that "is fun" to know and can have little if any harmful consequences. The companies charge as little as \$150 to test for two or three genes, and perhaps \$1,500 to test for a full suite of genes.

WRITING PROMPT

Evaluate the Ethics of Do-It-Yourself Genetic Testing

1. Evaluate the ethics of selling gene tests directly to consumers like these genetic-testing companies are doing. What would each of the three views of a business's duties to consumers say about what the companies are doing? Under what conditions do you think selling the tests would be ethically legitimate, and why?
2. Check out the video of the U.S. Government Accountability Office's undercover interviews with salespeople at direct-to-consumer genetic-testing companies at <http://www.gao.gov/products/gao-10-847t>. Evaluate the selling practices shown in the video.

The response entered here will appear in the performance dashboard and can be viewed by your instructor.

Submit

6.5.2: Criticisms and Defense of the Social Costs View

Arguments for and against the social costs view deserve much more discussion than we can give them here. The view is essentially an attempt to come to grips with the problem of allocating the costs of injuries between two morally innocent parties: the manufacturer who could not foresee or prevent a product-related injury and the consumer who could not guard against the injury because the hazard was unknown. This allocation problem will arise in any society that, like ours, has come to rely on technology whose effects do not become evident until years after the technology is introduced. Unfortunately, it is also a problem that may have no "fair" solution.

Defenders of the social costs view have replied that in reality, the costs of consumer liability suits are not large. Studies have shown that the number of liability suits filed in state courts has increased at a fairly low rate.⁵¹ Less than 1 percent of product-related injuries results in suits, and successful suits average payments of only a few thousand dollars.⁵² Defenders of the social costs view also point out that insurance companies and the insurance industry as a whole have remained quite profitable; they also claim that higher insurance costs are due to factors other than an increase in the amount of liability claims.⁵³

Quick Review 6.5

Criticisms of the Social Cost View

- It is unjust to manufacturers since compensatory justice says one should compensate injured parties only if the injury was foreseeable and preventable.

- It falsely assumes that the social cost view prevents accidents; instead, it encourages consumer carelessness by relieving them of responsibility for their injuries.
- It has increased the number of successful consumer lawsuits, which imposes heavy losses on insurance companies and makes insurance too expensive for many firms; however, studies show only a small increase in lawsuits, and insurance firms remain profitable.

6.6: Advertising Ethics

OBJECTIVE: Assess the ethical concerns associated with information and persuasion in advertising

The advertising industry is a massive business. Over \$189 billion was spent in 2015 on advertising in the United States, and \$592 billion worldwide.⁵⁴ In the United States, more than \$58 billion was spent on digital advertising alone and another \$28 billion on mobile Internet advertising.⁵⁵ There are over 6,000 advertising agencies in the United States, and many of them employ several thousand people.

Who pays for these advertising expenditures? In the end, advertising costs must be covered by the prices consumers pay for the goods they buy—the consumer pays. What do consumers get for their advertising dollar? According to most consumers, they get very little. Surveys have shown that 66 percent of consumers feel that advertising does not reduce prices, 65 percent believe it makes people buy things they should not buy, 54 percent feel advertisements insult their intelligence, and 63 percent feel advertisements do not present the truth.⁵⁶ However, defenders of the advertising industry see things differently.

Criticisms of the Social Costs View

Justice based in hindsight, concern for what really makes consumers safe, and burdens placed on the producer and insurers are three arguments against the social costs view.^{57, 58, 59}

Interactive

The Social Costs View Is Unjust

The major criticism of the social costs view of the manufacturer's duties is that it is unjust. It is unjust, critics charge, because it violates the basic canons of compensatory justice. Compensatory justice implies that a person should have to compensate an injured party only if the person could have foreseen and prevented the injury. By forcing manufacturers to pay for injuries they could neither foresee nor prevent, the social costs view (and the legal theory of "strict liability" that flows from it) treats manufacturers unjustly. Moreover, insofar as the social costs view encourages passing the costs of injuries on to all consumers (in the form of higher prices), consumers are also being treated unfairly since they had nothing to do with the injuries.

The Social Costs View Contains an Incorrect Assumption

The Social Costs View Places an Undue Burden

Advertising, they claim, "is, before all else, communication."⁶⁰ Its basic function is to provide consumers with information about the products available to them—a beneficial service.⁶¹

Is advertising a waste or a benefit? Does it harm consumers or help them?

6.6.1: Distinguishing Advertising from Other Communication

Commercial advertising is sometimes defined as a form of "information" and an advertiser as "one who gives information." The definition of *commercial advertising* implies that the principal function of advertising is to provide information to consumers. However, this

definition fails to distinguish advertisements from, say, articles in publications such as *Consumer Reports*, which compare, test, and objectively evaluate the durability, safety, defects, and usefulness of various products. One study found that more than half of all television ads contained no consumer information whatsoever about the advertised product and that only half of all magazine ads contained more than one informational cue.⁶² Consider how much information is conveyed by the following advertisements:

"Got Milk?" (America's Dairy Farmers and Milk Processors)

"Just do it" (Nike)

"Embrace your demons" (cinnamon-flavored Altoids)

"Think different" (Apple)

"Can you hear me now? Good." (Verizon)

“Have it your way” (Burger King)
 “Inside every woman is a glow just waiting to come out”
 (Dove soap)
 “It is, in the end, the simple idea that one plus one can,
 and must, equal more than two” (Chrysler cars)
 “I’m lovin’ it” (McDonald’s)
 “The United Colors of Benetton” (Benetton)
 “Before there was a Land Rover there was a dream” (Land
 Rover SUV)

Advertisements often do not include much objective information for the simple reason that their primary function is not that of providing unbiased information. The primary function of commercial advertisements, rather, is to sell a product to prospective buyers, and whatever information they happen to carry is subsidiary to this basic function and usually determined by it.

A more helpful way of characterizing commercial advertising is in terms of the buyer–seller relationship: commercial advertising can be defined as a certain kind of communication between a seller and potential buyers. It is distinguished from other forms of communication by the following two features:

1. Advertising is publicly addressed to a mass audience as distinct from a private message to a specific individual. Because of this public feature, advertising can have widespread social effects.
2. Advertising is intended to induce members of its audience to buy the seller’s products. An advertisement can succeed in this intent in two main ways:
 - a. By creating a desire for the seller’s product in consumers
 - b. By creating a belief in consumers that the product is a means of satisfying some desire the buyer already has

Discussion of the ethical aspects of advertising can be organized around the various features identified in this definition: its social effects, its creation of consumer desires, and its effects on consumer beliefs. We begin by discussing the social effects of advertising.

Quick Review 6.6

Characteristics of Advertising

- It is a public communication aimed at a large social group intended to induce members of this audience to buy the seller’s products.
- It succeeds by creating a desire for the seller’s product or a belief that a product will satisfy a preexisting desire.

6.6.2: The Social Effects of Advertising

Critics of advertising claim that it has several adverse effects on society: it degrades people’s tastes, it wastes

valuable resources, and it creates monopoly power. We examine these criticisms, one by one.

THE PSYCHOLOGICAL EFFECTS OF ADVERTISING A familiar criticism of advertising is that it debases the tastes of the public by presenting irritating and aesthetically unpleasant displays.⁶³ To be effective, advertisements must often be intrusive, strident, and repetitive. Therefore, so that they are understood by the most simple-minded person, advertisements are often boring, insipid, and insult the intelligence of viewers. In illustrating the use of toothpaste, mouthwashes, deodorants, and underwear, for example, advertisements sometimes employ images that many people find vulgar, offensive, disgusting, and tasteless. However, although these sorts of criticisms may be accurate, they do not seem to raise truly ethical issues. It is certainly unfortunate that advertisements do not measure up to our aesthetic norms, but this does not imply that they also violate our ethical norms.

More to the point is the criticism that advertising debases the tastes of consumers by gradually and subtly inculcating materialistic values and ideas about how happiness is achieved.⁶⁴ Because advertising necessarily emphasizes the consumption of material goods, people are led to forget the importance of their other, more basic needs and of other, more realistic ways of achieving self-fulfillment. As a result, personal efforts are diverted from “nonmaterialistic” aims and objectives, which are more likely to increase the happiness of people, and are instead channeled into expanded material consumption. Consumer advocate Mary Gardiner Jones once wrote, for example, that the message of any television advertisement has two basic premises:

- The first is that it is by acquiring things that we will “gratify our basic and inner needs and aspirations.” That is, all of our problems will be “instantly eliminated by the use of a product.”
- The second premise is that everyone is “externally motivated,” in the sense that we all want to emulate “our neighbors” or “popular successful individuals” and that personal success comes from having external things instead of being “the product of years of study and training.” Advertisements lead us to adopt this “essentially materialistic” message.⁶⁵

The difficulty with this kind of criticism, however, is that it is uncertain whether advertising actually has the large psychological effects the criticism attributes to it.⁶⁶ A person’s beliefs and attitudes are notoriously difficult to change without their willingness to accept the message being offered. Thus, the success of advertising may depend more on its appeal to the values consumers already possess than on its ability to instill new values. If this is so, then advertising does not so much create society’s values as reflect them.

On the Edge

Advertising Death to Kids?

Because they end up killing 4 million of their worldwide customers each year, tobacco companies like R.J. Reynolds have to keep recruiting new smokers.⁶⁷ Few people start smoking after they reach adulthood (88 percent of smokers start before they are 18), so new recruits have to come from the ranks of children. As an internal report by a cigarette company stated: "Today's teenager is tomorrow's potential regular customer, and the overwhelming majority of smokers first begin to smoke while still in their teens." So in spite of a 1998 legal settlement prohibiting cigarette promotions aimed at children, R.J. Reynolds (RJR) has run large multi-page ads promoting a "collaboration between Camel and independent artists and record labels" in *Rolling Stone* magazine whose readers include more than 1.5 million teenagers.

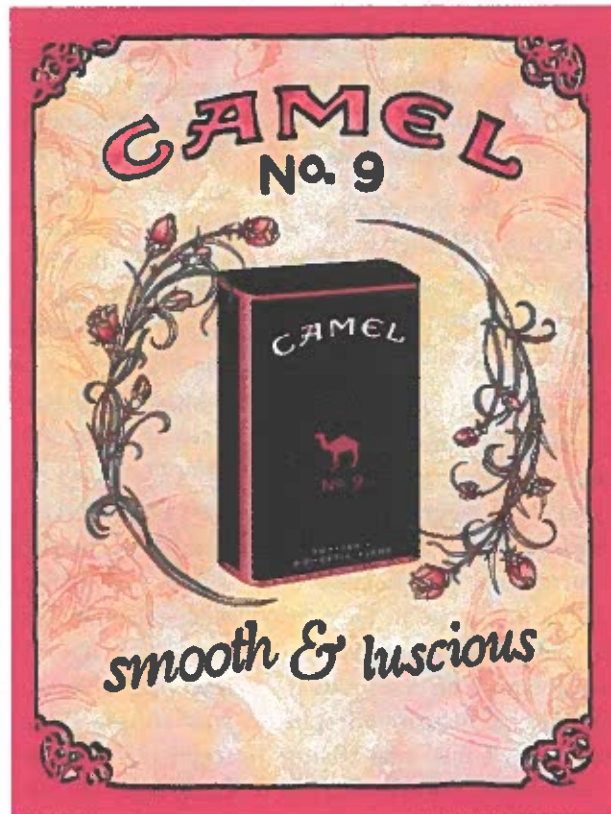
The tobacco ads featured cartoons of animals, monsters, aliens, and space ships and references to "an alternate dimension where everyone wears Black Converse." RJR has marketed Camel cigarettes flavored with tastes of cocoa, Asian mint, sweet apple, and toasted honey. An internal RJR memo suggested making "a cigarette which is obviously youth oriented . . . for example, a flavor which would be candy-like but give the satisfaction of a cigarette." RJR has also promoted a new product, "Camel No. 9," packaged in a pink wrapper, in women's magazines whose readers include a high percentage of young girls. The number of teen girls who now say Camel ads are their favorite ads has doubled since the promotion began.

RJR and the other cigarette companies also heavily advertise e-cigarettes, whose vapors contain formaldehyde, heavy metals, and nicotine. Several studies have shown that smoking e-cigarettes ultimately encourages users to begin smoking ordinary cigarettes. The legal restrictions on advertising of regular cigarettes

Did You Try Smoking as a Teenager?

Many of us tried cigarettes when we were younger; perhaps it was a one-time experiment or a few years' habit. Some of us have continued smoking. We may not have thought about it when we were 13, but tobacco companies were pitching cigarettes to us even then.

Interactive



RJR promoted this pink-colored Camel No. 9 cigarette box in magazines whose readers included a high percentage of young girls.

do not apply to e-cigarettes, which are advertised with the same marketing tactics earlier used to advertise ordinary cigarettes. The cigarette companies have developed e-cigarettes with flavors that are designed to appeal to youngsters. RJR, for example, now sells crema-, chai-, berry-, and mint-flavored e-cigarettes.

The tobacco companies are spending more money (now a record 90 percent of the \$12.5 billion they spend on tobacco promotions) advertising in retail stores and other places where their ads will be visible to children, placing them at children's eye level or next to candy shelves. At least once a week, most teens (75 percent) visit retail stores, 80 percent of which post tobacco ads inside, and 60 percent of which post tobacco ads outside. Advertisements for those cigarette brands most popular with children reach 80 percent of children an average of 17 times a year. According to the U.S. Surgeon General, cigarettes are known to injure nearly every bodily organ by inducing deadly cancerous tumors inside the mouth, lungs, throat, larynx, esophagus, bladder, stomach, cervix, kidney, and pancreas, and by causing emphysema and heart attacks. Joe Tye, an industry critic, argues that cigarette advertisements are the most deceptive of all advertisements because they use "images of independence" to promote products that cause "profound dependence," images of "health and vitality" to promote products that cause "disease and suffering," and images of "life" to promote products that bring "death." Numerous studies show banning cigarette ads would

significantly reduce teen smoking. However, tobacco companies oppose ad restrictions. They argue that ad restrictions violate free speech; that cigarette ads are not deceptive and smokers know the risks which are on every pack and ad; that people have a right to smoke and to have information about cigarette brands; that cigarette ads do not make people start smoking or smoke more but only keep smokers from changing brand; and that cigarette ads do not intentionally target children.

WRITING PROMPT

The Ethical Duties of Manufacturing and R.J. Reynolds

1. What, if any, are the ethical reasons why RJR should change its promotions and what, if any, changes should it make? Are any of the arguments tobacco companies make in their defense legitimate? Explain.
2. What would each of the three views of a manufacturer's duties to consumers imply about RJR's cigarette promotions?

The response entered here will appear in the performance dashboard and can be viewed by your instructor.

Submit

ADVERTISING AND WASTE A second major criticism brought against advertising is that it is wasteful, and thus it violates utilitarian principles.⁶⁸ Economists sometimes distinguish between production costs and selling costs.

- *Production costs* are the costs of the resources consumed in producing or improving a product.
- *Selling costs* are the additional costs of resources that do not go into changing the product but are invested instead in getting people to buy the product.

The costs of resources consumed by advertising, critics claim, are essentially "selling costs": they are not used to improve the product, but to merely persuade people to buy it. The resources consumed by advertisements do not add anything to the utility of the product.

Substantial uncertainty surrounds the question of whether advertising is responsible for a rise in the total consumption of goods.⁶⁹ Studies have shown that advertising frequently fails to stimulate consumption of a product, and consumption in many industries has increased despite minimal advertising expenditures. Thus, advertising appears to be effective for individual companies not because it expands consumption, but only because it shifts consumption away from one product to another. If this is true, then economists are correct when they claim that, beyond the level needed to impart information, advertising becomes a waste of resources because it does nothing more than shift demand from one firm to another.⁷⁰

Moreover, even if advertising were an effective spur to consumption, many authors have argued, this is not necessarily a blessing. E. F. Schumacher, Herman E. Daly, and other economists have claimed that the most pressing social need at present is finding ways to *decrease* consumption.⁷¹ Increasing consumption has led to a rapid industrial expansion that has polluted much of the natural environment and has rapidly depleted our nonrenewable resources. Unless we limit consumption, we will soon outrun the finite natural resources our planet possesses with disastrous consequences for us all. If this is so, then the claim that advertising induces ever higher levels of consumption is not in its favor.

ADVERTISING AND MARKET POWER For many decades, Nicholas Kaldor and others have claimed that the massive advertising campaigns of modern manufacturers enable them to achieve and maintain monopoly (or oligopoly) power over their markets.⁷² Monopolies, as we have seen, lead to higher consumer prices. Kaldor's argument was simple. Large manufacturers have the financial resources to mount massive and expensive advertising campaigns to introduce their products. These campaigns create in consumers a "loyalty" to the brand name of the manufacturer, giving the manufacturer control of a major portion of the market. Small firms are then unable to break into the market because they cannot finance the expensive advertising campaigns that would be required to get consumers to switch their brand loyalties. As a result, a few

Do Advertisements Waste Resources or Add Utility?

Critics assert that resources used in advertising are “wasted” because they are expended without adding to consumer utility in any way. Defenders of advertising counter that information brings utility and that advertising creates a beneficial rise in demand.^{73, 74, 75}

Interactive

Advertising Produces and Transmits Information

Defenders of advertising argue that advertising does in fact produce something: it produces and transmits information on the availability and the nature of products. Yet as many have pointed out, even in this respect, the information content of advertisements is minimal and could be transmitted by substantially less expensive means.

Advertising Serves to Produce a Rise in the Demand for All Products

large oligopoly firms emerge in control of consumer markets from which small firms are effectively barred. Advertising, then, is supposed to reduce competition and raise barriers to entry into markets.

However, is there a connection between advertising and market power? If advertising does raise costs for consumers by encouraging monopoly markets, there should be a statistical connection between the amount of advertising revenues spent by an industry and the degree of market concentration in that industry. The more concentrated and less competitive industries should exhibit high levels of advertising, whereas less concentrated and more competitive industries should exhibit correspondingly lower levels. Unfortunately, the statistical studies aimed at uncovering a connection between advertising intensity

and market concentration have been inconclusive.⁷⁶ Some concentrated industries (e.g., soaps, cigarettes, breakfast cereals) expend large amounts on advertising, but others (e.g., drugs, cosmetics) do not. Moreover, in at least some oligopoly industries (e.g., the auto industry), smaller firms spend more per unit on advertising than the large major firms. Whether advertising harms consumers by diminishing competition is an interesting but unsettled question.

The criticisms of advertising based on its social effects are inconclusive. They are inconclusive because it is unknown whether advertising has the capacity to produce the effects that the critics assume it has. To establish the case for or against advertising on the basis of its effects on society will require a great deal more research on the exact nature of the psychological and economic effects advertising has.

Quick Review 6.7**Criticisms of Advertising Based on Its Social Effects**

- It debases the tastes of the public; but this criticism is not a moral criticism.
- It inculcates materialistic values; but this criticism ignores the lack of evidence that advertisements can change people's values.
- Its costs are selling costs that, unlike production costs, do not add to the utility of products and so waste resources; but this criticism ignores how advertising can increase consumption, which is good; however, studies suggest advertising does not increase consumption and, anyway, increasing consumption is not necessarily good.
- It is used by big firms to create brand loyalties that let them become monopolies or oligopolies; however, this criticism ignores studies showing that monopoly or oligopoly firms do not advertise more than small firms.

6.6.3: Advertising and the Creation of Consumer Desires

John K. Galbraith and others have argued that advertising is manipulative: it is the creation of desires in consumers for the sole purpose of absorbing industrial output.⁷⁷ Galbraith distinguished two kinds of desires: those that have a “physical” basis, such as desires for food and shelter, and those that are “psychological in origin,” such as the individual’s desires for goods that “give him a sense of personal achievement, accord him a feeling of equality with his neighbors, direct his mind from thought, serve sexual aspiration, promise social acceptability, enhance his subjective feeling of health, contribute by conventional canons to personal beauty, or are otherwise psychologically rewarding.”⁷⁸ The physically based desires originate in the buyer and are relatively immune to being changed by persuasion. The psychological desires, however, are capable of being managed, controlled, and expanded by advertising. Because the demand created by physical needs is finite, producers soon produce enough to meet these needs. If production is to expand, therefore, producers must create new demand by manipulating the pliable psychological desires through advertising. Advertising is therefore used to create psychological desires for the sole purpose of “ensuring that people buy what is produced”—that is, to absorb the output of an expanding industrial system.

The effect of this management of demand through advertising is to shift the focus of decision in the purchase of goods from the consumer, where it is beyond control, to the firm, where it is subject to control.⁷⁹ Production is not molded to serve human desires; rather,

human desires are molded to serve the needs of production. If this view of Galbraith’s is correct, then advertising violates the individual’s right to choose: Advertising manipulates the consumer. The consumer is used merely as a means for advancing the ends and purposes of producers, and this diminishes the consumer’s capacity to freely choose.⁸⁰

It is not clear that Galbraith’s argument is correct. As we have already seen, the psychological effects of advertising are still unclear. Consequently, it is unclear whether psychological desires can be manipulated by advertising in the wholesale way that Galbraith’s argument assumes.⁸¹ Moreover, as F. A. von Hayek and others have pointed out, the “creation” of psychological wants did not originate with modern advertising.⁸² New wants have always been “created” by the invention of novel and attractive products (such as the first bow and arrow, the first painting, the first perfume), and such a creation of wants seems harmless enough.

However, although it is unclear whether advertising as a whole has the massive manipulative effects that Galbraith attributes to it, it is clear that some particular advertisements are at least intended to manipulate. They are intended to arouse in consumers a psychological desire for the product without consumers’ knowledge and without consumers being able to rationally weigh whether the product is in their own best interests. Advertisements that intentionally rely on “subliminal suggestion,” or that attempt to make consumers associate unreal sexual or social fulfillment with a product, fall into this class, as do advertisements that are aimed at children.

Suppa Corporation in Fallbrook, California, briefly tested candy advertisements printed on paper on which the word *buy* was written so it would register subconsciously, but could not be consciously perceived unless one specifically looked for it. Subsequent tests showed that the ads created more of a desire to buy candy than those printed on paper on which the word *no* appeared in a similar subliminal manner.⁸³ Manipulative ads aimed at children are exemplified by a criticism the National Advertising Division of the Council of Better Business Bureaus recently leveled at a Mattel, Inc. television commercial aimed at children, which mixed animation sequences with group shots of dolls. Children who are still learning to distinguish between fantasy and reality, the council felt, would not be given “an accurate depiction of the products” pictured in the advertisements.⁸⁴ The council also criticized a Walt Disney Music Co. advertisement of a limited-time offer that conveyed a “sense of urgency” that children might find “overwhelming.” Critics have also claimed that television shows of animated characters resembling toy dolls and figures that are advertised on the same show are, in effect, prolonged advertisements for these toys. The effect of such “half-hour

advertisements," they allege, is to manipulate vulnerable children by feeding them commercials under the guise of entertainment.⁸⁵ Moreover, such advertisement programs often contain high levels of violence because their cartoon superhero characters, such as "He-Man," "Rambo," "GI Joe," and "Transformers," are violent. Advertising that promotes toys modeled on violent characters or promotes military toys indirectly promotes aggression and violent behavior in children who are highly suggestible and easily manipulated, critics claim, and it is therefore unethical.⁸⁶ Advertisements of this sort are manipulative insofar as they circumvent conscious reasoning and seek to influence the consumer to do what the advertiser wants and not what is in the consumer's interests.⁸⁷ Specifically, they violate the consumer's right to be treated as a free and equal rational being.

Quick Review 6.8

Criticism of Advertising Based on Its Effects on Desires

- Galbraith claimed advertising creates psychological desires that, unlike physical desires, are pliable and unlimited.
- Psychological desires are created so firms can use consumers to absorb industrial output.
- Using consumers in this way treats people as means and not as ends and so is unethical.
- This criticism ignores studies that suggest advertising cannot create and manipulate desires; on the other hand, subliminal ads can manipulate desires, and children's desires can be manipulated.

6.6.4: Advertising and Its Deceptive Effects on Consumer Beliefs

The most common criticism of advertising concerns its effect on consumer beliefs. Because advertising is a form of communication, it can be as truthful or deceptive as any other form of communication. Most criticisms of advertising focus on the deceptive aspects of modern advertising.

Deceptive advertising can take several forms. An advertisement can misrepresent the nature of the product by using deceptive mock-ups, using untrue paid testimonials, inserting the word *guarantee* where nothing is guaranteed, quoting misleading prices, failing to disclose defects in a product, misleadingly disparaging a competitor's goods, or simulating well-known brand names. Some deceptive forms of advertising involve more complex schemes. For example, bait advertisements announce the sale of goods that later prove not to be available or to be defective. Once consumers are lured into the store, they are pressured to purchase another, more expensive item.

A long ethical tradition has consistently condemned deception in advertising on the grounds that it violates

consumers' rights to choose for themselves (a Kantian argument) and on the grounds that it generates a public distrust of advertising that diminishes the utility of this form and even of other forms of communication (a utilitarian argument).⁸⁸ The central problem, then, is not understanding why deceptive advertising is wrong, but understanding at what point it becomes deceptive and, therefore, unethical.

The moral issues raised by advertising are complex and involve several still unsolved problems. Table 6.1 summarizes the main factors that should be taken into consideration when determining the ethical nature of a given advertisement.

Quick Review 6.9

Deceptive Advertising Requires . . .

- An author who (unethically) intends to make the audience believe what he or she knows is false by means of an intentional act or utterance
- Media or intermediaries who communicate the false message of the advertisement and so are also responsible for its deceptive effects
- An audience who is vulnerable to the deception and who lacks the capacity to recognize the deceptive nature of the advertisement

6.7: Consumer Privacy

OBJECTIVE: Outline ethical and unethical business practices as they relate to the consumer's right to privacy

Advances in computer-processing power, database software, and communication technologies have given us the power to collect, manipulate, and disseminate personal information about consumers on an unprecedented scale. This new power over the collection, manipulation, and dissemination of personal information has enabled mass invasions of the privacy of consumers and has created the potential for significant harm arising from the spread of mistaken or false information.

Ethical Application

British Intelligence and the U.S. Medical Information Bureau

In Great Britain, companies register with the government the kind of information they will collect from consumers. A pair of British investigators reported that businesses were collecting highly detailed and very personal information about their

customers. For example, the Midland Bank was given approval to collect information about the sex lives of customers who were applying for insurance; another company was cleared to collect and store sexual and political information about any of its customers. In other instances, a retailer, W.H. Smith, had permission to collect sexual data for "personnel and employee administration"; a leisure company, Grand Metropolitan, could store similar information for use by its corporate lawyers; and BT was approved to collect information about political party affiliation "as a reference tool."⁸⁹

In the United States, fairly complete files on the medical history of consumers is maintained by the Medical Information

Bureau (MIB), a company founded in 1902 to provide insurance companies with information about the health of individuals applying for life insurance to detect fraudulent applications. The MIB currently has medical histories on about 15 million people. Information is collected from the forms consumers fill out when applying for life insurance, the applicant's physician, hospitals, employment records, the Department of Motor Vehicles (DMV), and even interviews with employers or friends. However, information in these files is sometimes inaccurate. One individual was erroneously reported to have AIDS and to be gay, whereas another was wrongly reported to be an alcoholic.⁹⁰

Three Elements of Communication: Participation in Deception

All communication involves three elements:

The author(s) who originates the communication

The medium that carries the communication

The audience who receives the communication.

Because advertising is a form of communication, ethical problems related to deception can be organized around these three elements of communication.

The Author's Role in Deception

Deception involves three necessary conditions in the author of a communication:

1. The author must intend to have the audience believe something false.
2. The author must know it is false.
3. The author must intentionally utter or do something that leads the audience to believe the falsehood.

These conditions indicate that the deliberate intent to have an audience believe something false by merely implying it is already a deception. They also indicate, however, that the advertiser cannot be held morally responsible for misinterpretations of an advertisement when these are the unintended and unforeseen results of unreasonable carelessness on the part of the audience. The "author" of an advertisement should be taken to include not only the heads of an advertising agency but also the persons who create advertising copy and those who "endorse" a product. By offering their positive cooperation in the making of an advertisement, they become morally responsible for its deceptive effects as long as they knew what they were doing and could have opted out of doing it.

Table 6.1 Evaluating an Advertisement for Ethics

Three main factors should be considered when evaluating the ethics of an advertisement: social effects, effects on desire, and effects on belief. This table presents the main factors and the types of questions associated with them.

Interactive

Main Factor	Associated Questions
Social effects	What does the advertiser intend the effect of the advertisement to be? What are the actual effects of the advertisement on individuals and on society as a whole?
Effects on desire	Does the advertisement inform or does it also seek to persuade? If it is persuasive, does it attempt to create an irrational and possibly injurious desire?
Effects on belief	Is the content of the advertisement truthful? Does the advertisement have a tendency to mislead those to whom it is directed?

Check Your Understanding

The most complete files on consumers are those maintained by credit bureaus. Credit bureaus provide credit reports about specific individuals to banks, retailers, employers, and other businesses who ask for information about specific customers. These credit reports include information about a person's credit card accounts, mortgages, bank loans, student loans, history of payments on these with special notes on late payments, foreclosures, bankruptcies, details about loan amounts, nonpayment of property taxes, personal or property liens, divorce proceedings, marriage licenses, driver licenses, civil lawsuits, present and past employers, present and previous addresses, and other personal information compiled from various sources. Currently, three main bureaus—Experian (formerly TRW), Equifax, and TransUnion LLC—compile information on about 150 million consumers. Every day

fresh credit data come into each bureau that must be entered into the appropriate files. Equifax has estimated that its staff must input some 65 million updates each day. Not surprisingly, a study by *Consumer Reports* found errors in 43 percent of the reports they analyzed.⁹¹ These errors can result in a person being refused a loan, credit card, or job. Beyond the problems created by errors in the data files maintained on them, consumers worry that the detailed information that credit bureaus compile will be given to inappropriate parties. For example, until a few years ago, credit bureaus would sell names from their files to junk mailers. The potential for invading consumers' privacy is clearly quite high. To discuss this issue, however, it is important to have a clearer idea about what privacy is and why consumers and others have a right to privacy.

6.7.1: Defining the Right to Privacy

Speaking broadly, the right to privacy is the right to be left alone. We do not discuss this broad characterization of the right to privacy, however, but concentrate on privacy as the right of individuals not to have others spy on their private life. In this more narrow sense, the *right to privacy* can be defined as the right of persons to determine what, to whom, and how much information about themselves will be disclosed to other parties.⁹²

The purpose of rights is to enable individuals to pursue their significant interests and to protect these interests from the intrusions of other individuals. To say that persons have a moral right to something is to say at least that they have a substantial interest in that “something.” To claim that people have a right to privacy, therefore,

implies that people have a substantial interest in privacy and see it as so important that it should be protected by giving it the status of a right.

Quick Review 6.10

The Value of Privacy

- It protects individuals from disclosures that can shame, can encourage interference in one’s private life, hurt loved ones, and lead to self-incrimination.
- It enables the intimacy that develops personal relationships, the trust and confidentiality that underlies client-professional relationships, the ability to maintain distinct social roles, and the ability to determine how others will see us.

Psychological and Physical Privacy

There are two basic types of privacy: psychological and physical.⁹³

Interactive

Start Over

Swap

0/2 REVIEWED · 0 MASTERED

Psychological privacy

Previous

Next

Got it!

Valuable Functions of Privacy

Why is our interest in privacy considered important enough to surround it with the protection of a right? Privacy is important because it has several protective and enabling functions.⁹⁴

Interactive

Protective Functions

Enabling Functions

Privacy has the following protective functions:

1. Privacy ensures that others do not acquire information about us that, if revealed, would expose us to shame, ridicule, embarrassment, blackmail, or other harm.
2. Privacy also prevents others from interfering in our plans simply because they do not hold the same values we hold. Our private plans may involve activities that, although harming no one, might be viewed with distaste by other people. Privacy protects us against their intrusions and thereby allows us the freedom to behave in unconventional ways.
3. Privacy protects those whom we love from being injured by having their beliefs about us shaken. There may be things about ourselves that, if revealed, might hurt those whom we love. Privacy ensures that such matters are not made public.
4. Privacy also protects individuals from being led to incriminate themselves. By protecting their privacy, people are protected against involuntarily harming their own reputations.

6.7.2: Privacy within a Business Context

Clearly, our interest in privacy is important enough to recognize it as a right that all people have, including consumers. However, this right must be balanced against the rights and legitimate needs of others. For example, if banks are to provide loans to individuals, they need to know something about the credit history of those individuals and how diligent they have been in repaying previous loans. Consumers ultimately benefit from such a banking system. Insurance companies that provide life insurance need to know whether an individual has any life-threatening

illnesses, and so they must have access to the individual's medical information. Consumers benefit from having life insurance available to them. Thus, businesses can provide significant consumer benefits, but they can provide those benefits only if agencies exist that can collect information about individuals and make that information available to those businesses. At the same time, consumers' rights to privacy have to be balanced with the legitimate needs of businesses. Several considerations have been suggested as key to balancing legitimate business needs with the right to privacy: purpose; relevance; informing, consent; accuracy; and security, recipients, and uses. See Table 6.2 for details on each of these considerations.

Table 6.2 Business Efforts to Respect the Right to Privacy

Consideration	Description
Purpose	The purpose for which information about specific consumers is collected must be a legitimate business need. In this context, a purpose is legitimate if it results in benefits that are generally enjoyed by the people about whom the information is being collected. Consumers benefit, for example, if banks are generally willing to extend loans, insurers are generally willing to insure them, and credit card companies are generally willing to provide credit. This point does not mean that a specific individual will benefit from having personal information available to, say, a bank, because the bank may refuse to give that specific person a loan on the basis of the person's credit record. It merely means that consumers benefit generally from having a banking system (or credit card or insurance system) available that is willing to provide loans, and such a system requires a mechanism for collecting information on its potential customers.
Relevance	Databases containing information on consumers should include only information that is directly relevant to the purpose for which the database is being compiled. Thus, credit information provided to banks or credit card issuing agencies should not include information about sexual orientation, political affiliations, medical history, or other information not directly relevant to determining an individual's creditworthiness.
Informing	Entities collecting information on consumers should inform consumers that the information is being collected and inform them about the purpose for which the information is being collected. Doing so enables consumers to voluntarily choose not to engage in those transactions that will result in revealing information about themselves that they do not want to reveal.
Consent	A business should collect information about an individual only if that individual has explicitly or implicitly consented to provide that information to that business and only if the information is to be used for the purpose for which the individual consented to have it used. Consent may be explicit, such as when a person provides information on a credit card application. However, consent may be implicit, such as when a person makes a purchase with a credit card knowing that a record of that purchase will be kept by the company issuing the credit card and the record will be collected by a credit bureau. In the latter case, the very act of using the credit card constitutes acceptance of the conditions the credit card company imposes on use of the card, particularly if the credit card company has explicitly advised the consumer that such information will be collected and reported to a credit bureau.
Accuracy	Agencies collecting information on a person must take reasonable steps to ensure that the information they store is accurate and that any inaccuracies called to their attention are corrected. Toward this end, agencies should allow individuals to see what information they have collected on them and allow them to bring inaccuracies to their attention.
Security, recipients, and uses	Agencies that collect information on specific individuals must ensure that information is secure and not revealed to parties that the individual has not explicitly or implicitly consented to be a recipient of that information or used in ways to which the consumer did not consent. If an individual provides information to one business so that the business can better serve that individual, it is wrong for that business to give or sell that information to another business without the individual's consent.

Web Resources

Readers who want to conduct online research on consumer issues might begin by turning to the websites of the following organizations: the National Safety Council (<http://www.nsc.org>), the Consumer Product Safety Commission (<http://www.cpsc.gov>), and the Federal Trade Commission (<http://www.ftc.gov>). Articles on consumer law can be found at Nolo Press (<http://www.nolo.com>) and *Consumer World* (<http://www.consumerworld.org>). Statistics on consumer injuries can be found at Fatality Analysis Reporting system (<http://www.fars.nhtsa.dot.gov>), National Highway Traffic Safety Administration (<http://www.nhtsa.dot.gov>), FedStats (<https://fedstats.sites.usa.gov>), National Center for Health Statistics (<http://www.cdc.gov/nchs>), and Centers for Disease Control and Prevention "Injury Prevention & Control: Data & Statistics (WISQARS)" (<http://www.cdc.gov/injury/wisqars/index.html>)

view is most adequate, and why? Is one view more appropriate than the others in certain marketing areas? Explain and give examples.

- Who should decide (a) how much information should be provided by manufacturers, (b) how good products should be, and (c) how truthful advertisements should be? The government? Manufacturers? Consumer groups? The free market? Explain your views.
- Carefully examine two or more current advertisements taken from newspapers or magazines and assess the extent to which they meet what you would consider adequate ethical standards for advertising. Be prepared to defend your standards.

▶ A minimum number of characters is required to post and earn points. After posting, your response can be viewed by your class and instructor, and you can participate in the class discussion.

Submit

0 characters | 140 minimum

SHARED WRITING

The Ethics of Consumer Production and Marketing

- Discuss the arguments for and against the three main views of the manufacturer's duties to consumers. In your judgment, which

Case Study 6.1: Promoting Infant Formula in the Twenty-First Century

In July 2015 the United Nations Children's Fund (UNICEF) posted an update on its website stating that in the developing world the deaths of more than 800,000 children under five could be prevented if mothers there would breastfeed their babies instead of trying to feed them on infant formula.¹ Babies that were exclusively breastfed in the first six months of their lives, the update also said, were 14 times less likely to die than those who were not breastfed, and were significantly less likely to die from an acute respiratory infection or diarrhea, the two major killers of children. The benefits of breastfeeding were particularly significant in "developing country situations" where diseases were rampant and access to clean water and sanitation were limited.

The "developing country situations" mentioned in the UNICEF statement include several developing countries in which the aggressive marketing practices of companies that manufactured infant formula had led millions of women to abandon breastfeeding in favor of feeding their babies the infant formulas promoted by the companies. The global infant formula market is lucrative; it was estimated to be about \$45 billion in 2014 and was expected to grow to more than \$70 billion by 2019.² A report issued in 2013 by nongovernmental organization (NGO) Save the Children noted:

[T]he marketing activities of some manufacturers has led to infant formula being used unnecessarily and improperly, ultimately putting children at risk. In 1981, the World Health Assembly adopted a set of standards known as the International Code of Marketing of Breast-milk Substitutes. . . . "The Code" regulates marketing tactics that can undermine breastfeeding, including advertising, free samples, targeting mothers and health claims on packaging. . . . [T]here continue to be too many examples of violations of the Code by some breast-milk substitute companies. Among the most worrying violations is the alleged targeting of health workers with encouragement to promote the companies' products to mothers of young infants.³

The marketing code that had been adopted by the United Nations World Health Assembly in 1981 had been a milestone in a long battle to get the companies that manufacture infant formula to stop promoting their formulas in developing countries where use of the formulas created significant risks for newborns. That battle, which continues to the present day, had begun more than a decade earlier.

Development of the Infant Formula Market

Infant formulas are manufactured substitutes for breast milk. The first commercial infant formula, called "Liebig's Soluble food for Babies," was developed by Justus von Liebig in 1867 to help mothers who could not nurse their babies and who until then had to rely on homemade brews of fresh cow's milk, cream diluted with water, condensed milk, or mixtures of these combined with corn, flour, or rice.⁴ Over the years, other companies began to

offer their own infant formulas, and many made important improvements to the formulas, such as adding vitamin C to prevent scurvy and vitamin D to prevent rickets.

By the 1970s, 75 percent of all American babies were being fed infant formula, and two kinds of companies were producing and marketing the formulas: drug companies and food companies.⁵

- The main American drug companies producing infant formula—Bristol-Myers and Abbott Laboratories—tended to emphasize dietary research in the development of their formulas and tended to market their formulas through medical channels: physicians, nurses, hospitals, clinics, professional health journals, pharmacies, and medical detail staff.
- The food companies—Nestlé, a Swiss company, and Borden's and American Home Products, both U.S. companies—entered the infant formula business as a way of diversifying the condensed milk products they were already producing and they tended to market their product through conventional consumer-oriented mass advertising and distribute the formulas along with their other food products.

Birth rates during the 1970s in the United States and Europe were declining, and infant formula companies turned to marketing their products to the developing world where birth rates were still high. In addition, large numbers of people in the developing world were moving into cities and urban areas where they were accessible to modern mass-marketing techniques. In growing cities, married women often had to work outside the home and they too were looking for ways to feed their babies while they were at work.

All of these factors made the developing world an attractive market to the infant formula companies. Bristol-Myers pushed hard to extend the company's reach into the Caribbean, Central America, and the Philippines. Abbott Laboratories moved into Africa and Southeast Asia. American Home Products expanded into Southeast Asia, Latin America, and Africa. Borden's went into Latin America, the Caribbean, and Southeast Asia. Nestlé, which had emerged as the world's largest producer of infant formula, attempted to build up a significant presence in every national market.

As they moved into the developing world, the drug companies continued to rely heavily on medical channels and promoted their infant formulas through doctors, nurses, clinics, hospitals, and pharmacies. In particular, the drug companies provided hospitals with "mothercraft" nurses who dressed in white uniforms and who promoted and distributed samples of the formulas to new mothers along with advice on hygienic child care and feeding.

The food companies, on the other hand, tended to promote their products primarily through intensive mass-media advertising, including sound trucks, newspapers, television, radio, popular magazines, and billboards. Both types of companies, however, learned from each other, and each borrowed and used the marketing practices of the other.

Many medical personnel in the developing world were happy to see the appearance of the infant formulas. Prior to the introduction of the formulas, infants in the developing world were regularly weaned from breast-feeding with rice water, sweetened

cow's milk, sweetened condensed milk, and other supplemental foods. The formulas provided a healthier and preferable method of weaning. Moreover, undernourished or sickly mothers had not had a readily available and healthy alternative to supplement their breast milk until the formulas appeared. As well, working mothers could turn to the formulas when work outside the house made it impossible for them to breast-feed their babies. The powdered formulas were especially attractive in tropical regions, since they could be stored without refrigeration.

Concerns in Developing Countries

As the infant formula manufacturers expanded their marketing into the developing world, health officials began to voice concern that the incidence of malnutrition and diarrhea was rising among babies in developing countries due to an increasing reliance on the formulas and a concomitant decline of breast-feeding. In a series of studies, Dr. Derrick B. Jelliffe and other experts on infant nutrition concluded that the trend toward infant formulas was dangerous and that breast milk was the only ideal food for growing infants because it contains both the nutrients essential to a child's health and the antibodies that protect the child against disease.⁶ Moreover, they claimed, using the powdered formulas safely required amenities women in developing countries often did not have.

If a mother is unable to nurse her child, Jelliffe and others argued, then commercial formulas would provide a safe substitute only if they were used under sanitary conditions and according to the instructions provided with the formulas. In the developing countries, they pointed out, these conditions were often absent. Hygiene was lacking, sterilization procedures might be difficult to employ, drinking water was often contaminated, and many mothers were illiterate and so unable to read written instructions. The poor economic conditions of most developing countries also led impoverished mothers to dilute the powdered formulas to make them last longer, leaving the baby undernourished. Dr. Jelliffe summarized these and other dangers related to the use of infant formulas in the developing world:

We know that infant mortality is rapidly increasing in the developing world. We also know that breast-feeding is decreasing throughout the developing world, while sales of infant formula are increasing by leaps and bounds. There is alarming evidence that the sale of infant formula is leading directly to the infant deaths, and that the formula industry's promotional practices are primarily to blame. Consider how it happens: A poor mother with a new baby is gently urged by "mothercraft" or "milk" nurses at the hospital in which the baby was born, not to breast-feed her infant. Instead, she is told, she should adopt the modern, scientific infant feeding practice of bottle-feeding formula, the same kind of formula advertised on the radio and on billboards and flyers, with pictures of fat happy babies sitting beside cans of powdered formula—just the way all the better educated mothers do these days. Unaware that the "nurse" was being paid a commission to sell the formula, the mother takes her "expert advice," allows her breast milk to dry up and takes the baby home with free bottles and nipples and several cans of formula generously provided by the hospital. Alas, she is illiterate and cannot read the instructions that tell her to sterilize the

bottles, the nipples, and the water that she mixes with the formula. Even if she could read, how is she to carry out the sterilization procedures on her three-stone stove? But the water supply is contaminated, and soon the baby develops diarrhea. That lowers his ability to absorb nutrients from the formula. Then, of course, the formula given by the hospital rapidly runs out, and she finds that it is very expensive to buy. So she does not buy enough, and extends it with too much contaminated water. Now the infant has malnutrition added to his intestinal illness, and between them, he dies of malnutrition and dehydration. In order to make a profit on this hitherto untapped market, the infant formula industry, especially Nestlé S.A., has adopted deceptive hard-sell promotional practices (including undermining the mother's confidence in her ability to produce enough milk for her baby) that deliberately disrupt the new mother's breast-feeding in order to sell their product. That disruption was the cause of that child's death . . . by malnutrition.⁷

Dr. Jelliffe estimated that infant deaths in the developing world directly or indirectly attributable to the use of infant formula might be as high as 10 million per year. However, other experts estimated that infant deaths attributable to the use of infant formula numbered about 1.5 million babies a year.

Organizing to Address Issues and Marketing Practices

In 1974, War on Want, one of several NGOs that had begun to address the issue, published a pamphlet entitled *The Baby Killer*, which drew attention to the activities of the infant formula companies in the developing world. Several of the examples of how the companies were promoting their products involved Nestlé, which by now was the major distributor of infant formula. A year later, another NGO, the Third World Action Group, reprinted the pamphlet in Switzerland with the title *Nestlé Kills Babies!* Nestlé immediately sued the group for libel. Although Nestlé won the suit, the judge at the end of the trial publicly and strongly reprimanded Nestlé for its actions and imposed a token fine of 300 Swiss francs on the publishers of the pamphlet. But the public trial had attracted the attention of the media, and the issue was being publicized throughout the world.

Critics of the infant formula companies focused on two marketing practices of the companies:

1. Intensive consumer advertising that implied that the use of infant formula was nutritionally or socially superior to breast-feeding
2. Use of medical personnel (or people dressed like medical personnel) to endorse or promote the infant formulas directly to new mothers

Doug Clement, one of the founders of the Infant Formula Action Coalition (INFACT), an NGO addressing the issue, said in a public statement that during his own investigative travels through developing nations, he had seen how the companies promoted their formulas. In Thailand and Nigeria, he said, large advertisements of the formulas were plastered on the sides of trucks; in Barbados, Bristol-Meyers advertised its "Enfamil" on the back cover of the telephone book; in the Philippines, color posters on

the walls of hospital maternity wards showed healthy babies next to Nestlé's formulas. Infant formula ads made up about 14 percent of all radio ads in Kenya, 90 percent of which were for Nestlé's Lactogen. In Malaysia the companies hired "Mothercraft nurses" to work as sales people in clinics where they approached new mothers, talked about feeding their babies infant formula, and passed out samples to the mothers. Because they wore white uniforms, the mothers may have thought the Mothercraft nurses were medical personnel and so accepted their recommendations as the "modern, healthy and Western way to feed babies."⁸ Over time breast feeding came to be seen as an old and vulgar tradition, while bottle-feeding was accepted as a modern status symbol.

Many NGOs by now had become concerned with the issue and were demanding that the infant formula companies stop selling their formulas in regions where their use created risks for newborns. Others argued that advertisements and labels should state explicitly that breast-feeding was superior to using the formulas and that the formulas were not equivalent or comparable to mother's milk. To demonstrate that many companies failed to explain that using a formula was inferior to breast-feeding, another NGO, the Interfaith Center for Corporate Responsibility, reported that it had analyzed the labels on several cans of infant formula available in stores in Guatemala and that the labels read as follows when translated into English:⁹

SIMILAC—American Home Products

"There is no food equivalent that more closely resembles the milk of healthy well-fed mothers. SIMILAC With Iron, Similar to Mother's Milk."

WYETH S-26—American Home Products

"Nourishes the baby like the mother's breast. S-6: A superior food for the infant, offers the baby all the formula he wants, just as if you were giving him the breast."

NAN—Nestlé

"Maternal Lactation is the most adequate for the baby but in case of its total or partial absence, or if for other reasons it is necessary to replace or complement it, you can use NAN with total confidence, a powdered food quantitatively and qualitatively similar to mother's milk, for use right from the infant's birth."

Companies Respond

The infant formula companies responded in several ways to the criticisms. Some declared that women of developing nations should be allowed the same freedom of choice to use the formulas that women of developed nations had and it was wrong to deny them that freedom; others argued that the real problems were poverty, illiteracy, and contaminated water, and that they were not responsible for these factors.¹⁰ A spokesperson for Nestlé declared that the criticisms were an "attack on the free world's economic system" and that a "worldwide church organization, with the stated purpose of undermining the free enterprise system, is in the forefront of this activity."¹¹ Representatives of the drug companies claimed that withdrawing infant formulas from the developing world would create even greater problems for

those women who could not nurse their babies. For example, a spokesperson for Abbot Laboratories said:

[In cases] related to maternal disease, infant deformities, serious illness, prematurity and inadequacy of breast-milk . . . a formula may be necessary to complement or replace breast-milk if the child is to progress normally. . . . [Moreover,] women of low socioeconomic status in developing countries are often malnourished . . . they produce an at-risk newborn of low birth weight in up to 50 percent of the cases. . . . If fed solely at the breast low birth weight infants begin to exhibit signs of growth retardation, reduced activity and other symptoms of serious malnutrition at about three months. . . . The infant's poor state of malnutrition is associated with higher susceptibility to infection and disease. . . . Over time we believe it will become increasingly clear that a high-quality infant formula, closely patterned after breast-milk and fed with breast-milk may be nutritionally preferable for many infants.¹²

Another way the infant formula producers responded to their critics was by adopting codes of ethics that addressed the infant formula issue. For example, Nestlé and several food companies formed the International Council of Infant Food Industries (ICIFI) and pledged to adopt a code of marketing ethics. The code the member companies of the ICIFI adopted stated, in part, the following:

—Product information for the public will always recognize that breast-milk is the feeding of choice . . . Product labeling will affirm breast-feeding as the first choice for the nutrition of infants . . .

—Explicitly worded instructions and demonstrations for product use will be provided. . . . In cooperation with health authorities, professional communications and educational materials will be provided to caution against misuse . . .

—Individual contacts by mothercraft personnel and issuance of complimentary supplies of breast-milk substitutes will be in consultation with medical or nursing personnel. . . . Mothercraft personnel will support doctors . . . and will not discourage mothers from . . . breast-feeding.¹³

The ICIFI code, however, did not address how the companies should or should not promote their formulas to mothers, nor whether the formulas should be distributed, made available, and sold to mothers who might not be able to use them correctly.

Abbott Laboratories and the other drug companies did not believe that the ICIFI code adequately addressed what they claimed was the major problem: advertising the formulas directly to consumers. Abbott Laboratories developed its own code of ethics that stated, in part, the following:

- We believe that unsupervised, direct promotion of infant feeding products to mothers can unjustly impel them to make decisions concerning the care and nutrition of their babies for which they may lack adequate medical or nutritional knowledge. Therefore, we do not advertise our products through general circulation magazines, directories, newspapers, radio, television, billboards, and other public mass media.
- We do not encourage use of our products where private purchase would impose a financial hardship on the family, or where inadequate facilities for preparation constitute a hazard to infant health.

International Baby Food Action Network

In 1979, many of the NGOs campaigning against the infant formula companies had joined together to form the International Baby Food Action Network (IBFAN), a coalition of groups dedicated to protecting mothers and children from the risks associated with infant formulas. Once the 1981 International Code of Marketing of Breast-milk Substitutes had been adopted, IBFAN organized a network of 200 groups located in 196 countries to monitor whether the companies were abiding by the code.^{14, 15, 16, 17, 18, 19, 20}

Interactive

In 1988, IBFAN published the first of its *State of the Code by Country* reports, which detailed how the infant formula companies were implementing the 1981 code. The findings of the report were disappointing. The companies were not only continuing their intensive promotions of infant formula, but many were doing so in direct violation of the requirements of the code. Particularly troubling was that IBFAN's monitoring revealed that the companies were "flooding health facilities with free and low-cost supplies of their formulas." Also troubling was an announcement by the United Nations' World Health Assembly that it was concerned by "continuing decreasing breastfeeding trends in many countries." Nestlé, especially, seemed to be a repetitive violator of the code. So significant were the violations that IBFAN resumed the boycott of Nestlé in 1988.

1 of 4

Previous

Next

- If any contact with mothers is made . . . it must be with the explicit agreement of a health care professional. Samples are supplied only to professional health care personnel at their request. . . .
- Our product label and printed instructions, in addition to stressing the importance of breast-feeding, will emphasize the need for accurate, proper proportions in preparing the formula. Pictographs as well as the written word will be included in appropriate language.²¹

The Need to Move Further toward a Solution

Like the ICIFI code, the Abbott Laboratories code did not address the question of whether the formulas should be made available and sold to mothers unable to use them correctly. Abbott Laboratories, like the other infant formula companies, often distributed

its products through grocery stores and other retail outlets where they could be purchased by anyone. Although the drug companies also sold their products through pharmacies, in most developing countries anyone could purchase any pharmaceutical product without a prescription.

The codes did not satisfy the companies' critics. Thousands of babies, they said, were still dying every day because the drug companies continued to aggressively promote their formulas to women who were unknowingly putting their children's lives at risk. Consequently, in 1977 INFACT organized a worldwide boycott against all Nestlé products, charging them with marketing infant formula in the developing world in ways that were leading to the deaths of hundreds of thousands of babies. Dozens of NGOs around the world supported the boycott. Nestlé was a natural target for INFACT. With revenues of approximately \$10 billion in 1977, Nestlé had become the world's largest food-processing

Importance of Breast-Feeding and Risks Involved in Using Infant Formula

By 2016, medical research had firmly established the enormous health benefits of breast-feeding for babies in both rich and poor countries. It had also established the equally significant risks associated with using infant formulas, particularly during the first six months of a newborn's life.^{22, 23, 24, 25}

Interactive

Importance of Breast-Feeding

Newborns given breast milk in the first hour of their lives were up to three times more likely to survive than those breast-fed a day later; compared with babies that are exclusively breast-fed for the first six months of their lives. Babies who are not breast-fed are 15 times more likely to die from pneumonia and 11 times more likely to die of diarrhea. Babies who are not breast-fed at all are 14 times more likely to die compared with those who are exclusively breast-fed, while babies who are only partially breast-fed are 4 times more likely to die. Several studies have shown that breast-feeding a baby is associated (later in that child's life) with higher performance in intelligence tests, improved academic performance, increased long-term earnings and productivity, reduced obesity, and reduced incidence of diabetes. Studies have also shown that mothers who breast-feed have a significantly lower risk of breast cancer and ovarian cancer, and that current rates of breast-feeding prevent about 20,000 deaths from breast cancer each year.

Study on the Benefits of Breast-Feeding

Risks Involved in Using Infant Formula

company and sold more infant formula in countries around the world than any of the other infant formula companies.

The growing awareness of the issue prompted the United Nations to address the problem. In 1981, after working on the issue for many years, and after intense lobbying from numerous NGOs as well as the infant formula companies, the United Nations' World Health Assembly adopted the International Code of Marketing of Breast-milk Substitutes. A full 118 nations voted to adopt the code; only the United States voted against it. The code banned all direct promotion of breast-milk substitutes and set out requirements for labeling and marketing infant formulas by the infant formula companies. Specifically, the code stated that infant formula companies would not promote the formulas directly to the public, either in hospitals or stores; they would not give their formulas to mothers as free samples or gifts, nor provide them to maternity wards or hospitals for free or at subsidized or discounted prices; they would not give the formulas to health workers as gifts; any information about the formulas they provided to health workers

would be restricted to factual or scientific information and would not be misleading; they would not promote the formulas to health workers nor would their sales people make any direct contact with mothers; they would not promote any of their other drinks or foods as appropriate for babies; they would label their products with directions that were in a language mothers could understand and that provided clear health warnings; they would not idealize the formulas nor idealize the use of infant formula; they would not use pictures of babies on the labels of their products.²⁶

The code was voluntary, and initially only a few dozen nations passed legislation mandating the code. Nevertheless, most of the drug companies pledged to abide by the code. Although Nestlé at first refused to adopt the code, in January 1984, the company finally succumbed and agreed it would implement the code in developing countries. In response to Nestlé's agreement, INFACCT agreed to suspend the boycott, but vowed that they would continue to monitor whether the companies were abiding by the code.

Where We Are Today

By 2016, the ethics of promoting infant formulas was being questioned not just in developing countries, but in all countries.

WRITING PROMPT

Evaluate the Ethics of Infant Formula Marketing

1. How did the marketing strategies of food companies such as Nestlé differ from those of drug companies such as Abbot Laboratories? How did the code of the International Council of Infant Food Industries (ICIFI) fit the marketing strategies of the food companies, and how did the code developed by Abbot Laboratories fit the marketing strategies of the drug companies?
2. Assess whether it would be ethically right for the infant formula companies to withdraw their products totally from the developing world, basing your assessment on the probable costs and benefits of withdrawing, the way that withdrawal would impact the rights of stakeholders in the developing world, the justice of withdrawing, and the impact that withdrawal would have on the obligations of caring.

The response entered here will appear in the performance dashboard and can be viewed by your instructor.

Submit

Case Notes

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Case Study 6.2: Reducing Debt at Credit Solutions of America

Doug Van Arsdale began Credit Solutions of America (CSA) in 2003 in Richardson, Texas, with five employees.²⁷ Eventually, the company moved its headquarters to Dallas, grew to more than 1,000 employees in several states, and had tens of thousands of customers enrolled in its debt-reduction programs. Company

revenues in 2007 were \$77,354,088, double its 2006 revenues of \$40,333,517. When Van Arsdale founded CSA, he used his own funds and developed its programs, processes, and procedures on his own. In 2007, the company won the prestigious J.D. Power and Associates award for "An Outstanding Customer Service Experience." Why is it that such an outstanding company, so devoted to serving its customers, was sued by the attorney generals of eight states for customer fraud?²⁸

CSA was part of the "debt settlement" or "debt management" industry. Debt settlement companies help consumers who

have accumulated a large amount of debt and who are now unable to continue making monthly payments on their debt and who also cannot pay their debts off in full.²⁹ One option for such consumers is to file for personal bankruptcy in a federal court. Filing for personal bankruptcy stops all collection efforts by creditors and allows a judge to have the debtor's assets sold to pay off as much of his debt as possible, and then to issue a court order that eliminates any remaining debts. When a debtor reaches the point of bankruptcy, he or she will usually have little or no assets left, so creditors often get nothing. Bankruptcy, in effect, allows a person who has been overwhelmed by debt to have his or her debts forgiven and to start over with a clean slate. However, bankruptcy has some long-lasting serious consequences. The bankruptcy will stay on a person's credit report for 10 years, and during that time it will be almost impossible for the person to get a loan, get a credit card, buy a home, buy anything on credit (e.g., a car), and get life insurance. It will also make getting a job difficult. Because of these serious negative consequences, most debtors are reluctant to file for bankruptcy and will first try to find some other way to settle their debts. That is where debt settlement companies come in.

There are several categories of debt settlement companies:

- Some debt settlement companies provide traditional "credit counseling," which consists of showing their customers how to put together a budget and a plan for paying off their debts, and helping them work with creditors to reduce their interest rates or their penalty fees.
- Other debt settlement companies provide "debt consolidation loans," which provide the customer with a single loan that they use to pay off all their other debts. The loan allows repayment over several years so that each month's payment is low enough for the customer to afford.
- A third category of debt settlement companies provide "debt management," which consists of negotiating directly with the customer's creditors on behalf of the customer. They may try to convince the creditors to reduce the customer's monthly payments to an affordable level, usually by making the pay-off period longer but sometimes by forgiving part of the debt.

However, these options seemed inadequate to Van Arsdale. Before he founded CSA, he had spent nine months researching and studying the industry.³⁰ He discovered, he said, that there was a need for an "effective alternative to both bankruptcy and consumer credit counseling." The main problem, he said, was that "in our society, most customers with debt problems are treated poorly [and] I saw that consumers needed someone who was exclusively on their side." So he decided to establish a different kind of debt settlement company, one that would provide more vigorous help to consumers who were being swamped by their debt.

The Debt Settlement Business Model

CSA initiated a fourth category of debt settlement companies. This fourth category consisted of companies that engage in an aggressive kind of debt relief that tries to force creditors to reduce the customer's debt. Companies in this category work primarily with customers who have unsecured debt (i.e., debt that is not

backed by an asset such as a house, a car, or shares of stock) that the creditor can repossess if the customer cannot repay the debt. Since the main form of unsecured debt is credit card debt, most of CSA's customers had credit card debts that they could not repay and whose monthly payments they could no longer afford. A person was required to have had at least \$6,000 of unsecured debt to become a customer of CSA.

Debt settlement companies operate by suggesting to their customers that they stop making all monthly payments on their unsecured debts.³¹ CSA told its customers that although it could not legally advise them to stop paying their creditors, the CSA "program" would not work unless they stopped making payments. Customers were instructed to open a savings account and each month to deposit there the money they would have used to make their payments. They were also asked to agree to let CSA handle all contacts with their creditors from that point on. After several months of failing to make their regular payments, a customer's debts normally would go into default and the creditors would begin demanding their money, calling and writing letters trying to collect, and even threatening to sue. After a period of time, the debt settlement company, CSA, would contact the creditors and negotiate a substantial reduction of the loan, perhaps suggesting that if the loan is not reduced the creditor may not get any of their money back because the customer may file for bankruptcy.

Although creditors are unwilling to discuss reductions when they are getting their monthly payments, they are more open to doing so when they are not getting any money from the customer anyway—which is why this kind of debt management works only if customers stop making payments on their debts. In many cases, creditors at this point will agree to a settlement (i.e., agree to reduce the debt), perhaps by 30 percent, but very often by as much as 40 percent or even 60 percent, depending on the circumstances and the skills of the negotiator. This part of its program was a feature that Van Arsdale's company often advertised on its website:

Debt settlement specifically reduces your current outstanding total balances 40–60% . . . A typical settlement can be accomplished within 36 months or less with a lower monthly payment than any other debt resolutions option . . . More than 200,000 people from every walk of life have entrusted us to help them become debt free. Credit Solutions is the industry leader, managing more than \$2.25 billion of debt for our clients.³²

If the negotiations are successful, the customer's debt is reduced to a level he or she can manage but without the negative consequences of a bankruptcy. The customer uses the money he or she has been putting in a savings account to make a beginning lump-sum payment to the creditor and then usually gets back to making monthly payments. Often the reduced debt is low enough for the customer to pay off in a matter of months.

In return for its services, CSA charged a fee of 15 percent of the total debt the customer wanted reduced, and the customer paid this fee in three large payments made in the first three months and then in smaller monthly installments spread over the next 14 months. CSA took these monthly fees out of the savings account the customer opened when he or she first stopped paying creditors. CSA began drawing its fees out of the customer's

savings account at the beginning of the program, which was right when the customer would stop making monthly payments on his or her debts, but before the debts had defaulted and so before CSA was to begin to actively negotiate settlements. CSA did not start to negotiate with creditors until several months later when the creditors would be anxious to get at least some of their debt back, and the customer had saved up enough money to make the initial lump-sum payments creditors demand.

Marketing and the Use of CSA Services

Customers signed up with CSA by calling one of its salespeople. The company had twice as many people working on sales than people working to resolve its customers' credit problems. The company gave its salespeople a script to follow when talking to customers, although the company also advised salespeople: "We are NOT EXCLUSIVELY SCRIPTED! Formulate your own artillery of rebuttals! Don't be a robot! Be creative!"³³ The sales script asked salespeople to explain that CSA's debt settlement was better than debt consolidation or credit counseling and that debt settlement would "dramatically reduce your debt and get you out

in 3 years or less." If a customer were to ask, "Will I get sued?" the script suggested a response: "We want to reassure the client that there is nothing that can happen that we will not try to assist them with." If a customer were to ask, "What is this going to do to my credit?" the script suggested asking, "What's your current credit score?" which was designed to distract the customer from his or her own question since most consumers did not know their score. The salesperson might also say, "After you're out of the program, your score will be as good if not better than it is now." If the customer were to ask, "Can you guarantee that my creditors will settle with you?" the script suggested answering, "We guarantee our service fee because we know that your creditors will negotiate a settlement with us. (Let them know that we are currently building relationships with as many creditors as possible.) Some creditors actually set aside certain days of the week just to work with us. Notice, we do not say we 'don't guarantee,' but rather tell them what we can and do guarantee."

Van Arsdale felt that his company was able to provide help right when indebted consumers were at their lowest. "That's where we come into play and ultimately make a difference," he

Customer Experiences

Some CSA customers posted comments online about their experience with the company.³⁵

Interactive

One of CSA's satisfied customers posted a comment about her experience with CSA on *ConsumerAffairs.com*, a website that collects comments about debt settlement:

I lost my job . . . and joined Credit Solutions in June 2009 after trouble paying all my credit card bills. . . . The first six months of the program was the hardest. I was receiving creditor calls, letters, etc. since I [had] stopped paying my monthly credit card bills. . . . Then, after 6 months an offer came in from a credit card I owed over \$5K on . . . and I was able to settle my first account for less than half of what I actually owed. A few months later I paid off two more accounts . . . so I personally think it has been worth it. . . . Plus I have already saved twice as much as their total service fee . . . It is not easy, and yes your credit score will be destroyed, but in my situation, it seemed like the only way to get out of debt. Paying the rent and buying food for the kids seemed more important than my credit score at the time. —Tiffany of Orlando, FL Feb. 9, 2010

Customers' Accusations and CSA's Defense against Accusations

Examples of the different types of problems faced by customers and explanations of how CSA handled them are included below.^{37, 38, 39}

Interactive

Dissatisfied Customers Lodged Complaints with the Better Business Bureau

In the middle of 2010, the Better Business Bureau (BBB) noted on its website that it had received more than 1,400 complaints about CSA during the previous 36 months. According to its report on CSA posted on the BBB's website, "customers complain that paying the company fee and following the debt negotiation program does not reduce debt, as stated by company representatives. As a result of the program, customers complain, they have an increase in debt, due to late fees or additional interest and negative credit reporting."

1 of 5

Previous

Next

said.³⁴ Moreover, the company had even become a helpful resource for the creditors themselves. "Working with us on behalf of our mutual clients is very beneficial to them," he noted. "They save time and money that would have been spent on ineffective collection efforts."

The methods that CSA used to get creditors to reduce their customers' debts put considerable stress on the customers. When a customer stopped making his or her monthly payments, creditors started calling constantly, sending threatening letters, and adding "late fees" and other penalties to the debt. Later creditors may have turned the debt over to a collection agency, which was even more aggressive and harassing to the customer. Eventually, the customer could have been threatened with lawsuits, or the creditor would get a court order that allowed it to "garnish" (to take) part of the customer's wages. Also, the creditor would report the customer's failure to pay his or her debt to a credit agency so the customer's credit rating fell, which made it much more difficult for the customer to get credit in the future. In

the extreme, the creditor could have actually sued the customer. Nevertheless, although the process was traumatic, the final outcome had the potential to leave CSA's customers satisfied.

Complaints and Responses

A website called *Debt Consolidation Care* opened a forum entitled "Credit Solutions—Is it a scam company?" and quickly received over a hundred posts. Some were favorable to the company, such as that of the writer who had almost finished paying off his debts and who "had nothing but good things from them." However, most comments were negative, including one from a writer who signed up with Credit Solutions and then was harassed daily by debt collectors and threatened with lawsuits until "I was near suicidal."³⁸

Doug Van Arsdale, who remained CEO of CSA until 2012, said in a statement that CSA "subscribes to the highest ethical standards" and remained focused on its customers.⁴⁰ The company, he said, "treats them with respect and assists them with getting their lives back in order, regardless of their situation."⁴¹

WRITING PROMPT

The Ethics of CSA's Business Practices

1. What stakeholders were affected by CSA's business practices? Explain the ethics of CSA's activities by assessing how it treated those stakeholders.
2. Which complaints made against CSA by customers and others could have been the result of misunderstanding how CSA carries out its debt-reduction activities? Which complaints, if any, cannot be explained as the result of misunderstanding how CSA carries out its debt-reduction activities?
3. In your judgment, should it be illegal for companies to attempt to settle or reduce customers' debts in the way that CSA attempted to do?
4. Suppose that CSA charged no more than it was able to recover for its customers, up to a set maximum charge of, say, \$2,000. Would this change make its treatment of its customers ethical? Why or why not?

▶ The response entered here will appear in the performance dashboard and can be viewed by your instructor.

Submit

Case Notes

27. State of Texas v. CSA-Credit Solutions of America, Inc., Case No. D-1-GV-09-000417, Filed March 26, 2009, in the District Court of Travis County, Texas, 261st Judicial District, Plaintiff's Original Petition., p. 6; revenue data and information on Doug Van Arsdale is from "Credit Solutions," The American Business Awards, accessed November 4, 2016, http://www.stevieawards.com/pubs/awards/403_2591_19325.cfm.
28. "News 8 Finds CEO Sued for Deceiving Customers Back in Business," *WFAA.com*, August 10, 2016, <http://www.wfaa.com/news/local/investigates/news-8-finds-ceo-sued-for-deceiving-customers-back-in-business/293586107>.
29. "Facts for Consumers, Knee Deep in Debt," Federal Trade Commission, accessed January 13, 2011, <http://www.ftc.gov/bcp/edu/pubs/consumer/credit/cre19.shtm>.
30. All Van Arsdale quotations from "Ernst & Young's Entrepreneur of the Year Finalists," *D Magazine*, June 11, 2008 [From D CEO, July 2008], http://www.dmagazine.com/Home/2008/06/05/Ernst_Youngs_Entrepreneur_of_the_Year_Finalists.aspx?redirected=1.
31. State of Texas v. CSA-Credit Solutions of America, Inc., p. 2.
32. *Ibid.*, p. 7.
33. *Ibid.*, pp. 8–12.
34. Quotes are from "Ernst & Young's Entrepreneur of the Year Finalists."
35. "Credit Solutions of America," ConsumerAffairs.com, accessed November 4, 2016, http://www.consumeraffairs.com/debt_counsel/credit_solutions.html#ixzz0xejZbTyl.
36. See Debt Consolidation Care Forums, <http://www.debtconsolidationcare.com/settlement/credit-solutions-scam.html>.
37. "BBB Reliability Report for Credit Solutions," Better Business Bureau, accessed January 30, <http://www.bbb.org/dallas/business-reviews/debt-relief-services/credit-solutions-in-dallas-tx-90005445>.
38. David Streitfeld, "2 Firms Accused of Fraud in Debt Settlement," *New York Times*, May 19, 2009.
39. *Ibid.*
40. "Cuomo Targets Debt Settlement Companies," *CNYcentral.com*, May 8, 2009, accessed January 17, 2011, <http://www.cnycentral.com/news/story.aspx?list=190258&id=297298>.
41. Quote is from "Ernst & Young's Entrepreneur of the Year Finalists."

Summary

1. Consumers confront a wide array of problems, including dangerous products, deceptive selling practices, products that are poorly made, warranties that are not honored, deceptive advertising, and invasions of privacy. In some ways, the most serious of these is the problem of product safety. Some have argued that product safety should be left to the market since manufacturers will make safer products if consumers demand higher safety. However, these arguments wrongly assume that consumers are fully informed about products and capable of weighing risks rationally. Moreover, many consumer markets are monopolies or oligopolies that limit consumer choices. Since markets cannot be relied on to provide safety, businesses have an obligation to ensure their products are safe. There are three main views concerning the obligations businesses have to provide consumers with safe products: the contractual view, the due-care view, and the social costs view.
2. The contractual view assumes that the relationship between a business and its customers is a contractual one in which the business and its customers bargain as equals. The obligations of the business are to comply with all the express and implied claims the business makes about the reliability, service life, maintainability, and safety of its products. In addition, the business must not misrepresent the product and must not coerce its customers in any way. However, businesses have no obligation to provide any safety measures beyond those they explicitly claim their products have. The problem with the contractual view is that many of its key assumptions are mistaken. The maker of a product, for example, does not directly bargain or contract with consumers who buy the product from a retailer; moreover, both the maker and the retailer have much more expertise and knowledge about the product than consumers.