

PART 8 — *Exploding Technologies: 1914-1990s*

TECHNOLOGIES OF MASS-PRODUCTION

18 AND DESTRUCTION

1914 — 1990s

WHAT IS A TECHNOLOGICAL SYSTEM AND WHY IS IT IMPORTANT?

COMMENTARY

In many respects Part Eight — *Exploding Technologies* — may be seen as a continuation of, or perhaps a sequel to, the previous section on revolutionary social change. In terms of technological change, the 20th century, which is surveyed in the last section of the book, has been the most revolutionary era to date. This is true not only with respect to **technologies of mass destruction**, but also for those which have lengthened, enhanced, and improved human life, and, most recently for changes in **information and communications technologies** that have brought the regions of the world closer together and facilitated the dissemination of all forms of knowledge. The six chapters in this section spend much time examining both the opportunities and problems that this technological explosion presented to the world as a whole (Chapter 18) and to certain selected regions, specifically Russia and Japan (Chapter 19), China and Japan (20), the Middle East (21), Africa (22), and Latin America (23). But woven inextricably into this survey are the continuing and inter-related effects of the political and social revolutions that transformed the globe during the 18th and 19th centuries. These too — especially problems emanating from the political philosophies of mass democracy and nationalism and from population growth and migration — reached crisis proportions in the 20th century.

Chapter 18 — Technologies of Mass-Production and Destruction — confronts some of the most disastrous (or potentially so) consequences of the technological, political, and social revolutions that have shaped the modern world to date: the global **population explosion**, the cataclysmic **world wars** of the first half of the 20th century, the awesome growth of the power of the modern **nation-state**, the ideological confrontation of the **Cold War** and the specter of a **nuclear war**, and the destructive effects of modern technology on the world's **ecology**. It also examines the ongoing attempts at dealing with those problems through **international organizations**, such as the **League of Nations** (1919-1939), the **United Nations** (1945-), and various regional organizations, such as the **European Union**. It also demonstrates the unavoidable — and many times unanticipated — interconnectedness of global change. Both **World War I** and **World War II**, as the text points out, were caused, in part, by the imperialist ambitions of nation-states competing for territory and natural resources to feed their growing populations and fuel their expanding economies. They were facilitated by the ability of governments — through mass education and communication — to mobilize their populations to make enormous sacrifices on behalf of such abstract ideas as the nation or democracy or the purity of the race. They encouraged the development of technologies of industrialized mass murder such as the machine gun, poison gas, indiscriminate aerial bombing, atomic weapons and intercontinental ballistic missiles that have caused the deaths of over 100 million people during this century. And they necessitated the creation of the Leviathan of the 20th century state and the creation of technologies that pose a real threat to the continuance of life on earth. And, in spite of all the century's wars, the world's population has quadrupled since 1900 and is expected to double again within the next twenty-five years — the result, once again, of modern technologies: medical, agricultural and transportation, in this case. The chapter records these problems of 20th century civilization, as well as some of the intellectual discontent and reflection they have produced. But it also demonstrates how the problems of war, overpopulation, impersonal state structures, and environmental dangers have promoted attempts at regional and global international cooperation in dealing with the fallout from modern technology and converting it to the betterment of human society. A concluding section discusses the globalization phenomenon of the 1990s, its impact on different societies in the world, and the opportunities and challenges that it presents for humankind. In the end, it is left up to the reader to decide if, in fact, the 20th century did improve on others — as the Polish poet Wanda Szymborska doubted — or not.

CHAPTER OUTLINE

A. Technological Systems

1. Technology and technological systems: definitions
2. Technological transformations in the 20th century
 - a. Demographic shifts
 - i. Technology and population growth
 - ii. FOCUS: Genetic Engineering and the Human Genome Project
 - iii. Social and political consequences
 - b. Gender relations
 - c. Urbanization and migration
 - i. FOCUS: Cities and Crowds, Ants and Industry
 - ii. Counter-urbanization
 - d. Domestic change
 - e. Energy
 - i. O.P.E.C. and the geo-politics of oil supply
 - ii. Atomic energy

B. National Identity and World War

1. World War I: 1914-1918
 - a. Origins of the war
 - b. Trench warfare on the Western Front
 - c. The United States enters the war
 - d. New weapons: machine guns, tanks, poison gas
2. The Paris Peace Settlement of 1919
 - a. FOCUS: War Experiences Subvert Colonialism
 - b. The end of the Habsburg and Ottoman Empires
 - c. Germany: war guilt and reparations
 - d. The League of Nations
3. Economic depression and the expansion of the welfare state between the wars
 - a. Causes of the depression
 - b. Economic and political effects in Britain, the U.S.A. and Germany
4. World War II: 1939-1945
 - a. Origins of the war
 - i. Hitler and the Nazis in Germany
 - ii. Mussolini and Italian Fascism
 - iii. Japan and China
 - b. The war in Europe and Asia
 - c. Technology in the war
 - i. War production
 - ii. The mobilization of women
 - d. Horrors of war
 - i. The Holocaust
 - ii. The atomic bombs

C. The Image of Humanity

1. Mohandas Gandhi on technology and civilization
2. SOURCE: How Should We Live?
3. PROFILE: Charlie Chaplin
4. Picasso, Freud, and Yeats
5. Auschwitz and Hiroshima
6. SPOTLIGHT: Icons of War
7. Camus and existentialism

- D. The Leviathan State and the United Nations
 - 1. 20th century warfare and the Leviathan State
 - 2. Cold War: 1945-85
 - a. Origins of the Cold War
 - b. The arms race and the Cuban Missile Crisis of 1962
 - c. Vietnam and Afghanistan
 - d. Military-industrial complexes
 - e. The end of the Cold War
 - 3. The Cold War: How Do We Know?
- E. Decolonization and New Nations
 - 1. FOCUS: First World, Second World, Third World
 - 2. The United Nations today
 - a. U. N. peacekeeping missions
 - b. Ecological Issues
 - c. FOCUS: Ecology
- F. The Nation-State, International Organization and the Individual
 - 1. Regional international organizations
 - 2. Western Europe: the EU
 - 3. The United States
 - a. The civil-rights movement
 - b. The women s movement
 - c. The debate over the role of government in American life
- G. Globalization
 - 1. Globalization — a definition
 - 2. The global criminal economy
 - 3. The Internet and the World Wide Web
 - 4. Disparities, Disruptions and Crises of Identity
- H. Reading Contemporary History: What Difference Does It Make?

IDENTIFICATION TERMS

For each term, students should be able to provide an identification or definition, an approximate date, a geographical location (if relevant) and —most important —a concise explanation of its significance in the context of the chapter. Terms that appear in the *Study Guide* are listed in **bold** font in the first column.

UNICEF	Human Genome Project	New Deal
Total War	<i>The Feminine Mystique</i>	<i>Mein Kampf</i>
Third World	counterurbanization	Benito Mussolini
Elie Wiesel	ENIAC	Manchuria
Green Revolution	Chernobyl	Axis Powers
criminal economy	Serbia	Battle of Britain
European Union (EU)	Austro-Hungarian Empire	D-Day
Military-industrial complex	trench warfare	Rosie the Riveter
Fascism	<i>All Quiet on the Western Front</i>	Auschwitz
<i>Silent Spring</i>	Fourteen Points	ecology
Franklin D. Roosevelt	Paris Peace Settlement	Sigmund Freud
Barbara McClintock	mandates	Pablo Picasso
Hiroshima	reparations	existentialism
Cuban Missile Crisis	League of Nations	Pax Americana
Triple Alliance	Great Depression	<i>Sputnik</i>
NATO	EEC	OPEC
	globalization	

LEARNING OBJECTIVES

After reading and studying Chapter 18, students should be able to:

1. Understand the concept of a technological system and the benefits and dangers of technology. Explain the impact of new technologies on both warfare and peacetime pursuits.
2. Explain the consequences of the First World War, with particular reference to the Paris Peace Conference, the League of Nations, the demise of European empires, the Great Depression and the rise of Italian Fascism and Nazism.
3. Understand Adolf Hitler's ideology, as expressed in *Mein Kampf*; its origins in European nationalism, anti-Semitism and social Darwinism; and its consequences in the Holocaust, when combined with modern technologies of mass destruction.
4. Appreciate the impact of the two world wars upon Russia and the United States and their role on the world stage.
5. Understand the origins, course and consequences of the Cold War.
6. Appreciate the cultural and philosophical impact of 20th century warfare and modern technology on the world, as expressed in the *Image of Humanity* section of the chapter.

SUGGESTIONS FOR LECTURE TOPICS

1. Discuss the positive aspects of modern technology, with particular reference to solving some of the global demographic, environmental and health problems discussed in Chapters 16 through 18.
2. Introduce the concept of total war as an agent of social, political and cultural, as well as technological, change, focussing on such examples as changes in gender relations, the growth of the Leviathan State, the impact of the world wars on imperialism, and changes in human mentalities (psychology, philosophy, art, literature, etc.)
3. Discuss Italian Fascism and Hitler's Nazi movement as combined products of European nationalism, social Darwinism, mass democracy and imperialism, forged in the crucible of World War I and the Great Depression.
4. Discuss the two world wars, the Great Depression, the Cold War and the post-war energy, population and environmental crises as agents of the welfare state and big government.
5. Introduce and explain the concept of globalization with examples from the chapter.

TOPICS FOR ESSAYS OR CLASS DISCUSSIONS

1. Although millions of people have died as the result of 20th century wars, the world's population has grown enormously, especially in the so-called Third World. Explain the factors contributing to this increase, the reasons why governments' attempts to limit population growth have often been unsuccessful, and the measures that demographers have suggested to remedy the situation.
2. Current Events & issues: Discuss the responsibilities, accomplishments, and problems of the United Nations. How successful have its various agencies been in dealing with issues of international peacekeeping, economic development, and health and environmental issues? What factors have hindered its performance? Should the United States continue to support the United Nations?
3. The previous chapter referred to the two faces of nationalism. Discuss the specific examples of the negative face of nationalism that were described in the present chapter. How did nationalism contribute to the causes of the two world wars? To problems facing the world since 1945?
4. Some historians have argued that the First (1914-1918) and Second (1939-1945) World Wars were simply two stages of the same global conflict, separated by a twenty-year truce. How valid is that argument? Considering the issues that precipitated each war, in what respects were they part of the same struggle? In what way might World War I be seen as the major cause of World War II?
5. The two world wars brought about a number of cumulative changes in the governments and societies of their major participants. What were the most important of these changes, according to the text? How, exactly, were these changes a result of the wars?
6. Current events & issues: Why is Rachel Carson's *Silent Spring* regarded as one of the most important books of the 20th century? How did it call attention to global environmental issues? What are the most pressing ecological issues facing the world at this time?
7. Group work: Some of the century's most noted figures have leveled a blistering critique of the concepts of civilization and progress in light of the uses and misuses of technology since 1914. With specific reference to the works of Mohandas Gandhi, Sigmund Freud, William Butler Yeats, Elie Wiesel, Pablo Picasso, Albert Camus, Wanda Szymborska, and Mardhekar (pp. 600 and 615-621), discuss the main points of this critique.

8. Debate: Considering the photograph and eyewitness testimony of the atomic bombing of Hiroshima in 1945 (p. 600), was the use of atomic weapons on Japan by the United States in World War II justified? What arguments have been put forward in defense of this action? What criticisms have been made by subsequent commentators? Was the killing of several million defenseless Japanese and German civilians by British and American aerial bombing in World War II in any way comparable to the Nazis' destruction of several million defenseless Jews, as some commentators have argued it was?
9. Define globalization. What are some of its most significant aspects or examples in the 20th century, according to the text? How has modern technology contributed to globalization? What are some of its advantages? What are some of its dangerous side effects, according to the various authors mentioned in the text (pp. 635-638)?
10. Current events & issues: The Human Genome Project has the potential to become the most important scientific discovery of the 21st century. Is this a good thing — or does such technology do just as much to devalue life and diminish humanity as the technologies of industrialization, mass communication and mass destruction condemned by the people listed in question #7, above?

TEXT RESOURCES (Spodek, 2nd ed.)

Timetables, charts and graphs:	Europe and the United States, 1910s-1990s	(p. 596)
	World War II — Key Events	(p. 610)
	Defense expenditure	(p. 623)
	The United Nations	(p. 629)
Large photographs or illustrations:	Indian squatter settlement	(p. 598)
	Civil aviation	(p. 601)
	Before the silicon chip (the ENIAC computer, 1946)	(p. 602)
	Life in the trenches, World War I	(p. 605)
	Nazi Party rally, Nuremberg, 1934	(p. 612)
	Rosie the Riveter	(p. 613)
	The liberation of Belsen concentration camp, 1945	(p. 614)
	A-bomb devastation, Hiroshima, 1945	(p. 615)
	Bombers on a raid, 1945	(p. 622)
	A great step for mankind (Aldrin on the moon)	(p. 624)
Maps:	World War I	(p. 604)
	The new post-war nations (1920-1932)	(p. 608)
	World War II in Europe	(p. 611)
SPOTLIGHT:	Icons of War	(pp. 618-9)
FOCUS:	Genetic Engineering and the Human Genome Project	(p. 597)
	Cities and Crowds: Ants and Industry	(p. 600)
	War Experiences Subvert Colonialism	(p. 606)
	First World, Second World, Third World	(p. 627)
	Ecology	(pp. 629-30)
PROFILE:	Charlie Chaplin	(p. 617)
SOURCES:	Wisława Szymborska, How Should We Live?	(p. 616)

ADDITIONAL PRIMARY SOURCES (*Documents Set & www.prenhall.com/Spodek*)

18-1	The perversion of technology: was in No Man's Land [from Remarque, <i>All Quiet on the Western Front</i>]
18-2	Franklin D. Roosevelt's technological America: the dormant colossus
18-3	Lodz under Rumkowski: the enclave of death
18-4	Ulster: the ritual of hate
18-5	Anti-Communist idealist: Dr. Dooley in Indochina [Tom Dooley, <i>Deliver Us from Evil</i>]
18-6	The Nogradi Street incident; a prelude to the dismantling of Communism
www	The Superpower unleashed: America's ordeal in the Pacific

AUDIO-VISUAL RESOURCES (videos, CD-ROM, DVDs and websites)

***A-Bomb WWW Museum:* <http://www.csi.ad.jp/ABOMB/index-j.html> [website]**

This Japanese site is an online museum. It presents the story of the atomic bombs from the Japanese perspective and contains much information from the Hiroshima and Nagasaki museums.

***Blood & Iron: MPI Video.* [3 videos; 180 minutes, color and B&W]**

This series vividly emphasizes the technology theme of the chapter by tracing the rise of German science and technology during the Industrial Revolution and the development of the German armaments industry. It then surveys the deployment of that technology in the service of German military expansion and Nazi genocide in the two world wars.

***The Great War and the Shaping of the 20th Century: PBS Home Video.* [4 videos; 480 minutes; B&W and color]**

Contains contemporary photos, vintage film footage, and commentaries by leading historians of WWI: this series explains the origins of the war; the impact of the first total war on European society and empires; and the war's effects on European politics and society.

***Lest We Forget: A History of the Holocaust, Logos Research Systems, 1996.* [CD-ROM]**

Good overview of the Holocaust, its causes and its effects. The CD includes topics on the Weimar Republic, Nazi racism, the ghettos, concentrations camps and the Nuremberg Trials.

***The Nizkor Project:* <http://nizkor.almanac.bc.ca/> [website]**

This Canadian site is the homepage of a multimedia project designed to counter the claims of Holocaust deniers. It contains over 4000 documents relating to the Nazi genocide against Jews and others.

***Science and Technology — 100 Years of Progress: Films for the Humanities and Sciences.* [video; 42 min., color]**

This film presents both the benefits and dangers of modern technology, from computers and the polio vaccine to the Chernobyl nuclear disaster.

***U.S. Holocaust Memorial Museum:* <http://www.ushmm.org> [website]**

The museum's website contains a narrative of the events of the Holocaust; a summary of the museum's exhibits; information on various related topics and the Nuremberg Trial records.

***The World at War: Thames Television.* [9 videos; 26 hours, color and B&W]**

This incomparable film documentary of the Second World War narrates the story of the conflict from the rise of Hitler in 1933 and the Japanese invasion of Manchuria in 1931 to the fall of Berlin and the dropping of the first atomic bombs in 1945. There is even a post-war Epilogue. Documentary film footage and interviews with participants.

***World War (1914-1918):* <http://www.cfesc.dnd.ca/links/milhist/wwi/html> [website]**

This web-page provides links to numerous other WWI sites covering war origins, trench warfare, war poetry, document archives, and the Versailles Treaty.

***World War II on the Web:* <http://www.bunt.com/~mconrad/> [website]**

This site contains almost 450 links to other WWII websites, covering all aspects of the conflicts in the European and Pacific Theatres, the various Home Fronts, and the Holocaust. This is the definitive WWII search engine.