

In the course of its various expansions Western Civilization has collided with only one civilization which was not already in the stage of decay. This exception was its half-brother, so to speak, the civilization now represented by the Soviet Empire. It is not clear what stage this "Orthodox" Civilization is in, but it clearly is not in its stage of decay. It would appear that Orthodox Civilization began as a period of mixture (500-1300) and is now in its second period of expansion. The first period of expansion, covering 1500-1900, had just begun to change into an Age of Conflict (1900-1920) when the vested interests of the society were wiped away by the defeat at the hands of Germany in 1917 and replaced by a new organization of society which gave rise to a second Age of Expansion (since 1921). During much of the last four hundred years culminating in the twentieth century, the fringes of Asia have been occupied by a semicircle of old dying civilizations (Islamic, Hindu, Chinese, Japanese). These have been under pressure from Western Civilization coming in from the oceans and from Orthodox Civilization pushing outward from the heart of the Eurasian land mass. The Oceanic pressure began with Vasco da Gama in India in 1498, culminated aboard the battleship Missouri in Tokyo Bay in 1945, and still continued with the Anglo-French attack on Suez in 1956. The Russian pressure from the continental heartland was applied to the inner frontiers of China, Iran, and Turkey from the seventeenth century to the present. Much of the world's history in the twentieth century has arisen from the interactions of these three factors (the continental heartland of Russian power, the shattered cultures of the Buffer Fringe of Asia, and the oceanic powers of Western Civilization).

## Chapter 2—Cultural Diffusion in Western Civilization

We have said that the culture of a civilization is created in its core area originally and moves outward into peripheral areas which thus become part of the civilization. This movement of cultural elements is called "diffusion" by students of the subject. It is noteworthy that material elements of a culture, such as tools, weapons, vehicles, and such, diffuse more readily and thus more rapidly than do the nonmaterial elements such as ideas, art forms, religious outlook, or patterns of social behavior. For this reason the peripheral portions of a civilization (such as Assyria in Mesopotamian Civilization, Rome or Spain in Classical Civilization, and the United States or Australia in Western Civilization) tend to have a somewhat cruder and more material culture than the core area of the same civilization.

Material elements of a culture also diffuse beyond the boundaries of a civilization into other societies, and do so much more readily than the nonmaterial elements of the culture. For this reason the nonmaterial and spiritual elements of a culture are what give it its distinctive character rather than its tools and weapons which can be so easily exported to entirely different societies. Thus, the distinctive character of Western Civilization rests on its Christian heritage, its scientific outlook, its humanitarian elements, and its distinctive point of view in regard to the rights of the individual and respect for women rather than in such material things as firearms, tractors, plumbing fixtures, or skyscrapers, all of which are exportable commodities.

The export of material elements in a culture, across its peripheral areas and beyond, to the peoples of totally different societies has strange results. As elements of material culture move from core to periphery inside a civilization, they tend, in the long run, to strengthen the periphery at the expense of the core because the core is more hampered in the use of material innovations by the strength of past vested interests and because the core devotes a much greater part of its wealth and energy to nonmaterial culture. Thus, such aspects of the Industrial Revolution as automobiles and radios are European rather than American inventions, but have been developed and utilized to a far greater extent in America because this area was not hampered in their use by surviving elements of feudalism, of church domination, of rigid class distinctions (for example, in education), or by widespread attention to music, poetry, art, or religion such as we find in Europe. A similar contrast can be seen in Classical Civilization between Greek and Roman or in Mesopotamian Civilization between Sumerian and Assyrian or in Mayan Civilization between Mayan and Aztec.

The diffusion of culture elements beyond the boundaries of one society into the culture of another society presents quite a different case. The boundaries between societies present relatively little hindrance to the diffusion of material elements, and relatively greater hindrance to the diffusion of nonmaterial elements. Indeed, it is this fact which determines the boundary of the society, for, if the nonmaterial elements also diffused, the new area into which they flowed would be a peripheral portion of the old society rather than a part of a quite different society.

The diffusion of material elements from one society to another has a complex effect on the importing society. In the short run it is usually benefitted by the importation, but in the long run it is frequently disorganized and weakened. When white men first came to North America, material elements from Western Civilization spread rapidly among the different Indian tribes. The Plains Indians, for example, were weak and impoverished before 1543, but in that year the horse began to diffuse northward from the Spaniards in Mexico. Within a century the Plains Indians were raised to a much higher standard of living (because of ability to hunt buffalo from horseback) and were immensely strengthened in their ability to resist Americans coming westward across the continent. In the meantime, the trans-Appalachian Indians who had been very powerful in the sixteenth and early seventeenth centuries began to receive firearms, steel traps, measles, and eventually whiskey from the French and later the English by way of the St. Lawrence. These greatly weakened the woods Indians of the trans-Appalachian area and ultimately weakened the Plains Indians of the trans-Mississippi area, because measles and whiskey were devastating and demoralizing and because the use of traps and guns by certain tribes made them dependent on whites for supplies at the same time that they allowed them to put great physical pressure on the more remote tribes which had not yet received guns or traps. Any united front of reds against whites was impossible, and the Indians were disrupted, demoralized, and destroyed. In general, importation of an element of material culture from one society to another is helpful to the importing society in the long run only if it is (a) productive, (b) can be made within the society itself, and (c) can be fitted into the nonmaterial culture of the importing society without demoralizing it. The destructive impact of Western Civilization upon so many other societies rests on its ability to

demoralize their ideological and spiritual culture as much as its ability to destroy them in a material sense with firearms.

When one society is destroyed by the impact of another society, the people are left in a debris of cultural elements derived from their own shattered culture as well as from the invading culture. These elements generally provide the instruments for fulfilling the material needs of these people, but they cannot be organized into a functioning society because of the lack of an ideology and spiritual cohesive. Such people either perish or are incorporated as individuals and small groups into some other culture, whose ideology they adopt for themselves and, above all, for their children. In some cases, however, the people left with the debris of a shattered culture are able to reintegrate the cultural elements into a new society and a new culture. They are able to do this because they obtain a new nonmaterial culture and thus a new ideology and morale which serve as a cohesive for the scattered elements of past culture they have at hand. Such a new ideology may be imported or may be indigenous, but in either case it becomes sufficiently integrated with the necessary elements of material culture to form a functioning whole and thus a new society. It is by some such process as this that all new societies, and thus all new civilizations, have been born. In this way, Classical Civilization was born from the wreckage of Cretan Civilization in the period 1150 B.C.—900 B.C., and Western Civilization was born from the wreckage of Classical Civilization in the period A.D. 350—700. It is possible that new civilizations may be born in the debris from the civilizations wrecked by Western Civilization on the fringes of Asia. In this wreckage is debris from Islamic, Hindu, Chinese, and Japanese civilizations. It would appear at the present time that new civilizations may be in the throes of birth in Japan, possibly in China, less likely in India, and dubiously in Turkey or Indonesia. The birth of a powerful civilization at any or several of these points would be of primary significance in world history, since it would serve as a counterbalance to the expansion of Soviet Civilization on the land mass of Eurasia.

Turning from a hypothetical future to a historical past, we can trace the diffusion of cultural elements within Western Civilization from its core area across peripheral areas and outward to other societies. Some of these elements are sufficiently important to command a more detailed examination.

Among the elements of the Western tradition which have diffused only very slowly or not at all are a closely related nexus of ideas at the basis of Western ideology. These include Christianity, the scientific outlook, humanitarianism, and the idea of the unique value and rights of the individual. But from this nexus of ideas have sprung a number of elements of material culture of which the most noteworthy are associated with technology. These have diffused readily, even to other societies. This ability of Western technology to emigrate and the inability of the scientific outlook, with which such technology is fairly closely associated, to do so have created an anomalous situation: societies such as Soviet Russia which have, because of lack of the tradition of scientific method, shown little inventiveness in technology are nevertheless able to threaten Western Civilization by the use, on a gigantic scale, of a technology almost entirely

imported from Western Civilization. A similar situation may well develop in any new civilizations which come into existence on the fringes of Asia.

The most important parts of Western technology can be listed under four headings:

1. Ability to kill: development of weapons
2. Ability to preserve life: development of sanitation and medical services
3. Ability to produce both food and industrial goods
4. Improvements in transportation and communications

We have already spoken of the diffusion of Western firearms. The impact which these have had on peripheral areas and other societies, from Cortez's invasion of Mexico, in 1519 to the use of the first atom bomb on Japan in 1945, is obvious. Less obvious, but in the long run of much greater significance, is the ability of Western Civilization to conquer disease and to postpone death by sanitation and medical advances. These advances began in the core of Western Civilization before 1500 but have exercised their full impact only since about 1750 with the advent of vaccination, the conquest of plague, and the steady advance in saving lives through the discovery of antisepsis in the nineteenth century and of the antibiotics in the twentieth century. These discoveries and techniques have diffused outward from the core of Western Civilization and have resulted in a fall in the death rate in western Europe and America almost immediately, in southern Europe and eastern Europe somewhat later, and in Asia only in the period since 1900. The world-shaking significance of this diffusion will be discussed in a moment.

Western Civilization's conquest of the techniques of production are so outstanding that they have been honored by the term "revolution" in all history books concerned with the subject. The conquest of the problem of producing food, known as the Agricultural Revolution, began in England as long ago as the early eighteenth century, say about 1725. The conquest of the problem of producing manufactured goods, known as the Industrial Revolution, also began in England, about fifty years after the Agricultural Revolution, say about 1775. The relationship of these two "revolutions" to each other and to the "revolution" in sanitation and public health and the differing rates at which these three "revolutions" diffused is of the greatest importance for understanding both the history of Western Civilization and its impact on other societies.

Agricultural activities, which provide the chief food supply of all civilizations, drain the nutritive elements from the soil. Unless these elements are replaced, the productivity of the soil will be reduced to a dangerously low level. In the medieval and early modern period of European history, these nutritive elements, especially nitrogen, were replaced through the action of the weather by leaving the land fallow either one year in three or even every second year. This had the effect of reducing the arable land by half or one-third. The Agricultural Revolution was an immense step forward, since it replaced the year of fallowing with a leguminous crop whose roots increased the supply of nitrogen in

the soil by capturing this gas from the air and fixing it in the soil in a form usable by plant life. Since the leguminous crop which replaced the fallow year of the older agricultural cycle was generally a crop like alfalfa, clover, or sainfoin which provided feed for cattle, this Agricultural Revolution not only increased the nitrogen content of the soil for subsequent crops of grain but also increased the number and quality of farm animals, thus increasing the supply of meat and animal products for food, and also increasing the fertility of the soil by increasing the supply of animal manure for fertilizers. The net result of the whole Agricultural Revolution was an increase in both the quantity and the quality of food. Fewer men were able to produce so much more food that many men were released from the burden of producing it and could devote their attention to other activities, such as government, education, science, or business. It has been said that in 1700 the agricultural labor of twenty persons was required in order to produce enough food for twenty-one persons, while in some areas, by 1900, three persons could produce enough food for twenty-one persons, thus releasing seventeen persons for nonagricultural activities.

This Agricultural Revolution which began in England before 1725 reached France after 1800, but did not reach Germany or northern Italy until after 1830. As late as 1900 it had hardly spread at all into Spain, southern Italy and Sicily, the Balkans, or eastern Europe generally. In Germany, about 1840, this Agricultural Revolution was given a new boost forward by the introduction of the use of chemical fertilizers, and received another boost in the United States after 1880 by the introduction of farm machinery which reduced the need for human labor. These same two areas, with contributions from some other countries, gave another considerable boost to agricultural output after 1900 by the introduction of new seeds and better crops through seed selection and hybridization.

These great agricultural advances after 1725 made possible the advances in industrial production after 1775 by providing the food and thus the labor for the growth of the factory system and the rise of industrial cities. Improvements in sanitation and medical services after 1775 contributed to the same end by reducing the death rate and by making it possible for large numbers of persons to live in cities without the danger of epidemics.

The "Transportation Revolution" also contributed its share to making the modern world. This contribution began, slowly enough, about 1750, with the construction of canals and the building of turnpikes by the new methods of road construction devised by John L. McAdam ("macadamized" roads). Coal came by canal and food by the new roads to the new industrial cities after 1800. After 1825 both were greatly improved by the growth of a network of railroads, while communications were speeded by the use of the telegraph (after 1837) and the cable (after 1850). This "conquest of distance" was unbelievably accelerated in the twentieth century by the use of internal-combustion engines in automobiles, aircraft, and ships and by the advent of telephones and radio communications. The chief result of this tremendous speeding up of communications and transportation was that all parts of the world were brought closer together, and the impact of European culture on the non-European world was greatly intensified. This impact was made even more overwhelming by the fact that the Transportation Revolution spread outward from Europe extremely rapidly, diffusing almost as rapidly as the spread of

European weapons, somewhat more rapidly than the spread of European sanitation and medical services, and much more rapidly than the spread of European industrialism, European agricultural techniques, or European ideology. As we shall see in a moment, many of the problems which the world faced at the middle of the twentieth century were rooted in the fact that these different aspects of the European way of life spread outward into the non-European world at such different speeds that the non-European world obtained them in an entirely different order from that in which Europe had obtained them.

One example of this difference can be seen in the fact that in Europe the Industrial Revolution generally took place before the Transportation Revolution, but in the non-European world this sequence was reversed.

This means that Europe was able to produce its own iron, steel, and copper to build its own railroads and telegraph wires, but the non-European world could construct these things only by obtaining the necessary industrial materials from Europe and thus becoming the debtor of Europe. The speed with which the Transportation Revolution spread out from Europe can be seen in the fact that in Europe the railroad began before 1830, the telegraph before 1840, the automobile about 1890, and the wireless about 1900. The transcontinental railroad in the United States opened in 1869; by 1900 the Trans-Siberian Railway and the Cape-to-Cairo railroad were under full construction, and the Berlin-to-Baghdad enterprise was just beginning. By that same date—1900—India, the Balkans, China, and Japan were being covered with a network of railroads, although none of these areas, at that date, was sufficiently developed in an industrial sense to provide itself with the steel or copper to construct or to maintain such a network. Later stages in the Transportation Revolution, such as automobiles or radios, spread even more rapidly and were being used to cross the deserts of the Sahara or of Arabia within a generation of their advent in Europe.

Another important example of this situation can be seen in the fact that in Europe the Agricultural Revolution began before the Industrial Revolution. Because of this, Europe was able to increase its output of food and thus the supply of labor necessary for industrialization. But in the non-European world (except North America) the effort to industrialize generally began before there had been any notable success in obtaining a more productive agricultural system. As a result, the increased supply of food (and thus of labor) needed for the growth of industrial cities in the non-European world has generally been obtained, not from increased output of food so much as from a reduction of the peasants' share of the food produced. In the Soviet Union, especially, the high speed of industrialization in the period 1926-1940 was achieved by a merciless oppression of the rural community in which millions of peasants lost their lives. The effort to copy this Soviet method in Communist China in the 1950's brought that area to the verge of disaster.

The most important example of such differential diffusion rates of two European developments appears in the difference between the spread of the food-producing revolution and the spread of the revolution in sanitation and medical services. This

difference became of such worldshaking consequences by the middle of the twentieth century that we must spend considerable time examining it.

In Europe the Agricultural Revolution which served to increase the supply of food began at least fifty years before the beginnings of the revolution in sanitation and medical services which decreased the number of deaths and thus increased the number of the population. The two dates for these two beginnings might be put roughly at 1725 and 1775. As a result of this difference, Europe generally had sufficient food to feed its increased population. When the population reached a point where Europe itself could no longer feed its own people (say about 1850), the outlying areas of the European and non-European worlds were so eager to be industrialized (or to obtain railroads) that Europe was able to obtain non-European food in exchange for European industrial products. This sequence of events was a very happy combination for Europe. But the sequence of events in the non-European world was quite different and much less happy. Not only did the non-European world get industrialization before it got the revolution in food production; it also got the revolution in sanitation and medical services before it got a sufficient increase in food to take care of the resulting increase in population. As a result, the demographic explosion which began in northwestern Europe early in the nineteenth century spread outward to eastern Europe and to Asia with increasingly unhappy consequences as it spread. The result was to create the greatest social problem of the twentieth-century world.

Most stable and primitive societies, such as the American Indians before 1492 or medieval Europe, have no great population problem because the birthrate is balanced by the death rate. In such societies both of these are high, the population is stable, and the major portion of that population is young (below eighteen years of age). This kind of society (frequently called Population Type A) is what existed in Europe in the medieval period (say about 1400) or even in part of the early modern period (say about 1700). As a result of the increased supply of food in Europe after 1725, and of men's increased ability to save lives because of advances in sanitation and medicine after 1775, the death rate began to fall, the birthrate remained high, the population began to increase, and the number of older persons in the society increased. This gave rise to what we have called the demographic explosion (or Population Type B). As a result of it, the population of Europe (beginning in western Europe) increased in the nineteenth century, and the major portion of that population was in the prime of life (ages eighteen to forty-five), the arms-bearing years for men and the childbearing years for women.

At this point the demographic cycle of an expanding population goes into a third stage (Population Type C) in which the birthrate also begins to fall. The reasons for this fall in the birthrate have never been explained in a satisfactory way, but, as a consequence of it, there appears a new demographic condition marked by a falling birthrate, a low death rate, and a stabilizing and aging population whose major part is in the mature years from thirty to sixty. As the population gets older because of the decrease in births and the increase in expectation of life, a larger and larger part of the population has passed the years of hearing children or bearing arms. This causes the birthrate to decline even more rapidly, and eventually gives a population so old that the death rate begins to rise again

because of the great increase in deaths from old age or from the casualties of inevitable senility. Accordingly, the society passes into a fourth stage of the demographic cycle (Population Type D). This stage is marked by a declining birthrate, a rising death rate, a decreasing population, and a population in which the major part is over fifty years of age.

It must be confessed that the nature of the fourth stage of this demographic cycle is based on theoretical considerations rather than on empirical observation, because even western Europe, where the cycle is most advanced, has not yet reached this fourth stage. However, it seems quite likely that it will pass into such a stage by the year 2000, and already the increasing number of older persons has given rise to new problems and to a new science called geriatrics both in western Europe and in the eastern United States.

As we have said, Europe has already experienced the first three stages of this demographic cycle as a result of the Agricultural Revolution after 1725 and the Sanitation-Medical Revolution after 1775. As these two revolutions have diffused outward from western Europe to more peripheral areas of the world (the lifesaving revolution passing the food-producing revolution in the process), these more remote areas have entered, one by one, upon the demographic cycle. This means that the demographic explosion (Population Type B) has moved outward from western Europe to Central Europe to eastern Europe and finally to Asia and Africa. By the middle of the twentieth century, India was fully in the grasp of the demographic explosion, with its population shooting upward at a rate of about 5 million a year, while Japan's population rose from 55 million in 1920 to 94 million in 1960. A fine example of the working of this process can be seen in Ceylon where in 1920 the birthrate was 40 per thousand and the death rate was 32 per thousand, but in 1950 the birthrate was still at 40 while the death rate had fallen to 12. Before we examine the impact of this development on world history in the twentieth century let us look at two brief tables which will clarify this process.

The demographic cycle may be divided into four stages which we have designated by the first four letters of the alphabet. These four stages can be distinguished in respect to four traits: the birthrate, the death rate, the number of the population, and its age distribution. The nature of the four stages in these four respects can be seen in the following table:

#### The Demographic Cycle

Stage	A	B	C	D
Birthrate	High	High	Falling	Low
Death rate	High	Falling	Low	Rising
Numbers	Stable	Rising	Stable	Falling
Age	Many young	Many in prime	Many Middle-aged	Many old



Distribution (Below 18) (18-45) (Over 30) (Over 50)

The consequences of this demographic cycle (and the resulting demographic explosion) as it diffuses outward from western Europe to more peripheral areas of the world may be gathered from the following table which sets out the chronology of this movement in the four areas of western Europe, central Europe, eastern Europe, and Asia:

### Diffusion of the Demographic Cycle

Areas

Dates	Western Europe	Central Europe	Eastern Europe	Asia
1700	A	A	A	A
1800	B	A	A	A
1850	B   B		A	A
1900	C	B   B		A
1950	C	C	B   B	
2000	D	D	C	B

In this table the line of greatest population pressure (the demographic explosion of Type B population) has been marked by a dotted line. This shows that there has been a sequence, at intervals of about fifty years, of four successive population pressures which might be designated with the following names:

Anglo-French pressure, about 1850

Germanic-Italian pressure, about 1900

Slavic pressure, about 1950

## Asiatic pressure, about 2000

This diffusion of pressure outward from the western European core of Western Civilization can contribute a great deal toward a richer understanding of the period 1850-2000. It helps to explain the Anglo-French rivalry about 1850, the Anglo-French alliance based on fear of Germany after 1900, the free-world alliance based on fear of Soviet Russia after 1950, and the danger to both Western Civilization and Soviet Civilization from Asiatic pressure by 2000.

These examples show how our understanding of the problems of the twentieth century world can be illuminated by a study of the various developments of western Europe and of the varying rates by which they diffused outward to the more peripheral portions of Western Civilization and ultimately to the . non-Western world. In a rough fashion we might list these developments in the order in which they appeared in western Europe as well as the order in which they appeared in the more remote non-Western world:

### Developments in Western Europe

1. Western ideology
2. Revolution in weapons (especially firearms)
3. Agricultural Revolution
4. Industrial Revolution
5. Revolution in sanitation and medicine
6. Demographic explosion
7. Revolution in transportation and communications

### Developments in Asia

1. Revolution in weapons
2. Revolution in transport and communications
3. Revolution in sanitation and medicine
4. Industrial Revolution
5. Demographic explosion
6. Agricultural Revolution

## 7. And last (if at all), Western ideology

Naturally, these two lists are only a rough approximation to the truth. In the European list it should be quite clear that each development is listed in the order of its first beginning and that each of these traits has been a continuing process of development since. In the Asiatic list it should be clear that the order of arrival of the different traits is quite different in different areas and that the order given on this list is merely one which seems to apply to several important areas. Naturally, the problems arising from the advent of these traits in Asiatic areas depend on the order in which the traits arrive, and thus are quite different in areas where this order of arrival is different. The chief difference arises from a reversal of order between items 3 and 4.

The fact that Asia obtained these traits in a different order from that of Europe is of the greatest significance. We shall devote much of the rest of this book to examining this subject. At this point we might point out two aspects of it. In 1830 democracy was growing rapidly in Europe and in America. At that time the development of weapons had reached a point where governments could not get weapons which were much more effective than those which private individuals could get. Moreover, private individuals could obtain good weapons because they had a high enough standard of living to afford it (as a result of the Agricultural Revolution) and such weapons were cheap (as a result of the Industrial Revolution). By 1930 (and even more by 1950) the development of weapons had advanced to the point where governments could obtain more effective weapons (dive-bombers, armored cars, flamethrowers, poisonous gases, and such) than private individuals. Moreover, in Asia, these better weapons arrived before standards of living could be raised by the Agricultural Revolution or costs of weapons reduced sufficiently by the Industrial Revolution. Moreover, standards of living were held down in Asia because the Sanitation Medical Revolution and the demographic explosion arrived before the Agricultural Revolution. As a result, governments in Europe in 1830 hardly dared to oppress the people, and democracy was growing; but in the non-European world by 1930 (and even more by 1950) governments did dare to, and could, oppress their peoples, who could do little to prevent it. When we add to this picture the fact that the ideology of Western Europe had strong democratic elements derived from its Christian and scientific traditions, while Asiatic countries had authoritarian traditions in political life, we can see that democracy had a hopeful future in Europe in 1830 but a very dubious future in Asia in 1950.

From another point of view we can see that in Europe the sequence of Agricultural-Industrial-Transportation revolutions made it possible for Europe to have rising standards of living and little rural oppression, since the Agricultural Revolution provided the food and thus the labor for industrialism and for transport facilities. But in Asia, where the sequence of these three revolutions was different (generally: Transportation-Industrial-Agricultural), labor could be obtained from the Sanitary-Medical Revolution, but food for this labor could be obtained only by oppressing the rural population and preventing any real improvements in standards of living. Some countries tried to avoid this by borrowing capital for railroads and steel mills from European countries rather than by raising capital from the savings of their own people, but this meant that these countries became the