

## Chapter 1: How Dreadful Life Used to Be

*Political Economy or Economics is a study of mankind in the ordinary business of life: it examines that part of individual and social action which is most closely connected with the attainment and the use of the material requisites of well being.*

Alfred Marshall, 1890

In the ordinary business of life, mankind thrives as never before. Over the last few hundred years, first in Europe and America and then increasingly throughout the world, people have become substantially better off - materially, politically, and culturally - than they have ever been in the entire history of the world. We live longer. We eat more nutritious food. We are better clothed. We are better housed. We have access to a far greater variety of goods. We have more leisure. We are healthier. We have infinitely greater access to information. We watch television, drive cars, and fly to vacations thousands of miles away from home. Ordinary folk enjoy a standard of living to which the nobility in the great empires of the past could not aspire. Our laws are more just and humane. We have greater respect for one another. We are more inclined to recognize a common humanity between rulers and ruled, and between rich and poor. We govern ourselves collectively, and are less frequently subjected to the whim of tyrants. Our present conditions of life are uniformly better than those of our ancestors.

The source of our prosperity is the organization of our economy. I claim this as a necessary rather than as a sufficient condition. But for the institution of private property and the intricate web of rules we call capitalism, none of what we now enjoy would be possible. To make such a claim is not to deny that other similar claims may be equally valid. But for the progress of science and technology, none of what we now enjoy would be possible. But for the development of political liberty and democracy, none of this would be possible. I would deny neither of these other claims. Claims on behalf of capitalism, technology, and political organization may all be true, as necessary conditions, simultaneously. This chapter does not discuss markets or explain how markets foster prosperity and economic growth. These matters will be discussed throughout this book. The main purpose of this chapter is to set the stage by reviewing the record of mankind's achievements.

A subsidiary purpose is to balance this triumphant view of contemporary capitalism as a producer of goods and services (including non-material goods such as leisure, health and longevity) with a brief account of mankind's far less successful record in distribution. Inevitably, the apportionment among people of the benefits of material progress leaves some gap between the prosperous and the unprosperous and entails some wastage of resources, goods, effort and lives in the struggle of each person against every other person to procure for oneself the largest possible share. Within the nation, the bread and the cheese, the cars and the bicycles, the access to medical services, and the access to higher education all have to be apportioned, so much for you, so much for him, so much for me. The nation's tasks have to be assigned. Explicitly or implicitly, society must decide who is to be the butcher, the baker, the doctor, the day labourer,

the cop on the beat, the prime minister, and the beggar on the side on the road. Privileges and responsibilities have to be assigned. Society must decide who participates in the choice of laws, who obeys whom, when, and in what circumstances obedience is withdrawn. In the world at large, territories must be assigned to peoples, countries' borders must be established, citizenship must be recognized together with rights, if any, to migrate from one country to another.

The next few chapters are about how markets attend to production and distribution automatically, with no central authority to determine who does what and who gets what and on the strength of a prior distribution among people of the property of the nation. The distribution of property is not God-given or just in itself. It can be nothing other than the outcome of a gradual evolution through a complex interaction of skill, industry, chicanery, and theft. It is accepted (in so far as it is accepted) as the foundation of prosperity and as the only peaceful and efficient alternative to the wasteful and lethal scramble over allocation among people and among groups of people identified by race, religion, language, wealth, or territory of residence. Wars occur when the distribution of goods, property and privilege - within the nation and, especially, among nations - is not universally accepted. A sketch of the record of prosperity, equality, and conflict is presented in this chapter as preference to the analysis of these phenomena in the rest of the book.

The chapter is divided into three main parts: the material conditions of life, customs, and mass destruction. Under the general heading of the material conditions of life, I present evidence on the length of life and standard of living. Life expectancy at birth has increased from about twenty-five years in biblical times to over seventy-five years in a great many countries today. A person born today can expect three times the life-span of his biblical ancestors, of the ancient Romans or of English people at the time of William the Conqueror. The improvement in the standard of living is equally spectacular. Real national income per head - the standard measure of the availability of goods and services - has increased a full ten-fold over the last hundred and fifty years. Until very recently, a typical person came close to starvation at some time in his life, was illiterate, and rarely strayed more than a few miles from his place of birth. Today, in Europe, America, and elsewhere, starvation is a distant memory though it remains unbanished elsewhere in the world.

Under the heading of customs, I call attention to the dependence of our judgments of right and wrong upon the circumstances of the economy. What is right in a poor community may become wrong once a degree of prosperity is attained. We need no longer resort to patricide and infanticide for the survival of the community. Crimes can be punished less cruelly than at a time when imprisonment was, for the ordinary run of crimes, prohibitively expensive. Less obviously connected to the degree of prosperity, but connected nonetheless, are the institution of slavery, class privileges, heresy and political inequality. Slavery, once prevalent throughout the world, has now been almost eliminated. Civil rights and property rights supply a degree of protection against predatory neighbours or predatory government. Political inequality is distinctly less pervasive than it once was, though economic inequality still flourishes.

Under the heading of mass destruction, I discuss the loss of life in war and the wanton extermination of large numbers of people by their own governments. Here the record of the twentieth century is much less admirable, though better comparatively speaking than is often supposed. The advance of technology has brought us prosperity but has made war more lethal and has supplied governments with new vehicles for oppression of the ordinary citizen. Death in war has been greater during the twentieth century than ever before, but not significantly so as a percentage of total population, and the depressing effect of war on life-expectancy is almost negligible by comparison with the general improvement due to advances in medicine and to prosperity itself. Such matters are usually ignored in economics texts because they are not part of the ordinary business of life. Economics is above all the peaceful science with no place in its formal models for violence, terrorism, war or extermination. These matters find their way, albeit peripherally, into a text on political economy because technical change is at once the foundation of material progress and the source of an ever-greater capacity to harm one another, creating an ever-greater challenge to hold that capacity in check.

This chapter is written with special reference to Canada, the United States, and Great Britain, in part because data for these countries are readily available but primarily because these are the countries I know best. An author with a different geographical focus could tell much the same story about other countries elsewhere. Broad trends are similar in these three countries and in many other countries as well. Most countries throughout the world have shown significant improvement in mortality rates and material well-being, but not all countries have been equally fortunate. Some world-wide trends will be examined.

## **The Material Conditions of Life**

### *Longevity*

“Once a distracted mother came to the All-Compassionate one with her dead babe in her arms, and besought him it might be restored to life. He listened to her pleading; then sent her forth to fetch a grain of mustard seed from a house where no children had died. She sought for long and in vain, and then returned and told him of her failure.

‘My sister, thou has found,’ the Master said, ‘searching for what none finds,  
That bitter balm I had to give thee.  
Thou knowest the whole wide world weeps.  
The grief which all share grows less for one.’”

The All-Compassionate one is the Buddha,<sup>1</sup> and this old tale of the mustard seed has for millennia been a consolation to people in grief. Today, however, the moral is not what it once was. The intended moral of the story was that every mother has seen the death of some of her children, and that no mother can expect to be exempted from this sad condition of life. That can no longer be the moral because the bowl of the grieving mother would now be full rather than

empty. To be sure, children still die, but the death of a child is now a rare event, and most houses have not seen such deaths. Science, technology, and prosperity have rendered the story obsolete.

An almost unconscionably selective history of life expectancy from the cavemen to the present day is presented in table 1 with England as the “representative” country from the middle ages to the present day. The remarkable features of the story are how so little happened from the start of civilization to the beginning of the nineteenth century and how much has happened in the last two hundred years. Ten thousand years ago hunter-gatherers had a life expectancy of just over 30 years. By the year 1800, English life expectancy had crept up to 37 years. It rose steadily over the course of the nineteenth century, but, by the end of the century, was still only 50 years. Then, during the twentieth century, life expectancy increased by almost 30 years to 79 years in 2000. This was the greatest increase in longevity in the entire history of mankind. In most countries throughout the world, life expectancy today is greater than ever before.

The information in table 1 is from three sources. For the years before the middle ages, the early data are ingenious estimates by anthropologists and archeologists from the study of ancient bones. The English data from the thirteenth century to 1841 are from Church records and graveyards. Thereafter, the data are from censuses of population. The experience of the twentieth century will be examined in greater detail below, but with reference to the United States rather than to England.

The main story in the table is of ups and downs with no longterm trend until the end of the middle ages, very slow growth for the next few hundred years, acceleration in the nineteenth century and rapid growth in the twentieth century. There are two sub-plots: the long-term fall in life expectancy associated with the transition from hunter-gathering to agriculture (a decline of five years from the mesolithic to the neolithic periods) and the sudden plunge in life expectancy during the Black Death in the fourteenth century. A school of anthropologists maintains that ordinary people were better off as hunter-gatherers than they were for millennia afterwards until quite recent times. People were taller than they have been at any time prior to the twentieth century. Their health was better - as measured, for example, by the number of missing teeth in their skeletons. Their diet was better, meat rather than grain. The numbers in table 1 are consistent with this claim, but it is hard to know how much stock to put on these estimates<sup>2</sup>.

The Black Death was an epidemic of the plague that originated in China and swept west, destroying about a third of the population of Europe, and arriving in England in 1348. Life expectancy dropped by almost half, from 31.3 years for the generation born between 1276 and 1300 to 17.3 years for the generation born between 1348 to 1376. In 1300, the population of England and Wales was about 5 million. By 1377, it had fallen to about two and a half million. Additional waves of the plague drove the population down to about one and a half million by the end of the century.

**Table 1: Life Expectancy at Birth from Ancient Times to the Present**

	time and place	years
1	Palaeolithic, 500,000BC - 8,000BC, cave men with primitive stone tools	19.9
2	Mesolithic, 8,000BC - 2,500BC, hunter-gatherers	31.4
3	Neolithic, 6,000BC - 1,500BC, agriculture and domestication of animals	26.9
5	Bronze Age, 2,500BC - 500BC, ancient Egypt and Mesopotamia	32.1
6	Iron Age, 1,500BC - 500AD	27.3
7	Roman Empire, First to Fourth Centuries	27.8
8	Hungary, Tenth to Twelfth Centuries	28.1
9	England and Wales, Generation of Males Born 1276-1300	31.3
10	England and Wales, Generation of Males Born 1348-75, during the Black Death	17.3
11	England and Wales, Generation of Males Born 1426-50	32.8
12	England and Wales, 1601	38.1
13	England and Wales, 1701	37.1
14	England and Wales, 1801	35.9
15	England and Wales, 1841	40.3
16	England and Wales, 1871	41.3
17	England and Wales, 1900	50.4
18	England and Wales, 1950	68.9
19	England and Wales, 2000	78.9

Source: 1- 6, A. C. Swedlund and G. J. Armelagos, *Demographic Anthropology*, Dubuque, Iowa: W. C. Brown, 1976, table 4.6. The stages of civilization are defined by technology, attained in different places at different times. The ages are mapped in “Archeology”, an entry in Collier’s Encyclopedia.

7 - 8, Ascadi, G. and Nemeskeri, J., *History of Human Life Span and Mortality*, 1970, tables 121 and 130.

9 -11, J. C. Russell, *British Medieval Population*, 1948, tables 8.4, 8.7 and 8.10

12 - 16, Wrigley, E.A. and Schofield, R.S., *The Population History of England, 1541-1871*, 1981, table A3.1

17-19, [www.oheschools.org/ohech6pg4.html](http://www.oheschools.org/ohech6pg4.html).

The huge world-wide improvement in longevity in the twentieth century is exemplified by the experience of the United States summarized, for males and for females, in tables 2 and 3. The tables themselves are largely self-explanatory. In both tables, the right-hand columns show life expectancy. Over the century, life expectancy increased from 46.3 years to 73.9 years for men, and from 48.3 years to 79.4 years for women. By the end of the century, men lived 27.6

**Table 2: Improvements in Age-specific Mortality Rates and Life Expectancy in the United States During the Twentieth Century, Males**

[Age-specific mortality rates are deaths per 100,000 in the designated age group]

year	under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	life expectancy
1900	17,914	2,045	384	594	824	1,067	1,570	2,870	5,929	12,826	26,877	46.3
1910	14,533	1,458	310	484	693	995	1,523	2,867	5,874	12,742	25,579	48.4
1915	11,450	969	243	423	619	914	1,436	2,769	5,875	12,455	24,672	52.5
1916	11,820	1,169	261	455	660	971	1,509	2,898	6,063	12,865	25,546	49.6
1917	11,736	1,119	270	496	708	1,007	1,548	2,934	6,111	12,899	25,107	48.4
1918	12,453	1,600	415	1,215	1,902	1,528	1,671	2,870	5,850	11,812	22,756	36.6
1920	10,353	1,027	280	478	643	822	1,263	2,463	5,453	12,214	25,301	53.5
1930	7,701	602	190	350	489	746	1,360	2,661	5,582	11,912	23,671	58.1
1940	6,190	312	118	229	338	588	1,289	2,612	5,462	12,126	24,639	60.8
1950	3,728	152	71	168	217	429	1,067	2,395	4,931	10,426	21,636	65.6
1960	3,059	120	56	152	188	373	992	2,310	4,914	10,178	21,186	66.6
1970	2,410	93	51	189	215	403	959	2,283	4,874	10,010	17,822	67.1
1980	1,429	73	37	172	196	299	767	1,815	4,105	8,817	18,801	70
1990	1,082	52	29	147	204	310	610	1,553	3,492	7,889	18,057	71.8
1999	802	39	22	116	150	257	547	1,280	3,109	7,000	16,931	73.9

Source: 1. National Vital Statistics Report, Vol. 48, No. 18, February 7, 2001. Table 12. Estimated life expectancy at birth in years, by race and sex: Death-registration States, 1900-28, and United States, 1928-98. National Center for Health Statistics. Health, United States, 2001. Hyattsville, Maryland: Public Health Service. 2001

2. National Center of Health Statistics. United States 2001. Official Website:  
<http://www.cdc.gov/nchs/datawh/statab/unpubd/mortabs/hist290.htm>

years longer than their great grandfathers a hundred years before. By the end of the century, women lived 31.1 years longer than their great grandmothers a hundred years before. Women not only live longer than men, but the improvement over the century has been greater for women than for men.

**Table 3: Improvements in Age-specific Mortality Rates and Life Expectancy in the United States During the Twentieth Century, Females**  
 [Age-specific mortality rates are deaths per 100,000 in the designated age group]

year	under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	life expectancy
1900	14,541	1,912	388	578	815	975	1,418	2,576	5,358	11,877	25,517	48.3
1910	11,762	1,335	285	423	612	790	1,207	2,366	5,241	11,740	24,600	51.8
1915	8,995	879	216	391	544	745	1,165	2,319	5,247	11,599	23,532	56.8
1916	9,281	1,052	228	422	572	775	1,195	2,387	5,360	11,950	24,660	54.3
1917	9,147	1,012	242	442	587	785	1,202	2,399	5,336	11,921	24,206	54
1918	9,851	1,546	410	943	1,340	1,134	1,358	2,403	5,150	10,827	21,805	42.2
1920	8,067	946	247	497	713	800	1,170	2,244	5,046	11,589	24,467	54.6
1930	6,074	523	153	319	433	615	1,062	2,124	4,676	10,663	22,138	61.6
1940	4,774	267	89	181	274	452	861	1,800	4,222	10,369	22,759	65.2
1950	2,855	127	49	89	143	290	642	1,405	3,333	8,400	19,195	71.1
1960	2,321	98	37	61	107	229	527	1,196	2,872	7,633	19,008	73.1
1970	1,864	75	32	68	102	231	517	1,099	2,580	6,678	15,518	74.7
1980	1,142	55	24	58	76	159	413	934	2,144	5,440	14,747	77.4
1990	856	41	19	49	74	138	343	879	1,991	4,883	14,274	78.8
1999	658	31	16	45	67	143	313	787	1,973	4,916	14,863	79.4

Source: Same as table 2.

The rest of tables 2 and 3 shows age-specific mortality rates, defined here as the number of deaths per 100,000 people. For example, the figure of 17,914 in the top left-hand corner of table 2 means that 17,914 out of every 100,000 male children born during the year 1900 died within the first year of life. Almost 18% of the baby boys born in the year 1900 did not live to their first birthday. By contrast, the figure of 802 at the bottom of the column indicates that, by the year 1999, less than 1 percent were dying during the first year of life. Throughout the century, the mortality rate is high during the first year of life, is lowest for the period of life between 5 and 14 years of age and becomes steadily higher thereafter.

At every age, mortality rates are significantly lower in the year 1999 than in the year 1900, but the drop in mortality rates is most dramatic for infants and young children. With minor variations, the reduction from 1900 to 1999 in the risk of death is less pronounced as one grows older. For male children in the first year of life, the risk of death in the year 1999 had fallen to less than a twentieth (specifically, as shown in the first column of table 2, the ratio is 802/17,914 or 4.5%) of what it had been in the year 1900. The percentage fall is even more pronounced for the much safer period of life between one to four years of age. For that age group, the risk of death in the year 1999 had fallen to about one-fiftieth (39/2,045 or 1.9%) of what it had been in the year 1900. Thereafter the percentage gains diminish. By the end of the twentieth century, the risk of death between 5 and 14 years of age was only 6.3% of what it had been at the beginning. The comparable figures are 19.5% between 15 and 24 years of age, 34.8% between 45 and 54 four years of age, and 62.9% among people 85 years and older. The same pattern is evident for females in table 3.

The rows show mortality rates every tenth year with the exception of the years around the great flu epidemic of 1918. Male life expectancy which had been 48.4 years in 1917 fell abruptly in 1918 to 36.6 years, not significantly different from what it had been before the invention of agriculture 20,000 years ago. Among young men aged 25 to 34, the mortality rate rose from 708 per 100,000 in 1917 to 1,902 per 100,000 in 1918, an extra risk of death of just over 1% per year. The figures for women are essentially the same. By contrast the rise in the death rate among men of that age group during the Second World War (not shown in the table) was about 50 per 100,000 or about a twentieth of a percent. These figures must be interpreted with care. To say that life expectancy fell from 48.4 years in 1917 to 36.6 years in 1918 is not to suggest that people born in 1918 had markedly shorter lives than people born the year before. It is, rather, to say that people would have had markedly shorter lives if these temporarily higher mortality rates had persisted throughout their lives.

For young adults, male and female, the principal sources of the decline in the mortality rates are shown in table 4. The combined mortality rate from all causes together fell in the course of the century to about an eighth of what it had been at the beginning, from 819.8 per 100,000 people in the year 1900 down to 108.3 per 100,000 people in the year 1999, that is, from just under one person per hundred to just over one person per thousand. The greatest triumph for this age group was the elimination of tuberculosis which killed about one person per three hundred in the year 1900. The death rate from Aids never exceeded the death rate from



**Table 4: Selected Causes of Mortality Among Young Adults in United States**  
 [Both Sexes, 25-34 years, deaths per 100,000 people per year]

Years	All Causes	Tuberculosis (All forms)	Pneumonia (All Forms) and Influenza	Syphilis (All Forms)	Aids	Cancer and other Malignant Tumors	Diabetes Mellitus	Intracranial lesions of vascular origin (stroke)	Diseases of the heart	Diarrhea, Enteritis and Ulceration of the intestines	Appendicitis	Nephritis (All Forms)	Complications of pregnancy & childbirth	Motor Vehicle Accidents	All Other Accidents	Suicide	Homicide
1900	819.8	294.3	76.2	-	0	14	5	15.4	43	7.5	8.9	45.2	-	'	62.6	11.2	1.8
1910	654.5	217.6	46.9	6.3	0	14	5	10.2	41	3.2	10	32.7	-	1.8	78.9	17.7	7.9
1920	677.5	164.9	180.6	9.6	0	15	6	7.5	38	3	14	20.4	-	7.9	46	11.5	18.9
1930	465.8	102.8	38.9	10	0	17	4	6.4	38	1.5	14	17.6	-	24	38.4	14.9	17.3
1940	305.9	56.3	17.1	7.1	0	17	3	5.5	30	1	7	11.8	-	24.8	27.4	13.5	12.2
1950	178.7	19.1	4.2	0.7	0	20	2	4.2	21	0.7	0.9	4.5	5.4	17.3	13	8.6	9.9
1960	146.4	2.4	4.8	0.2	0	20	2	4.7	16	0.7	0.3	2.8	2.9	24.3	18.6	10	9.7
1970	157.4	0.7	3.8	0	0	17	2	4.5	11	0.5	0.2	1.4	1.2	30.9	20.7	14.1	16.6
1980	135.5	0.1	1.5	0	0	14	2	2.6	8.3	0.4	0.1	0.7	0.4	29.1	17.2	16	19.6
1990	139.2	0.3	1.8	0	20	13	2	2.2	7.6	0.4	0	0.5	0.4	23.6	13.4	15.2	17.7
1999	108.3	'	0.9	'	7.2	11	2	1.5	8.1	'	0	0.7	0.5	17.9	13.4	13.5	11.2

Notes: “-” No data

“ ’ ” Zero or negligible

- Sources: 1. Forrest D. Linder and Robert D. Grove, Vital Statistics Rates in the United States, 1900-1940.  
 2. Robert D. Grove and Alice M. Hetzel, Vital Statistics Rates in the United States, 1940-1960.  
 3. National Office of Vital Statistics. Vital Statistics of the United States, Mortality, 1932 through 1993.  
 4. National Center for Health Statistics, “Mortality Data from the National Vital Statistics System, “mortality website:  
<http://www.cdc.gov/nchs/datawh/statb/unpubd/nortabs.htm>  
<http://www.cdc.gov/nchs/releases/0-1facts/99mortality.htm>  
 5. United States Bureau of the Census. Vital Statistics, Special Reports, Vol. 43, “Death, Rates by Age, Race and Sex, 1900-1953”

tuberculosis a century ago, and was lower in the year 1999 than syphilis in the year 1930. Mortality from rheumatic fever, diabetes, stroke, influenza, appendicitis as well as complications of pregnancy have been all but eliminated. Mortality from cancer and heart disease have been reduced but not comparably to the reduction in mortality from other diseases. By contrast, the incidence of violent death remains more or less the same. Deaths rates from accidents, suicide and homicide do not change much over the century, though there seems to be some considerable improvement in the last few decades.

### The Increase in Life Expectancy Throughout the World

The great increase in life expectancy in the United States is by no means unusual. Similar increases have occurred in most of the countries in Europe and America well as in Japan and elsewhere in Asia. Most advanced countries have by now attained life expectancies of about 75 years for men and 80 for women. A sample of histories of life expectancies is presented in table 5. Russia is an exception. In 1965, life expectancy in Russia was about the same as in the United States. Since then, American life expectancy has risen from 66.8 to 72.0 for men, and from 73.7 to 78.8 for women. By contrast, Russian life expectancy remained about the same until 1989, falling from 64.5 to 64.2 for men but rising from 73.7 to 74.6 for women. Then Russian life expectancy plummeted to 58.9 (a fall of 5.3 years) for men, and to 71.9 (a fall of 2.7 years) for women in 1998.

**Table 5: Life Expectancy at Birth in Several Countries, 1750-2000**

	1750	1800	1880	1900	1930	1950	1965	2001
Sweden	37.3	36.5	48.5	54	63.3	71.3	73.9	79.7
France	27.9	33.9	42.1	47.4	56.7	66.5	71.1	78.9
Russia			27.7	32.4	42.9	64	69.1	67.3
Australia			49	55	65.3	69.6	71	80
Canada		35.6	49.6	56	61	68.6	72	79.6
Japan			35.1	37.7	45.9	59.1	70.3	80.1

Source: M. Livi-Bacci, *A Concise History of World Population*, Oxford: Blackwell, second edition, 1997, tables 4.3 and 4.8, supplemented by data from Angus Maddison, *Monitoring the World Economy, 1820-1992*, Paris: OECD, 1995, table A-3a, Bourbeau, R., Legare, J. and Emond, V., *New Birth Cohort Life Tables for Canada and Quebec, 1801-1991*, Statistics Canada, 91 F0015MPE, V. Shkolnikov, F. Mesle and J. Vallin, "Health Crisis in Russia", *Population*, volume 8, 1999, INED, Appendix table 1, *Canadian Historical Statistics*, table, 65 & 66 (for 1966), *Statistiska centralbyran* ([www.scb.se](http://www.scb.se) for 1961-70), Queensland, *Office of the Commonwealth Actuary* ([www.oesr.qld.au](http://www.oesr.qld.au) for 1965-7) and [www.odci.gov/cia/publications/factbook/country.html](http://www.odci.gov/cia/publications/factbook/country.html)

For the period since the Second world war, the increase in life expectancy throughout the world is summarized in table 6 for three groupings of countries, more developed, less developed and least developed. Average life expectancy has increased substantially in all three regions, and the spreads between regions are narrowing somewhat, but that significant differences among regions remain.

**Table 6: World-wide Life -expectancy at Birth, 1950-1999**

	More Developed Regions	Less Developed Regions	Least Developed regions
1950-5	66.5	40.9	35.7
1960-5	69.8	47.7	39.8
1970-5	71.2	54.6	43.6
1980-5	73	58.5	47.2
1990-9	75	64	61

Source: United Nations, *World Population Prospects, The 1994 Revision*, page 117, supplemented by current data from [www.prb.org/pubs/wpds99/wpds99\\_world.htm](http://www.prb.org/pubs/wpds99/wpds99_world.htm)

### *Demographic Catastrophe*

The Black Death was by no means the only or the worst epidemic in the history of mankind. Even more dramatic was the epidemic brought by Europeans to the indigenous people of North American. Small pox, measles, typhus, tuberculosis, influenza, and chicken pox - diseases that Europeans had coped with for millennia - were hitherto unknown in the Americas and very much more lethal. It has been estimated that contact with the Europeans diminished the indigenous population of the United States from 5 million to a low of 60,000, from which it substantially increased once people became accustomed to European-borne disease. From 1532 to 1608, the indigenous population of central Mexico fell from 16.9 million to 1.1 million<sup>3</sup>.

From time to time over the last two millennia, China has experienced similarly rapid declines in population, but with a different cause. China has been no less subject than Europe to epidemics, but the standard explanation of the ups and downs in population is political. Variations in population are attributed to the establishment and disintegration of public order, referred to by historians as the dynastic cycle. An established ruling dynasty is said to possess the mandate of heaven. As long as the dynasty preserves the mandate of heaven, public order is maintained and the population grows. Eventually, dynasties lose the mandate of heaven. Public order is then dissolved, the land is preyed upon by armies of bandits that the government can no longer suppress, crops are stolen or destroyed, people are displaced, starvation stalks the land,

and population declines until such time as a new dynasty is established, making way for fresh population growth once order is restored. The root cause of the cycle is debatable. The traditional explanation is that, with time, dynasties grow corrupt and effete. Population growth itself may be destabilizing as the standard of living is reduced, choking off the farmers' surplus production required for the provisioning of the army and the bureaucracy of the state. Disease and starvation reinforce one another in the population decline.

The story is told in table 7, showing the history of the population of China classified by the six principal dynasties during the last two thousand years. For each dynasty, two estimates of population are shown, one near the beginning of the dynasty and the other near the end. It is immediately evident from these data that population grew substantially within each dynasty, and then fell between dynasties, sometimes dramatically. For instance, in just 29 years from AD 2 near the end of the West Han dynasty to AD 31 near the beginning of the next dynasty, the population declined by about 75% from 58 million to 15.1 million. Population recovered over the next 80 years during the East Han Dynasty, but then fell once again between the end of the East Han dynasty and the beginning of the Tang dynasty, five hundred years later. The last imperial dynasty was followed by the Republic of China which lasted until 1953 when it was replaced by the Peoples' Republic of China which rules to this day. In 1953, the first year of the Peoples' Republic of China, the population of China was 508 million. By the year AD 2000, the population of China had grown to 1 billion and 266 million people.

**Table 7: The Population of Imperial China, 206B.C. to 1911 A.D.**

Dynasties	Population Early in the Dynasty (millions)	Population Late in the Dynasty (millions)
West Han (206BC-8AD)	14.0 (206 BC)	58.0 (2AD)
East Han (25AD-208AD)	15.1 (31AD)	59.8 (118AD)
Tang (618AD-907AD)	17.6 (624AD)	38.1 (845AD)
Sung (960AD-1279AD)	24.8 (959AD)	54.9 (1276AD)
Ming (1368AD-1644AD)	63.8 (1368AD)	99.9 (1626AD)
Ch'ing (1645AD-1911AD)	88.5 (1646AD)	405.5 (1911AD)

Source: Cheng-chui Lai, "Man/Land Ratio and Dynastic Cycle in Imperial China: A Malthusian Interpretation", *Archives of Economic History*, 1992, Vol. II, No. 1, 113-125, Table 1.

Today, epidemics are contained, but by no means eliminated. The world's encounter with Aids is instructive. The experience of the epidemic in the rich countries was very different from that of the experience in the poor countries. When the epidemic first struck the United States in the early 1980s, it was not recognized as a new disease, and its cause was completely unknown. In time, though no cure has yet been discovered, scientists learned the nature of the disease, its cause, and the means to contain it. Before 1980, there were in the United States no known deaths from Aids. Thereafter, the number of deaths from the infection increased steadily to a peak of 51,000 in 1995. Aggressive treatment reduced deaths to 9,000 in 2000, the latest year for which data are available. The rate of infection with the HIV virus has been reduced and expensive treatment has contained the virus so that it does not give rise to full-blown Aids. About 800,000 to 900,000 Americans out of a total population of 280 million are now thought to be infected. It is terrifying to think what might have happened if the Aids epidemic had struck a century ago when the nature of the disease could not have been discovered and when people would be unlikely to associate disease today with sexual activity as much as a dozen years before the onset of the disease.

The rate of infection with the HIV virus has been much higher in Africa. It is estimated that, by the year 2000, a full 8.5% of the adult population of sub-Saharan Africa was infected with Aids and that, during the year 1999, a third of a percent of the population (2.2 million people out of a total population of 596.3 million) died of the disease<sup>4</sup>. The cost of treatment is greater than most African countries can afford without massive foreign assistance.

### ***Prosperity***

A rough indicator of prosperity in England over the last seven centuries is supplied by the time series of average *real wages* in table 8. If people consumed nothing but bread, the real wage each year would be the number of loaves consumed or, equivalently, the money wage divided by the price of bread. When people consume many different goods, the real wage each year becomes the money wage *deflated* by a *price index* to reflect wage-earners' standard of living. The price index and the corresponding index of real wages are constructed with reference to an arbitrarily chosen *base year*. In the base year, real wages and money wages are, by definition, the same. In any other year, the real wage is the money wage one would require in the base year (when confronted with prices in the base year) to be as well off as a one would be with the average wage in that other year. Suppose the year 2000 is the chosen base year. With respect to the year 2000 as the base year, the average real wage in the year 1950 is said to be \$18,000 per year if the average worker in the year 1950 - with prices and wages as they were in 1950 - was as well off as a person who earned \$18,000 in the year 2000. Actual money wages in the year 1950 may have been very much less. If prices had increased six-fold in the intervening fifty years, then the actual money wage in the year 1950 would have been only \$3,000.

To deflate money wages by prices is to divide money wages each year by the value of an appropriately scaled price index. In the example in the preceding paragraph, the price index is set at 1 for the year 2000, ensuring that the average money wage and the average real wage are the same in that year. As prices are assumed to have risen six-fold from 1950 to 2000, the value of

the price index must have been 1/6 in the year 1950. Thus, if the money wage is \$3,000 in the year 1950, the corresponding real wage must be \$18,000 [ $3,000 \div (1/6)$ ]. Alternatively, as in table 8, the price index might be scaled to set the real wage at 100 in some chosen base year. If the average money wage was \$36,000 in the year 2000, it would be said that real wages grew by 100% - or 1.39% per year - over the entire 50 year period. The construction of a time-series of real wages is straightforward when all prices change proportionally, up or down, from year to year. The measurement of real wages becomes problematic when prices vary at different rates - some up, some down - each year, a matter to be taken up at the end of chapter 5 once the required theory of taste and demand has been developed. For the moment, think of real wages as money wages deflated by a reasonable price index without being too concerned about what “reasonable” means in this context.

Table 8 is a time-series of real wages in England from 1340 to 1977, specifically of builders’ wages corrected for changes over time in prices of commodities that builders are likely to buy. The procedure tracks standards of living satisfactorily if and in so far as percentage changes over time in the real wages of builders are not too different from percentage changes over time in average real wages for all occupations and for all regions of the country. The information is acquired from a sample of records of monasteries and other institutions. Sketchy and incomplete, it is the only information available for such a long stretch of time. To construct the time-series of real wages, money wages were deflated by a price index scaled so that the average real wage is set at 100 over the period from 1451 to 1475. The choice of dates in the early years is determined in part by the availability of data and in part to show data before and after the Black Death. For each year in the table, population is shown as well. Figures for the early years are necessarily judgmental because there was no adequate census of population.

**Table 8: Real Wages and Population: England and Wales, 1340 to 1997**

Date	Real Wages 1451-75=100	Population (millions)
1340	52	4 to 6
1377	74	2.2 to 2.8
1421	108	1.6
1552	48	3
1600	44	4.1
1642	48	5.1
1700	57	5.1

Date	Real Wages 1451-75=100	Population (millions)
1750	68	5.7
1800	38	8.9
1850	84	17.9
1900	134	32.5
1950	180	43.8
1997	460	58.2

Source: Real Wages: [1340 to 1950] H. Phelps-Brown and S. Hopkins, “Seven Centuries of Prices of Consumables compared with Builders’ Wage-rates”, *Economica*, 1956, included as “Labour Force, 31” in B.R. Mitchell, *British Historical Statistics*, Cambridge University Press, 1988. [1997] *Statistical Yearbook, 1997*, United Nations, tables 33 and 35 and B.R. Mitchell, *International Historical Statistics, Europe, 1750-1993*, U.K.: Macmillan, 1998, tables B1 and H2. Population: [1340, 1377 and 1421] D. Coleman and J. Glass, *The British Population: Patterns, Trends and Processes*, Oxford: Oxford University Press, 1992. [1552 - 1950], Mitchell, op. cit. “Population and Vital Statistics, 1”. [1997] *Statistical Yearbook, 1997*, United Nations, table 7 for the entire United Kingdom.

The history of real wages and population in England can be divided into three main episodes. The first episode was the Black Death which, as discussed above, wiped out half the population of England in the middle of the fourteenth century. From the beginning to the end of the fourteenth century, the population of England fell from about 5 million to about 2 million. The fall in population created a scarcity of labour, leading to an rise in the real wage from about 50 in the early part of the fourteenth century to a peak of over 100 in the fifteenth century, the highest level of real wages until the middle of the nineteenth century. The next episode was the gradual rise in population throughout the seventeenth and eighteenth centuries, but with no corresponding rise in real wages. Potential gains in the early years of the industrial revolution were eaten away in population growth. In the third episode from about 1800 to the present day, technical change outdistanced population growth, and real wages rose steadily from a low of 38 in 1800 to 460 in 1997, over 12 times what they were in the beginning of the nineteenth century and almost 4 times as high as they had ever been up to the twentieth century. Until about a hundred years ago, wages rose in good times and fell in bad times, with no discernible long-term

trend one way or another. Only in the last hundred years has technical change outdistanced population growth, providing the common man with a standard of living unprecedented in the entire history of the world.

Real wages are a less than ideal measure of prosperity for a country as a whole. When available, a better measure of general prosperity is *real national income* per head where “national income” is the value of all goods and services produced by government as well as by the private sector, and for investment as well as for consumption. Time-series of national income do not reach as far back as time-series of real wages because national income statistics are built up from vast amounts of primary data collected by national statistical agencies that did not exist until the nineteenth century.

For Canada, from the year 1870 to the year 2000, a time series of real national income is presented in table 9. National income can be thought of as a family of closely related statistics, each giving rise to a somewhat different time-series. The variant of national income in table 9 is *real gross domestic product* per head expressed in dollars for the year 2000. *Domestic product* is the dollar value of all goods and services produced in the country (including non-residents’ entitlement to domestically produced goods and services, but excluding residents’ entitlement to goods and services produced abroad). *Gross* means that there is no correction for depreciation of the capital stock. Conversion from money national income to real national income is essentially the same as conversion from money wages to real wages. The choice of the year 2000 as the base year of the time series is arbitrary but, nonetheless, informative because the user of statistics of real national income wants to know how well off people used to be by his standards today, not how well off he is by theirs. He wants to know how much income grandma and grandpa would need today to be as well off as they were back in 1950, not how much income he would need in 1950 to be as well off as he is today.

Inevitably, the measurement of real national income is fuzzy because the price index is never quite what we would like it to be, because different people consume different proportions of goods, because new types of goods are introduced from time to time, and because the quality of goods changes over time. Statistics of real national income do not have the precision of, for example, distances between cities. Statistics of real national income are interesting and instructive nonetheless.

Table 9 is largely self-explanatory. For example, the number 2,554 in the top row of the fourth column means that people in the year 1870 were on average as well off as one would be with an annual income of \$2,554 in the year 2000. Actual money income per head in the year 1870 was very much less, but prices were less too. Only for the year 2000, shown on the bottom row of the table, are money income and real income the same.



**Table 9: Canadian Economic Growth, 1870-2000**

	<b>Gross Domestic Product at Prices in the Year 2000 (\$ billion)</b>	<b>Population (000)</b>	<b>Gross Domestic Product Per Head at Prices in the Year 2000 (\$)</b>	<b>Annual Growth Rate of Gross Domestic Product Per Head at Prices in the Year 2000 (Rate since the year below ) (%)</b>
<b>1870</b>	9.3	3625	2554	----
<b>1880</b>	11.5	4255	2697	0.55
<b>1890</b>	16.5	4779	3453	2.47
<b>1900</b>	22.6	5301	4265	2.11
<b>1910</b>	41.5	6988	5934	3.3
<b>1920</b>	49.9	8556	5832	-0.02
<b>1930</b>	76.1	10208	7472	2.45
<b>1933</b>	56.9	10633	5350	-11.1
<b>1940</b>	94.6	11381	8309	6.29
<b>1950</b>	155.4	13712	11343	3.11
<b>1960</b>	243.5	17870	13628	1.84
<b>1970</b>	402.7	21297	18908	3.27
<b>1980</b>	613.1	24043	25500	2.99
<b>1990</b>	808.5	27791	29092	1.32
<b>2000</b>	1056	30616	34492	1.7

Source: M.C. Urquhart, *Gross National Product, Canada 1870-1926*, Kingston and Montreal: McGill-Queen's University Press, table 1.2, updated with data from CANSIM, Statistics Canada. Several time series covering less than the entire period from 1870 to 2000 and with different base years are spliced together to produce one consistent time series in 2000 dollars. 1870 to 2000 and with different base years are spliced together to produce one consistent time series in 2000 dollars.

The right hand column of table 9 shows the rate of growth each decade in real gross domestic product per head. The average rate of growth over the entire 130 years of the time series was about 2% per year. Such is the power of compound interest that this annual growth of 2% was sufficient to generate a more than 15- fold increase in real income per head, from \$2,254 in the year 1870 to \$34,942 in the year 2000. The typical Canadian today is over 15 times as well off as Canadians used to be 130 years ago. This unprecedented prosperity is broadly consistent with the pattern of real wages in England in table 8.

As the overall measure of prosperity tends to be somewhat abstract and distant from everyday life, it may be helpful to supplement the table with information about the specifics of the improvement in the standard of living. The increase in real gross domestic product per head is a summing up of the changes over time in the quantities and qualities of a thousand different goods and services. A few of these changes are shown in table 10 for several years between 1935 and 1997 for which the data happen to be readily available. This was a time of rapidly increasing prosperity in a number of dimensions. Ownership of automobiles increased four-fold. Housing improved markedly, as indicated by the increase in the proportion of dwellings with flush toilets from just over half to almost 100 percent. The old term “cold water flat” has gone out of use because virtually all apartments are now supplied with hot water. The switch during the last quarter of the twentieth century from red meat to poultry is in part due to a substantial fall in the price of poultry relative to the price of beef, and in part due a change in peoples’ perception about what constitutes a healthy diet. General prosperity and improvements in food storage have resulted in large increases in consumption of fruits and vegetables. As a percentage of the population, the number of undergraduates in university increased four-fold and the number of graduate students increased twenty-fold. Equally important, though not so easily quantified is the improvement in the quality of goods and the introduction of new goods. We have much better cars and refrigerators than we had in 1935, and we have TV sets and home computers which our grandparents in 1935 did not have at all. Progress in medical science has increased the quality as well as the length of life. New and better anaesthetics save us from pain our forefathers had no choice but to endure. We need no longer fear a tooth extraction or die in agony. Among the few goods consumed less today than in the past are potatoes and cigarettes. In 1981, 38.1 percent of Canadians smoked an average of 20.6 cigarettes per smoker. In 1996/7, the 28.9 percent of Canadians smoked an average of 17.5 cigarettes per smoker<sup>5</sup>.

**Table 10: Selected Indicators of Prosperity in Canada, 1935-1997**

	1935	1950	1965	1974	1986	1997
Red Meat, pounds consumed per person per year	115.5	126	150	169.7	154.6	130
Poultry, pounds consumed per person per year	10.4	11.5	27.2	43.3	55.2	67.5
Vegetables, pounds consumed per person per year	---	---	291	321.9	380.9	409.4
Fruit, pounds per person per year	---	---	183.5	199.3	253.2	283.4
Stock of Cars per 1000 people	91	139	269	377	438	440
Flush Toilets, % of households	56.3	64.2	78.7	97.2	99+	99+
Refrigerators, % of households	9.3	60	98	99+	99+	99+
Computers, % of households	0	0			10.3	39.8
Television Sets, % of households	0	10.3	92.6	96.5	98.7	99+
Telephones per 1000 people	57	110	270	390	---	---
University Students per 1000 people, undergraduate	3	5	8.3	17	15.7	16.6
University Students per 1000 people, graduate	0.14	0.39	1.12	1.67	2.09	2.52

Source: D. Usher, *The Measurement of Economic Growth*, Oxford: Blackwell, 1980, table 10.2, and Tanis Day, *Substituting Capital for Labour in the Home: The Diffusion of Household Technology*, Ph. D. Dissertation, Queen's University, 1987, table A. 1a. Supplemented with data from Statistics Canada: *Road Motor Vehicles*, 53-219; *Education in Canada*, 81-229; *Household Facilities and Equipment*, 64-202, *Food Consumption in Canada*, 32-230, *Historical Statistics of Canada*.

A similar story is told for the entire world in table 11. There is a 10-fold growth in western Europe and 'western offshoots' (meaning United States, Canada, Australia, and New Zealand) and a less spectacular but still substantial growth in the rest of the world. Asia more or less stagnated for the first hundred years, but grew faster in the last thirty years than any other region. Africa did the least well over the entire period, trebling income per head but falling relatively from 82% (450/661) to 24% (1318/5539) of the world average.

**Table 11: World-wide Gross Domestic Product per Head in 1990 Dollars**

	Western Europe	Western Offshoots	Southern Europe	Eastern Europe	Latin America	Asia	Africa	Average
1820	1292	1202	806	750	715	550	450	661
1870	2110	2440	1111	1030	800	580	480	920
1900	3092	4022	1575	1263	1134	681	500	1305
1929	4704	5237	1753	1557	1515	742	575	1592
1960	7675	10813	2828	3670	3302	1041	933	2931
1992	17384	20850	8273	4608	5292	3239	1318	5539

Source: Madison, A., *Monitoring the World Economy*, Paris: OECD, 1995, table E-3, 210.

“Western Offshoots” refers to United States, Canada, Australia and New Zealand. The comparable figures for Japan are 704 in 1820 and 19,425 in 1992. The comparable figures for United States are 1,287 in 1820 and 22,569 in 1992. The comparable figures for Canada are 1,225 in 1820 and 18,159 in 1992.

The increase in longevity and prosperity over the last two hundred years would have been impossible without a marked decline in fertility rates, defined as the number of children per woman. Consider the Canadian experience as set out in table 12. In the year 1700, women in Canada who lived until the end of their childbearing age would have given birth to just over eight children. With mortality rates as they were at that time, the actual number of children per women was 4.3, equivalent to about 2.15 female children per generation. Suppose the length of a generation, from childbirth to childbirth, to be 25 years. Had that rate of increase been maintained over the twelve generations from 1700 to 2000, the original population of 18 thousand in the year 1700 would have grown 9,756 fold ( $2.15^{12}$ ), reaching 176 million by the year 2000, over five times the present population of Canada. The Canadian resource base could not support that many people at the present standard of living. Despite substantial immigration over the past three hundred years, the population of Canada is only 32 million today. Worse still, if mortality rates among women had been the same in the year 1700 as they became in the year 2000 (so that almost all women survived until the end of their childbearing years) and if the number of children “per woman who lives to the end of the childbearing age” remained as it was in the year 1700, the population would have increased over four-fold per generation. The Canadian population would have grown 22.6 million fold ( $4.1^{12}$ ). By the year 2000, the Canadian population would have reached about 407 billion people, more than sixty times the present population of the world.

**Table 12: Life Expectancy at Birth and the Number of Children per Woman in Canada, 1700-1999**

Year	Life Expectancy at Birth		Number of Children per Woman (fertility rate)	Number of Children per Woman who Lives to the end of Child-bearing Age	Population of Canada (thousands)
	Males	Females			
1700	35.5	35.5	4.3	8.2	18
1831	40.2	42.4	3.9	6.5	1124
1861	42.7	45.3	3	4.8	3230
1891	49.3	53.5	2.5	3.6	4883
1921	62.6	70.2	2.7	3.1	8788
1950	72.3	79.6	1.8	1.9	14009
1999	76.1	82.8	1.7	1.7	31006

Source: Demographic data from *Lavoie, Y.*, “Two Centuries of Demographic Change”, *Report on the Demographic Situation in Canada*, Statistics Canada, 91-209-E, 1992 and 1996.

Population data from W. L. Marr and D.G. Paterson, *Canada: An Economic History*, Toronto: Macmillan of Canada, 1980, table 6-1 updated from *Annual Demographic Statistics*, 1999, Statistics Canada, 91-213- XPB, table 1.1. All data for 1999 are from [www.odci.gov/cia/publications/factbook/ca.html#people](http://www.odci.gov/cia/publications/factbook/ca.html#people)

Until quite recently, recognition of the consequences of this bizarre mathematics of population growth led thoughtful people to despair about the prospects for permanent prosperity or long- term economic growth. A small upper class could be kept wealthy. Forces beyond anybody’s control would keep the vast majority of people permanently impoverished. Technical change may raise the standard of living for a time, but not permanently. Inevitably, prosperity lowers mortality rates, the fall in mortality rates brings population growth, population growth reduces resources per head, and the reduction in resources per head brings prosperity to an end, driving down the standard of living to whatever level is sufficient to stop population growth.

Little faith was placed in people’s ability or willingness to restrict population voluntarily, though that is exactly what happened. Population has grown rapidly in the last few hundred years, but not nearly as rapidly as our mathematics would suggest because fertility rates fell. The story was told for Canada in table 12 and for the entire world in table 13. Table 13 shows that fertility rates have been declining everywhere, but not sufficiently to stop population growth. Fertility rates in Africa have been especially high: enough to generate a three-fold increase in population over the last fifty years. Fertility rates in Europe and America have been much lower: enough that population will soon decline if not shored up by immigration. In view

of the enormous increase over the last few hundred years in the population of Europe and of lands occupied by Europeans, a period of voluntary decline may be no tragedy. The larger picture is that technical change has enabled national income per head to increase despite the pressure of population on land and resources. There is no assurance that past trends will continue, for current fertility rates are still well above what is required at present mortality rates to stop the growth of population. The mechanics of economic growth will be discussed in chapter 6.

**Table 13: A Fall in Fertility Rates and a Rise in Population**

	Fertility Rates		Population in millions				
	1980-5	1990-9	1750	1850	1900	1950	1999
World		2.9	791	1262	1650	2520	5982
Africa	6.32	5.4	106	111	133	224	771
Asia	3.7	2.8	502	809	947	1403	3637
Europe	1.78	1.4	163	276	408	549	728
Latin America	3.84	2.9	16	38	74	166	512
Northern America	1.8	2	2	26	82	166	303
Oceania	2.6	2.4	2	2	6	13	30

Source: United Nations, *World Population Prospects, The 1994 Revision*, pages 101 and 117, supplemented by current data from [www.prb.org/pubs/wpds99/wpds99\\_world.htm](http://www.prb.org/pubs/wpds99/wpds99_world.htm)

### Customs and Institutions

The doubling of the length of life and the 10-fold increase in gross national product per head over the last two hundred years are beneficial to humankind directly and by virtue of the customs and institutions they permit. Patricide, infanticide, brutal punishment for crime, torture, persecution of witches and heretics, a rigid class structure, and slavery have been eliminated in much of the world because people are for the first time in a position to do without them.

#### *Patricide and Infanticide*

For our custom up here is that all old people who can do no more, and whom death will not take, help death to take them. And this is not merely to be rid of a life that is no longer a pleasure, but also to relieve their nearest relations of the trouble they give them.

A Netsilik Eskimo<sup>6</sup>

Today, old folks retire to a life of leisure in Florida. Traditionally, the Eskimos abandoned their old folks, who were younger than most Canadians and Americans retiring today, to freeze. There is nothing unusual about such behaviour. The story is told that, among the Visigoths, ancestors of much of the population of Europe and North America, old men weary of life would be expected to throw themselves off *The Rock of the Forefathers* on the understanding that a delightful abode in heaven awaited those who committed suicide and a horrible subterranean cavern awaited those who died of sickness or decrepitude. Such practices are common among poor primitive people, especially nomads for whom the capacity to walk long distances quickly is essential<sup>7</sup>. Similar considerations may lie behind the ancient Hindu custom of immolating widows on their husbands' funeral pyres.

Nor can we condemn our ancestors for these practices. A community close to subsistence may be confronted with the stark choice between the old and the young. The very survival of the group may depend on a willingness to slough off its weaker members. "The Eskimos of Baffin Island have a great respect for the aged and treat them well. But when a woman becomes so old that she is a burden, she may calmly resign herself to death, allowing herself to be walled into a snow hut and left to die. She thinks it is better; the tribe agrees"<sup>8</sup>.

The content of our ethics depends upon the productivity of our economy. Right and wrong depend upon the level of prosperity humankind has attained. Provision for the old always draws upon resources that might be used for the benefit of the young instead. Whether that provision is warranted depends on what else those resources might procure. Today, patricide is evil because the sacrifice to the young in sending the old folks to a retirement home rather than to the ice flows is a smaller car or a shorter vacation, not life itself. Today the trade-off is between lives and goods. At other times it has been between the lives of the old and the lives of the young. We sympathize with the plight of the Eskimos in circumstances as they used to be, though we would unreservedly condemn patricide by Eskimos following the old traditions, or by anybody else, today. Patricide has become an abomination because we can afford to dispense with it.

Infanticide was equally necessary. The human female is biologically programmed to produce many more children than is consistent with the very low rates of population growth observed throughout most of history. Without modern methods of birth control, it is unlikely bordering on impossible, that a population of hunter-gatherers could have been stabilized without recourse to infanticide<sup>9</sup>. Nomadic people cannot maintain more young children than can be carried for long distances. There is anthropological evidence of infanticide among the many tribal societies. Some societies did not recognize children until enough time had elapsed after birth for a decision to be made whether the child is allowed to survive, drawing the line between birth control and murder at, for example, the tenth month after conception. Prosperity has distinct moral consequences.

## *The Severity of the Law*

A similar observation can be made about the law. Prosperity and longevity cannot be sustained without a modicum of public order, and that, in turn, requires that crime be significantly deterred. The incidence of crime must be held to some tolerable limit by the prospect of punishment. Today, we can afford a police force, and we can afford to put convicted criminals in prison. In times gone by, both were prohibitively costly and other means had to be found to deter crime. As the risk of detection was low, the punishment had to be correspondingly severe.

Consider an amoral person deciding whether to steal \$100. If he is sure to be caught, a fine of as little as \$1 (over and above the return of the stolen \$100) is sufficient deterrence because the thief is made \$1 worse off by stealing than by not stealing. But if the probability of detection and punishment is only 10% (and if the would-be thief is risk neutral), the fine must exceed the loot by a factor of at least nine to ensure that crime does not pay. To deter a theft of \$100, a fine of over \$900 would be required. The general principle is that crime can only be deterred when the expected cost of punishment to the would-be criminal exceeds his expected benefit from crime. The preservation of society requires that punishment be severe enough to deter most crime, though, for reasons to be discussed later on, not all crime is deterred in practice.

To this principle, there is an important qualification. The would-be criminal must be wealthy enough to pay the fine. If not, some other form of punishment is required. The poorer the society and the less efficient the police, the less likely is this requirement to be met. Nowadays, the alternative is imprisonment which is costly to society but effective as a deterrent. Imprisonment may be insufficient in a poor society. Imprisonment may be deemed too costly or may fail to deter crime among people on the very edge of subsistence. That leaves only the infliction of pain or the death penalty, which were - and had to be - imposed almost everywhere until modern times.

English law as it was in the early seventeenth century provides a wealth of examples<sup>10</sup>. Treason, murder, manslaughter, larceny, abduction of an heiress with intent to marry her, forgery, malicious burning of stocks of grain, malicious injury to another man's eyes or tongue, refusal to depart on command from assembly with intent to bring down prices, and stealing of more than a shilling's worth (about two days wage of a labourer) were all capital crimes, punishable by hanging. Lying, perjury, and blasphemy were punished by piercing the tongue with a hot iron. Every village had its stocks and its whipping post for punishment of lesser crimes such as petty theft, vagrancy, wife beating, drunkenness, breaking the sabbath, or gambling. All punishment, especially execution, would be meted out in full view of the public, outside church on Sunday or in the marketplace on market day. As recently as 1833, a 14 year-old boy was hanged for stealing two pence worth of printers ink<sup>11</sup>.

Treason, the most serious of all crimes, was punished by hanging, drawing (disembowelling), and quartering. The great seventeenth-century English jurist, Sir Edward Coke, described the process, with approval, as follows:



“When the sentence was fully carried out - and this was not always done - the traitor was drawn backwards, with head downwards, on a hurdle from the prison to the gallows, as being “unworthy to tread any more on mother earth”...; he was then hanged by the neck and, whilst still alive, cut down from the gallows and his penis and testicles cut off, since he was regarded as unprofitably begotten and unfit to leave any descendants; his bowels and entrails, which were considered to have inwardly conceived and concealed the treason, were cut out of his body and burnt by the executioner before the dying man’s eyes; then his head, that imagined the crime, was cut off, his body divided into four quarters and set up in some “high and eminent place to the view and detestation of men and to become a prey for the fowls of the air”<sup>12</sup>.

Torture - by the rack, compression, manacles, starvation, and hanging by one’s thumbs - was regularly employed on witnesses and accused persons to extract information. Torture is distinct from punishment. Punishment is inflicted on someone convicted of having committed a crime; torture is inflicted to elicit information from someone who may very well be innocent of any crime. Special measures had to be taken in circumstances where conviction could not be obtained without a plea, guilty or not guilty as the case may be, by the accused and where the accused refused to plead at all. The procedure, called *pein forte et dure*, was to place one heavy stone after another on the chest of the accused until his rib cage collapsed. Knowing the consequences of silence, an accused person might still refuse to plead because a guilty verdict would mean the forfeiture of his property to the state, while a person who dies under *peine forte et dure* has not been convicted of a crime so that his heirs retain entitlement their inheritance<sup>13</sup>.

These were the practices of our ancestors. English law was not unusually harsh for its time, and by the seventeenth century, the reformers were already condemning its worse excesses. Seventeenth-century England was the huge cauldron from which bubbled up a great many of our present ideas about justice and democracy. Nevertheless, a degree of savagery in the criminal justice system, like the institution of patricide among the traditional Eskimos, was once necessary to preserve society and maintain the core of order without which civilized life would have been impossible.

### *Witchcraft and Heresy*

Today, Halloween is a celebration for children. It is at the same time a collective memory of the era, four to five hundred years ago, when the church, Protestant and Catholic, treated witchcraft as a capital crime and was instrumental in its prosecution and punishment. In those days, the Devil stalked the earth, capturing the souls of unfortunate people who flew off on broomsticks to their sabbats to copulate with the Devil and plot mischief for mankind. As witches could hardly be expected to admit to such crimes voluntarily, confession was extracted by torture.

During the great witch craze from about 1450 to 1650, belief in the existence of witches was almost universal, in part because learned and authoritative treatises on the subject decreed that “to disbelieve in witchcraft is the greatest of heresies”<sup>14</sup>. University students would be taught by grave and sincere professors that witches live secretly among us and must be exterminated. Throughout most of Europe, the punishment for witchcraft was to be burned alive

at the stake, with the option of being strangled first if one admitted one's crimes. Estimates vary considerably, but something in the order of 100,000 witches, mostly but not entirely old women, were executed<sup>15</sup>.

Heresy was also punishable by burning at the stake, though lesser punishments would normally be imposed on those who confessed their crimes and accepted the authority of the true church, whatever that might be. Records of ancient tribes or musings of ancient prophets were accepted as literally and factually true, and bureaucracies of clerics were empowered with the sole custody of interpretation. Entrance to heaven became conditional on obedience to the true church, no act in defense of the true church was prohibited, and no punishment of unbelievers was too severe. The term heresy was usually reserved for Christians who deviated from the true church, not Jews or Muslims who had always been apart, but the definition of heresy varied from time to time and from place to place. For a layman to read the Bible in the vernacular might be heresy. Participants in religious sects outside of the established church were heretics. Converted Jews or Muslims preserving elements of their old faiths were heretics. Protestants in Catholic countries and Catholics in Protestant countries were heretics.

No one is sure how many heretics were burned at the stake in the middle ages and in early modern times. Probably tens of thousands altogether<sup>16</sup>. Many, many more deaths are probably attributable to the ferocity of the wars of religion in the seventeenth century when Catholics and Protestants alike could expect to be executed for their religious beliefs if their side did not come out victorious. Many innocent civilians would have been destroyed in the crossfire. Only gradually, did the crime of heresy disappear. Associating freedom of belief with freedom of trade, some historians have attributed the disappearance of crime of heresy and the emergence of the principle of toleration with the rise of capitalism<sup>17</sup>. Memory of the days when heresy was a capital offense lies behind the provision in the American constitution for separation between church and state.

### *The Class Structure*

For that infinite wisdom of God, which hath distinguished his angels by degrees, which hath given less light and beauty to the heavenly bodies, which hath made differences between beast and birds, created the eagle and the fly, the cedar and the shrub, and among stone given the fairest tincture to the ruby and the quickest light to the diamond, hath also ordained kings, dukes and leaders of people, magistrates, judges and other degrees among men.

Sir Walter Raleigh<sup>18</sup>

How utterly foreign that sounds! So accustomed have we become to thinking of people as fundamentally equal that we have quite forgotten that our ancestors held a very different world view in which some people were innately superior to others. The pharaohs of Egypt and the emperors of China, Rome, ancient Cambodia and many other places were not just divinely-appointed, but God-like in themselves and worthy of worship. Nobility were almost biologically different from ordinary folk. It may have been self-evident to the writer of the *Declaration of*

*Independence*, and it may be self-evident to us today, that “all men are created equal,” but it was no less self-evident to our ancestors that they were not.

The cruel truth of the matter may be that, throughout most of recorded history, a sufficient degree of order in society could only be established despotically. The material conditions of life may have allowed no other options, except perhaps in small tribes where people could keep watch on one another and the community as a whole could mete out punishment where necessary. Otherwise, the choice may have been between total disorder where the life of man is, in Hobbes’ famous phrase “solitary, poor, nasty, brutish and short” and the utter subservience of the greater part of mankind to a small ruling class which comes to look upon its subjects as sheep to be cared for and protected only to the extent that the wool and meat are useful to the shepherd. And if that be the choice, the shepherd may be preferable to the wolves. Recall the passage in the Bible (1 Samuel 8) where the Israelites beg the prophet Samuel to appoint a king.

And he [the Lord as quoted by Samuel] said, “This will be the behaviour of the king who will reign over you: ... He will appoint captains over his thousands and captains over his fifties. ... He will take your daughters to be perfumers, cooks and bakers. And he will take the best of your fields, your vineyards and your olive groves. ... And you will be his servants. And you will cry out in that day because of your king...and the Lord will not hear you in that day.” Nevertheless the people refused to obey the voice of Samuel; and they said, “We will have a king over us...that our king may judge us and go out before us and fight our battles...”

To be sure, the origin of kingship may have been somewhat less consensual than the story would suggest, but, had there been a choice, an absolute monarchy and the division of humankind into rigid social classes may have been the best available option.

Class structure would be reflected in the law. During the third century AD there evolved in the Roman empire a broad distinction between the *humiliores* and the *honestiores*, names which should speak for themselves. The *humiliores* could be flogged, tortured or put to death for certain crimes for which the *honestiores* could at most be exiled or deprived of property<sup>19</sup>. In Imperial China, scholars who passed the Confucian examination and thereby established themselves as members of the ruling class were exempt from torture and corporal punishment, no small privilege when torture with wooden presses was routinely employed to exact confessions from persons accused of crimes. The legal privileges of the upper classes were enhanced by the rule that punishment, not excluding strangulation or beheading for many crimes, was commutable to fines at rates the upper classes could afford but the lower classes could not<sup>20</sup>. In the old Soviet Union, the privileges of the members of the Communist Party - the Nomenklatura - included the right to shop in special stores that were closed to ordinary people. It has been claimed that, in practice, the nomenklatura was so favoured in the application of the law that there might as well have been two distinct codes of law<sup>21</sup>.

In Anglo-Saxon times before the Norman Conquest, when recognition by the courts was restricted to the kindred group, the punishment for murder was the payment of compensation, called *wergild*, from the kins people of the murderer to the kinsmen of his victim. The amount of compensation depended on the status of the victim: 1,200 shillings for the death of an immediate dependent of the king, though 200 shillings would do for an ordinary landowner, 20 shillings for a slave, with no penalty at all if the slave was one's own<sup>22</sup>. Marked class distinctions were still evident in the seventeenth century. The law allowed peers to assault, strike and beat members of the lower classes. People who could read and write were exempted from the death penalty for certain crimes, including theft, under a curious provision of the law called "benefit of clergy"<sup>23</sup>. The history of the law over the last two hundred years is the story of the removal of class privilege and the development of rules that are the same for all.

### *Slavery*

The ugliest manifestation of the class system is slavery which was once ubiquitous but has now been eliminated from most of the world. Treatment of slaves by the ancient Israelites may have been more humane than in neighbouring tribes, but the authors of the Bible and the Koran saw nothing wrong in one person owning another. The list of large-scale slave-holding societies runs for pages and pages, and includes ancient Greece and Rome, Muslim Spain, the Arab world to the present day, early medieval England, many countries of Africa before and during the period of colonialism (African slaves destined for the Americas or the middle east were mostly bought from local traders, not captured), Korea, China, Thailand, many countries in Latin America, many North American Indian tribes before the coming of the Europeans, Canada until early in the nineteenth century and the United States before slavery was abolished during the Civil War<sup>24</sup>.

Slavery is not a uniform institution. Slaves have no rights whatsoever in some societies and limited rights in others. Slavery merges by degrees into serfdom where peasants are tied to the land but have some protection against ill-treatment by their masters. Slavery was part of the traditional culture of Indian tribes of the Canadian west coast where slaves accounted for about 15 percent of the population and where the authority of masters over slaves was as complete as the ownership of any property today. Masters could kill their slaves with impunity. Slaves might be executed as part of the potlatch or on the occasion of the master's funeral. "The first whale that was killed in a season it was customary to make a sacrifice of one of their slaves the corps they laid beside a piece of the whales head adorned with eagle feathers after it has laid there a certain time they put it in a box as usual."<sup>25</sup> And at the foot of those magnificent totem poles that have become symbolic of Canadian culture one might expect to find the bones of a ritually executed slave. Similar stories might be told of a thousand other cultures.

## *Franchise*

The abolition of slavery and of the legal privileges of the upper classes are part of a larger process: the gradual emergence of a society where everybody has the same civil rights as everybody else and where people are equal politically, though they may be unequal in their incomes and in their wealth. Civil rights may be classified as rights *against* the government and as rights *over* the government. Rights against government include freedom of speech, freedom of association and the rule of law protecting people from punishment at the pleasure of the ruling class. Rights over the government empower citizens to participate in the choice of leaders and legislators. Public decisions must be binding on everybody, those who favour them and those who do not. Sometimes acquiescence is attained by force, as when a criminal is punished. Sometimes acquiescence is attained by a combination of respect for political customs and the threat of force, as when the outcome of a presidential election is accepted by the loser and when a law passed by the legislature is obeyed by those who opposed the law as well as by those who favoured it. Regardless, public decision-making may be the preserve of the privileged few - as in a monarchy or under communism with an all-powerful central committee - or a right of every citizen, a right that cannot be exercised by all citizens simultaneously except by voting.

Voting is only sustainable under very special conditions which obtain now in many countries but have not always done so. As much as we admire the ancient constitution of Athens (approximately 400 BC) as the cradle of democracy, we have to recognize that its franchise was limited to about a sixth of the adult population. Franchise was limited to free male citizens. Exact numbers for residents and voters are hard to come by. One historian's considered judgment is that, at the height of Athenian civilization in the fourth century BC, the total male population of Athens was about 31,000 of whom about 12,000 were free aliens with civil rights but without the right to vote and about 10,000 were slaves, leaving 9,000 people entitled to vote out of a total population of 62,000.<sup>26</sup> Can we then infer from the prevalence of slavery and the limited franchise that the ancient Athenians were insufficiently imbued with the spirit of democracy as we understand the word today? There is another possibility. Restricted democracy with limited franchise may have been the only alternative to the tyranny characteristic of most countries at that time.

In the early years of the nineteenth century, the parliament of the United Kingdom was still the preserve of the grandees and the land-owning classes whose dominance was upheld by property qualifications for voting, the exclusion of women, "rotten boroughs" (constituencies with almost no voters) and the open ballot (so that a bribe-giver could ascertain that the bribe-taker has voted as he promised). Gradually the franchise was extended to the entire adult population, in part through fear of rebellion by the disenfranchised, but also because economic conditions rendered universal franchise compatible with democratic government.

#### **Table 14: Steps on the Path to Liberty and Equality in Canada**

1215 - The Magna Carta. King John of England guarantees political and legal rights to his Barons, protection from arbitrary taxation, and from punishment without trial. The Magna Carta offered nothing to the common man, but was the beginning of the extension of rights to other social classes.

1649 - The Beheading of Charles I. A central event in the English Revolution in which the supremacy of Parliament was established.

1776 - The Declaration of Independence. The American Revolution was the central event in the gradual dismantling of colonies and the establishment of representative government.

1832 - The enfranchisement of Catholics in Canada

1834 - The Abolition of slavery in the British Empire. There had been slaves in British North America and in New France.

1834-51 - The *disenfranchisement* of women in the colonies of British North America. Each province determined its own franchise. It was not the case that franchise was steadily expanded. All provinces disenfranchised women at this time.

1870 - The Fifteenth Amendment to the Constitution of the United States: “The right of citizens of the United States to vote shall not be denied or abridged by the united states or by any state on account of race, color or previous condition of servitude.” (In practice, by one means or another, the right was abridged for many years to come.)

1884 - Universal suffrage established, but for white males only. Prior to 1884, there had been property qualifications on voting.

1918 - Women enfranchised in Federal elections.

1923 - Chinese immigration Act - Banned the immigration of Chinese altogether. Formerly, Chinese immigration had been subject to a head tax instituted in 1884, raised to \$100 to 1900 and raised again to \$500 in 1903. Immigration of South Asians and Blacks had been banned in 1907 and 1910.

1940 - Women enfranchised for provincial elections in Quebec, the last of the provinces to enfranchise women.

1948 - Chinese enfranchised and allowed to immigrate on the same terms as anybody else.

Sources: See the entries on “representative government” and “prejudice and discrimination” in *The Canadian Encyclopaedia*, and John Garner, *The Franchise and Politics in British North America, 1755-1967*.

Over and over again, serious and well-meaning people have opposed government by voting with universal franchise in the belief that it is destined to self-destruct. The argument in a nutshell is that, with universal franchise, the poor can outvote the rich and have every incentive to employ their democratically acquired authority over the government to dispossess the rich entirely. In an age where most people are illiterate and where the poor are not permanently secure from starvation, nobody's wealth would be safe and enterprise would be rendered futile by the prospect of expropriation at the hands of a hostile majority of the electorate. In an age where heretics risk execution, supporters of a government ousted in an election might prefer civil war to acquiescence in the outcome of the vote. The argument that democracy self-destructs was probably correct until recent times. The stability of democracy today will be discussed in chapter 9.

Whatever the reasons, franchise in the United Kingdom and in the United States has been gradually enlarged over the last two centuries. Property qualifications have been abolished. Women have become entitled to vote. People are no longer excluded from voting by virtue of race. Literacy tests (which could be used selectively to exclude groups of voters) are no longer employed. Focussing instead on Canada, table 14 is a reminder of some of the key events in that process. The table includes events elsewhere and before the establishment of Canada as an independent country because the true history of Canada is the history of the influences on its people beginning with Adam and Eve and encompassing events in many times and places.

### *Inequality of Income*

It is characteristic of modern democracies that people are equal in one respect but unequal in another. People are equal politically as voters and as citizens, but unequal economically as property holders and in their capacity to earn. Some degree of inequality of income is inevitable in any society where people's wages are a reflection of their talents and where property is privately owned. It is, nevertheless, of interest to measure the gap between the rich and the poor and to see whether, in what direction and to what extent the gap between rich and poor is changing over time. The pattern in the United States from 1926 to 1998 is shown in table 15. Inequality might be assessed for individuals or for families. In table 15, inequality of family income is identified by "quintile" shares, defined as shares of each fifth of the population ordered from the poorest to the wealthiest. For example, the number 3.6 in the top right hand corner of the table means that, in the year 1998, the poorest 20% of all families in the United States acquired only 3.6% of the total income. If every family's income were the same, each quintile of the population would have exactly 20% of the income and the top 5% of income earners would have 5% of the income. The numbers in the column would be 20, 20, 20, 20, 20, 5 with average disposable income at the bottom. Deviations from this sequence reflect inequality in the distribution of income. To say that the poorest 20% of all families has only 3.6% of total income and that the richest 5% has 21.4% is to say that the poorest 20% acquires only a fifth and that the richest 5% acquires just over four times what they would acquire if total income were allocated equally. In other words, the income per family among the richest 5% is about twenty times the income per family among the poorest 20% of the population.

**Table 15: The Distribution of Family Income in the United States, 1926-1998**

Quintile shares	1926	1935-6	1941	1950	1960	1970	1980	1990	1998
Lowest		4.1	4.1	4.5	4.8	5.4	5.1	4.6	3.6
Second	12.5	9.2	9.5	12	12.2	12.2	11.6	10.8	9
Third	13.8	14.1	15.3	17.4	17.8	17.6	17.5	16.6	15
Fourth	19.3	20.9	22.3	23.4	24	23.8	24.3	23.8	23.2
Highest	54.4	51.7	48.8	42.7	41.3	40.9	41.6	44.3	49.2
Share of Top 5%	30	26.5	24	17.3	15.9	15.6	15.3	17.4	21.4
Disposable Personal Income per person in 1992 dollars	5349	5160	6640	7661	8660	12202	14813	17941	20733

Source: *Historical Statistics of the United States, Colonial Times to 1970*, Series G319-336, F19 and F31, supplemented by *The Statistical Abstract of the United States*, 1996 and 2000. Table 692 and U.S. Census Bureau, Series P60, Income Inequality, Table 1. For 1926 only, the two lowest quintile shares are combined. The bottom row of the table is constructed by splicing series of real disposable personal income with different base years. Data for 1998 are from [www.census.gov/hhes/income/histinc/inchhdet.html](http://www.census.gov/hhes/income/histinc/inchhdet.html)

The trend of inequality of income in the United States is this: steadily increasing equality of income until the mid-1970s, followed by steadily increasing inequality of income thereafter, so that the gap between rich and poor was almost the same at the end of the period (1998) as it was at the beginning (1926). Consider the share of the poorest 40% of the population, shown in the top two rows of the table. It rose steadily from 12.5% of total income in 1926 to 17.6% in 1970, and then fell again to 12.6% in 1998, which was almost where it began. At the same time, the share of the most prosperous 5% of the population fell dramatically from 30% of total income in 1926 to 15.3% in 1980, and then rose, almost equally dramatically, to 21.4% in 1998.

Shares must be distinguished from levels. A fall in one's share of total income need not signify that one is becoming worse off over time, only worse off relative to other people. From 1980 to 1998, the share of the lowest quintile fell from 5.1% to 3.6%, but the average income of a person in that quintile remained almost the same. Measured in constant (1992) dollars, the average income of a person in the lowest quintile is the product of (1) average disposable income in the bottom row of the table, and (2) the share of the lowest quintile as a proportion of its percentage of the population (i.e. 20%). In 1980, the average income of a family in the lowest quintile was \$3,777 [ $14,813 \times 5.1/20$ ]. In 1998, the average income of a family in the lowest quintile was \$3,732 [ $20,733 \times 3.6/20$ ]. Thus, from 1980 to 1998, the average income of a family in the lowest quintile declined ever so slightly at a rate of 0.07% per year. By contrast, over the same period, the average income per family of the most prosperous 5% of the population grew from \$45,343 [ $14,318 \times 15.3 / 5$ ] to \$89,152 [ $20,733 \times 21.4 / 5$ ], at a rate of 3.76% per year



The resurgence of inequality over the last twenty-five years came as a surprise to many observers who had supposed that the long-term equalizing trend - shown in the table for the years from 1926 to 1970 but believed to have been maintained since the late nineteenth century - would continue indefinitely, in part because of the growing access in the American population to higher education. The numbers must be taken with a grain of salt. Average size of poor families is less than average size of rich families. In any year, observed low-income families include some whose incomes are only temporarily low. A family that earns \$500,000 one year and nothing the next is counted in the statistics as a poor family with no income every second year. The standard of living of the poor is buoyed up by charity, earnings not recorded by the tax collector and free services such as the food bank. However, to the extent that these influences persist unchanged over time, the trend of inequality in table 15 may be reasonably accurate. The recent increase in the number of homeless people and of beggars on city streets seems indicative of a real trend.

The significance of inequality may be changing as a consequence of general prosperity, the content of civil rights, public provision of “free” goods and services, and other aspects of modern society. General prosperity matters because relative deprivation is the far greater hardship when average income is low. Consider a society with two distinct classes, with equal numbers of people in each class, and with a ten-fold gap between the income per family of the upper class and the income per family of the lower class. A ten-fold gap between the incomes of the classes may not matter very much if the income per family in the upper class is \$500,000 and the income per family in the lower class is \$50,000 because what is most important in life - an adequate diet, a decent place to live, and so on - can be had for \$50,000. The extra \$450,000 is for luxuries that would be welcome but that one can do without. A ten-fold gap between the incomes of the classes would matter a great deal if income per family in the upper class were only \$50,000 and the income per family in the lower class were \$5,000, for, depending on what society supplies free, a family with an annual income of only \$5,000 is consigned to a life of poverty at best, and perhaps to actual starvation. Prosperity moderates the sting of income inequality. Public provision of “free” goods is also significant. Obviously, poverty hurts more when medical care and access to education are purchased by each person for himself than when they are provided to each person equally by the state. Inequality hurts less when we all walk the same streets, are entitled to watch the same television programs, vote equally for legislators, send our children to the same schools and are subject to laws that do not subtly favour the rich over the poor than when these conditions do not obtain. Money matters in accordance with what money can buy, and money buys less when civil rights are strong.

With regard to longevity and prosperity, it may be asserted unambiguously that, with few exceptions, people throughout the world are better off today than people have ever been before. With regard to social customs and institutions, no such sweeping statements can be warranted. Social customs cannot be compared quantitatively. There are too many contemporary instances of horrible institutions and horrible behaviour justified by ancient legends believed to be literally and completely true. The reign of hocus pocus is not yet over. What can be said is that we have rid ourselves of a great burden of superstition and misery. Infanticide, patricide, judicial torture, witchcraft, slavery, cruel and unusual punishment and the more extreme manifestations of the

class system are largely, though not entirely, gone. A great by-product of rationality in science and in markets is that such institutions are no longer necessary.

### **Mass Destruction**

And Samuel said to Saul, “The Lord sent you to anoint you king over his people Israel: now therefor hearken unto the words of the Lord. Thus says the lord of hosts, ‘I will punish what the Amalekites did to Israel in opposing them on the way, when they came up out of Egypt. Now go and smite the Amalekites, and utterly destroy all that they have; do not spare them, but kill both man and woman, infant and suckling, ox and sheep, camel and ass.’... And Saul defeated the Amalekites ... and utterly destroyed all the people with the edge of the sword.”

1 Samuel 15

The efflorescence of science, technology, and productivity that has supplied most of mankind with an unprecedentedly high standard of living has also provided us with the means to harm one another more efficiently and on a far greater scale than ever before. Societies have been exterminated in the past, but, as a vehicle for extermination, the sword and the gallows cannot compete with the machine gun, poison gas, biological weapons, and the atomic bomb. It is virtually impossible to predict whether and for how long improvements in the organization of society will restrain our usage of such weapons. We may take some consolation in the fact that the mass destruction in the twentieth may not have been significantly worse than in earlier centuries and that its impact on life-expectancy has been tiny by comparison with the improvement in life expectancy brought about by the containment of disease and by prosperity itself. Table 16 shows the number of deaths in a selection of catastrophic events.

**Table 16: Death Tolls in Wars and Exterminations**

A) Number of soldiers killed in battle	(Millions)
Thirty Years War, 1618-48	0.6
Napoleonic Wars, 1806-15	3
U.S. Civil War, 1860-5	0.5
First World War, 1914-18	9
Second World War, 1940-5	22
B) Government Extermination of Civilians	
Collectivization of Agriculture in the USSR in the 1930s	14
The Holocaust, 1942-5	12
The Great Leap Forward, 1958-60	35
Communist rule in Cambodia, 1975	1
Civil War in Rwanda	1

Source: A)Urlanis, B., *Wars and Population*, Progress Publishers, Moscow, 1971, 226; B) discussed below.

*War*

The full death toll in the Second World War is the sum of the number of deaths of soldiers in battle and the number of civilians destroyed by bombing, shelling, execution or starvation. The total number of deaths has been estimated at 50 million, as shown in table 17. Estimates of the number of civilian deaths tend to be more judgmental and less reliable than estimates of deaths of soldiers. Civil order and civilian record-keeping break down in wartime, and there is some difficulty in accounting for the fall in the birth rate. Typically, civilian deaths are estimated by comparing actual the population after a war with an estimate of what that population would be if the pre-war population had increased at the “normal” rate<sup>27</sup>. This method of estimation is necessarily imperfect. All of the three components of the estimation - the actual pre-war population, the actual post-war population and the rate of growth of population as it would have been if the war had been avoided - are inaccurate to some extent. Typically, this method of estimation is combined with whatever records of deaths are available and with survivors reports. One is suspicious if different sources of information fail to correspond.

**Table 17: Death Toll in World War II**

Soldiers killed in battle, died of wounds, perished in captivity	22 million
Civilians who perished in concentration camps	12 million
Civilians who perished from aerial bombings	1.5 million
Civilians who perished as a result of hostilities, owing to blockade, starvation and epidemics	
- in European countries	7 million
- in China	7.5 million
<u>Total</u>	50 million

Source: Urlanis, B., *Wars and Population*, Progress Publishers, Moscow, 1971, 293.

World War II was by far the most lethal war in recent times, but is hard to say whether it was more lethal than past wars in relation to total world population at the time. We simply do not know, for example, the full death toll, soldiers and civilians, of the conquests of Genghis Khan. Historians recorded the victories of glorious leaders, not the cost to the conquered.

### *Extermination of Unwanted People*

“As I live,” says the Lord, “What you have said in my hearing I will do to you: your dead bodies shall fall in this wilderness; and of all of your number, numbered from twenty years old and upward, who have murmured against me, not one shall come into the land where I swore I would make you dwell ... but your little ones who you said would become a prey, I will bring in, and they shall know the land which you have despised ... And your children shall be shepherds in the wilderness forty years, and shall suffer for your faithlessness, until the last of your dead bodies lies in the wilderness.”

Numbers 14

As many people have been exterminated by their own governments as have died in wars. A class of people is deemed so wicked or so dangerous that nothing short of extermination is sufficient to protect moral purity or the safety of the rest. By far the best documented and the most chilling, though not the most lethal as measured in millions killed, of the non-military exterminations in the twentieth century was the Holocaust. Of the 12 million people exterminated, about 6 million were Jews seen as polluting the Aryan race. These 6 million made up about two-thirds of the pre-war Jewish population of Europe<sup>28</sup>. A great many gypsies were also exterminated. Though the Holocaust occurred in wartime, the extermination of the Jews contributed neither to the security of the leaders of the Nazi party nor to the effectiveness of the German army in the war. It was a diversion of resources from the war effort to ideological aims. Victims were brought to concentration camps, worked for as long as they had the strength to work, gassed and cremated.

**Table 18: Death toll in the Russian Collectivization of Agriculture, 1930-37**

Peasants killed or starved, 1930-37	11 million
Arrested to die in concentration camps	3.5 million
<u>Total</u>	14.5 million
of these:	
Dead as a result of deKulakization	6.5 million
Dead in the Kazakh catastrophe	1 million
Dead in the famine of 1932-33	
-in the Ukraine	5 million
-in the north Caucasus	1 million
-elsewhere	1 million

Source: Robert Conquest, *Harvest of Sorrow, Soviet Collectivization and the Terror Famine*, Edmonton, Alberta: University of Alberta Press, 1986, page 306.

An estimated 14.5 million people were executed or starved during the collectivization of agriculture in the Soviet Union in the 1930s. Collectivization was the transformation of agriculture from small privately owned farms into large publicly owned farms. Motives for the massacre were apparently mixed, partly to stamp out all resistance to collectivization of agriculture by farmers who had been accustomed to a degree of independence, partly to wipe out Ukrainians who were less than enthusiastic about Russian domination in a communist society, partly to transfer a larger fraction of the produce of agriculture to the cities than would otherwise have been possible<sup>29</sup>. The number of victims of collectivization is shown in table 18. The term “deKulakization” in the table refers to the elimination of the wealthy peasants, called Kulaks, an elastic term referring at first to very wealthy farmers, then, as the most wealthy farmers were eliminated, to less wealthy farmers, and so on. The killings came in two great waves. First, in the late nineteen twenties, came the elimination of the Kulaks many of whom were sent to die in concentration camps. Then, in 1932-3, came the mass starvation of peasants brought through the requisition of most of the harvest by the state.

**Table 19: Death Tolls in Democratic Kampuchea, 1975-1979**

social group	1975 population (thousands)	number who perished (thousands)	percentage that perished
<i>New people</i>			
urban Khmer	2000	500	25
rural Khmer	600	150	25
Chinese (all urban)	430	215	50
Vietnamese (urban)	10	10	100
Lao (rural)	10	4	40
<i>Total new people</i>	3050	879	29
<i>Base People</i>			
rural Khmer	4500	675	15
Cham (all rural)	250	90	36
Vietnamese (rural)	10	10	100
Thai (rural)	20	8	40
upland minorities	60	9	15
<i>Total base people</i>	4840	792	16
<i>Total Cambodia</i>	7890	1671	21

Source: Ben Kiernan, *The Pol Pot Regime, Race, Power and Genocide in Cambodia under the Khmer Rouge, 1975-59*, New Haven: Yale University Press, 1996, page 458. Kampuchea is the new name of Cambodia. The distinction between “new” and “base” people was drawn by the Communist Party itself. New people came under the authority of the Communist Party when it assumed control over the whole of Cambodia in 1975. Base people had been living in Communist-controlled territory before the Communist Party assumed control over the entire country.

The Khmer Rouge came to power in Cambodia in 1975 and remained in power until 1979 when they were displaced by a puppet government sponsored by Vietnam. The Khmer Rouge, so far as anyone can tell, were not insane in the normal sense of the term and intended in all sincerity to purify their country. According to an official broadcast by Radio Phnom Penh in 1975 “A clean social system is flourishing throughout new Cambodia. Since 17 April, Cambodia has been totally and permanently emancipated. The sound, clean, social system formerly prevailing in the liberated zone has now been expanded to Phnom Penh, a number of

provincial capitals and throughout the country. This new social system is sound, clean, free of corruption, hooliganism, graft, embezzlement, gambling, prostitution, alcoholism, or any kind of hazardous games<sup>30</sup>. To achieve these aims, the Khmer Rouge emptied the cities of bourgeois and petty bourgeois elements, and collectivized agriculture at a cost of about 1.7 million lives out of a total population prior to their accession to power of about 7.9 million. The details are shown in table 19. About 15% of the native Khmer people, 50% of the resident Chinese and almost 100% of the resident Vietnamese were eliminated. Other minorities were decimated. Indigenous rural Khmers were the least affected.

The starvation of some 30 million people in China during the period known as the Great Leap Forward (1958-61) was not a natural disaster from flooding or drought, not the extermination of a hated minority, not the exploitation of one race, social class, or linguistic group for the benefit of another, and not the outcome of rivalry among would-be rulers of the country. Unbelievable as this may be, the disaster appears to have been brought about by vanity. Mao Zedong bore no animosity toward the Chinese peasants left to starve. Schooled in the Chinese classics and in Marxism, elevated to the peak of society by the Communist victory over the Kuomintang, unchallenged in his primacy, venerated in poetry and song as the great and glorious leader, his portrait displayed reverently in every house and in every public place, Mao Tse-Tung could not imagine that he was less than infallible as an agronomist. The Great Leap Forward combined industrial and agricultural reform, including the production of steel from scrap iron in backyard furnaces, abolition of private property in land, collectivization of agriculture to the point of communal dining and mandatory changes in farming practice. It was expected to generate huge increases in output of food and other goods. Mao could not accept the evidence that output fell drastically and that taxes levied at reasonable rates on predicted output left the peasant with virtually nothing. The cadres dared not describe what was really happening. Better 30 million people should starve than that the great helmsman should be embarrassed. So completely was the press controlled and foreign visitors restricted in their movements that twenty years were to pass before decisive evidence emerged that the famine had occurred at all<sup>31</sup>.

The late twentieth century has witnessed a number of politically-engineered episodes of mass starvation, the worst being the Ethiopian famine of 1984-5 in which an estimated 8 million people lost their lives. Typically, it is difficult to attribute famines to a single cause. A crop failure that would not lead to starvation in a rich country may do so in a poor country, or famine may be averted by well-chosen redistribution of the available food stocks. Political turmoil may or may not lead to famine depending on the productivity of the economy<sup>32</sup>.

The total number of deaths during the twentieth century in war and in the extermination of unwanted people has been estimated at about 175 million<sup>33</sup>.

## A Balance

What are we to make of all this? Focussing upon peacetime prosperity - the increase in life expectancy, the increase in national income, the appearance of a host of new products, the spread of literacy and the flourishing of democracy in more countries than ever before - observers have judged the twentieth century to have been, without question, the best time in the history of the world. Focussing upon mass destruction death in battle and extermination of unwanted people - observers have judged the twentieth century to have been the most terrible century in the history of mankind. Are these judgments in any way comparable. Do longevity and prosperity outweigh mass destruction, or vice versa?

Comparison of the loss of life in war and extermination with the gain of life in reduced mortality from natural causes requires a weighing of both phenomena on a common scale. That can be arranged, though only approximately, by expressing the loss of life in war and extermination in man-years which can then be compared with total world population at risk over the course of the century. On the assumptions that the full toll of loss of life in war and mass extermination was 200 million people and that its victims would otherwise have lived for 50 years, the total loss of life would be 10 billion man-years. As world population grew over the century from about 2 billion people to about 6 billion people, it would not be grossly inaccurate to say that the population at risk from war and mass extermination was about 10 billion as well, in which case the loss would be about 1 man-year per person. But the gain in ordinary life-expectancy from the decline in civilian mortality was, depending on the country, between 30 and 40 years, and the average life expectancy over the century was about 15 years higher than life expectancy in 1900. The loss of 1 expected year of life in war and mass extermination must be set against an average civilian gain of 15 or 30 years, depending on how you choose to measure it. Terrible as they were, the wars and exterminations of the twentieth century destroyed far fewer years of life than were created by the unprecedented decline in mortality from natural causes. On a life expectancy scale, the fall in mortality from natural causes is by far the larger consideration.

Bear in mind that the comparison is between the *decrease* in mortality from natural causes and the *total* number of deaths in war and mass extermination. Strictly speaking, the comparison would only be valid if there had been no war or extermination in times gone by. If deaths in war and mass extermination had remained the same over the centuries as a proportion of the population, there would be nothing to set against the gain in life expectancy in the comparison of the twentieth century with other centuries in the past. Evidence on this matter is hard to come by. Statistics of deaths in battle are untrustworthy, and war-related deaths of civilians are not available at all. Armies were typically smaller, but decimation of innocent civilians, never far from the margin of subsistence, might have been enormous. We simply do not know the extent of the death toll of the Roman conquests, the invasions of Genghis Khan, the Islamic conquest of North Africa, or the Amalekites wiped out by King Saul at God's command. Mortality rates in war and extermination may, for all we know, have been greater in biblical times than in twentieth-century Europe. An anthropological study of the Yanomamos of Brazil and Venezuela, revealed that deaths in ordinary intertribal warfare once accounted for 24% of all



male deaths.<sup>34</sup> History is written by the victors who may choose not to dwell on the cost of their victories and who tend not to speak well of the defeated. The story of the wanderings of the Israelites for forty years in the desert was written by those who finally arrived at the promised land, not by those whose bones lay rotting in the wilderness. Swings in the population of Imperial China, as shown in table 7, are greater as a percentage than the swings in population in all but a very few countries in this century. It is difficult at this distance to disentangle the influences of war and epidemics, but the experience of ordinary people caught in a downturn of population must have been dreadful. In the ninth century, a breakdown of civil order in the Mayan civilization is thought to have caused a fall of 90% in the population of parts of Central America<sup>35</sup>.

For Europe only, the loss of life of soldiers in war and the normal every-day mortality from disease, malnutrition, accidents and old age is presented for each of the last five centuries in table 20. The interpretation of mortality in the second column is both broader and narrower than I would have liked. It is broader because it includes wounds as well as deaths in battle. It is narrower because it excludes mass extermination of civilians together with death by starvation in the wake of war. The third column is for England only, but is probably representative of Europe as a whole. The significance of the table in the context of this chapter is that war appears to have been more lethal in the twentieth century than ever before, but, as in our stylized example, the gain from the drop in ordinary peacetime mortality has more than compensated for any increase in the severity of war.

**Table 20: The Severity of War**

Country	Casualties in battle per million people per year (Europe, average per century)	deaths from all causes per million people per year (England, the middle year of the century)
Sixteenth	150	27100
Seventeenth	370	32100
Eighteenth	330	27100
Nineteenth	150	23100
Twentieth	583	11600

Sources: For the first four centuries, the number of casualties in battle, including soldiers wounded as well as soldiers killed, is from Quincy Wright, *A Study of War*, Chicago: University of Chicago Press, 1965, table 50\*, page 656. The corresponding number for the twentieth century is the ratio of a one-hundredth part of total deaths in battle over the course of the century to the population in the year 1950. Total deaths in battle is estimated at 35 million. The population of Europe in the year 1950 was about 600 million. English death rates from all causes are from B. R. Mitchell, *British Historical Statistics*, Cambridge: Cambridge University Press, 1988, tables 11 and 13.

The purpose of these comparisons is not to belittle the horror of war and of mass extermination, but to emphasize in the strongest possible way the significance of the gain in life expectancy. A premise of the comparison is that a life is a life is a life. The loss of the young man to tuberculosis is no less tragic than the loss of the life of a young man in war, and the grief of his parents is no less real, despite the absence of the flags, the speeches, and the monuments for those who die in battle. The comparison is, of course, only of lives saved or lost. The increase in national income, the proliferation of new goods and services, and the greater freedom that most people enjoy would have to be thrown into any comparison of the twentieth century with preceding centuries.

The ultimate test of whether life in times gone by really was dreadful by comparison with life today is where in time you would prefer to be located. To compare the twentieth century with, for instance, the nineteenth century, suppose you are offered the choice of living your life in either century. Your response would, of course, depend on how the question is framed. It must not be supposed that in selecting centuries you can choose to be your favourite character, an Einstein, a Queen Victoria or an Abraham Lincoln. You must suppose that you will be a randomly chosen person with a randomly chosen life-span in a certain country or in the world as a whole, so that, for example, as a nineteenth-century American you would have a one in fifty million chance of being President and about a one in ten chance of being a slave.

As a Canadian or American - if your choice is to live in the nineteenth century or the twentieth century as a randomly chosen Canadian or American - there is, I believe no contest whatsoever. The twentieth century wins hands down. Your standard of living is significantly higher. Your life expectancy is much higher too. There is far less chance of seeing your children die of disease or of women dying in childbirth. You have greater political rights, with no chance of being a slave. Your risk of death as a soldier is significantly less, and your risk of civilian mortality in war is infinitely so: for the US Civil War was more lethal to North Americans than either World War I or World War II. Nor is there much question about Latin America, Taiwan, South East Asia or Japan, notwithstanding the Japanese losses in the World War II. For the typical western European, a unprecedentedly high peacetime standard of living and life expectancy in the twentieth century must be balanced against the experience of two world wars that were very nasty but not so lethal as to outweigh the gains in life expectancy from the containment of disease. The balance is probably in favour of the twentieth century, though not for Jews or Armenians who were almost wiped out.

Elsewhere, the choice is not so clear. For Russia, the huge losses in both world wars, Stalin's wanton destruction of peasants and the experience of living in a Communist society may turn the balance toward the nineteenth century. For China, both centuries have been pretty bad, with huge losses in war and revolution, though the standard of living and life expectancy today are higher than ever before. The choice may be most problematic for Africa with low economic growth, periodic famine and civil war, and the worst ravages of the Aids epidemic.

There are dangers on the horizon. World population continues to grow, though at a slower rate than in the recent past. Population growth may eat up past gains by creating new scarcities. Scarcity of resources or the emergence of new toxic substances may eventually impede economic growth or precipitate decline. Global warming seems inevitable. Fossil energy will eventually give out, and only time will tell whether it can be adequately replaced by solar energy or other developments. Fresh water is becoming scarce. Other resources are becoming scarce too. Public order may crack, domestically or internationally. War is increasingly lethal; one well-placed bomb can wipe out as many people as died in the whole of the Second World War. The specter of nuclear annihilation that receded with the end of the Cold War is reappearing as advanced technology enables more and more countries to procure nuclear and biological weapons. Terrorism is becoming more lethal too. Democratic politics could succumb to theological madness or disintegrate into some new despotism of the great all-knowing leader. Always fragile, the web of institutions that holds democracy together may one day fail to do so.

Be that as it may, the comparison in this chapter is between present and past, not between present and future. This chapter is a description of what has happened already, not a prediction of what is yet to come. The comparison is between the way things are and the way things used to be. We live in a perpetual race between new dangers and our ability to invent our way around them. So far, we have been winning.

\* \* \* \* \*

Beyond its role as a preface to the study of economics, this brief review of the dimensions of progress may serve as an antidote to complacency about the content of our lives. We grow accustomed to our possessions and our recently acquired freedom from misery, disease and premature death. We tend to take our conditions of life for granted, forgetting that life was not always as it is today. This review of the dimensions of progress may preserve a sense of wonder and gratitude for our good fortune, and may provide a response to the grumps and the nostalgic among us who look back to the good old days, disparaging the present by comparison.

As an introduction to the study of economics, the purpose of this review is to raise questions about why and how. How, in what sense and under what conditions, does the price mechanism organize the nation's resources to make people as well off as possible today and to provide appropriately for tomorrow? What is the proper role of the government in the economy? Should government be confined to the protection of private property, has it a larger role to play and, if so, what precisely is that role? How does one go about predicting the full consequences of public policy upon the economy? These questions are the meat and potatoes of any economics text, and this text is no exception. Other questions are more characteristic of political economy. To what extent was the growth of the economy, year after year, and the procession of inventions that made it possible attributable to the organization of the economy? To what extent are economic progress and political developments intertwined? Are political rights and democracy the consequences of events in the political realm that are what they are independently of developments in the economy? Is economic progress independent of politics? What lessons can be learned about how we should be organizing ourselves to preserve democratic government

and economic prosperity? The very term “political economy” suggests that all these questions can be usefully discussed together.

As a preface to that discussion, the next chapter is an attempt to highlight the importance of the security of property as a requirement for efficiency in the economy by constructing a world where property is insecure and the economy is distinctly inefficient. The model to be developed serves as a vehicle for raising the ancient question of whether the establishment of a degree of security is ever possible in this imperfect world except at the expense of liberty, freedom, and democracy. This chapter has been about how dreadful life used to be. The next chapter is about why perpetual dreadfulness might be expected. The rest of the book is about how, and to what extent, perpetual dreadfulness can be averted.

## Footnotes

1. Humphreys, C., *Buddhism*, London: Penguin, 1954, 81-2.
2. Sahlins, Marshall, “The Original Affluent Society”, chapter 1 of *Stone Age Economics*, London: Tavistock Publications, 1974. Sahlins argued that the transition from hunter-gathering to settled agriculture was a disaster. As hunter-gatherers, people were better fed, healthier and enjoyed more leisure. Jared Diamond entitled an article on the subject, “The Worst Mistake in the History of the Human Race” (*Discover*, pp. 64-66, 1987). The transition from hunter-gathering to agriculture was accompanied by increases in population densities of a hundred fold, but led to a deterioration in the diet of ordinary people that has only been reversed in modern times. To be constantly on the move by foot with no vehicles whatsoever, to be without solid housing, with bonfires as the only mode of heating and lighting, without writing, radio television or electricity, without clothing other than what one makes for oneself, without medical care, and entirely ignorant of the world beyond one’s field of vision, is a life that only an anthropologist could admire.
3. Data from M. Livi-Bacci, *A Concise History of World Population*, second edition, Oxford: Blackwell, 1992, Chapter 2, Section 4, “The Tragedy of the American *Indios*”.
4. *Report on the Global HIV/AIDS Epidemic*, UNAIDS, June 2000, [www.unaids.org/epidemicupdate/report](http://www.unaids.org/epidemicupdate/report).
5. Wired Health: [www.hc.sc.gc.ca/hppb/wired/smoking/htm](http://www.hc.sc.gc.ca/hppb/wired/smoking/htm)
6. Leighton, A.H. and Hughes, C.C., “Notes on Eskimo Patterns of Suicide” in Giddens, A. ed., *The Sociology of Suicide*, London, Cass, 1971, 158.
7. Durkheim, E., *Suicide: A Study in Sociology*, Glencoe, Ill., Free Press, 1951, book two, “Altruistic Suicide”. For a sympathetic understanding of patricide among very poor or migratory people, see *The Law of Life*, a short story by Jack London about patricide among some North American Indians, and *The Ballad of Narayama*, a beautiful film by Shohei Imamura about tribal people in ancient Japan.
8. Leighton and Hughes, op. cit., 195
9. Harris, Marvin, “Murder in Eden”, chapter 2 of *Cannibals and Kings*, New York, Vintage Books, 1978. See also, Hoebel, E.A., *The Law of Primitive Man*, chapter 5, Cambridge, Mass: Harvard University Press, 1967.
10. Donald Veall, *The Popular Movement for Law Reform, 1640-1660*, Oxford at the Clarendon Press, 1970, chapter 1, “Crime and Punishment 1600-1660.
11. Leon Radzinowicz, *A History of English Criminal Law and its Administration from 1750*, Volume 1, London: Stevens, 1948, page 11, footnote 11.

12. Veall, *The Popular Movement for Law Reform*, op. cit. chapter II, 6.
13. See Veall, op. cit., 27-28.
14. The quotation is from the title page of *Malleus Maleficarum* the great treatise on witchcraft published in 1486, two years after the Papal bull of Pope Innocent VIII deploring the spread of witchcraft and instructing inquisitors to extirpate it. See H. R. Trevor-Roper, *The European Witch-Craze of the Sixteenth and Seventeenth Centuries and Other Essays*, New York: Harper & Row, 1969, p. 117.
15. There is considerable variation among historians in their estimates of the number of witches burned at the stake. In *Cows, Pigs, Wars and Witches*, New York: Random House, 1974, p. 207. Marvin Harris asserts that half a million people were executed for witchcraft. In *The Witch-hunt in Early Modern Europe*, New York: Longman, 1995, 24-5, Brian P. Levack estimates that there were about 110,000 prosecutions for witchcraft leading to about 60,000 executions.
16. The Inquisition began in the thirteenth century as persecution of dissident Christian sects. It has been estimated that about 5,000 people were executed for heresy during the Reformation and about 2,000 during the Spanish Inquisition. On the Reformation, see B. Gregory, *Salvation at Stake: Christian Martyrdom in Early Modern Europe*, Cambridge, Mass: Harvard University Press, 1999, p. 6. On the Spanish Inquisition, see J. Contrabras and G. Henningsen, "Forty-four cases of the Spanish Inquisition" in *The Inquisition in Early Modern Europe*, G. Henningsen and J. Tedeschi, eds. Dekalb, Ill.: Northern Illinois University Press, 1986. "There is an unjust persecution which the ungodly operate against the Church of Christ; and a just persecution which the Churches of Christ make use of toward the ungodly...The Church persecutes out of love, the ungodly out of cruelty", St. Augustine quoted in Kamen, Henry, *The Rise of Toleration*, London: Weidenfeld & Nicolson, 1967, 14.
17. Kamen, "Economic Motives for Toleration", op. cit., 1967, 224-7.
18. Quoted by E. M. W. Tillyard in *The Elizabethan World Picture*, London: Chatto & Windus, 1945, p. 9.
19. A. H. M. Jones, *The Later Roman Empire, 284-602: A Social and Administrative Survey*, Oxford: Blackwell, 1964, 17 and 751.
20. J. D. Spence, *The Search for Modern China*, New York: Norton, 1990, 125.
21. M. Voslensky, *Nomenklatura, Anatomy of the Soviet Ruling Class*, London: Bodley Head, 1980, 179.
22. G. O. Sayles, *The Medieval Foundations of England*, London: Methuen, 1948, 122-5.
23. Veall, op. cit., 4. A common test of literacy was to read Psalm 51, known as the "neck verse". By memorizing that verse, a convicted thief might have his punishment commuted from

hanging to, perhaps, whipping.

24. A list is contained in Orlando Patterson, *Slavery and Social Death*, Cambridge, Mass: Harvard University Press, 198, Appendix C.

25. Howay, F.W. *Voyages of the 'Columbia' to the Northwest Coast, 1789-1790*, quoted in Leland Donald, *Aboriginal Slavery on the Northwest Coast of North America*, Berkeley: University of California Press, 1997, 172.

26. A. H. M. Jones, *Athenian Democracy*, Oxford: Blackwell, 1969, 78-9.

27. For example, if the pre-war population were 1 million, population had been growing at 2% before the war, the duration of the war was 5 years and the post-war population was 900 thousand, one might infer that, one way or another, 200 thousand people died in the war. Two percent of a million is 20 thousand. Ignoring compounding, we estimate that, but for the war, the population would have grown by 20 thousand a year, for a total of 100 thousand over the entire five years of the war. We would then estimate that, but for the war, the population would be 1,100 thousand. As the population is actually 900 thousand, we would say that 200 thousand people perished in the war.

28. R. Hilberg, *The Destruction of the European Jews*, New York: Holmes & Meier, 1985, Appendix B. Hilberg's estimate of the Jewish death toll is 5.1 million. In *A Holocaust Reader*, New York: Behrman House, 1976, L.S. Dawidowicz estimated the number at about 6 million.

29. The story is told in Robert Conquest, *Harvest of Sorrow, Soviet Collectivization and the Terror Famine*, Edmonton, Alberta: University of Alberta Press, 1986.

30. Quoted in K.D. Jackson, "The Ideology of Total Revolution" in K.D. Jackson ed. *Cambodia 1975-1978, Rendezvous with Death*, Princeton, New Jersey: Princeton University Press, 1989, page 67.

31. The story is told in Jasper Becker, *Hungry Ghosts: Mao's Secret Famine*, New York: Henry Holt, 1998. Becker speaks of "millions who have been sacrificed on the alter of Mao's vanity" (299) and he quotes Khrushchev that "Mao thought himself as a man brought by god to do God's bidding." (55). Becker adds that "Mao could not be brought down because he had created a world in which all beliefs and judgments were suspended. No one dared move or act according to what he knew to be true. Instead, even the highest ranking officials moved in a secret society paralysed by an all-pervasive network of informers and spies." (311)

32. See Martin Ravallin, "Famines and Economics", *Journal of Economic Literature*, September 1997, 1205-1242.

33. Brzezinski, Z., *Out of Control, Global Turmoil on the Eve of the Twenty-first Century*, New York: Scribner, 1993.

34. Napoleon A. Chagnon, *Yanomamo: The Fierce People*, New York: Holt, Rinehart and Winston, 1983, page 20.
35. *The Economist*, December 21, 1996, page 60.