

# TASKS FOR THE FUTURE

John Scales Avery

November 17, 2021

# INTRODUCTION<sup>1</sup>

Today, the world is facing several threats, and to avoid them we need to act. The greatest threats are catastrophic climate change and thermonuclear war, but a large-scale global famine also has to be considered.

We give our children loving care, but it makes no sense do so and at the same time to neglect to do all that is within our power to ensure that they and their descendants will inherit an earth in which they can survive. We also have a responsibility to all the other living organisms with which we share the gift of life.

Inaction is not an option. We have to act with courage and dedication because the stakes are so high. The mass media could mobilize us to action, but they have failed in their duty. Our educational system could also wake us up and make us act, but it too has failed us. The battle to save the earth from human greed and folly has to be fought in the alternative media.

We need a new economic system, a new society, a new social contract, a new way of life. Here are the great tasks that history has given to our generation:

## **We need a steady-state economic system**

A steady-state economic system is necessary because neither population growth nor economic growth can continue indefinitely on a finite earth. No one can maintain that exponential industrial growth is sustainable in the long run except by refusing to look more than a short distance into the future.

Of course, it is necessary to distinguish between industrial growth, and growth of culture and knowledge, which can and should continue to grow. Qualitative improvements in human society are possible and desirable, but resource-using and pollution-producing industrial growth is reaching its limits, both because of ecological constraints and because of the exhaustion of petroleum, natural gas and other non-renewable resources, such as metals. The threat of catastrophic climate change makes it imperative for us to stop using fossil fuels within very few decades.

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<sup>1</sup>This book makes much use of book chapters that I have previously published, but some new material has been added.

## **We must restore democracy**

It is obvious, almost by definition, that excessive governmental secrecy and true democracy are incompatible. If the people of a country have no idea what their government is doing, they cannot possibly have the influence on decisions that the word “democracy” implies.

Governmental secrecy is not something new. Secret diplomacy contributed to the outbreak of World War I, and the secret Sykes-Picot Agreement later contributed to the bitterness of conflicts in the Middle East. However, in recent years, governmental secrecy has grown enormously.

The revelations of Edward Snowden have shown that the number of people involved in secret operations of the United States government is now as large as the entire population of Norway: roughly 5 million. The influence of this dark side of government has become so great that no president is able to resist it.

We must restore democracy wherever it has been replaced by oligarchy. When we do so, we will free ourselves from many evils, including excessive economic inequality, violation of civil rights, and the suffering produced by perpetual wars.

## **We must decrease economic inequality**

In a recent speech, Senator Bernie Sanders quoted Pope Francis extensively and added: “We have a situation today, Mr. President, incredible as it may sound, where the wealthiest 85 people in the world own more wealth than the bottom half of the world’s population.”<sup>2</sup>

The social epidemiologist Prof. Richard Wilkinson, has documented the ways in which societies with less economic inequality do better than more unequal societies in a number of areas, including increased rates of life expectancy, mathematical performance, literacy, trust, social mobility, together with decreased rates of infant mortality, homicides, imprisonment, teenage births, obesity and mental illness, including drug and alcohol addiction.<sup>3</sup> We

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<sup>2</sup>[https://www.youtube.com/watch?v=9\\_LJpN893Vg](https://www.youtube.com/watch?v=9_LJpN893Vg)  
<https://www.oxfam.org/en/tags/inequality>  
[https://www.oxfam.org/sites/www.oxfam.org/files/file\\_attachments/cr-even-it-up-extreme-inequality-291014-en.pdf](https://www.oxfam.org/sites/www.oxfam.org/files/file_attachments/cr-even-it-up-extreme-inequality-291014-en.pdf)

<sup>3</sup><https://www.youtube.com/watch?v=cZ7LzE3u7Bw>  
[https://en.wikipedia.org/wiki/Richard\\_G.\\_Wilkinson](https://en.wikipedia.org/wiki/Richard_G._Wilkinson)

must also remember that according to the economist John A. Hobson, the basic problem that led to imperialism was an excessively unequal distribution of incomes in the industrialized countries. The result of this unequal distribution was that neither the rich nor the poor could buy back the total output of their society. The incomes of the poor were insufficient, and rich were too few in number.

### **We must break the power of corporate greed**

Why is war continually threatened? Why is Russia threatened? Why is war with Iran threatened? Why fan the flames of conflict with China? Is it to “protect” civilians? Absolutely not! In a thermonuclear war, hundreds of millions of civilians would die horribly everywhere in the world, also in neutral countries. What is really being protected are the profits of arms manufacturers. As long as there are tensions; as long as there is a threat of war, military budgets are safe; and the profits of arms makers are safe. The people in several “democracies”, for example the United States, do not rule at the moment. Greed rules.

As Institute Professor Noam Chomsky of MIT has pointed out, greed and lack of ethics are built into the structure of corporations. By law, the Chief Executive Officer of a corporation must be entirely motivated by the collective greed of the stockholders. He must maximize profits. If the CEO abandons this single-minded chase after corporate profits for ethical reasons, or for the sake of humanity or the biosphere or the future, he (or she) must, by law, be fired and replaced.

### **We must leave fossil fuels in the ground**

The threat of catastrophic climate change requires prompt and dedicated action by the global community. Unless we very quickly make the transition from fossil fuels to 100% renewable energy, we will reach a tipping point after which uncontrollable feedback loops could take over, leading to a human-caused 6th geological extinction event. This might even be comparable to the Permian-Triassic event, during which 96% of all marine species and 70% of terrestrial vertebrates became extinct.

## **We must stabilize and ultimately reduce the global population**

Education of women and higher status for women are vitally important measures, not only for their own sake, but also because in many countries these social reforms have proved to be the key to lower birth rates. As Sir Partha Dasgupta of Cambridge University has pointed out, the changes needed to break the cycle of overpopulation and poverty are all desirable in themselves. Besides education and higher status for women, they include state-provided social security for old people, provision of water supplies near to dwellings, provision of health services to all, abolition of child labor and general economic development. The money required to make these desirable changes is a tiny fraction of the amount that is currently wasted on war.

In order to avoid a catastrophic future famine, it is vitally important that all of the countries of the world should quickly pass through a demographic transition from a situation characterized by high birth rates and high death rates to a new equilibrium, where low death rates are balanced by low birth rates.

## **We must eliminate the institution of war**

Today we look with horror at drawings of slave ships, where human beings were packed together like cord-wood, and we are amazed that such cruelty could have been possible. Can we not hope for a time when our descendants, reading descriptions of the wars of our own time, will be equally amazed that such cruelty and stupidity could have been possible? If we use them constructively, the vast resources now wasted on war can initiate a new era of happiness and prosperity for the family of man. It is within our power to let this happen. The example of the men and women who worked to rid the world of slavery can give us courage as we strive for a time when war will exist only as a dark memory fading into the past.

## **We need a World Federation**

Today's United Nations is a confederation. It tries to control the actions of its member states by imposing economic sanctions. However, these sanctions often affect the poor people of a country, rather than the guilty leaders. Thus, they are both unjust and ineffective.

By contrast, the government of a federation has the power to make laws that act on individuals. Historically, federations have proved to be very successful. Today, the governments of several large countries (for example Russia, the United States, Germany and Australia) are federations.

## **New ethics to match new technology**

We need a new global ethic, where loyalty to one's family and nation is supplemented by a higher loyalty to humanity as a whole. The Nobel laureate biochemist Albert Szent-Györgyi once wrote:

“The story of man consists of two parts, divided by the appearance of modern science.... In the first period, man lived in the world in which his species was born and to which his senses were adapted. In the second, man stepped into a new, cosmic world to which he was a complete stranger.... The forces at man's disposal were no longer terrestrial forces, of human dimension, but were cosmic forces, the forces which shaped the universe. The few hundred Fahrenheit degrees of our flimsy terrestrial fires were exchanged for the ten million degrees of the atomic reactions which heat the sun.”

“This is but a beginning, with endless possibilities in both directions; a building of a human life of undreamt of wealth and dignity, or a sudden end in utmost misery. Man lives in a new cosmic world for which he was not made. His survival depends on how well and how fast he can adapt himself to it, rebuilding all his ideas, all his social and political institutions.”

“...Modern science has abolished time and distance as factors separating nations. On our shrunken globe today, there is room for one group only: the family of man.”

# Contents

<b>1</b>	<b>WE NEED A STEADY-STATE ECONOMIC SYSTEM</b>	<b>13</b>
1.1	Introduction: The need for reform . . . . .	13
1.2	The Club of Rome . . . . .	15
1.3	Biological Carrying capacity and Economics . . . . .	17
1.4	Population and food supply . . . . .	18
1.5	Social Values and Levels of Consumption . . . . .	20
1.6	Introduction . . . . .	22
1.7	What is entropy? . . . . .	23
1.8	Human society as a superorganism . . . . .	23
1.9	Frederick Soddy . . . . .	24
1.10	Currency reform, and nationalization of banks . . . . .	25
1.11	Nicholas Georgescu-Roegen . . . . .	26
1.12	Limits to Growth: A steady-state economy . . . . .	28
1.13	Optimum population in the long-term future . . . . .	29
1.14	Limitations on cropland . . . . .	31
1.15	Energy-dependence of modern agriculture . . . . .	34
1.16	Effects of climate change on agriculture . . . . .	36
1.17	Secret land purchases in Africa . . . . .	41
1.18	Some conclusions . . . . .	41
<b>2</b>	<b>WE MUST RESTORE DEMOCRACY</b>	<b>49</b>
2.1	Edward Snowden's revelations . . . . .	49
2.2	The jaws of power . . . . .	50
2.3	The deep state . . . . .	51
2.4	<i>The United States of Secrets</i> . . . . .	57
2.5	Censorship of the news . . . . .	58
2.6	Coups, torture and illegal killing . . . . .	58
2.7	Secret trade deals . . . . .	59
2.8	Secrecy, democracy and nuclear weapons . . . . .	60
2.9	Freedom from fear . . . . .	61
2.10	<i>Inside Job</i> . . . . .	62

<b>3</b>	<b>WE MUST DECREASE ECONOMIC INEQUALITY</b>	<b>67</b>
3.1	The Industrial Revolution and colonialism . . . . .	67
3.2	Genocides in the Americas . . . . .	67
3.3	Modern weapons and colonialism . . . . .	68
3.4	Persistent effects of colonialism . . . . .	70
3.5	Racism, colonialism and exceptionalism . . . . .	73
3.6	Leopold II and Atrocities in Belgian Congo . . . . .	73
3.7	The Kaiser's genocide . . . . .	78
3.8	The racism of Cecil Rhodes . . . . .	78
3.9	Our older brothers can help us today . . . . .	80
3.10	Social systems in Scandinavia . . . . .	81
3.11	Shocking statistics . . . . .	87
3.12	Benefits of equality . . . . .	88
3.13	Extreme inequality today . . . . .	91
3.14	Oligarchy replaces democracy in many countries . . . . .	91
3.15	Media in the service of powerholders . . . . .	94
3.16	Television as a part of our educational system . . . . .	94
3.17	Neglect of climate change in the mass media . . . . .	96
3.18	Climate change denial in mass media . . . . .	97
3.19	Showing unsustainable lifestyles in mass media . . . . .	100
3.20	Alternative media . . . . .	100
3.21	Outstanding voices calling for climate action . . . . .	101
3.22	Benefits of equality . . . . .	114
3.23	How do elites keep their power and wealth? . . . . .	117
3.24	Resistance to tyranny . . . . .	125
<b>4</b>	<b>WE MUST BREAK THE POWER OF CORPORATE GREED</b>	<b>129</b>
4.1	Why corporations are socially and ecologically destructive . . . . .	129
4.2	An article in The Guardian by George Monbiot . . . . .	130
4.3	Pinochet's terror, and the boys from Chicago . . . . .	132
4.4	<i>The Shock Doctrine</i> , by Naomi Klein . . . . .	134
<b>5</b>	<b>WE MUST LEAVE FOSSIL FUELS IN THE GROUND</b>	<b>139</b>
5.1	Blood for oil . . . . .	139
5.2	Attacks on Iran, past and present . . . . .	140
5.3	The agony of Iraq . . . . .	143
5.4	The Middle East . . . . .	151
5.5	China . . . . .	151
5.6	India . . . . .	151
5.7	Russia . . . . .	152
5.8	North America . . . . .	154
5.9	Latin America . . . . .	156
5.10	The European Union . . . . .	158



5.11	Major producers of fossil fuels . . . . .	158
5.12	Fossil fuel extraction must stop! . . . . .	160
5.13	Xi Jinping and Putin absent from COP26 . . . . .	164
5.14	Joe Biden's climate hypocrisy exposed . . . . .	167
5.15	"Phase down coal" instead of "Phase out coal" . . . . .	168
<b>6</b>	<b>WE MUST STABILIZE AND ULTIMATELY REDUCE POPULATION</b>	<b>175</b>
6.1	All the needed reforms are desirable in themselves . . . . .	175
6.2	Higher status and higher education for women . . . . .	176
6.3	Primary health care for all . . . . .	177
6.4	Clean water supplies near homes . . . . .	179
6.5	State provision of care for the elderly . . . . .	179
6.6	Abolition of child labor and slavery . . . . .	180
6.7	General economic progress . . . . .	182
6.8	Population and fossil fuel consumption . . . . .	184
6.9	Population stabilization today . . . . .	186
6.10	How many earths does it take to support us? . . . . .	187
6.11	Overuse of pesticides and the insect apocalypse . . . . .	191
6.12	The Silent Spring . . . . .	193
6.13	Biodiversity loss . . . . .	197
6.14	Illegal burning for palm oil plantations . . . . .	197
6.15	Jair Bolsonaro's attack on the Amazon rainforest . . . . .	198
6.16	Growing populations and forest loss . . . . .	203
6.17	Desertification and soil erosion . . . . .	204
6.18	Forest drying and wildfires: a feedback loop . . . . .	204
6.19	Degraded forests are carbon emitters . . . . .	205
6.20	Replanting forests . . . . .	205
6.21	Human ecology . . . . .	207
6.22	Paul R. Ehrlich and Anne H. Ehrlich . . . . .	207
6.23	John P. Holdren . . . . .	211
6.24	Barry Commoner . . . . .	215
<b>7</b>	<b>WE MUST ELIMINATE THE INSTITUTION OF WAR</b>	<b>225</b>
7.1	War as a political, economic and social institution . . . . .	225
7.2	Eisenhower's farewell address . . . . .	225
7.3	The "War on Terror" . . . . .	228
7.4	We are militarism's hostages . . . . .	230
7.5	We have come within a hair's breadth of disaster . . . . .	231
7.6	Killing civilians . . . . .	232
7.7	The direct and indirect costs of war . . . . .	240
7.8	Medical and psychological consequences; loss of life . . . . .	241
7.9	Effects of war on children . . . . .	242
7.10	Refugees . . . . .	242

7.11	Damage to infrastructure . . . . .	243
7.12	Ecological damage . . . . .	243
7.13	Links between poverty and war . . . . .	244
7.14	The threat of nuclear war . . . . .	246
7.15	Atoms for peace? . . . . .	253
7.16	Cancer threat from radioactive leaks at Hanford . . . . .	264
7.17	An accident waiting to happen . . . . .	266
7.18	Flaws in the concept of nuclear deterrence . . . . .	271
7.19	Nuclear weapons are criminal! Every war is a crime! . . . . .	277
<b>8</b>	<b>WE NEED A WORLD FEDERATION</b>	<b>287</b>
8.1	What is law? . . . . .	287
8.2	Magna Carta, 1215 . . . . .	288
8.3	The English Bill of Rights, 1689 . . . . .	290
8.4	The United States Constitution and Bill of Rights, 1789 . . . . .	290
8.5	Kellogg-Briand Pact, 1928 . . . . .	293
8.6	United Nations Charter, 1945 . . . . .	294
8.7	International Court of Justice, 1946 . . . . .	296
8.8	Nuremberg Principles, 1947 . . . . .	297
8.9	The Universal Declaration of Human Rights, 1948 . . . . .	298
8.10	Geneva Conventions, 1949 . . . . .	301
8.11	Nuclear Non-Proliferation Treaty, 1968 . . . . .	302
8.12	Biological Weapons Convention, 1972 . . . . .	303
8.13	Chemical Weapons Convention, 1997 . . . . .	304
8.14	Mine Ban Treaty, 1999 . . . . .	304
8.15	International Criminal Court, 2002 . . . . .	305
8.16	Arms Trade Treaty, 2013 . . . . .	305
8.17	Racism, Colonialism and Exceptionalism . . . . .	306
8.18	The Oslo Principles on Climate Change Obligation, 2015 . . . . .	306
8.19	Treaty on the Prohibition of Nuclear Weapons, 2017 . . . . .	308
8.20	Hope for the future, and responsibility for the future . . . . .	308
8.21	The training of soldiers . . . . .	309
8.22	The Nuremberg principles adopted by the UN . . . . .	312
8.23	The International Criminal Court . . . . .	316
8.24	The illegality of NATO . . . . .	316
8.25	A personal note . . . . .	318
8.26	Strengthening the United Nations . . . . .	323
8.27	The Success of Federations . . . . .	327
8.28	Obstacles to a World Federation . . . . .	332

<b>9</b>	<b>WE NEED NEW GLOBAL ETHICS</b>	<b>335</b>
9.1	The ethics of Mahatma Gandhi . . . . .	335
9.2	The ethics of Albert Einstein . . . . .	339
9.3	The ethics of Saint Francis . . . . .	342
9.4	The ethics of Pope Francis . . . . .	345
9.5	All humans are brothers and sisters! . . . . .	347
9.6	The ethics of Henry David Thoreau . . . . .	347
9.7	Education for world citizenship . . . . .	351
9.8	The role of the mass media . . . . .	353
9.9	The role of religion . . . . .	354
9.10	Reformed teaching of history . . . . .	356
9.11	Reformed education of economists and businessmen . . . . .	358
9.12	Law for a united world . . . . .	358
9.13	Teaching global ethics . . . . .	359
9.14	The social responsibility of scientists . . . . .	359
9.15	Large nations compared with global government . . . . .	360
9.16	Culture, education and human solidarity . . . . .	361
9.17	We stand on each other's shoulders . . . . .	366
9.18	The fragility of modern society . . . . .	367
9.19	The collective human consciousness . . . . .	368



# Chapter 1

## WE NEED A STEADY-STATE ECONOMIC SYSTEM

### 1.1 Introduction: The need for reform

The Industrial Revolution marked the start of massive human use of fossil fuels. The stored energy from several hundred million years of plant growth began to be used at roughly a million times the rate at which it had been formed. The effect on human society was like that of a narcotic. There was a euphoric (and totally unsustainable) surge of growth of both population and industrial production. Meanwhile, the carbon released into the atmosphere from the burning of fossil fuels began to duplicate the conditions which led to the 5 geologically-observed mass extinctions, during each of which more than half of all living species disappeared forever.

Economists (with a few notable exceptions, such as Nicholas Georgescu-Roegen, Herman Daly and Aurelio Peccei) have long behaved as though growth were synonymous with economic health. If the gross national product of a country increases steadily by 4% per year, most economists express approval and say that the economy is healthy. If the economy could be made to grow still faster (they maintain), it would be still more healthy. If the growth rate should fall, economic illness would be diagnosed.

However, it is obvious that on a finite Earth, neither population growth nor economic growth can continue indefinitely. A 4% rate of growth corresponds to an increase by a factor of 50 every century. No one can maintain that this is sustainable in the long run except by refusing to look more than a short distance into the future.

Of course, it is necessary to distinguish between industrial growth, and growth of culture and knowledge, which can and should continue to grow. Qualitative improvements in human society are possible and desirable, but resource-using and pollution-producing industrial growth is reaching its limits, both because of ecological constraints and because of the exhaustion of petroleum, natural gas and other non-renewable resources, such as metals. The threat of catastrophic climate change makes it imperative for us to stop using fossil fuels within very few decades.

Today, as economic growth falters, the defects and injustices of our banking system have come sharply into focus, and light has also been thrown onto the much-too-cozy relationship between banking and government. The collapse of banks during the sub-prime mortgage crisis of 2008 and their subsequent bailout by means of the taxpayer's money can give us an insight into both phenomena, the faults of our banking system and its infiltration into the halls of government. The same can be said of the present national debt crisis in the Euro zone and elsewhere.

One feature of banking that cries out for reform is "fractional reserve banking", i.e. the practice whereby private banks keep only a tiny fraction of the money entrusted to them by their depositors, and lend out all the remaining amount. By doing so, the banks are in effect coining their own money and putting it into circulation, a prerogative that ought to be reserved for governments. Under the system of fractional reserve banking, profits from any expansion of the money supply go to private banks rather than being used by the government to provide social services. This is basically unjust; the banks are in effect issuing their own counterfeit money.

When the economy contracts instead of expanding, the effect of fractional reserve banking is still worse. In that case the depositors ask the banks for their money, which it is their right to do. But the banks do not have the money; they have lent it out, and thus they fail. However, the bankers have insured themselves against this eventuality by buying the votes of government officials. Thus the banks are bailed out and the taxpayers are left with the bill, as in the recent example in which the US Federal Reserve secretly gave 7.7 trillion of the taxpayers' dollars to bail out various banks.

In a later section (on entropy and economics) we will discuss in detail Frederick Soddy's criticisms of the fractional reserve banking system, and his proposals for monetary reform.

The fact that our fractional reserve banking system is stable when the economy is expanding, but collapses when the economy contracts explains, in part, the irrational and almost religious belief of governments and economists in perpetual growth. Also contributing to growth-worship are the unearned profits that investors reap when they own property in growing cities, or shares of growing businesses. But growth cannot continue forever. It is destroying the earth.

Pope Francis has called for economic reform. Our battered earth calls for it. The case of Greece shows clearly that our present economic system is not working; it is destroying nature and at the same time producing human misery. We need to replace our present economic system by one that has both an ecological conscience and a social conscience.<sup>1</sup>

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<sup>1</sup><http://eruditio.worldacademy.org/issue-5/article/urgent-need-renewable-energy>  
<http://www.theguardian.com/environment/2015/jul/08/exxon-climate-change-1981-climate-denier-funding>  
<http://human-wrongs-watch.net/2015/06/25/militarisms-hostages/>  
<http://www.commondreams.org/news/2015/07/13/pope-calls-world-youth-rise-against-global-capitalism>  
<https://www.transcend.org/tms/2015/07/tpp-ttip-tisa-a-tipping-edge-from-democracy/>  
<http://dissidentvoice.org/2015/05/secretcy-and-democracy-are-incompatible/>  
<http://www.countercurrents.org/roberts100715.htm>  
<http://eruditio.worldacademy.org/issue-6/article/institutional-and-cultural-inertia>  
<http://human-wrongs-watch.net/2015/07/04/will-the-real-issues-be-discussed-in-2016/>

## 1.2 The Club of Rome

In 1968 Aurelio Peccei, Thorkil Kristensen and others founded the Club of Rome, an organization of economists and scientists devoted to studying the predicament of human society. One of the first acts of the organization was to commission an MIT study of future trends using computer models. The result was a book entitled “Limits to Growth”, published in 1972. From the outset the book was controversial, but it became a best-seller. It was translated into many languages and sold 30 million copies. The book made use of an exponential index for resources, i.e. the number of years that a resource would last if used at an exponentially increasing rate.

Today the more accurate Hubbert Peak model is used instead to predict rate of use of a scarce resource as a function of time. Although the specific predictions of resource availability in “Limits to Growth” lacked accuracy, its basic thesis, that unlimited industrial growth on a finite planet is impossible, was indisputably correct. Nevertheless the book was greeted with anger and disbelief by the community of economists, and these emotions still surface when it is mentioned.

Economic activity is usually divided into two categories, 1) production of goods and 2) provision of services. It is the rate of production of goods that will be limited by the carrying capacity of the global environment. Services that have no environmental impact will not be constrained in this way. Thus a smooth transition to a sustainable economy will involve a shift of a large fraction the work force from the production of goods to the provision of services.

In his recent popular book “The Rise of the Creative Class” the economist Richard Florida points out that in a number of prosperous cities, for example Stockholm, a large fraction of the population is already engaged in what might be called creative work, a type of work that uses few resources, and produces few waste products, work which develops knowledge and culture rather than producing material goods. For example, producing computer software requires few resources and results in few waste products. Thus it is an activity with a very small ecological footprint.

Similarly, education, research, music, literature and art are all activities that do not weigh heavily on the carrying capacity of the global environment. Furthermore, cultural activities lead in a natural way to global cooperation and internationalism, since cultural achievements are shared by the people of the entire world. Indeed, the shared human inheritance of culture and knowledge is growing faster than ever before.

Florida sees this as a pattern for the future, and maintains that everyone is capable of creativity. He visualizes the transition to a sustainable future economy as one in which a large fraction of the work force moves from industrial jobs to information-related work. Meanwhile, as Florida acknowledges, industrial workers feel uneasy and threatened by such trends.<sup>2</sup>

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<https://www.youtube.com/watch?v=AjZaFjXfLec>

<http://www.theguardian.com/environment/video/2012/oct/25/david-attenborough-climate-change-video>

<sup>2</sup><http://www.clubofrome.org/?p=326>

<http://www.donellameadows.org/wp-content/userfiles/Limits-to-Growth-digital-scan-version.pdf>

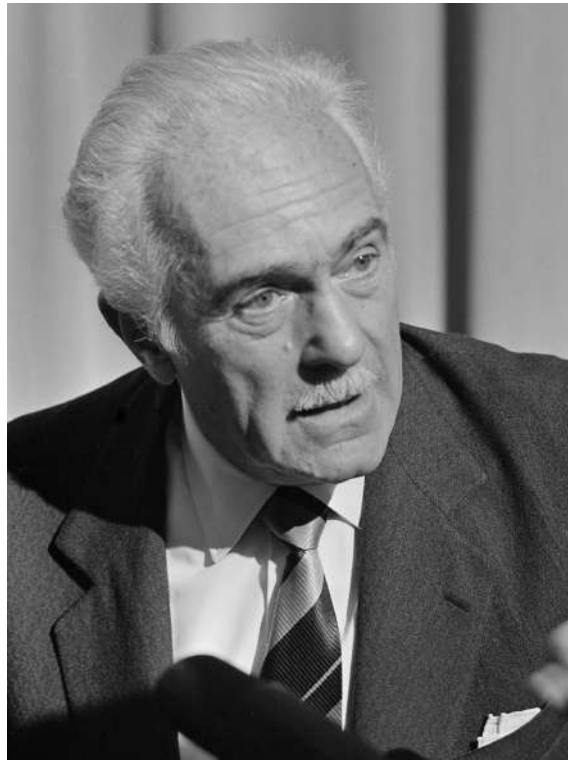


Figure 1.1: Aurelio Peccei (1908-1984), main founder of the Club of Rome. Concerning our present economic system, he wrote: “The only way we have devised to meet the surging waves of our rampant militarism and consumerism is to draw increasingly on the natural environment and to exploit, indiscriminately, the most accessible mineral and fuel deposits and all living resources we can lay our hands on. Such actions irreversibly impoverish our unique, irreplaceable, world, whose bounty and generosity are not infinite. Even if all the other adverse situations we find ourselves in today were to be alleviated, in itself, our high-handed treatment of Nature can bring about our doom.” Photograph by Koen Suyk/Anefo (Nationaal Archief), CC BY-SA 3.0, Wikimedia Commons



## 1.3 Biological Carrying capacity and Economics

Classical economists pictured the world as largely empty of human activities. According to the empty-world picture of economics, the limiting factors in the production of food and goods are shortages of human capital and labor. The land, forests, fossil fuels, minerals, oceans filled with fish, and other natural resources upon which human labor and capital operate, are assumed to be present in such large quantities that they are not limiting factors. In this picture, there is no naturally-determined upper limit to the total size of the human economy. It can continue to grow as long as new capital is accumulated, as long as new labor is provided by population growth, and as long as new technology replaces labor by automation.

Biology, on the other hand, presents us with a very different picture. Biologists remind us that if any species, including our own, makes demands on its environment which exceed the environment's carrying capacity, the result is a catastrophic collapse both of the environment and of the population which it supports. Only demands which are within the carrying capacity are sustainable. For example, there is a limit to regenerative powers of a forest.

It is possible to continue to cut trees in excess of this limit, but only at the cost of a loss of forest size, and ultimately the collapse and degradation of the forest. Similarly, cattle populations may for some time exceed the carrying capacity of grasslands, but the ultimate penalty for overgrazing will be degradation or desertification of the land. Thus, in biology, the concept of the carrying capacity of an environment is extremely important; but in economic theory this concept has not yet been given the weight which it deserves.

Exponential growth of human population and economic activity have brought us, in a surprisingly short time, from the empty-world situation to a full-world situation. In today's world, we are pressing against the absolute limits of the earth's carrying capacity, and further growth carries with it the danger of future collapse.

Full-world economics, the economics of the future, will no longer be able to rely on industrial growth to give profits to stockbrokers or to solve problems of unemployment or to alleviate poverty. In the long run, neither the growth of industry nor that of population is sustainable; and we have now reached or exceeded the sustainable limits.

The limiting factors in economics are no longer the supply of capital or human labor or even technology. The limiting factors are the rapidly vanishing supplies of petroleum and metal ores, the forests damaged by acid rain, the diminishing catches from over-fished oceans, and the cropland degraded by erosion or salination, or lost to agriculture under a cover of asphalt.

Neoclassical economists have maintained that it is generally possible to substitute man-made capital for natural resources; but a closer examination shows that there are only very few cases where this is really practical. (See G.E. Tverberg, "Thoughts on why energy use and CO<sub>2</sub> emissions are rising as fast as GDP", [www.ourfiniteworld.com](http://www.ourfiniteworld.com), November 30, 2011.)

The size of the human economy is, of course, the product of two factors the total number of humans, and the consumption per capita. If we are to achieve a sustainable global society in the future, a society whose demands are within the carrying capacity of the global environment, then both these factors must be reduced.

The responsibility for achieving sustainability is thus evenly divided between the North and the South: Where there is excessively high consumption per capita, it must be reduced; and this is primarily the responsibility of the industrialized countries. High birth rates must also be reduced; and this is primarily the responsibility of the developing countries. Both of these somewhat painful changes are necessary for sustainability; but both will be extremely difficult to achieve because of the inertia of institutions, customs and ways of thought which are deeply embedded in society, in both the North and the South.

## 1.4 Population and food supply

Let us look first at the problem of high birth rates: The recent spread of modern medical techniques throughout the world has caused death rates to drop sharply; but since social customs and attitudes are slow to change, birth rates have remained high. As a result, between 1930 and 2011, the population of the world increased with explosive speed from two billion to seven billion.

During the last few decades, the number of food-deficit countries has lengthened; and it now reads almost like a United Nations roster. The food-importing nations are dependent, almost exclusively, on a single food-exporting region, the grain belt of North America. In the future, this region may be vulnerable to droughts produced by global warming.

An analysis of the global ratio of population to cropland shows that we probably already have exceeded the sustainable limit of population through our dependence on petroleum: Between 1950 and 1982, the use of cheap petroleum-derived fertilizers increased by a factor of 8, and much of our present agricultural output depends their use. Furthermore, petroleum-derived synthetic fibers have reduced the amount of cropland needed for growing natural fibers, and petroleum-driven tractors have replaced draft animals which required cropland for pasturage. Also, petroleum fuels have replaced fuelwood and other fuels derived for biomass. The reverse transition, from fossil fuels back to renewable energy sources, will require a considerable diversion of land from food production to energy production.

As population increases, the cropland per person will continue to fall, and we will be forced to make still heavier use of fertilizers to increase output per hectare. Also marginal land will be used in agriculture, with the probable result that much land will be degraded through erosion or salination.

Reserves of oil are likely to be exhausted by the middle of this century. Thus there is a danger that just as global population reaches the unprecedented level of 9 billion or more, the agricultural base for supporting it may suddenly collapse. The resulting catastrophe, possibly compounded by war and other disorders, could produce famine and death on a scale unprecedented in history, a disaster of unimaginable proportions, involving billions rather than millions of people. The present tragic famine in Africa is to this possible future

disaster what Hiroshima is to the threat of thermonuclear war a tragedy of smaller scale, whose horrors should be sufficient, if we are wise, to make us take steps to avoid the larger catastrophe.

At present a child dies from starvation every six seconds. Five million children die from hunger every year. Over a billion people in today's world are chronically undernourished. There is a threat that unless prompt and well-informed action is taken by the international community, the tragic loss of life that is already being experienced will increase to unimaginable proportions.

As glaciers melt in the Himalayas, threatening the summer water supplies of India and China; as ocean levels rise, drowning the fertile rice-growing river deltas of Asia; as aridity begins to decrease the harvests of Africa, North America and Europe; as populations grow; as aquifers are overdrawn; as cropland is lost to desertification and urban growth; and as energy prices increase, the billion people who now are undernourished but still survive, might not survive. They might become the victims of a famine whose proportions could exceed anything that the world has previously experienced.

It is vital for the world to stabilize its population, not only because of the threat of a catastrophic future famine, but also because rapid population growth is closely linked with poverty. Today, a large fraction of the world's people live in near-poverty or absolute poverty, lacking safe water, sanitation, elementary education, primary health care and proper nutrition. Governments struggling to solve these problems, and to provide roads, schools, jobs and medical help for all their citizens, find themselves defeated by the rapid doubling times of populations. For example, in Liberia, the rate of population growth is 4% per year, which means that the population of Liberia doubles in size every eighteen years.

Under such circumstances, despite the most ambitious development programs, the infrastructure per capita decreases. Also, since new jobs must be found for the new millions added to the population, the introduction of efficient modern methods in industry and agriculture aggravates the already-serious problem of unemployment.

Education of women and higher status for women are vitally important measures, not only for their own sake, but also because in many countries these social reforms have proved to be strongly correlated with lower birth rates. Religious leaders who oppose programs for the education of women and for family planning on "ethical" grounds should think carefully about the scope and consequences of the catastrophic global famine which will undoubtedly occur within the next 50 years if population is allowed to increase unchecked.

One of the most important keys to controlling the global population explosion is giving women better education and equal rights. These goals are desirable for the sake of increased human happiness, and for the sake of the uniquely life-oriented point of view which women can give us; but in addition, education and improved status for women have shown themselves to be closely connected with lowered birth rates.

When women lack education and independent careers outside the home, they can be forced into the role of baby-producing machines by men who do not share in the drudgery of cooking, washing and cleaning; but when women have educational, legal, economic, social and political equality with men, experience has shown that they choose to limit

their families to a moderate size.

Sir Partha Dasgupta of Cambridge University has pointed out that the changes needed to break the cycle of overpopulation and poverty are all desirable in themselves. Besides education and higher status for women, they include state-provided social security for old people, provision of water supplies near to dwellings, provision of health services to all, abolition of child labor and general economic development.<sup>3</sup>

## 1.5 Social Values and Levels of Consumption

Let us next turn to the problem of reducing the per-capita consumption in the industrialized countries. The whole structure of western society seems designed to push its citizens in the opposite direction, towards ever-increasing levels of consumption. The mass media hold before us continually the ideal of a personal utopia filled with material goods. Every young man in a modern industrial society feels that he is a failure unless he fights his way to the “top”; and in recent years, women too have been drawn into this competition.

Of course not everyone can reach the top; there would not be room for everyone; but society urges all us to try, and we feel a sense of failure if we do not reach the goal. Thus, modern life has become a struggle of all against all for power and possessions.

One of the central problems in reducing consumption is that in our present economic and social theory, consumption has no upper bound; there is no definition of what is enough; there is no concept of a state where all of the real needs of a person have been satisfied. In our growth-oriented present-day economics, it is assumed that, no matter how much a person earns, he or she is always driven by a desire for more.

The phrase “conspicuous consumption” was invented by the Norwegian-American economist Thorstein Veblen (1857-1929) in order to describe the way in which our society uses economic waste as a symbol of social status. In “The Theory of the Leisure Class”, first published in 1899, Veblen pointed out that it was wrong to believe that human economic behavior is rational, or that it can be understood in terms of classical economic theory. To understand it, Veblen maintained, one might better make use of insights gained from anthropology, psychology, sociology, and history.

The sensation caused by the publication of Veblen’s book, and the fact that his phrase, “conspicuous consumption”, has become part of our language, indicate that his theory did not completely miss its mark. In fact, modern advertisers seem to be following Veblen’s advice: Realizing that much of the output of our economy will be used for the purpose of establishing the social status of consumers, advertising agencies hire psychologists to appeal to the consumer’s longing for a higher social position.

When possessions are used for the purpose of social competition, demand has no natural upper limit; it is then limited only by the size of the human ego, which, as we know, is boundless. This would be all to the good if unlimited economic growth were desirable. But today, when further industrial growth implies future collapse, western society urgently

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<sup>3</sup><http://www.poverties.org/famine-in-africa.html>

needs to find new values to replace our worship of power, our restless chase after excitement, and our admiration of excessive consumption.

The values which we need, both to protect nature from civilization and to protect civilization from itself, are perhaps not new: Perhaps it would be more correct to say that we need to rediscover ethical values which once were part of human culture, but which were lost during the process of industrialization, when technology allowed us to break traditional environmental constraints.

Our ancestors were hunter-gatherers, living in close contact with nature, and respecting the laws and limitations of nature. There are many hunter-gatherer cultures existing today, from whose values and outlook we could learn much. Unfortunately, instead of learning from them, we often move in with our bulldozers and make it impossible for their way of life to continue. During the past several decades, for example, approximately one tribe of South American forest Indians has died out every year. Of the 6000 human languages now spoken, it is estimated that half will vanish during the next 50 years.

In some parts of Africa, before cutting down a tree, a man will offer a prayer of apology to the spirit of the tree, explaining why necessity has driven him to such an act. The attitude involved in this ritual is something which industrialized society needs to learn, or relearn. Older cultures have much to teach industrial society because they already have experience with full-world situation which we are fast approaching.

In a traditional culture, where change is extremely slow, population has an opportunity to expand to the limits which the traditional way of life allows, so that it reaches an equilibrium with the environment. For example, in a hunter-gatherer culture, population has expanded to the limits which can be supported without the introduction of agriculture. The density of population is, of course, extremely low, but nevertheless it is pressing against the limits of sustainability. Overhunting or overfishing would endanger the future. Respect for the environment is thus necessary for the survival of such a culture.

Similarly, in a stable, traditional agricultural society which has reached an equilibrium with its environment, population is pressing against the limits of sustainability. In such a culture, one can usually find expressed as a strong ethical principle the rule that the land must not be degraded, but must be left fertile for the use of future generations.

Today, the whole world seems to be adopting values, fashions, and standards of behavior presented in the mass media of western society. The unsustainable, power-worshipping, consumption-oriented values of western society are so strongly propagandized by television, films and advertising, that they overpower and sweep aside the wisdom of older societies. This is unfortunate, since besides showing us unsustainable levels of affluence and economic waste, the western mass media depict values and behavior patterns which are hardly worthy of imitation. We need to reverse this trend. The industrialized countries must learn from the values of older traditional cultures. The wisdom of our ancestors, their respect for nature and their hospitable traditions of sharing, can help us to create a new economic system founded on social and environmental ethics.<sup>4</sup>

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<sup>4</sup><http://www.learndev.org/dl/harmony8.pdf>  
<http://dissidentvoice.org/2015/05/gandhi-as-an-economist/>

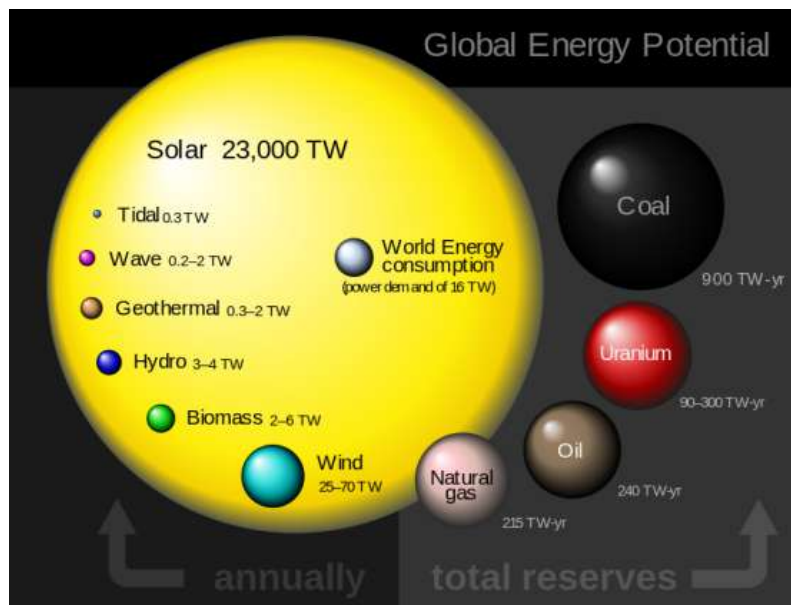


Figure 1.2: Global energy potential. Comparison of renewable and conventional planetary energy reserves and sources. While renewables display their power potential in terawatts (TW) with the corresponding annual amount of energy, conventional sources display their total recoverable energy reserves in terawatt-years (TW-yr). Author: Rfassbind, Wikimedia Commons

## 1.6 Introduction

We urgently need to shift quickly from fossil fuels to renewable energy if we are to avoid a tipping point after which human efforts to avoid catastrophic climate change will be futile because feedback loops will have taken over. The dangerous methane hydrate feedback loop is discussed in an excellent short video made by Thom Hartmann and the Leonardo DiCaprio Foundation.<sup>5</sup>

Celebrated author and activist Naomi Klein has emphasized the link between need for economic reform and our urgent duty to address climate change.<sup>6</sup>

Rebel economist Prof. Tim Jackson discusses the ways in which our present economic system has failed us, and the specific reforms that are needed. In one of his publications, he says: “The myth of growth has failed us. It has failed the two billion people who still live on 2 dollars a day. It has failed the fragile ecological systems on which we depend for survival. It has failed, spectacularly, in its own terms, to provide economic stability and

<http://www.encyclopedia.com/doc/1G2-3401804813.html>

<sup>5</sup><https://www.youtube.com/watch?v=sRGVTK-AAvw>  
<http://lasthours.org/>

<sup>6</sup><http://thischangeseverything.org/naomi-klein/>  
<http://www.theguardian.com/profile/naomiklein>

secure people's livelihood.”<sup>7</sup>

## 1.7 What is entropy?

Entropy is a quantity, originally defined in statistical mechanics and thermodynamics. It is a measure of the statistical probability of any state of a system: The greater the entropy, the greater the probability. The second law of thermodynamics asserts that entropy of the universe always increases with time. In other words, the universe as a whole is constantly moving towards states of greater and greater probability.

For any closed system, the same is true. Such systems move in time towards states of greater and greater probability. However, the earth, with its biosphere, is not a closed system. The earth constantly receives an enormous stream of light from the sun. The radiation which we receive from the sun brings us energy that can be used to perform work, and in physics this is called “free energy”. Because of this flood of incoming sunlight, plants, animals and humans are able to create structures which from a statistical point of view are highly unlikely.

The disorder and statistical probability of the universe is constantly increasing, but because the earth is not a closed system, we are able to create local order, and complex, statistically improbable structures, like the works of Shakespeare, the Mona Lisa and the Internet. The human economy is driven by the free energy which we receive as income from the sun. Money is, in fact, a symbol for free energy, and free energy might be thought of as “negative entropy”. There is also a link between free energy and information.<sup>8</sup>

## 1.8 Human society as a superorganism

A completely isolated human being would find it as difficult to survive for a long period of time as would an isolated ant or bee or termite. Therefore it seems correct to regard human society as a superorganism. In the case of humans, the analog of the social insects' nest is the enormous and complex material structure of civilization. It is, in fact, what we call the human economy. It consists of functioning factories, farms, homes, transportation links, water supplies, electrical networks, computer networks and much more.

Almost all of the activities of modern humans take place through the medium of these external “exosomatic” parts of our social superorganism. The terms “exosomatic” and “endosomatic” were coined by the American scientist Alfred Lotka (1880-1949). A lobster's claw is endosomatic; it is part of the lobster's body. The hammer used by a human is exosomatic, like a detachable claw. Lotka spoke of “exosomatic evolution”, including in this term not only cultural evolution but also the building up of the material structures of civilization.

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<sup>7</sup><http://www.theguardian.com/sustainable-business/rio-20-tim-jackson-leaders-green-economy?newsfeed=true>

<http://www.theguardian.com/sustainable-business/consumerism-sustainability-short-termism>

<sup>8</sup><http://www.amazon.com/Information-Theory-And-Evolution-Edition/dp/9814401234>

The economy associated with the human superorganism “eats” resources and free energy. It uses these inputs to produce local order, and finally excretes them as heat and waste. The process is closely analogous to food passing through the alimentary canal of an individual organism. The free energy and resources that are the inputs of our economy drive it just as food drives the processes of our body, but in both cases, waste products are finally excreted in a degraded form.

Almost all of the free energy that drives the human economy came originally from the sun’s radiation, the exceptions being geothermal energy which originates in the decay of radioactive substances inside the earth, and tidal energy, which has its origin in the slowing of the motions of the earth-moon system. However, since the start of the Industrial Revolution, our economy has been using the solar energy stored in of fossil fuels. These fossil fuels were formed over a period of several hundred million years. We are using them during a few hundred years, i.e., at a rate approximately a million times the rate at which they were formed.

The present rate of consumption of fossil fuels is more than 13 terawatts and, if used at the present rate, fossil fuels would last less than a century. However, because of the very serious threats posed by climate change, human society would be well advised to stop the consumption of coal, oil and natural gas well before that time.

The rate of growth of of new renewable energy sources is increasing rapidly. These sources include small hydro, modern biomass, solar, wind, geothermal, wave and tidal energy. There is an urgent need for governments to set high taxes on fossil fuel consumption and to shift subsidies from the petroleum and nuclear industries to renewables. These changes in economic policy are needed to make the prices of renewables more competitive.

The shock to the global economy that will be caused by the end of the fossil fuel era will be compounded by the scarcity of other non-renewable resources, such as metals. While it is true (as neoclassical economists emphasize) that “matter and energy can neither be created nor destroyed”, free energy can be degraded into heat, and concentrated deposits of minerals can be dispersed. Both the degradation of free energy into heat and the dispersal of minerals involve increases of entropy.

## 1.9 Frederick Soddy

One of the first people to call attention to the relationship between entropy and economics was the English radiochemist Frederick Soddy (1877-1956). Soddy won the Nobel Prize for Chemistry in 1921 for his work with Ernest Rutherford demonstrating the transmutation of elements in radioactive decay processes. His concern for social problems then led him to a critical study of the assumptions of classical economics. Soddy believed that there is a close connection between free energy and wealth, but only a very tenuous connection between wealth and money.

Soddy was extremely critical of the system of “fractional reserve banking” whereby private banks keep only a small fraction of the money that is entrusted to them by their depositors and lend out the remaining amount. He pointed out that this system means that



the money supply is controlled by the private banks rather than by the government, and also that profits made from any expansion of the money supply go to private corporations instead of being used to provide social services. Fractional reserve banking exists today, not only in England but also in many other countries. Soddy's criticisms of this practice cast light on the subprime mortgage crisis of 2008 and the debt crisis of 2011.

As Soddy pointed out, real wealth is subject to the second law of thermodynamics. As entropy increases, real wealth decays. Soddy contrasted this with the behavior of debt at compound interest, which increases exponentially without any limit, and he remarked:

"You cannot permanently pit an absurd human convention, such as the spontaneous increment of debt [compound interest] against the natural law of the spontaneous decrement of wealth [entropy]". Thus, in Soddy's view, it is a fiction to maintain that being owed a large amount of money is a form of real wealth.

Frederick Soddy's book, "Wealth, virtual wealth and debt: The solution of the economic paradox", published in 1926 by Allen and Unwin, was received by the professional economists of the time as the quixotic work of an outsider. Today, however, Soddy's common-sense economic analysis is increasingly valued for the light that it throws on the problems of our fractional reserve banking system, which becomes more and more vulnerable to failure as economic growth falters.<sup>9</sup>

## 1.10 Currency reform, and nationalization of banks

Frederick Soddy was writing at a time when England's currency was leaving the gold standard, and in order to replace this basis for the currency, he proposed an index system. Soddy's index was to be based on a standard shopping basket containing household items, such as bread, milk, potatoes and so on. If the price of the items in the basket rose, more currency would be issued by the nationalized central bank. If the price fell, currency would be withdrawn.

Nationalization of banks was proposed by Soddy as a means of avoiding the evils of the fractional reserve banking system. Today we see a revival of the idea of nationalized banks, or local user-owned cooperative banks. The Grameen Bank, founded by Prof. Muhammad Yunus, pioneered the idea of socially-motivated banks for the benefit poor people who would ordinarily be unable to obtain loans. The bank and its founder won a Nobel Peace Prize in 2006.<sup>10</sup>

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<sup>9</sup>[www.fadedpage.com/link.php?file=20140873-a5.pdf](http://www.fadedpage.com/link.php?file=20140873-a5.pdf)  
<http://human-wrongs-watch.net/2015/07/08/debt-slavery/>

<sup>10</sup><http://www.grameen-info.org/history/>  
<http://www.ibtimes.com/greece-drawing-contingency-plans-nationalize-banks-bring-parallel-currency-report-1868830>  
<http://www.quora.com/Why-were-banks-nationalized-in-India>  
<http://www.bloomberg.com/news/articles/2015-01-28/greek-bank-investors-hammered-as-3-day-slump-wipes-12-billion>  
<http://www.armstrongeconomics.com/archives/30531>  
<https://en.wikipedia.org/wiki/Nationalization>



Figure 1.3: **Prof. Muhammad Yunus, founder of the Grameen Bank. The bank and its founder shared a Nobel Peace Prize for their work. Prof. Yunus continues to work with businesses which aim at fulfilling social needs rather than at profit for stockholders. Source: [www.grameen-info.org](http://www.grameen-info.org)**

## 1.11 Nicholas Georgescu-Roegen

The incorporation of the idea of entropy into economic thought also owes much to the mathematician and economist Nicholas Georgescu-Roegen (1906-1994), the son of a Romanian army officer. Georgescu-Roegen's talents were soon recognized by the Romanian school system, and he was given an outstanding education in mathematics, which later contributed to his success and originality as an economist.

Between 1927 and 1930 the young Georgescu studied at the Institute de Statistique in Paris, where he completed an award-winning thesis: "On the problem of finding out the cyclical components of phenomena". He then worked in England with Karl Pearson from 1930 to 1932, and during this period his work attracted the attention of a group of economists who were working on a project called the Harvard Economic Barometer. He received a Rockefeller Fellowship to join this group, but when he arrived at Harvard, he found that the project had been disbanded.

In desperation, Georgescu-Roegen asked the economist Joseph Schumpeter for an appointment to his group. Schumpeter's group was in fact a remarkably active and interesting one, which included the future Nobel laureate Wassily Leontief; and there followed a period of intense intellectual activity during which Georgescu-Roegen became an economist.

Despite offers of a permanent position at Harvard, Georgescu-Roegen returned to his native Romania in the late 1930's and early 1940's in order to help his country. He served as a member of the Central Committee of the Romanian National Peasant Party. His experiences at this time led to his insight that economic activity involves entropy. He was

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<http://www.theguardian.com/world/2015/jul/23/beppe-grillo-calls-for-nationalisation-of-italian-banks-and-exit-from-euro>

<http://dissidentvoice.org/2015/07/whats-wrong-with-our-monetary-system-and-how-to-fix-it/>

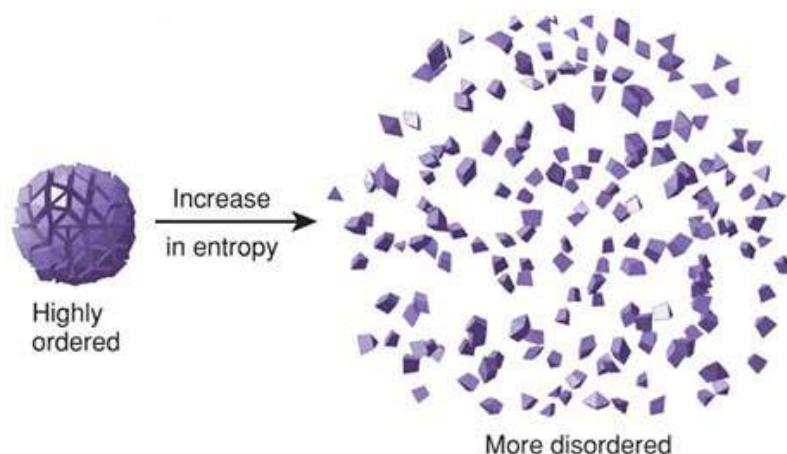


Figure 1.4: According to the second law of thermodynamics, the entropy of the universe constantly increases. Increase of entropy corresponds to increase of disorder, and also to increase of statistical probability. Living organisms on the earth are able to achieve a high degree of order and highly improbable structures because the earth is not a closed system. It constantly receives free energy (i.e. energy capable of doing work) from the sun, and this free energy can be thought of as carrying thermodynamic information, or “negative entropy”. Source: [flowchainsensel.wordpress.co](http://flowchainsensel.wordpress.co),

also helped to this insight by Borel’s monograph on Statistical Mechanics, which he had read during his Paris period.

Georgescu-Roegen later wrote: “The idea that the economic process is not a mechanical analogue, but an entropic, unidirectional transformation began to turn over in my mind long ago, as I witnessed the oil wells of the Ploesti field of both World Wars’ fame becoming dry one by one, and as I grew aware of the Romanian peasants’ struggle against the deterioration of their farming soil by continuous use and by rains as well. However it was the new representation of a process that enabled me to crystallize my thoughts in describing the economic process as the entropic transformation of valuable natural resources (low entropy) into valueless waste (high entropy).”

After making many technical contributions to economic theory, Georgescu-Roegen returned to this insight in his important 1971 book, “The Entropy Law and the Economic Process” (Harvard University Press), where he outlines his concept of bioeconomics. In a later book, “Energy and Economic Myths” (Pergamon Press, New York, 1976), he offered the following recommendations for moving towards a bioeconomic society:

1. The complete prohibition of weapons production, thereby releasing productive forces for more constructive purposes;
2. Immediate aid to underdeveloped countries;
3. Gradual decrease in population to a level that could be maintained only by organic agriculture;



Figure 1.5: **Wind, solar, and biomass are three emerging renewable sources of energy. Wind turbines in a rapeseed field in Sandesneben, Germany. Author: Jürgen from Sandesneben, Germany, Wikimedia Commons**

4. Avoidance, and strict regulation if necessary, of wasteful energy use;
5. Abandon our attachment to “extravagant gadgetry”;
6. “Get rid of fashion”;
7. Make goods more durable and repairable; and
8. Cure ourselves of workaholic habits by re-balancing the time spent on work and leisure, a shift that will become incumbent as the effects of the other changes make themselves felt.

Georgescu-Roegen did not believe that his idealistic recommendations would be adopted, and he feared that human society is headed for a crash.

## 1.12 Limits to Growth: A steady-state economy

Nicholas Georgescu-Roegen’s influence continues to be felt today, not only through his own books and papers but also through those of his students, the distinguished economists Herman E. Daly and Kozo Mayumi, who for many years have been advocating a steady-state economy. As they point out in their books and papers, it is becoming increasingly apparent that unlimited economic growth on a finite planet is a logical impossibility. However, it is important to distinguish between knowledge, wisdom and culture, which can and should continue to grow, and growth in the sense of an increase in the volume of material goods produced. It is growth in the latter sense that is reaching its limits.

Daly describes our current situation as follows: “The most important change in recent times has been the growth of one subsystem of the Earth, namely the economy, relative to the total system, the ecosphere. This huge shift from an ‘empty’ to a ‘full’ world is truly ‘something new under the sun’... The closer the economy approaches the scale of

the whole Earth, the more it will have to conform to the physical behavior mode of the Earth... The remaining natural world is no longer able to provide the sources and sinks for the metabolic throughput necessary to sustain the existing oversized economy, much less a growing one. Economists have focused too much on the economy's circulatory system and have neglected to study its digestive tract.”<sup>11</sup>

In the future, the only way that we can avoid economic collapse is to build a steady-state economy. There exists much literature on how this can be achieved, and these writings ought to become a part of the education of all economists and politicians.

## 1.13 Optimum population in the long-term future

What is the optimum population of the world? It is certainly not the maximum number that can be squeezed onto the globe by eradicating every species of plant and animal that cannot be eaten. The optimum global population is one that can be supported in comfort, equality and dignity, and with respect for the environment.

In 1848 (when there were just over one billion people in the world), John Stuart Mill described the optimal global population in the following words: “The density of population necessary to enable mankind to obtain, in the greatest degree, all the advantages of cooperation and social intercourse, has, in the most populous countries, been attained. A population may be too crowded, although all be amply supplied with food and raiment.”

“... Nor is there much satisfaction in contemplating the world with nothing left to the spontaneous activity of nature; with every rood of land brought into cultivation, which is capable of growing food for human beings; every flowery waste or natural pasture plowed up, all quadrupeds or birds which are not domesticated for man's use exterminated as his rivals for food, every hedgerow or superfluous tree rooted out, and scarcely a place left where a wild shrub or flower could grow without being eradicated as a weed in the name of improved agriculture. If the earth must lose that great portion of its pleasantness which it owes to things that the unlimited increase of wealth and population would extirpate from it, for the mere purpose of enabling it to support a larger, but not better or happier population, I sincerely hope, for the sake of posterity, that they will be content to be stationary, long before necessity compels them to it.” (From John Stuart Mill, “Principles of Political Economy, With Some of Their Applications to Social Philosophy”, 1848.)

Has the number of humans in the world already exceeded the earth's sustainable limits? Will the global population of humans crash catastrophically after having exceeded the carrying capacity of the environment? There is certainly a danger that this will happen - a danger that the 21st century will bring very large scale famines to vulnerable parts of

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<sup>11</sup><http://dalynews.org/learn/blog/>  
<http://steadystate.org/category/herman-daly/>  
<https://www.youtube.com/watch?v=EN5esbvAt-w>  
<https://www.youtube.com/watch?v=wIR-VsXtM4Y>  
<http://www.imf.org/external/pubs/ft/survey/so/2015/car031315a.htm>

## John Stuart Mill (1806-1873, England)



Mill “had a lifelong goal of reforming the world in the interest of human well-being”

<http://plato.stanford.edu/entries/mill>

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Figure 1.6: Mill wrote: “I sincerely hope, for the sake of posterity, that they will be content to be stationary, long before necessity compels them to it.” Source: [www.slideshare.net](http://www.slideshare.net)

the world, because modern energy-intensive agriculture will be dealt a severe blow by the end of the fossil fuel era, and because climate change will reduce the world’s agricultural output.

When the major glaciers in the Himalayas have melted, they will no longer be able to give India and China summer water supplies; rising oceans will drown much agricultural land; and aridity will reduce the output of many regions that now produce much of the world’s grain. Falling water tables in overdrawn aquifers, and loss of topsoil will add to the problem. We should be aware of the threat of a serious global food crisis in the 21st century if we are to have a chance of avoiding it.

The term *ecological footprint* was introduced by William Rees and Mathis Wackernagel in the early 1990’s to compare demands on the environment with the earth’s capacity to regenerate. In 2015, humanity used environmental resources at such a rate that it would take 1.6 earths to renew them. In other words, we have already exceeded the earth’s carrying capacity. Since eliminating the poverty that characterizes much of the world today will require more resources per capita, rather than less, it seems likely that in the era beyond fossil fuels, the optimum global population will be considerably less than the present population of the world.

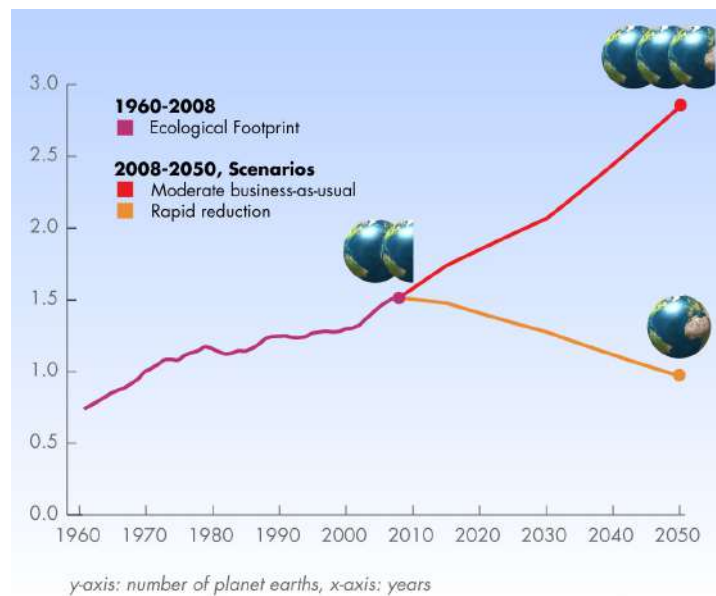


Figure 1.7: **Our present trajectory is completely unsustainable. If we follow it, then by 2050 it would take almost three earths to regenerate our demands on resources.** Source: [footprintnetwork.org](http://footprintnetwork.org)

## 1.14 Limitations on cropland

In 1944 the Norwegian-American plant geneticist Norman Borlaug was sent to Mexico by the Rockefeller Foundation to try to produce new wheat varieties that might increase Mexico's agricultural output. Borlaug's dedicated work on this project was spectacularly successful. He remained with the project for 16 years, and his group made 6,000 individual crossings of wheat varieties to produce high-yield disease-resistant strains.

In 1963, Borlaug visited India, bringing with him 100 kg. of seeds from each of his most promising wheat strains. After testing these strains in Asia, he imported 450 tons of the Lerma Rojo and Sonora 64 varieties: 250 tons for Pakistan and 200 for India. By 1968, the success of these varieties was so great that school buildings had to be commandeered to store the output. Borlaug's work began to be called a "Green Revolution". In India, the research on high-yield crops was continued and expanded by Prof. M.S. Swaminathan and his co-workers. The work of Green Revolution scientists, such Norman Borlaug and M.S. Swaminathan, has been credited with saving the lives of as many as a billion people.

Despite these successes, Borlaug believes that the problem of population growth is still a serious one. "Africa and the former Soviet republics", Borlaug states, "and the Cerrado, are the last frontiers. After they are in use, the world will have no additional sizable blocks of arable land left to put into production, unless you are willing to level whole forests, which you should not do. So, future food-production increases will have to come from higher yields. And though I have no doubt that yields will keep going up, whether they can go up enough to feed the population monster is another matter. Unless progress with





Figure 1.8: **Norman Borlaug and agronomist George Harrer in 1943.** Source: [beforeitsnews.com](http://beforeitsnews.com)

agricultural yields remains very strong, the next century will experience human misery that, on a sheer numerical scale, will exceed the worst of everything that has come before.”

With regard to the prospect of increasing the area of cropland, a report by the United Nations Food and Agricultural Organization (Provisional Indicative World Plan for Agricultural Development, FAO, Rome, 1970) states that “In Southern Asia,... in some countries of Eastern Asia, in the Near East and North Africa... there is almost no scope for expanding agricultural area... In the drier regions, it will even be necessary to return to permanent pasture the land that is marginal and submarginal for cultivation. In most of Latin America and Africa south of the Sahara, there are still considerable possibilities for expanding cultivated areas; but the costs of development are high, and it will often be more economical to intensify the utilization of areas already settled.” Thus there is a possibility of increasing the area of cropland in Africa south of the Sahara and in Latin America, but only at the cost of heavy investment and at the additional cost of destruction of tropical rain forests.

Rather than an increase in the global area of cropland, we may encounter a future loss of cropland through soil erosion, salination, desertification, loss of topsoil, depletion of minerals in topsoil, urbanization and failure of water supplies. In China and in the Southwestern part of the United States, water tables are falling at an alarming rate. The Ogallala aquifer (which supplies water to many of the plains states in the central and southern parts of the United States) has a yearly overdraft of 160%.

In the 1950's, both the U.S.S.R and Turkey attempted to convert arid grasslands into wheat farms. In both cases, the attempts were defeated by drought and wind erosion, just as the wheat farms of Oklahoma were overcome by drought and dust in the 1930's. If irrigation of arid lands is not performed with care, salt may be deposited, so that the land is ruined for agriculture. This type of desertification can be seen, for example, in



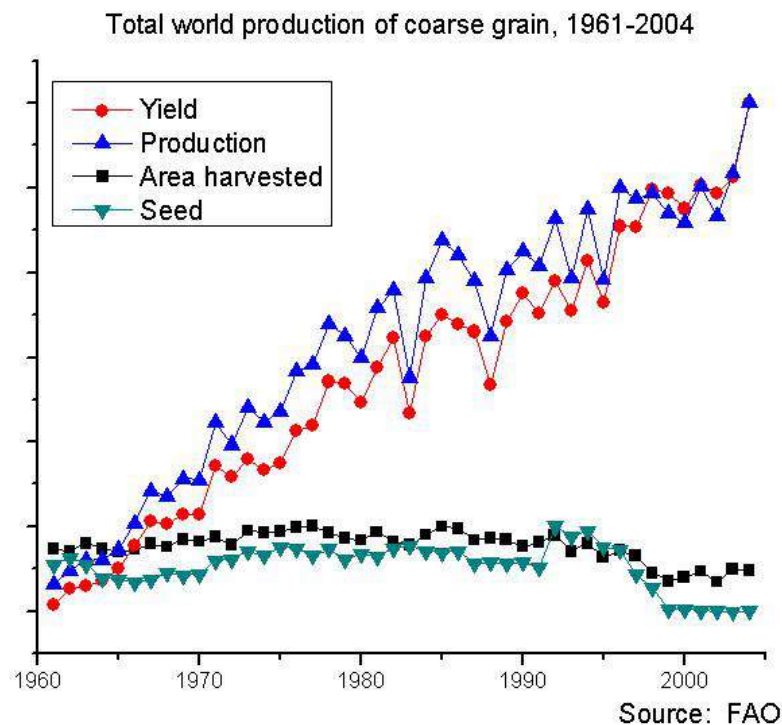


Figure 1.9: This graph shows the total world production of coarse grain between 1960 and 2004. Because of high-yield varieties, the yield of grain increased greatly. Notice, however, that the land under cultivation remained almost constant. High-yield agriculture depends on large inputs of fossil fuel energy and irrigation, and may be difficult to maintain in the future. Source: FAO

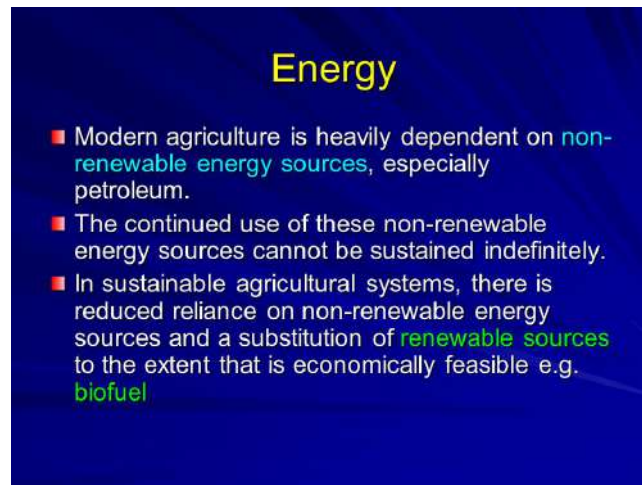


Figure 1.10: Source: [slideplayer.com](http://slideplayer.com)

some parts of Pakistan. Another type of desertification can be seen in the Sahel region of Africa, south of the Sahara. Rapid population growth in the Sahel has led to overgrazing, destruction of trees, and wind erosion, so that the land has become unable to support even its original population.

Especially worrying is a prediction of the International Panel on Climate Change concerning the effect of global warming on the availability of water: According to Model A1 of the IPCC, global warming may, by the 2050's, have reduced by as much as 30% the water available in large areas of world that now a large producers of grain.

Added to the agricultural and environmental problems, are problems of finance and distribution. Famines can occur even when grain is available somewhere in the world, because those who are threatened with starvation may not be able to pay for the grain, or for its transportation. The economic laws of supply and demand are not able to solve this type of problem. One says that there is no “demand” for the food (meaning demand in the economic sense), even though people are in fact starving.<sup>12</sup>

## 1.15 Energy-dependence of modern agriculture

A very serious problem with Green Revolution plant varieties is that they require heavy inputs of pesticides, fertilizers and irrigation. Because of this, the use of high-yield varieties contributes to social inequality, since only rich farmers can afford the necessary inputs.

<sup>12</sup><http://www.independent.co.uk/environment/climate-change/society-will-collapse-by-2040-due-to-catastrophic-food-shortages-says-study-10336406.html>  
<http://www.truth-out.org/news/item/32131-the-new-climate-normal-abrupt-sea-level-rise-and-predictions-of-civilization-collapse>  
<http://www.commondreams.org/views/2015/08/13/dignity-democracy-and-food-interview-frances-moore-lappe>

Monocultures, such as the Green Revolution varieties may also prove to be vulnerable to future epidemics of plant diseases, such as the epidemic that caused the Irish Potato Famine in 1845. Even more importantly, pesticides, fertilizers and irrigation all depend on the use of fossil fuels. One must therefore ask whether high agricultural yields can be maintained in the future, when fossil fuels are expected to become prohibitively scarce and expensive.

Modern agriculture has become highly dependent on fossil fuels, especially on petroleum and natural gas. This is especially true of production of the high-yield grain varieties introduced in the Green Revolution, since these require especially large inputs of fertilizers, pesticides and irrigation. Today, fertilizers are produced using oil and natural gas, while pesticides are synthesized from petroleum feedstocks, and irrigation is driven by fossil fuel energy. Thus agriculture in the developed countries has become a process where inputs of fossil fuel energy are converted into food calories.

The ratio of the fossil fuel energy inputs to the food calorie outputs depends on how many energy-using elements of food production are included in the accounting. David Pimental and Mario Giampietro of Cornell University estimated in 1994 that U.S. agriculture required 0.7 kcal of fossil fuel energy inputs to produce 1.0 kcal of food energy. However, this figure was based on U.N. statistics that did not include fertilizer feedstocks, pesticide feedstocks, energy and machinery for drying crops, or electricity, construction and maintenance of farm buildings. A more accurate calculation, including these inputs, gives an input/output ratio of approximately 1.0. Finally, if the energy expended on transportation, packaging and retailing of food is included, Pimental and Giampietro found that the input/output ratio for the U.S. food system was approximately 10, and this figure did not include energy used for cooking.

The Brundtland Report's estimate of the global potential for food production assumes "that the area under food production can be around 1.5 billion hectares (3.7 billion acres - close to the present level), and that the average yields could go up to 5 tons of grain equivalent per hectare (as against the present average of 2 tons of grain equivalent)." In other words, the Brundtland Report assumes an increase in yields by a factor of 2.5. This would perhaps be possible if traditional agriculture could everywhere be replaced by energy-intensive modern agriculture using Green Revolution plant varieties. However, Pimental and Giampietro's studies show that modern energy-intensive agricultural techniques cannot be maintained after fossil fuels have been exhausted or after their use has been discontinued to avoid catastrophic climate change.

At the time when the Brundtland Report was written (1987), the global average of 2 tons of grain equivalent per hectare included much higher yields from the sector using modern agricultural methods. Since energy-intensive petroleum-based agriculture cannot be continued in the post-fossil-fuel era, future average crop yields will probably be much less than 2 tons of grain equivalent per hectare.

The 1987 global population was approximately 5 billion. This population was supported by 3 billion tons of grain equivalent per year. After fossil fuels have been exhausted, the total world agricultural output is likely to be considerably less than that, and therefore the population that it will be possible to support sustainably will probably be considerably

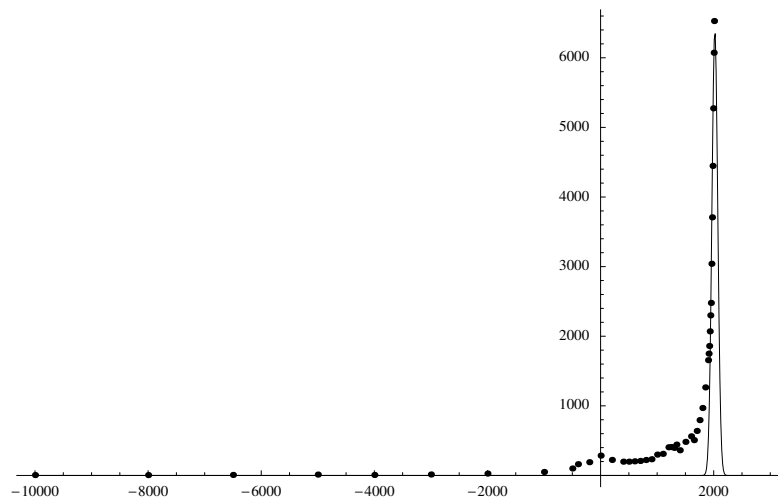


Figure 1.11: **Population growth and fossil fuel use, seen on a time-scale of several thousand years.** The dots are population estimates in millions from the US Census Bureau. Fossil fuel use appears as a spike-like curve, rising from almost nothing to a high value, and then falling again to almost nothing in the space of a few centuries. When the two curves are plotted together, the explosive rise of global population is seen to be simultaneous with, and perhaps partially driven by, the rise of fossil fuel use. This raises the question of whether the world's population is headed for a crash when the fossil fuel era has ended. (Author's own graph)

less than 5 billion, assuming that our average daily per capita use of food calories remains the same, and assuming that the amount of cropland and pasturage remains the same (1.5 billion hectares cropland, 3.0 billion hectares pasturage).

The Brundtland Report points out that “The present (1987) global average consumption of plant energy for food, seed and animal feed amounts to 6,000 calories daily, with a range among countries of 3,000-15,000 calories, depending on the level of meat consumption.” Thus there is a certain flexibility in the global population that can survive on a given total agricultural output. If the rich countries were willing to eat less meat, more people could be supported.<sup>13</sup>

## 1.16 Effects of climate change on agriculture

### a) The effect of temperature increase

<sup>13</sup><http://www.truth-out.org/news/item/32354-environmentalists-sue-epa-over-dead-zone-in-gulf-of-mexico>

There is a danger that when climate change causes both temperature increases and increased aridity in regions like the US grain belt, yields will be very much lowered. Of the three main grain types (corn, wheat and rice) corn is the most vulnerable to the direct effect of increases in temperature. One reason for this is the mechanism of pollination of corn: A pollen grain lands on one end of a corn-silk strand, and the germ cell must travel the length of the strand in order to fertilize the kernel. At high temperatures, the corn silk becomes dried out and withered, and is unable to fulfill its biological function. Furthermore, heat can cause the pores on the underside of the corn leaf to close, so that photosynthesis stops.

According to a study made by Mohan Wali and coworkers at Ohio State University, the photosynthetic activity of corn increases until the temperature reaches 20°C. It then remains constant until the temperature reaches 35°C, after which it declines. At 40°C and above, photosynthesis stops altogether.

Scientists in the Phillipines report that the pollination of rice fails entirely at 40°C, leading to crop failures. Wheat yields are also markedly reduced by temperatures in this range.<sup>14</sup>

#### **b) The effect of decreased rainfall**

According to the Stern Report, some of the major grain-producing areas of the world might loose up to 30% of their rainfall by 2050. These regions include much of the United States, Brazil, the Mediterranean region, Eastern Russia and Belarus, the Middle East, Southern Africa and Australia. Of course possibilities for agriculture may simultaneously increase in other regions, but the net effect of climate change on the world's food supply is predicted to be markedly negative.

#### **c) Unsustainable use of groundwater**

It may seem surprising that fresh water can be regarded as a non-renewable resource. However, groundwater in deep aquifers is often renewed very slowly. Sometimes renewal requires several thousand years. When the rate of withdrawal of groundwater exceeds the rate of renewal, the carrying capacity of the resource has been exceeded, and withdrawal of water becomes analogous to mining a mineral. However, it is more serious than ordinary mining because water is such a necessary support for life.

In many regions of the world today, groundwater is being withdrawn faster than it can be replenished, and important aquifers are being depleted. In China, for example, groundwater levels are falling at an alarming rate. Considerations of water supply in relation to population form the background for China's stringent population policy. At a recent lecture, Lester Brown of the Worldwatch Institute was asked by a member of the audience to name the resource for which shortages would most quickly become acute. Most of the audience expected him to name oil, but instead he replied "water".

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<sup>14</sup><http://ecowatch.com/2015/08/03/heat-wave-iran/>



Figure 1.12: **Lester R. Brown** has been a pioneer in the study of the future global food crisis. Source: [www.azquotes.com](http://www.azquotes.com)

Lester Brown then cited China's falling water table. He predicted that within decades, China would be unable to feed itself. He said that this would not cause hunger in China itself: Because of the strength of China's economy, the country would be able to purchase grain on the world market. However Chinese purchases of grain would raise the price, and put world grain out of reach of poor countries in Africa. Thus water shortages in China will produce famine in parts of Africa, Brown predicted.

Under many desert areas of the world are deeply buried water tables formed during glacial periods when the climate of these regions was wetter. These regions include the Middle East and large parts of Africa. Water can be withdrawn from such ancient reservoirs by deep wells and pumping, but only for a limited amount of time.

In oil-rich Saudi Arabia, petroenergy is used to drill wells for ancient water and to bring it to the surface. Much of this water is used to irrigate wheat fields, and this is done to such an extent that Saudi Arabia exports wheat. The country is, in effect, exporting its ancient heritage of water, a policy that it may, in time, regret. A similarly short-sighted project is Muammar Qaddafi's enormous pipeline, which will bring water from ancient sub-desert reservoirs to coastal cities.

In the United States, the great Ogallala aquifer is being overdrawn. This aquifer is an enormous stratum of water-saturated sand and gravel under-lying parts of northern Texas, Oklahoma, New Mexico, Kansas, Colorado, Nebraska, Wyoming and South Dakota. The average thickness of the aquifer is about 70 meters. The rate of water withdrawal from the aquifer exceeds the rate of recharge by a factor of eight.

Thus we can see that in many regions, the earth's present population is living on its inheritance of water, rather than its income. This fact, coupled with rapidly increasing populations and climate change, may contribute to a very serious food crisis partway through the 21st century.

#### **d) Glacial melting and summer water supplies**

The summer water supplies of both China and India are threatened by the melting of



Figure 1.13: **Whitechuck Glacier in the North Cascades National Park in 1973.**  
Source: [www.nichols.edu](http://www.nichols.edu)



Figure 1.14: **The same glacier in 2006.** Source: [www.nichols.edu](http://www.nichols.edu)

glaciers. The Gangotri glacier, which is the principle glacier feeding India's great Ganges River, is reported to be melting at an accelerating rate, and it could disappear within a few decades. If this happens, the Ganges could become seasonal, flowing only during the monsoon season. Chinese agriculture is also threatened by disappearing Himalayan glaciers, in this case those on the Tibet-Quinghai Plateau. The respected Chinese glaciologist Yao Tandong estimates that the glaciers feeding the Yangtze and Yellow Rivers are disappearing at the rate of 7% per year.<sup>15</sup>

The Indus and Mekong Rivers will be similarly affected by the melting of glaciers. Lack of water during the summer season could have a serious impact on the irrigation.

Mature forests contain vast amounts of sequestered carbon, not only in their trees, but

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<sup>15</sup><http://www.commondreams.org/news/2015/08/04/global-glaciers-melting-three-times-rate-20th-century>

also in the carbon-rich soil of the forest floor. When a forest is logged or burned to make way for agriculture, this carbon is released into the atmosphere.

One fifth of the global carbon emissions are at present due to destruction of forests. This amount is greater than the CO<sub>2</sub> emissions for the world's transportation systems. An intact forest pumps water back into the atmosphere, increasing inland rainfall and benefiting agriculture. By contrast, deforestation, for example in the Amazonian rainforest, accelerates the flow of water back into the ocean, thus reducing inland rainfall. There is a danger that the Amazonian rainforest may be destroyed to such an extent that the region will become much more dry. If this happens, the forest may become vulnerable to fires produced by lightning strikes. This is one of the feedback loops against which the Stern Report warns: the drying and burning of the Amazonian rainforest may become irreversible, greatly accelerating climate change, if destruction of the forest proceeds beyond a certain point.

#### **e) Erosion of topsoil.**

Besides depending on an adequate supply of water, food production also depends on the condition of the thin layer of topsoil that covers the world's croplands. This topsoil is being degraded and eroded at an alarming rate: According to the World Resources Institute and the United Nations Environment Programme, "It is estimated that since World War II, 1.2 billion hectares... has suffered at least moderate degradation as a result of human activity. This is a vast area, roughly the size of China and India combined." This area is 27% of the total area currently devoted to agriculture. The report goes on to say that the degradation is greatest in Africa. The risk of topsoil erosion is greatest when marginal land is brought into cultivation, since marginal land is usually on steep hillsides which are vulnerable to water erosion when wild vegetation is removed.

David Pimental and his associates at Cornell University pointed out in 1995 that "Because of erosion-associated loss of productivity and population growth, the per capita food supply has been reduced over the past 10 years and continues to fall. The Food and Agricultural Organization reports that the per capita production of grains which make up 80% of the world's food supply, has been declining since 1984...During the past 40 years nearly one-third of the world's cropland (1.5 billion hectares) has been abandoned because of soil erosion and degradation. Most of the replacement has come from marginal land made available by removing forests. Agriculture accounts for 80% of the annual deforestation."

Topsoil can also be degraded by the accumulation of salt when irrigation water evaporates. The worldwide area of irrigated land has increased from 8 million hectares in 1800 to more than 100 million hectares today. This land is especially important to the world food supply because it is carefully tended and yields are large in proportion to the area. To protect this land from salination, it should be irrigated in such a way that evaporation is minimized.

Finally cropland with valuable topsoil is being lost to urban growth and highway development, a problem that is made more severe by growing populations and by economic growth.



Every year, more than 100,000 square kilometers of rain forest are cleared and burned, an area which corresponds to that of Switzerland and the Netherlands combined. Almost half of the world's tropical forests have already been destroyed. Ironically, the land thus cleared often becomes unsuitable for agriculture within a few years. Tropical soils may seem to be fertile when covered with luxuriant vegetation, but they are usually very poor in nutrients because of leeching by heavy rains. The nutrients which remain are contained in the vegetation itself; and when the forest cover is cut and burned, the nutrients are rapidly lost.

Often the remaining soil is rich in aluminum oxide and iron oxide. When such soils are exposed to oxygen and sun-baking, a rock-like substance called Laterite is formed.

## 1.17 Secret land purchases in Africa

According to a report released by the Oakland Institute, in 2009 alone, hedge funds bought or leased nearly 60 million hectares of land in Africa, an area the size of France.

As populations increase, and as water becomes scarce, China, and other countries, such as Saudi Arabia are also buying enormous tracts of agricultural land, not only in Africa, but also in other countries.

These land purchases are very often kept secret from the local populations by corrupt governments.<sup>16</sup>

## 1.18 Some conclusions

There is a danger that just as global population reaches the unprecedented level of 9 billion or more, the agricultural base for supporting it may suddenly collapse. Ecological catastrophe, possibly compounded by war and other disorders, could produce famine and death on a scale unprecedented in history, a disaster of unimaginable proportions, involving billions rather than millions of people.

The resources of the earth and the techniques of modern science can support a global population of moderate size in comfort and security; but the optimum size is undoubtedly smaller than the world's present population. Given a sufficiently small global population, renewable sources of energy can be found to replace disappearing fossil fuels. Technology may also be able to find renewable substitutes for many disappearing mineral resources for a global population of moderate size. What technology cannot do, however, is to give a global population of 9 billion people the standard of living which the industrialized countries enjoy today.

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<sup>16</sup><http://www.latimes.com/world/asia/la-fg-china-foreign-farmland-20140329-story.html>  
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## Chapter 2

# WE MUST RESTORE DEMOCRACY

### 2.1 Edward Snowden's revelations

Can a government, many of whose operations are secret, be a democracy? Obviously this is impossible. The recent attempts of the United States to arrest whistleblower Edward Snowden call attention to the glaring contradiction between secrecy and democracy.

In a democracy, the power of judging and controlling governmental policy is supposed to be in the hands of the people. It is completely clear that if the people do not know what their government is doing, then they cannot judge or control governmental policy, and democracy has been abolished. There has always been a glaring contradiction between democracy and secret branches of the government, such as the CIA, which conducts its assassinations and its dirty wars in South America without any public knowledge or control.

The gross, wholesale electronic spying on citizens revealed by Snowden seems to be specifically aimed at eliminating democracy. It is aimed at instilling universal fear and conformity, fear of blackmail and fear of being out of step, so that the public will not dare to oppose whatever the government does, no matter how criminal or unconstitutional.

Henry Kissinger famously remarked: "The illegal we do at once. The unconstitutional takes a little longer". Well, Henry, that may have been true in your time, but today the unconstitutional does not take long at all.

The Magna Carta is trashed. No one dares to speak up. Habeas Corpus is trashed. No one dares to speak up. The United Nations Charter is trashed. No one dares to speak up. The Universal Declaration of Human Rights is trashed. No one dares to speak up. The Fourth Amendment to the US Constitution is trashed. No one dares to speak up. The President claims the right to kill both US and foreign citizens, at his own whim. No one dares to speak up.

But perhaps this is unjust. Perhaps some people would dare to protest, except that they cannot get their protests published in the mainstream media. We must remember that the media are owned by the same corporate oligarchs who own the government.

George Orwell, you should be living today! We need your voice today! After Snowden's revelations, the sale of Orwell's "1984" soared. It is now on the bestseller list. Sadly, Orwell's dystopian prophesy has proved to be accurate in every detail.

## 2.2 The jaws of power

*"Every government degenerates when trusted to the rulers of the people alone. The people themselves, therefore, are its only safe depositories."* Thomas Jefferson, (1743-1826)

*"The jaws of power are always open to devour, and her arm is always stretched out, if possible, to destroy the freedom of thinking, speaking, and writing."* John Adams, (1735-1826)

According to the Nuremberg Principles, the citizens of a country have a responsibility for the crimes that their governments commit. But to prevent these crimes, the people need to have some knowledge of what is going on. Indeed, democracy cannot function at all without this knowledge.

What are we to think when governments make every effort to keep their actions secret from their own citizens? We can only conclude that although they may call themselves democracies, such governments are in fact oligarchies or dictatorships.

At the end of World War I, it was realized that secret treaties had been responsible for its outbreak, and an effort was made to ensure that diplomacy would be more open in the future. Needless to say, these efforts did not succeed, and diplomacy has remained a realm of secrecy.

Many governments have agencies for performing undercover operations (usually very dirty ones). We can think, for example of the KGB, the CIA, M5, or Mossad. How can countries that have such agencies claim to be democracies, when the voters have no knowledge of or influence over the acts that are committed by the secret agencies of their governments?

Nuclear weapons were developed in secret. It is doubtful whether the people of the United States would have approved of the development of such antihuman weapons, or their use against an already-defeated Japan, if they had known that these things were going to happen. The true motive for the nuclear bombings was also kept secret. In the words of General Groves, speaking confidentially to colleagues at Los Alamos, the real motive was "to control the Soviet Union".

The true circumstances surrounding the start of the Vietnam war would never have been known if Daniel Ellsberg had not leaked the Pentagon Papers. Ellsberg thought that once the American public realized that their country's entry into the war was based on a lie, the war would end. It did not end immediately, but undoubtedly Ellsberg's action contributed to the end of the war.

We do not know what will happen to Julian Assange. If his captors send him to the US, and if he dies there for the crime of publishing leaked documents (a crime that he

shares with the New York Times), he will not be the first martyr to the truth. The ageing Galileo was threatened with torture and forced to recant his heresy - that the earth moves around the sun. Galileo spent the remainder of his days in house arrest. Giordano Bruno was less lucky. He was burned at the stake for maintaining that the universe is larger than it was then believed to be. If Julian Assange becomes a martyr to the truth like Galileo or Bruno, his name will be honored by generations in the future, and the shame of his captors will be remembered too.

## 2.3 The deep state

What is the excuse for the massive spying reported by Snowden, spying not only on US citizens but also on the citizens of other countries throughout the world? “We want to protect you from terrorism.”, the government answers. But terrorism is not a real threat, it is an invented one. It was invented by the military-industrial complex because, at the end of the Cold War, this enormous money-making conglomerate lacked enemies.

Globally, the number of people killed by terrorism is vanishingly small compared to the number of children who die from starvation every year. It is even vanishingly small compared with the number of people who are killed in automobile accidents. It is certainly small compared with the number of people killed in wars aimed at gaining western hegemony over oil-rich regions of the world.

In order to make the American people really fear terrorism, and in order to make them willing to give up their civil liberties, a big event was needed, something like the 9/11 attacks on the World Trade Center.

There is strong evidence, available on the Internet for anyone who wishes to look at it, that the US government knew well in advance that the 9/11 attacks would take place, and that government agents made the disaster worse than it otherwise would have been by planting explosives in the buildings of the World Trade Center. For example, CIA insider Susan Lindauer has testified that the US government knew about the planned attacks as early as April, 2001. Other experts have testified that explosives must have been used to bring the buildings down.

Numerous samples of the dust from the disaster were collected by people in New York City, and chemical analysis of the dust has shown the presence of nanothermite, a compound that produces intense heat. Pools of recently-melted steel were found in the ruins of the buildings before these were sealed off from the public. An ordinary fire does not produce temperatures high enough to melt steel.

Thus it seems probable that the US government participated in the 9/11 attacks, and used them in much the same way that the Nazis used the Reichstag fire, to abridge civil liberties and to justify a foreign invasion. Soon afterward, the Patriot Act was passed. It's Orwellian name is easily understood by anyone who has read “1984”.

But in Shelley's words, “We are many; they are few!” The people who want democracy greatly outnumber those who profit from maintaining a government based on secrecy and fear. Let us “rise like lions after slumbers, in unvanquishable numbers”. Let us abolish



Figure 2.1: The sales of George Orwell's 1984 soared after Snowden's revelations.





Figure 2.2: Susan Lindauer

governmental secrecy and reclaim our democracy.

Governmental secrecy is not something new. Secret diplomacy contributed to the outbreak of World War I, and the secret Sykes-Picot agreement later contributed to the bitterness of conflicts in the Middle East. However, in recent years, governmental secrecy has grown enormously.

The revelations of Edward Snowden and others have shown that the number of people involved in secret operations of the United States government is now as large as the entire population of Norway: roughly 5 million. The influence of this dark side of government has become so great that no president is able to resist it.

In a recent article, John Chuckman remarked that “The CIA is now so firmly entrenched and so immensely well financed (much of it off the books, including everything from secret budget items to the peddling of drugs and weapons) that it is all but impossible for a president to oppose it the way Kennedy did. Obama, who has proved himself to be a fairly weak character from the start, certainly has given the CIA anything it wants. The dirty business of ISIS in Syria and Iraq is one project. The coup in Ukraine is another. The pushing of NATO’s face right against Russia’s borders is another. Several attempted coups in Venezuela are still more. And the creation of a drone air force for extra-judicial killings in half a dozen countries is yet another. They don’t resemble projects we would expect from a smiley-faced intelligent man who sometimes wore sandals and refused to wear a flag pin on his lapel during his first election campaign.”<sup>1</sup>

Of course the United States government is by no means alone in practicing excessive secrecy: Scott Horton recently wrote an article entitled *How to Rein in a Secretive Shadow Government Is Our National Security Crisis*. He dedicated the article to the Soviet dis-

<sup>1</sup><http://www.informationclearinghouse.info/article41222.htm>

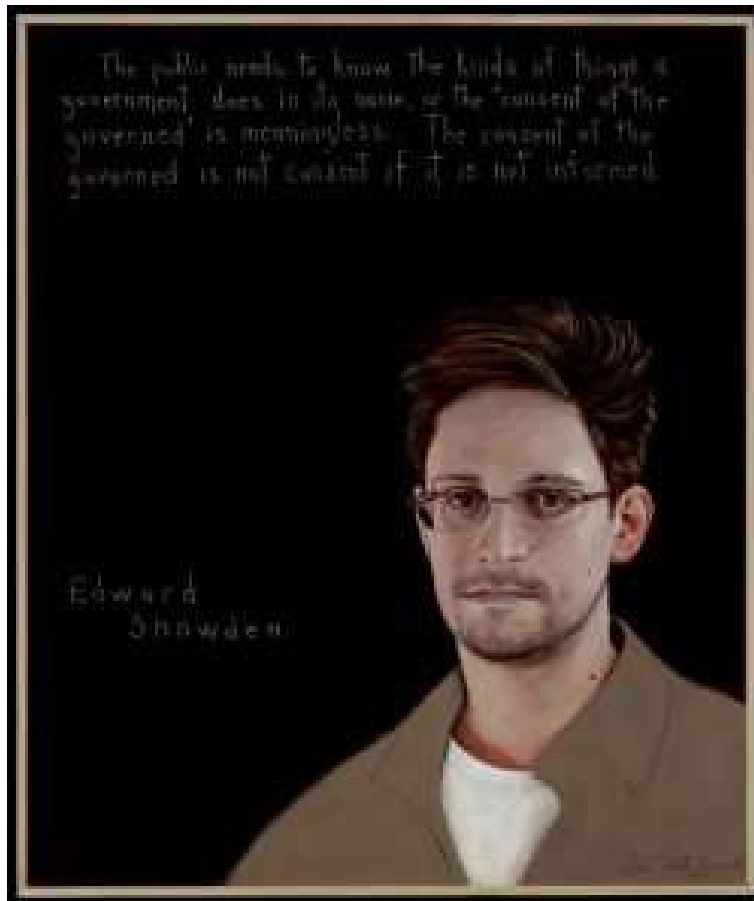


Figure 2.3: The revelations of Edward Snowden and others have shown that the number of people involved in secret operations of the United States government is now as large as the entire population of Norway: roughly 5 million.

sident Andrei Sakharov because, as he said, “Sakharov recognized that the Soviet Union rested on a colossal false premise: it was not so much socialism (though Sakharov was certainly a critic of socialism) as it was the obsession with secrecy, which obstructed the search for truth, avoided the exposure of mistakes, and led to the rise of powerful bureaucratic elites who were at once incompetent and prone to violence.”

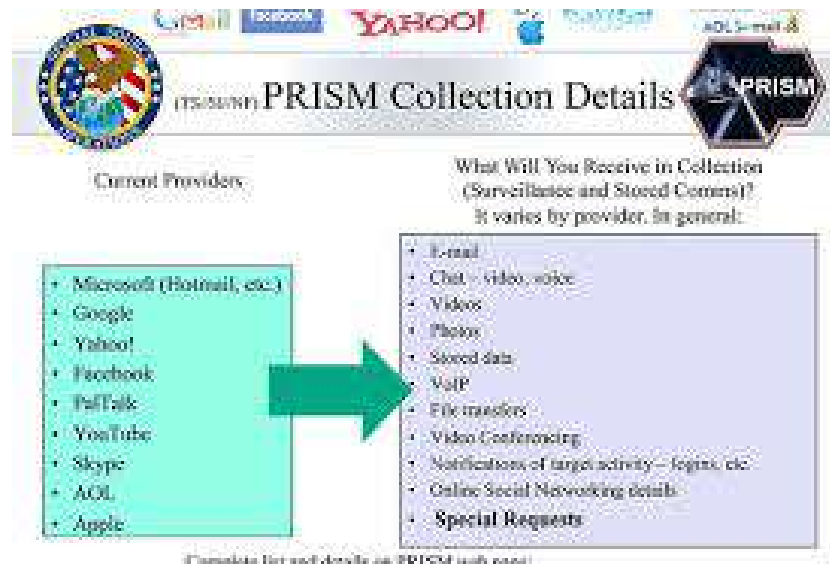


Figure 2.4: One of the power points used by NSA to sell their comprehensive collection of private data.



Figure 2.5: The data of major Internet corporations was stolen without their knowledge or consent.



Figure 2.6: These huge buildings in Fort Meade, Maryland, are the main headquarters of NSA.



Figure 2.7: Angela Merkel's telephone was bugged by NSA. In a cartoon depicting the incident, she says "Tell the Americans to stop listening to our telephone conversations". Her aide replies, "You just did".





Figure 2.8: Big Brother is watching you.

## 2.4 *The United States of Secrets*

### A review by Variety

Here are some excerpts from *Variety's* review of the first two parts of the series:

“Methodical and comprehensive, *Frontline's* documentary *The United States of Secrets* offers a blow-by-blow account of the Bush administration's embrace of potentially illegal spying/eavesdropping techniques, President Obama's decision to continue them (despite campaign promises to the contrary) and, most compellingly, those who sought to blow the whistle on government overreach, culminating with Edward Snowden's unprecedented dump of classified documents. If the two-part project breaks little new ground, it's an utterly thorough primer on what transpired that almost plays like a John Le Carre thriller, with remarkably candid interviews from participants on all sides...

“*United States of Secrets* also details the role played by the Fourth Estate, as frustrated officials reluctantly began going to the press, feeling they had no other recourse to beat back constitutional intrusions. Yet the New York Times, after nailing down the story, ultimately balked at running it, at the urging of the Bush administration...”

### A review by Network Knowledge

Another review, by *Network Knowledge*, makes the following comments:

“WSEC/PBS Springfield will premiere a compelling two-part series entitled FRONTLINE - United States of Secrets. These programs go behind the headlines to reveal the dramatic story of how the U.S. government came to monitor and collect the communications of millions of people around the world - including ordinary Americans - and the lengths they went to trying to hide the massive surveillance program from the public.

“In part one, premiering Tuesday, May 13 at 8PM on WSEC/PBS Springfield, FRONTLINE filmmaker Michael Kirk goes inside Washington and the National Security Agency,

piecing together the secret history of the unprecedented surveillance program that began in the wake of September 11 and continues today even after the revelations of its existence by NSA contractor Edward Snowden.

“Then, in part two, premiering Tuesday, May 20 at 9PM, veteran FRONTLINE filmmaker Martin Smith continues the story, exploring the secret relationship between Silicon Valley and the National Security Agency, and investigating how the government and tech companies have worked together to gather and warehouse your data.

“Part political thriller and part spy novel, *United States of Secrets* series is the definitive history of domestic surveillance in a post 9/11 world. With new revelations about government spying coming out almost daily, the series will be gripping viewing for those who want to understand the context of the Snowden affair and what it means for all Americans.”

## 2.5 Censorship of the news

Many modern governments have become very expert in manipulating public opinion through mass media. They only allow the public to hear a version of the “news” that has been handed down by powerholders. Of course, people can turn to the alternative media that are available on the Internet. But on the whole, the vision of the world presented on television screens and in major newspapers is the “truth” that is accepted by the majority of the public, and it is this picture of events that influences political decisions. Censorship of the news by the power elite is a form of secrecy, since it withholds information that is needed for a democracy to function properly.

## 2.6 Coups, torture and illegal killing

During the period from 1945 to the present, the US interfered, militarily or covertly, in the internal affairs of a large number of nations: China, 1945-49; Italy, 1947-48; Greece, 1947-49; Philippines, 1946-53; South Korea, 1945-53; Albania, 1949-53; Germany, 1950s; Iran, 1953; Guatemala, 1953-1990s; Middle East, 1956-58; Indonesia, 1957-58; British Guiana/Guyana, 1953-64; Vietnam, 1950-73; Cambodia, 1955-73; The Congo/Zaire, 1960-65; Brazil, 1961-64; Dominican Republic, 1963-66; Cuba, 1959-present; Indonesia, 1965; Chile, 1964-73; Greece, 1964-74; East Timor, 1975-present; Nicaragua, 1978-89; Grenada, 1979-84; Libya, 1981-89; Panama, 1989; Iraq, 1990-present; Afghanistan 1979-92; El Salvador, 1980-92; Haiti, 1987-94; Yugoslavia, 1999; and Afghanistan, 2001-present, Syria, 2013-present; Egypt, 2013-present, and Ukraine, 2013-present. Most of these interventions were explained to the American people as being necessary to combat communism (or more recently, terrorism), but an underlying motive was undoubtedly the desire to put in place governments and laws that would be favorable to the economic interests of the US and its allies.

For the sake of balance, we should remember that during the Cold War period, the Soviet Union and China also intervened in the internal affairs of many countries, for ex-



Figure 2.9: **Extrajudicial killing of civilians by means of drones is also shrouded by secrecy, and it too is a gross violation of democratic principles.**

ample in Korea in 1950-53, Hungary in 1956, Czechoslovakia in 1968, and so on; another very long list. These Cold War interventions were also unjustifiable, like those mentioned above. Nothing can justify military or covert interference by superpowers in the internal affairs of smaller countries, since people have a right to live under governments of their own choosing even if those governments are not optimal.

Many people in Latin America and elsewhere have been tortured: The long history of CIA torture was recently investigated, but only small portions of the 6000-page report are available to the public. The rest remains secret.

Extrajudicial killing of civilians by means of drones is also shrouded by secrecy, and it too is a gross violation of democratic principles.<sup>2</sup>

## 2.7 Secret trade deals

The Trans-Pacific Partnership is one of the trade deals that is currently being negotiated in secret. Not even the US congress is allowed to know the details of the document. However, enough information has been leaked to make it clear that if the agreement is passed, foreign corporations would be allowed to “sue” the US government for loss of profits because of (for example) environmental regulations. The “trial” would be outside the legal system, before a tribunal of lawyers representing the corporations. A similar secret trade deal with Europe, the Trans-Atlantic Trade and Investment Partnership (TTIP), is also being “fast-tracked”. One can hardly imagine greater violations of democratic principles.<sup>3</sup>

<sup>2</sup><http://www.globalresearch.ca/lawless-drone-killings/5355535>

<sup>3</sup><http://www.citizen.org/Page.aspx?pid=5411>

<https://www.transcend.org/tms/2015/03/world-at-a-crossroads-stop-the-fast-track-to-a-future-of-global-corporate-rule/>

<http://talkingpointsmemo.com/livewire/princeton-experts-say-us-no-longer-democracy>

We can also consider the “non-discrimination” principle adopted by GATT (the General Agreement on Tariffs and Trade). This principle states that participating countries “cannot discriminate between like products on the basis of the method of production”. This single principle allows multinational commerce to escape from all the humanitarian and environmental reforms that have been achieved since the start of the Industrial Revolution. No matter if the method of production involves destruction of a tropical rain forest, no matter if forced labor was used, we are not allowed to discriminate “on the basis of the method of production”.

The present situation is that agriculture, trade and industry have become global, but the world still lacks adequate institutions at the global level to watch over what is happening and to ensure respect for human needs and respect for the natural environment. Today’s global economic interdependence, instantaneous worldwide communication, and the need for peaceful resolution of international conflicts all call for strong governmental institutions at the global level, but the United Nations today lacks many things that would be necessary if it is to perform such a role: It lacks a legislature with the power to make laws binding on individuals and corporations. It lacks mechanisms for enforcing such laws. And it lacks a large and dependable source of income.

It would be logical to improve the United Nations by giving it the things just mentioned, and by giving it at the same time the task of regulating multinational corporations to ensure that they act in a socially and ecologically responsible manner. It would also be logical to entitle the UN to a fee for acting as a referee in relationships between multinationals and the developing countries. These reforms must come someday because of the logic of our present situation. I hope that they will come soon.

The CEO’s of Wall Street call for less government, more deregulation and more globalization. They are delighted that the work of the reform movement is being undone in the name of “freedom”. But is this really what is needed? We need instead to reform our economic system and to give it both a social conscience and an ecological conscience. Governments already accept their responsibility for education. In the future they must also accept the responsibility for ensuring that their citizens can make a smooth transition from education to secure jobs. The free market alone cannot do this the powers of government are needed. Let us restore democracy! Let us have governments that work for the welfare of all their citizens, rather than for the enormous enrichment of the few!

## 2.8 Secrecy, democracy and nuclear weapons

Nuclear weapons were developed in secret. The decision to use them on the civilian populations of Hiroshima and Nagasaki in an already-defeated Japan was made in secret. Since 1945, secrecy has surrounded all aspects of nuclear weapons, and for this reason it is clear that they are essentially undemocratic.

Nuclear disarmament has been one of the core aspirations of the international community since the first use of nuclear weapons in 1945. A nuclear war, even a limited one, would have global humanitarian and environmental consequences, and thus it is a responsibility

of all governments, including those of non-nuclear countries, to protect their citizens and engage in processes leading to a world without nuclear weapons.

Now a new process has been established by the United Nations General Assembly, an Open Ended Working Group (OEWG) to Take Forward Multilateral Nuclear Disarmament Negotiations. The OEWG convened at the UN offices in Geneva on May 14, 2013. Among the topics discussed was a Model Nuclear Weapons Convention.

The Model Nuclear Weapons Convention prohibits development, testing, production, stockpiling, transfer, use and threat of use of nuclear weapons. States possessing nuclear weapons will be required to destroy their arsenals according to a series of phases. The Convention also prohibits the production of weapons usable fissile material and requires delivery vehicles to be destroyed or converted to make them non-nuclear capable.

Verification will include declarations and reports from States, routine inspections, challenge inspections, on-site sensors, satellite photography, radionuclide sampling and other remote sensors, information sharing with other organizations, and citizen reporting. Persons reporting suspected violations of the convention will be provided protection through the Convention including the right of asylum.

Thus we can see that the protection of whistleblowers is an integral feature of the Model Nuclear Weapons Convention now being discussed. As Sir Joseph Rotblat (1908-2005, Nobel Laureate 1995) frequently emphasized in his speeches, societal verification must be an integral part of the process of “going to zero” ( i.e, the total elimination of nuclear weapons). This is because nuclear weapons are small enough to be easily hidden. How will we know whether a nation has destroyed all of its nuclear arsenal? We have to depend on information from insiders, whose loyalty to the whole of humanity prompts them to become whistleblowers. And for this to be possible, they need to be protected.

In general, if the world is ever to be free from the threat of complete destruction by modern weapons, we will need a new global ethic, an ethic as advanced as our technology. Of course we can continue to be loyal to our families, our localities and our countries. But this must be supplemented by a higher loyalty: a loyalty to humanity as a whole.

## 2.9 Freedom from fear

In order to justify secrecy, enormous dark branches of government and mass illegal spying, governments say: “We are protecting you from terrorism”. But terrorism is not a real threat, since our chances of dying from a terrorist attack are vanishingly small compared to (for example) preventable disease or an automobile accident. If we are ever to reclaim our democracy, we must free ourselves from fear.

## 2.10 *Inside Job*

### Peter Bradshaw's review in *The Guardian*

"If you're growing, you're not in recession ... right?" The speaker is Hank Paulson, the former US treasury secretary, and, as it happens, the former CEO of Goldman Sachs. In Charles Ferguson's documentary about the great financial crash, Paulson's shrugging remark sums up the attitude of the super-rich banking apparatchiks and their eager political supporters. As long as the bubble's getting bigger, there's no worry about the bubble contracting ... right? But that is not what happens to bubbles. In 2008, the pop was heard around the world.

This film is as gripping as any thriller. Aided by some fascinating interviews, Ferguson lays out an awful story. In the 1980s, the markets and financial services were deregulated, and the driving force for this liberalization was Alan Greenspan, formidable chairman of the US federal reserve board from 1987 to 2006. Banks and loan companies were freer to gamble with their depositors' money; they were themselves freer to borrow more; they were free to offer investors dizzyingly complex financial instruments, with income streams from different debts bundled up, including high-interest home loans offered to high-risk borrowers - the so-called "sub-prime" market that offered mouthwateringly high returns.

The good times rolled. The banks ballooned. They offered their traders mind-blowing bonuses to encourage risk-taking chutzpah, corporate loyalty, and a neurotically driven pursuit of profit. Ferguson argues that crucially, the banks were allowed to insure against bad debts with credit default swaps - any number of these insurance policies could be purchased against one particular risk. Chillingly, the banks now had a vested interest in selling insanely risky products, as they themselves were lavishly insured with these swaps.

Perhaps the most sensational aspect of this film is Ferguson's contention that the crash corrupted the discipline of economics itself. Distinguished economists from America's Ivy League universities were drafted in by banks to compose reports sycophantically supporting reckless deregulation. They were massively paid for these consultancies. The banks bought the prestige of the academics, and their universities' prestige, too. Ferguson speaks to many of these economists, who clearly thought they were going to be interviewed as wry, dispassionate observers. It is really something to see the expression of shock, outrage and fear on their faces as they realize they're in the dock. One splutters with vexation; another gives vent to a ripe Freudian slip. Asked by Ferguson if he has any regrets about his behaviour, he says: "I have no comments ... uh, no regrets."

This is what Ferguson means by "inside job". There is a revolving door between the banks and the higher reaches of government, and to some extent

the groves of academe. Bank CEOs become government officials, creating laws convenient for their once and future employers.

Perhaps only the pen of Tom Wolfe could do justice to these harassed, bald, middle-aged masters of the universe, as they appear in Ferguson's film. The director shows how their body-language is always the same: somehow more guilty-looking when they are in the White House rose garden in their career pomp, being introduced to the press, than when they are facing openly hostile Senate hearings. They look uneasy, shifty, in weirdly ill-fitting suits, as if they are oppressed by the scrutiny, and worn out, possibly, by the strain of suppressing their own scruples. Their financial capacity far outstrips their capacity for enjoying themselves. They look very unhappy. Occasionally, British figures including Mervyn King and Alistair Darling are to be glimpsed in these photos, reminding us that we Brits have been ardent deregulators, as well.

One of Ferguson's interviewees is Charles Morris, author of *The Two Trillion Dollar Meltdown*, who amusingly discusses the effects this mega-windfall has on the individual banker's mind. He became absurdly rich and "he thought it was because he was smart".

I was reminded of Michael Lewis's *Liar's Poker*, his very funny book about the financial mentality of the 80s boom. He noted that if a regular person won the lottery, he might roll around on the floor, kicking his legs up with glee, but when bankers won their arbitrary lottery, they instead became solemn, pompous, overwhelmed with their own importance and stateliness. Their recklessness and excess coexisted with an almost priestly sense of worth. Even more than rich lawyers, rich bankers felt that their money proved their superior cleverness and also moral worthiness as the generators of prosperity. Yet that prosperity didn't trickle down very far.

Generally, this is the sort of film that is praised because it is not as wacky and tricky as Michael Moore. Yet it is clearly influenced by him - it's like a Moore film with the gags and stunts removed. And it's worth noting that without Moore's pioneering work, this documentary could not have been made.

Once again, the phrase that comes to mind is Milton Friedman's: socialism for the rich, free enterprise for the rest. An ordinary person defaults on his debt, he gets to live in his car. A banker defaults, and the taxpayer can be relied on to bail him out. No wonder the bonuses are back. But what can be done about all this? Ferguson has no answers, other than a faintly unedifying hint that bankers could be brought low if rumors about their systemic addiction to drugs and prostitutes could be made to stick legally - like Al Capone's tax evasion. But only a new political mood for regulation will do, and this still seems far away.

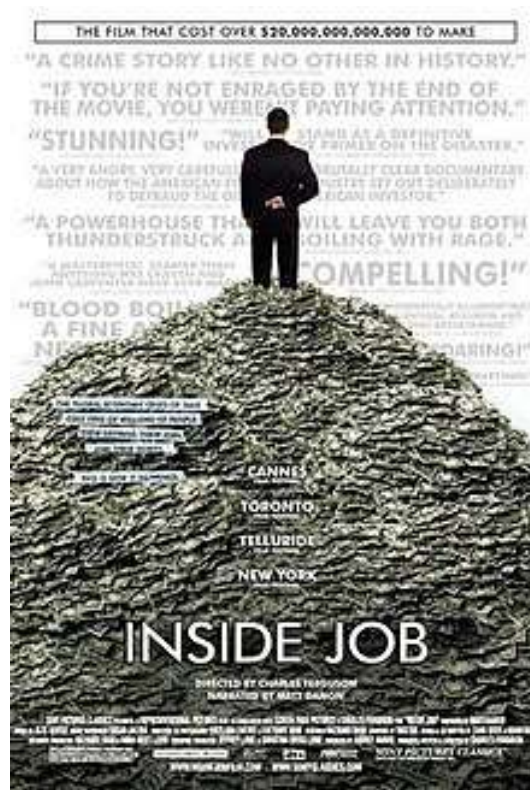


Figure 2.10: A poster advertising the Academy-Award-winning documentary film *Inside Job*.



## Suggestions for further reading

1. Marc Ambinder and D.B. Grady, *Deep State: Inside the Government Secrecy Industry*, Wiley, (2013).
2. Michael J. Glennon *National Security and Double Government* (PDF), Harvard National Security Journal. 5, (2014).
3. Jordan Michael Smith. *Vote all you want. The secret government won't change.* The Boston Globe,(October 19, 2014).
4. Amanda Taub and Max Fisher, *As Leaks Multiply, Fears of a 'Deep State' in America.* The New York Times, (February 16, 2017).
5. Bob Jessop, *The State: Past, Present, Future*, John Wiley & Sons, (2015).
6. Jeremy Scahill, *Donald Trump and the Coming Fall of the American Empire.* The Intercept, (2017-07-22).
7. Alana Abramson, *President Trump's Allies Keep Talking About the 'Deep State.' What's That?.* Time, (8 March 2017).
8. Ishaan Tharoor, *Is Trump fighting the deep state or creating his own?.* The Washington Post, (February 1, 2017).
9. Michael Crowley, *The Deep State Is Real.* Politico Magazine, (September-October 2017).
10. Julie Hirschfeld Davis, *Rumblings of a 'Deep State' Undermining Trump? It Was Once a Foreign Concept.* The New York Times, (March 6, 2017).



## Chapter 3

# WE MUST DECREASE ECONOMIC INEQUALITY

### 3.1 The Industrial Revolution and colonialism

As Europe became industrialized, European armaments allowed colonial expansion, until ultimately as much as 85% of the world's land surface fell under the colonial domination of the industrialized nations. Colonialism can be thought of as an early example military-industrial complexes. At this early stage of industrialism, we can already see wars conducted for the sake of resources. We can already see a circular flow of money from the profits of arms manufacturers to politicians and their newspaper supporters, and back to the arms manufacturers. We can already see the Devil's Dynamo at work.

### 3.2 Genocides in the Americas

Instances of genocide stain much of human history. Readers of Charles Darwin's book describing "The Voyage of the Beagle" will remember his horrifying account of General Rosas' genocidal war against the Amerind population of Argentina. Similar genocidal violence has been experienced by indigenous peoples throughout South and Central America, and indeed throughout the world.

In general, the cultures of indigenous peoples require much land, and greed for this land is the motive for violence against them. However, the genetic and cultural heritage of indigenous peoples can potentially be of enormous value to humanity, and great efforts should be made to protect them.

In North America, we can recall that military commanders, such as Lord Jeffrey Amherst, deliberately inoculated the Indians with smallpox by giving them blankets from smallpox hospitals. Amherst wrote to his associate, Colonel Henry Bouquet "You will do well to try to inoculate the Indians, by means of blankets, as well as to try every other method that can serve to extirpate this execrable race." This is clearly an instance of genocide, as well as being an example of the use of biological weapons.



Figure 3.1: The atrocities they committed by the “conquistadors” over the course of three centuries are far too many to be listed here, but there are some that stand out. In the Caribbean, most of the native populations were completely wiped out due to Spanish rapine and diseases. In Mexico, Hernan Cortes and Pedro de Alvarado ordered the Cholula Massacre and the Temple Massacre respectively, killing thousands of unarmed men, women and children. In Peru, Francisco Pizarro captured Emperor Atahualpa in the midst of an unprovoked bloodbath at Cajamarca. Wherever the conquistadors went, death and misery for the natives followed.

The website of the Holocaust Museum Houston states that “Civil war existed in Guatemala since the early 1960s due to inequalities existing in the economic and political life. In the 1970s, the Maya began participating in protests against the repressive government, demanding greater equality and inclusion of the Mayan language and culture. In 1980, the Guatemalan army instituted “Operation Sophia,” which aimed at ending insurgent guerilla warfare by destroying the civilian base in which they hid. This program specifically targeted the Mayan population, who were believed to be supporting the guerilla movement. Over the next three years, the army destroyed 626 villages, killed or ‘disappeared’ more than 200,000 people and displaced an additional 1.5 million, while more than 150,000 were driven to seek refuge in Mexico. Forced disappearance policies included secretly arresting or abducting people, who were often killed and buried in unmarked graves.”

### 3.3 Modern weapons and colonialism

In the 18th and 19th centuries, the continually accelerating development of science and science-based industry began to affect the whole world. As the factories of Europe poured

out cheap manufactured goods, a change took place in the patterns of world trade: Before the Industrial Revolution, trade routes to Asia had brought Asian spices, textiles and luxury goods to Europe. For example, cotton cloth and fine textiles, woven in India, were imported to England. With the invention of spinning and weaving machines, the trade was reversed. Cheap cotton cloth, manufactured in England, began to be sold in India, and the Indian textile industry withered, just as the hand-loom industry in England itself had done a century before.

The rapid development of technology in the west also opened an enormous gap in military strength between the industrialized nations and the rest of the world. Taking advantage of their superior weaponry, the advanced industrial nations rapidly carved the remainder of the world into colonies, which acted as sources of raw materials and food, and as markets for manufactured goods.

Throughout the American continent, the native Indian population had proved vulnerable to European diseases, such as smallpox, and large numbers of them had died. The remaining Indians were driven westward by streams of immigrants arriving from Europe.

Often the industrialized nations made their will felt by means of naval bombardments: In 1854, Commodore Perry forced Japan to accept foreign traders by threatening to bombard Tokyo. In 1856, British warships bombarded Canton in China to punish acts of violence against Europeans living in the city. In 1864, a force of European and American warships bombarded Choshu in Japan, causing a revolution. In 1882, Alexandria was bombarded, and in 1896, Zanzibar.

Much that was beautiful and valuable was lost, as mature traditional cultures collapsed, overcome by the power and temptations of modern industrial civilization. For the Europeans and Americans of the late 19th century and early 20th century, progress was a religion, and imperialism was its crusade.

Between 1800 and 1875, the percentage of the earth's surface under European rule increased from 35 percent to 67 percent. In the period between 1875 and 1914, there was a new wave of colonial expansion, and the fraction of the earth's surface under the domination of colonial powers (Europe, the United States and Japan) increased to 85 percent, if former colonies are included. The unequal (and unfair) contest between the industrialized countries, armed with modern weapons, and the traditional cultures with their much more primitive arms, was summarized by the English poet Hilaire Belloc in a sardonic couplet: <sup>1</sup>

Whatever happens, we have got  
The Maxim gun, and they have not.

During the period between 1880 and 1914, British industrial and colonial dominance began to be challenged. Industrialism had spread from Britain to Belgium, Germany

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<sup>1</sup>The Maxim gun was one of the world's first automatic machine guns. It was invented in the United States in 1884 by Hiram S. Maxim. The explorer and colonialist Henry Morton Stanley (1841-1904) was extremely enthusiastic about Maxim's machine gun, and during a visit to the inventor he tried firing it, demonstrating that it really could fire 600 rounds per minute. Stanley commented that the machine gun would be "a valuable tool in helping civilization to overcome barbarism".



and the United States, and, to a lesser extent, to France, Italy, Russia and Japan. By 1914, Germany was producing twice as much steel as Britain, and the United States was producing four times as much.

New techniques in weaponry were introduced, and a naval armaments race began among the major industrial powers. The English found that their old navy was obsolete, and they had to rebuild. Thus, the period of colonial expansion between 1880 and 1914 was filled with tensions, as the industrial powers raced to arm themselves in competition with each other, and raced to seize as much as possible of the rest of the world. Industrial and colonial rivalry contributed to the outbreak of the First World War, to which the Second World War can be seen as a sequel.

With the founding of the United Nations at the end of the Second World War, a system of international law was set up to replace the rule of military force. Law is a mechanism for equality. Under law, the weak and the powerful are in principle equal. One of the basic purposes of the United Nations is to make war illegal, and if war is illegal, the powerful and weak are on equal footing, much to the chagrin of the powerful. How can one can one construct or maintain an empire if war is not allowed? It is only natural that powerful nations should be opposed to international law, since it is a curb on their power. However, despite opposition, the United Nations has been largely successful in ending the era of colonialism, perhaps because of the balance of power between East and West during the Cold War. One by one, former colonies have regained their independence.

### 3.4 Persistent effects of colonialism

Part of the extreme economic inequality that exists in today's world is due to colonial and neocolonial wars.

The English economist and Fabian, John Atkinson Hobson (1858-1940), offered a famous explanation of the colonial era in his book "Imperialism: A Study" (1902). According



Figure 3.2: **Half of the population of Belgian Congo died during the rule of Leopold II.**

to Hobson, the basic problem that led to colonial expansion was an excessively unequal distribution of incomes in the industrialized countries. The result of this unequal distribution was that neither the rich nor the poor could buy back the total output of their society. The incomes of the poor were insufficient, and rich were too few in number. The rich had finite needs, and tended to reinvest their money. As Hobson pointed out, reinvestment in new factories only made the situation worse by increasing output.

Hobson had been sent as a reporter by the Manchester Guardian to cover the Second Boer War. His experiences had convinced him that colonial wars have an economic motive. Such wars are fought, he believed, to facilitate investment of the excess money of the rich in African or Asian plantations and mines, and to make possible the overseas sale of excess manufactured goods. Hobson believed imperialism to be immoral, since it entails suffering both among colonial peoples and among the poor of the industrial nations. The cure that he recommended was a more equal distribution of incomes in the manufacturing countries.

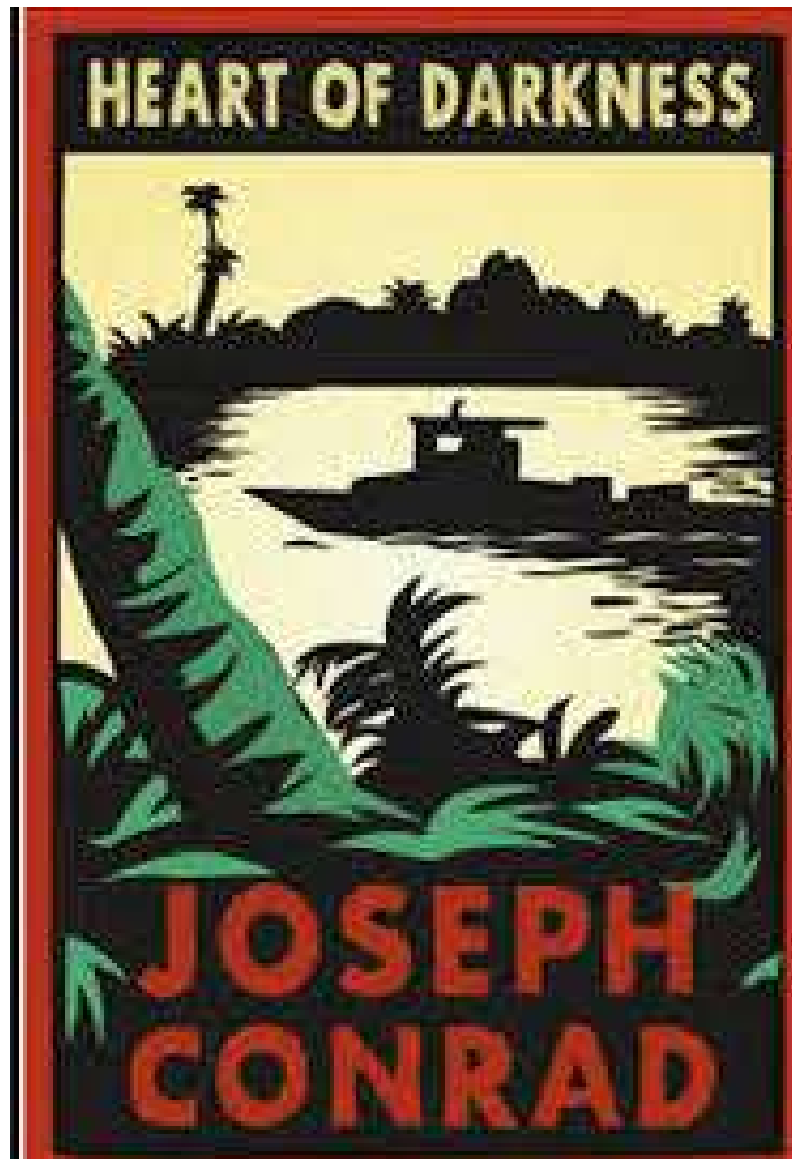


Figure 3.3: Joseph Conrad's famous book was written against the background of Leopold's atrocities.



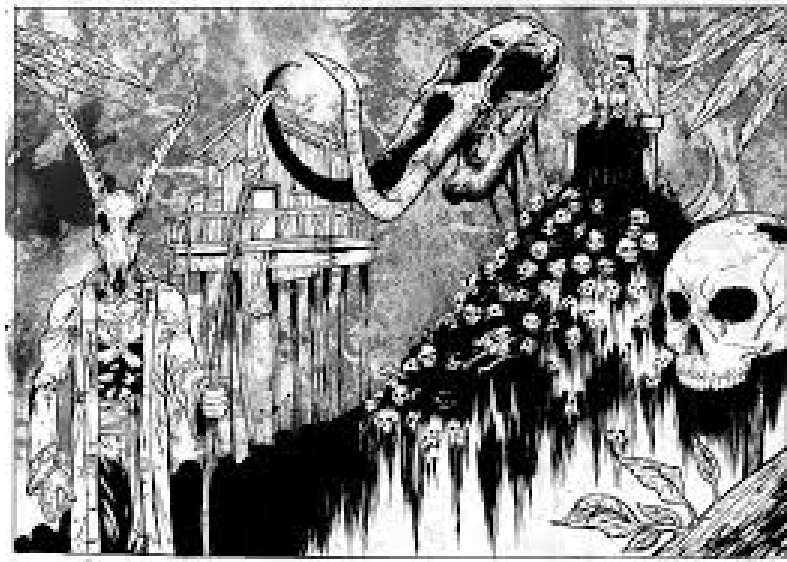


Figure 3.4: **Heart of Darkness:** An illustration for Joseph Conrad's book.

### 3.5 Racism, colonialism and exceptionalism

It seems to be possible for nations, and the majority of their citizens, to commit the worst imaginable atrocities, including torture, murder and genocide, while feeling that what they are doing is both noble and good. Some understanding of how this is possible can be gained by watching the 3-part BBC documentary, "The History of Racism".<sup>2</sup>

The series was broadcast by BBC Four in March 2007, and videos of the broadcasts are available on the Internet. Watching this eye-opening documentary can give us much insight into the link between racism and colonialism. We can also begin to see how both racism and colonialism are linked to US exceptionalism and neocolonialism.

### 3.6 Leopold II and Atrocities in Belgian Congo

Looking at the BBC documentary we can see how often in human history economic greed and colonial exploitation have been justified by racist theories. The documentary describes almost unbelievable cruelties committed against the peoples of the Americas and Africa by Europeans. For example, in the Congo, a vast region which King Leopold II of Belgium claimed as his private property, the women of villages were held as hostages while the men were forced to gather rubber in the forests. Since neither the men nor the women could produce food under these circumstances, starvation was the result.

Leopold's private army of 90,000 men were issued ammunition, and to make sure that

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<sup>2</sup><https://www.youtube.com/watch?v=efl6T8lovqY>  
<https://www.youtube.com/watch?v=IdBDRbjx9jo>  
<https://www.youtube.com/watch?v=oCJHJWaNL-g>



Figure 3.5: **Heart of Darkness: Another illustration for Conrad's book.**

they used it in the proper way, the army was ordered to cut off the hands of their victims and send them back as proof that the bullets had not been wasted. Human hands became a kind of currency, and hands were cut off from men, women and children when rubber quotas were not fulfilled. Sometimes more than a thousand human hands were gathered in a single day. During the rule of Leopold, roughly 10,000,000 Congolese were killed, which was approximately half the population of the region.

According to the racist theories that supported these atrocities, it was the duty of philanthropic Europeans like Leopold to bring civilization and the Christian religion to Africa. Similar theories were used to justify the genocides committed by Europeans against the native inhabitants of the Americas.

Racist theories were also used to justify enormous cruelties committed by the British colonial government in India. For example, during the great famine of 1876-1878, in which ten million people died, the Viceroy, Lord Lytton, oversaw the export to England of a record 6.4 million hundredweight of wheat.

Meanwhile, in Europe, almost everyone was proud of the role which they were playing in the world. All that they read in newspapers and in books or heard from the pulpits of their churches supported the idea that they were serving the non-Europeans by bringing them the benefits of civilization and Christianity. On the whole, the mood of Europe during this orgy of external cruelty and exploitation, was self-congratulatory.

Can we not see a parallel with the self-congratulatory mood of the American people and their allies, who export violence, murder, torture and neocolonialism to the whole world, and who justify it by thinking of themselves as "exceptional"?



Figure 3.6: **Heart of Darkness: Joseph Conrad.**



Figure 3.7: **Heart of Darkness: King Leopold II of Belgium and some of his victims.**



Figure 3.8: **Heart of Darkness:** A drawing used in the campaign to end Leopold's personal ownership of the Congo.



Figure 3.9: **Heart of Darkness:** In Leopold's Congo, human hands became a currency.



Figure 3.10: **Heart of Darkness:** Part of a palace built by Leopold II to glorify his “humanitarian” activities in the Congo.



Figure 3.11: **Heart of Darkness.** A statue of Leopold II.



Figure 3.12: Bones left by the German Kaiser's African genocide.

### 3.7 The Kaiser's genocide

A book entitled *The Kaiser's Holocaust: Germany's Forgotten Genocide and the Colonial Roots of Nazism*, by David Olusoga and Caspar W. Erichsen describes Germany's involvement in an African genocide. Here is Amazon's synopsis of the book: "On 12 May 1883, the German flag was raised on the coast of South-West Africa, modern Namibia - the beginnings of Germany's African Empire. As colonial forces moved in, their ruthless punitive raids became an open war of extermination. Thousands of the indigenous people were killed or driven out into the desert to die. By 1905, the survivors were interned in concentration camps, and systematically starved and worked to death. Years later, the people and ideas that drove the ethnic cleansing of German South West Africa would influence the formation of the Nazi party. The Kaiser's Holocaust uncovers extraordinary links between the two regimes: their ideologies, personnel, even symbols and uniform. The Herero and Nama genocide was deliberately concealed for almost a century. Today, as the graves of the victims are uncovered, its re-emergence challenges the belief that Nazism was an aberration in European history. The Kaiser's Holocaust passionately narrates this harrowing story and explores one of the defining episodes of the twentieth century from a new angle. Moving, powerful and unforgettable, it is a story that needs to be told."

### 3.8 The racism of Cecil Rhodes

Cecil Rhodes, who was born in Bishop's Stortford in Hertfordshire, came to South Africa in the late 1800s and made his fortune in the country's diamond mines before moving into politics. He served as prime minister of the Cape Colony and later founded the southern

African territory of Rhodesia, which would later become independent Zimbabwe. He was the architect of South Africa's notorious apartheid system, and a rabid advocate of British imperialism. Social Darwinism and the eugenics movement may have contributed to the racism and imperialism of Cecil Rhodes.

In a December 2015 article in *The Telegraph*, Dalia Gebrial wrote: "Cecil Rhodes was a man responsible for untold, unending devastation and violence. An architect of South African apartheid, he explicitly believed in the existence of an Anglo-Saxon master race - an ideology that drove him to not only steal approximately one [square] million miles of South African land, but to facilitate the deaths of hundreds of thousands of black South Africans.

"His establishment of a paramilitary private army, the British South Africa Company's Police (BSACP) resulted in the systematic murder of approximately 60,000 people; his amendment of the Masters and Servants Act (1890) reintroduced conditions of torture for black labourers; his infamous racist 'land grabs' set up a system in which the unlawful and illegitimate acquisition of land through armed force was routine.

"In 1887 he told the House of Assembly in Cape Town: 'The native is to be treated as a child and denied the franchise. We must adopt a system of despotism in our relations with the barbarians of South Africa.' His 1892 Franchise and Ballot Act effectively eliminated African voting rights. He repeatedly reminded his colleagues of the 'extreme caution' they must exercise when it comes to 'granting the franchise to coloured people.

Rhodes wanted to create an international movement to extend British influence. He once said: "Why should we not form a secret society with but one object, the furtherance of the British Empire and the bringing of the whole world under British rule, for the recovery of the United States, for making the Anglo-Saxon race but one Empire?"

Rhodes did, in fact, establish this secret society, and it remains very influential today. According to G. Edward Griffin<sup>3</sup>, "Financed by Nathan Rothschild and the Bank of England, he [Rhodes] established a monopoly over the diamond output of South Africa and most of the gold as well. He formed a secret society which included many of the top leaders of British government. Their elitist goal was nothing less than world domination and the establishment of a modern feudal society controlled by themselves through the world's central banks. In America, the Council on Foreign Relations (CFR) was an outgrowth of that group."

## Plot to overthrow Roosevelt through a fascist coup

The interested reader can find a detailed description of this plot in an article by Matt Riemann, entitled *These Wall Street millionaires literally plotted to overthrow the president*, Timeline. August 11, 2017<sup>4</sup>

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<sup>3</sup>in his book, *The Creature from Jeckyll Island*

<sup>4</sup><https://timeline.com/business-plot-overthrow-fdr-9a59a012c32a>



Figure 3.13: Native Americans protesting against the Dakota Access Pipeline.

### 3.9 Our older brothers can help us today

The distinguished English author Anne Baring describes the indigenous peoples of the world as our “older brothers”. They are anxious to give their “younger brothers” (us) advice about how to preserve the earth, rather than destroying it. But we do not listen. Instead, we murder them because of greed, because we want to take their land.

#### Pipeline protests by Native Americans

As a recent example of the way in which we respond to our “older brothers” when they urge us to behave in an environmentally responsible manner, we can consider the pipeline protests at Standing Rock. Wikipedia describe these protests as follows:

“On September 3, 2016, during Labor Day weekend, the Dakota Access Pipeline brought in a private security firm when the company used bulldozers to dig up part of the pipeline route that contained possible Native graves and burial artifacts; it was subject to a pending injunction motion. The bulldozers arrived within a day after the tribe filed legal action. Energy Transfer bulldozers cut a two-mile (3200 m) long, 150-foot (45 m) wide path through the contested area.

“When unarmed protesters crossed the perimeter fence to stop the bulldozers, the guards used pepper spray and guard dogs to attack. At least six protesters were treated for dog bites, and an estimated 30 were pepper-sprayed before the guards and their dogs left the scene in trucks. A woman that had taken part in the incident stated, ‘The cops watched the whole thing from up on the hills. It felt like they were trying to provoke us into being violent when we’re peaceful.’ The incident was filmed by Amy Goodman and a crew from Democracy Now! Footage shows several people with dog bites and a dog with blood on its muzzle.

“Some protesters who were arrested for misdemeanors and taken to the Morton County



jail reported what they considered harsh and unusual treatment. Sara Jumping Eagle, a physician on the Standing Rock Sioux Reservation, was required to remove all of her clothing and ‘squat and cough’ when she was arrested for disorderly conduct. In another such case, LaDonna Brave Bull Allard, who founded Sacred Stone Camp, said that when her daughter was arrested and taken into custody she was ‘strip-searched in front of multiple male officers, then left for hours in her cell, naked and freezing.’ Cody Hall from Cheyenne River Reservation in South Dakota also reported being strip-searched. He was held for four days without bail or bond and then charged with two misdemeanors.”

Beacue of public indignation, construction of the pipeline was halted in December, 2016. However, on February 7, 2017, newly-elected Donald Trump authorized the Army Corps of Engineers to proceed, ending its environmental impact assessment and the associated public comment period. The director of the Indigenous Environmental Network released a statement saying: “The granting of an easement, without any environmental review or tribal consultation, is not the end of this fight - it is the new beginning. Expect mass resistance far beyond what Trump has seen so far.”

### 3.10 Social systems in Scandinavia

The Green New Deal can simultaneously address the climate crisis and the problem of excessive economic inequality. In this context, it is interesting to look at the social and economic systems of the Scandinavian countries, Norway, Sweden, Finland, Denmark and Iceland. In these countries the contrast between the rich and poor has been very much reduced. It is almost true to say that poverty has been eliminated in these countries. At the same time, the Scandinavians have strong policies to address the climate emergency. Thus Scandinavian successes are a counter-argument to those who say that the Green New Deal cannot be put into practice.<sup>5</sup>

#### The Danish system today

In 2017. Denmark ranked 2nd in the world (after Norway) in the World Happiness Report. In a number of other years, Denmark has ranked 1st. In compiling the report, researchers ask people in a given country whether they are happy, and record how many say “yes”. Interestingly, in Denmark, women are the most happy of all. It is therefore relevant to look at the Danish social and political system of today, and to examine the reasons why women are so satisfied with it.

Denmark has very high taxes, but in return for these, its citizens receive many social services, such as free health care. If they qualify for university education, the tuition is free, and students are given an allowance for their living expenses. Mothers or alternatively fathers, can take paid leave of up to 52 weeks after the birth of a child. After that, a *vuggestue* (cresch) is always available, so that mothers can return to their jobs. When the child become too old for the cresch, day care centers are always available. For children of

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<sup>5</sup>But, of course, it cannot be put into practice while maintaining an economic oligarchy.

school age, after-school clubs are available where children can practice arts and crafts or other activities under supervision until their parents come home from work.

It is illegal in Denmark to fire a woman because she has become pregnant, or to deny her work because the employer fears that she may become pregnant. Thus, Danish women grow up expecting to find jobs outside the home. Danish women are happy to have careers, but it is also a necessity, because with taxes so high that a single income is not enough to give a family the desired standard of living. Husbands are grateful to their wives for helping to support the family. In the case of single mothers, support is given by the state.

The number of births per woman-life reached a low of 1.38 in 1983, but since that time the number has gradually risen and in 2017 the fertility rate was 1.77, still less than the replacement level. The other Scandinavian countries have very similar systems, and they all have high human development indices, as well as a high degree of economic equality. When US Senator Bernie Sanders declared that he is a socialist, he made the statement more precise by saying that he is in favor of the Scandinavian social and political system.

## Renewable energy in Denmark

Here are some excerpts from a recent report by the Danish Ministry of Energy, Utilities and Climate:<sup>6</sup>

**Denmark's success in transforming into a sustainable, green society is widely recognized. Denmark is at the forefront of numerous international initiatives and collaborative endeavors. In 2017, for the second consecutive year in a row, Denmark won the World Energy Council award for the world's best energy system.**

**Denmark's energy and climate policy was also high lighted in 2017 by the International Energy Agency (IEA), as an international model because the country produces wind turbines, provides record low energy prices and good electricity connections to neighboring countries.**

**In 2017, Denmark achieved a world record of 43.4% power produced solely by wind turbines.**

**Denmark can cover the largest share of its electricity production with green power from wind turbines.**

**Denmark is also a European leader in the export of energy technology, as exports of energy equipment account for a larger share of total exports than in any other EU country.**

**The government has set ambitious goals that few other countries can match:**

- **At least 50% of Denmark's energy needs must be covered by renewable energy by 2030.**
- **Coal must be completely phased out of the power supply by 2030.**

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<sup>6</sup>Denmark: Energy and climate pioneer. Status of the green transition



Figure 3.14: Senator Bernie Sanders, the popular candidate for the US Presidency in 2016 and 2020, says that he is a socialist. When asked to explain this in detail, Senator Sanders said that he believes that the United States would benefit from a social system similar to the systems in present-day Scandinavia.

- Moratorium on all exploration and drilling activities for oil, gas and shale gas on land and inland waters of Denmark.
- Denmark must be a low-emission society independent of fossil fuels in 2050.

/home/john/work/books/money/stauning.jpg



Figure 3.15: A day-care center in Sweden. In the Scandinavian countries, most women work, and state-provided day-care centers for pre-school children make this possible.

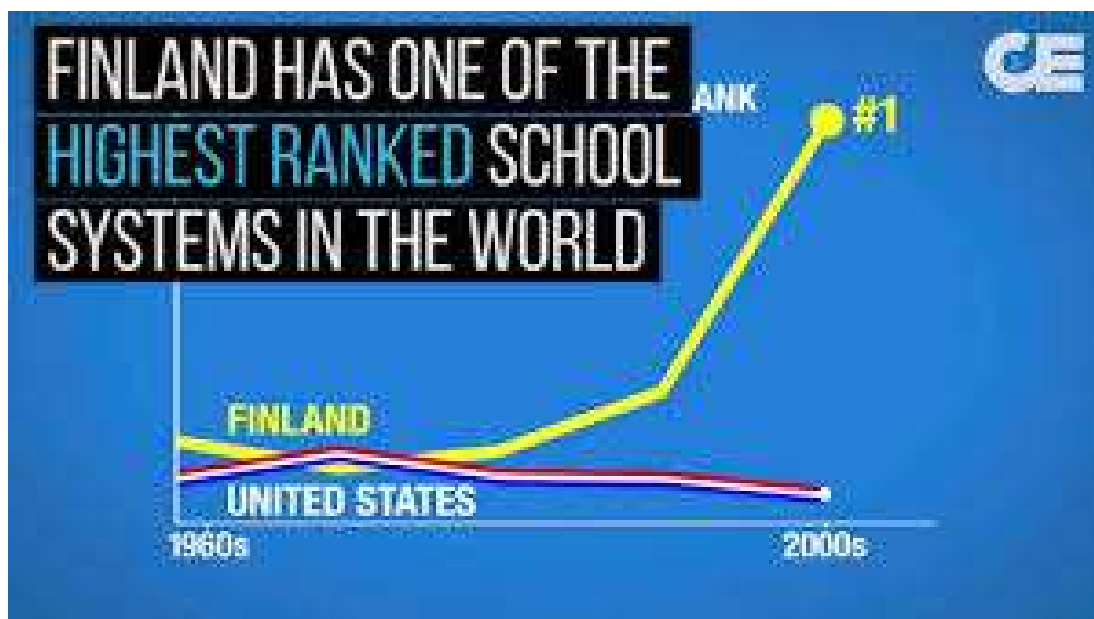


Figure 3.16: Finland has the best school system in the world. One reason for this is that the teachers are very highly selected and highly paid. Another reason is that the children are given frequent short rest periods, during which they may go outdoors and breath fresh air. They return from these small breaks with improved concentration.



Figure 3.17: The long-serving Danish Prime Minister Thorvald Stauning (1873-1942). He was the architect of the Danish social and economic system, which combines a free-market economy with such social benefits as universal free health care, state-provided day-care centers and free higher education. Thanks to Stauning's initiatives, those who qualify for college or university in Denmark are not only given free tuition, but also a stipend to support their living expenses. A high progressive income tax in Denmark pays for these benefits and reduces economic inequality. Stauning forged a coalition that united both labor and employers behind his reforms.

## 3.11 Shocking statistics

Intolerable and unjust economic inequality is increasing rapidly, both within and between nations. Statistics show that half of the world's net wealth belongs to the top 1%. They own as much as the remaining 99% of the world's peoples, the other 7.4 billion of us. Here are some excerpts from a recent article entitled '*How Their Rotten System Works*': *Global Billionaire Wealth Surged to Record \$10.2 Trillion Amid Covid-19 Catastrophe* by Kenny Stancil, published on October 7, 2020 by Common Dreams:

“While Covid-19 has taken the lives of over one million people across the globe and exacerbated economic precarity for millions more, the combined wealth held by the world's 2,189 billionaires has skyrocketed - increasing by 27.5% between April and July 2020 and reaching a record high of \$10.2 trillion.

“The surge in billionaires' wealth in the midst of a calamitous pandemic is captured in *Riding the Storm: Market Turbulence Accelerates Diverging Fortunes*, a report (pdf) published by Swiss bank UBS and consultancy firm PwC on Wednesday.

“The report attributed the growing fortunes of billionaires - there are 31 more of them in 2020 than there were in 2017 - to ‘the year's V-shaped rebound in asset prices,’ which benefited the rich even as middle- and low-income households continue to experience material hardship.

“Authors noted that billionaires in some sectors, particularly technology and healthcare, fared better than mega-wealthy individuals in other fields, such as media, finance, natural resources, and construction...

“ ‘Extreme wealth concentration is an ugly phenomenon from a moral perspective,’ Luke Hilyard, executive director of the High Pay Centre, a thinktank that focuses on excessive compensation, told The Guardian. ‘But it's also economically and socially destructive.’

“ ‘Billionaire wealth equates to a fortune almost impossible to spend over multiple lifetimes of absolute luxury,” Hilyard added. “Anyone accumulating riches on this scale could easily afford to raise the pay of the employees who generate their wealth, or contribute a great deal more in taxes to support vital public services, while remaining very well rewarded for whatever successes they've achieved.’

“Billionaires are cognizant of the fact that their intensified accumulation of wealth at a time of immense suffering for so many around the world could make them the targets of public outrage.”

### 3.12 Benefits of equality

The Industrial Revolution opened up an enormous gap in military strength between the industrialized nations and the rest of the world. Taking advantage of their superior weaponry, Europe, the United States and Japan rapidly carved up the remainder of the world into colonies, which acted as sources of raw materials and food, and as markets for manufactured goods. Between 1800 and 1914, the percentage of the earth under the domination of colonial powers increased to 85 percent, if former colonies are included.

The English economist and Fabian, John Atkinson Hobson (1858-1940), offered a famous explanation of the colonial era in his book “Imperialism: A Study” (1902). According to Hobson, the basic problem that led to colonial expansion was an excessively unequal distribution of incomes in the industrialized countries. The result of this unequal distribution was that neither the rich nor the poor could buy back the total output of their society. The incomes of the poor were insufficient, and rich were too few in number. The rich had finite needs, and tended to reinvest their money. As Hobson pointed out, reinvestment in new factories only made the situation worse by increasing output.

Hobson had been sent as a reporter by the Manchester Guardian to cover the Second Boer War. His experiences had convinced him that colonial wars have an economic motive. Such wars are fought, he believed, to facilitate investment of the excess money of the rich in African or Asian plantations and mines, and to make possible the overseas sale of excess manufactured goods. Hobson believed imperialism to be immoral, since it entails suffering both among colonial peoples and among the poor of the industrial nations. The cure that he recommended was a more equal distribution of incomes in the manufacturing countries.

Interestingly, TED Talks (ideas worth spreading) was recently under fire from many progressive groups for censoring a short talk by the adventure capitalist, Nick Hanauer, entitled “Income Inequality”. In this talk, Hanauer said exactly the same thing as John Hobson, but he applies the ideas, not to colonialism, but to current unemployment in the United States. Hanauer said that the rich are unable to consume the products of society because they are too few in number. To make an economy work, demand must be increased, and for this to happen, the distribution of incomes must become much more equal than it is today in the United States.

TED has now posted Hanauer’s talk, and the interested reader can find another wonderful TED talk dealing with the same issues from the standpoint of health and social problems. In a splendid lecture entitled “How economic inequality harms societies”, Richard Wilkinson demonstrates that there is almost no correlation between gross national product and a number of indicators of the quality of life, such as physical health, mental health, drug abuse, education, imprisonment, obesity, social mobility, trust, violence, teenage pregnancies and child well-being. On the other hand he offers comprehensive statistical evidence that these indicators are strongly correlated with the degree of inequality within countries, the outcomes being uniformly much better in nations where income is more equally distributed.

Warren Buffet famously remarked, “There’s class warfare, all right. But it’s my class, the rich class, that’s making war, and we’re winning.” However, the evidence presented by





Figure 3.18: **World wealth levels in 2004.** Countries with per capita wealth greater than 100,000 USD are shown in red, while those with per capita wealth less than 5,000 USD are shown in blue.

Hobson, Hanauer and Wilkinson shows conclusively that no one wins in a society where inequality is too great, and everyone wins when incomes are more evenly distributed.



Figure 3.19: In many countries, children live by scavaging from garbage dumps.



Figure 3.20: Even in rich countries, many millions of people live in poverty,

### 3.13 Extreme inequality today

Here are some quotations from a report by the Global Inequality organization: <sup>7</sup>

Inequality has been on the rise across the globe for several decades. Some countries have reduced the numbers of people living in extreme poverty. But economic gaps have continued to grow as the very richest amass unprecedented levels of wealth. Among industrial nations, the United States is by far the most top-heavy, with much greater shares of national wealth and income going to the richest 1 percent than any other country.

The world's richest 1 percent, those with more than \$1 million, own 45 percent of the world's wealth. Adults with less than \$10,000 in wealth make up 64 percent of the world's population but hold less than 2 percent of global wealth. The world's wealthiest individuals, those owning over \$100,000 in assets, total less than 10 percent of the global population but own 84 percent of global wealth. Credit Suisse defines "wealth" as the value of a household's financial assets plus real assets (principally housing), minus their debts.

"Ultra high net worth individuals" - the wealth management industry's term for people worth more than \$30 million - hold an astoundingly disproportionate share of global wealth. These wealth owners hold 11.3 percent of total global wealth, yet represent only a tiny fraction (0.003%) of the world population.

The world's 10 richest billionaires, according to Forbes, own \$745 billion in combined wealth, a sum greater than the total goods and services most nations produce on an annual basis. The globe is home to 2,208 billionaires, according to the 2018 Forbes ranking.

Those with extreme wealth have often accumulated their fortunes on the backs of people around the world who work for poor wages and under dangerous conditions. According to Oxfam, the wealth divide between the global billionaires and the bottom half of humanity is steadily growing. Between 2009 and 2017, the number of billionaires it took to equal the wealth of the world's poorest 50 percent fell from 380 to 42...

The United States has more wealth than any other nation. But America's top-heavy distribution of wealth leaves typical American adults with far less wealth than their counterparts in other industrial nations.

### 3.14 Oligarchy replaces democracy in many countries

#### The jaws of power

"Every government degenerates when trusted to the rulers of the people alone. The people themselves, therefore, are its only safe depositories." Thomas Jeffer-

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<sup>7</sup><https://inequality.org/facts/global-inequality/>

son, (1743-1826)

**“The jaws of power are always open to devour, and her arm is always stretched out, if possible, to destroy the freedom of thinking, speaking, and writing.”**  
John Adams, (1735-1826)

According to the Nuremberg Principles, the citizens of a country have a responsibility for the crimes that their governments commit. But to prevent these crimes, the people need to have some knowledge of what is going on. Indeed, democracy cannot function at all without this knowledge.

What are we to think when governments make every effort to keep their actions secret from their own citizens? We can only conclude that although they may call themselves democracies, such governments are in fact oligarchies or dictatorships.

At the end of World War I, it was realized that secret treaties had been responsible for its outbreak, and an effort was made to ensure that diplomacy would be more open in the future. Needless to say, these efforts did not succeed, and diplomacy has remained a realm of secrecy.

Many governments have agencies for performing undercover operations (usually very dirty ones). We can think, for example of the KGB, the CIA, M5, or Mossad. How can countries that have such agencies claim to be democracies, when the voters have no knowledge of or influence over the acts that are committed by the secret agencies of their governments?

Nuclear weapons were developed in secret. It is doubtful whether the people of the United States would have approved of the development of such antihuman weapons, or their use against an already-defeated Japan, if they had known that these things were going to happen. The true motive for the nuclear bombings was also kept secret. In the words of General Groves, speaking confidentially to colleagues at Los Alamos, the real motive was “to control the Soviet Union”.

The true circumstances surrounding the start of the Vietnam war would never have been known if Daniel Ellsberg had not leaked the Pentagon Papers. Ellsberg thought that once the American public realized that their country’s entry into the war was based on a lie, the war would end. It did not end immediately, but undoubtedly Ellsberg’s action contributed to the end of the war.

We do not know what will happen to Julian Assange. If his captors send him to the US, and if he is executed there for the crime of publishing leaked documents (a crime that he shares with the New York Times), he will not be the first martyr to the truth. The ageing Galileo was threatened with torture and forced to recant his heresy - that the earth moves around the sun. Galileo spent the remainder of his days in house arrest. Giordano Bruno was less lucky. He was burned at the stake for maintaining that the universe is larger than it was then believed to be. If Julian Assange becomes a martyr to the truth like Galileo or Bruno, his name will be honored by generations in the future, and the shame of his captors will be remembered too.

## The deep state

Can a government, many of whose operations are secret, be a democracy? Obviously this is impossible. The recent attempts of the United States to arrest whistleblower Edward Snowden call attention to the glaring contradiction between secrecy and democracy.

In a democracy, the power of judging and controlling governmental policy is supposed to be in the hands of the people. It is completely clear that if the people do not know what their government is doing, then they cannot judge or control governmental policy, and democracy has been abolished. There has always been a glaring contradiction between democracy and secret branches of the government, such as the CIA, which conducts its assassinations and its dirty wars in South America without any public knowledge or control.

The gross, wholesale electronic spying on citizens revealed by Snowden seems to be specifically aimed at eliminating democracy. It is aimed at instilling universal fear and conformity, fear of blackmail and fear of being out of step, so that the public will not dare to oppose whatever the government does, no matter how criminal or unconstitutional.

Henry Kissinger famously remarked: “The illegal we do at once. The unconstitutional takes a little longer”. Well, Henry, that may have been true in your time, but today the unconstitutional does not take long at all.

The Magna Carta is trashed. No one dares to speak up. Habeas Corpus is trashed. No one dares to speak up. The United Nations Charter is trashed. No one dares to speak up. The Universal Declaration of Human Rights is trashed. No one dares to speak up. The Fourth Amendment to the US Constitution is trashed. No one dares to speak up. The President claims the right to kill both US and foreign citizens, at his own whim. No one dares to speak up.

But perhaps this is unjust. Perhaps some people would dare to protest, except that they cannot get their protests published in the mainstream media. We must remember that the media are owned by the same corporate oligarchs who own the government.

George Orwell, you should be living today! We need your voice today! After Snowden’s revelations, the sale of Orwell’s “1984” soared. It is now on the bestseller list. Sadly, Orwell’s dystopian prophesy has proved to be accurate in every detail.

What is the excuse for the massive spying reported by Snowden, spying not only on US citizens but also on the citizens of other countries throughout the world? “We want to protect you from terrorism.”, the government answers. But terrorism is not a real threat, it is an invented one. It was invented by the military-industrial complex because, at the end of the Cold War, this enormous money-making conglomerate lacked enemies.

Globally, the number of people killed by terrorism is vanishingly small compared to the number of children who die from starvation every year. It is even vanishingly small compared with the number of people who are killed in automobile accidents. It is certainly small compared with the number of people killed in wars aimed at gaining western hegemony over oil-rich regions of the world.

But in Shelley’s words, “We are many; they are few!” The people who want democracy greatly outnumber those who profit from maintaining a government based on secrecy and fear. Let us “rise like lions after slumbers, in unvanquishable numbers”. Let us abolish

governmental secrecy and reclaim our democracy.

### 3.15 Media in the service of powerholders

Throughout history, art was commissioned by rulers to communicate, and exaggerate, their power, glory, absolute rightness etc, to the populace. The pyramids gave visual support to the power of the Pharaoh; portraits of rulers are a traditional form of propaganda supporting monarchies; and palaces were built as symbols of power.

Modern powerholders are also aware of the importance of propaganda. Thus the media are a battleground where reformers struggle for attention, but are defeated with great regularity by the wealth and power of the establishment. This is a tragedy because today there is an urgent need to make public opinion aware of the serious problems facing civilization, and the steps that are needed to solve these problems. The mass media could potentially be a great force for public education, but often their role is not only unhelpful - it is negative.

It is certainly possible to find a few television programs and newspaper articles that present the facts about climate change in a realistic way. For example *The Guardian* gives outstanding climate change coverage. However, the mass media could do very much more. One has to conclude that the media are neglecting their great responsibilities at a time of acute crisis for human civilization and the biosphere. The same can be said of our educational systems at both the primary and advanced levels. We urgently need much more public education about the severe dangers that we face today.

### 3.16 Television as a part of our educational system

In the mid-1950's, television became cheap enough so that ordinary people in the industrialized countries could afford to own sets. During the infancy of television, its power was underestimated. The great power of television is due to the fact that it grips two senses simultaneously, both vision and hearing. The viewer becomes an almost-hypnotized captive of the broadcast.

In the 1950's, this enormous power, which can be used both for good and for ill, was not yet fully apparent. Thus insufficient attention was given to the role of television in education, in setting norms, and in establishing values. Television was not seen as an integral part of the total educational system. It is interesting to compare the educational systems of traditional cultures with those of modern industrial societies.

In traditional societies, multigenerational families often live together in the same dwelling. In general, there is a great deal of contact between grandparents and grandchildren, with much transmission of values and norms between generations. Old people are regarded with great respect, since they are considered to be repositories of wisdom, knowledge, and culture.

By contrast, modern societies usually favor nuclear families, consisting of only parents

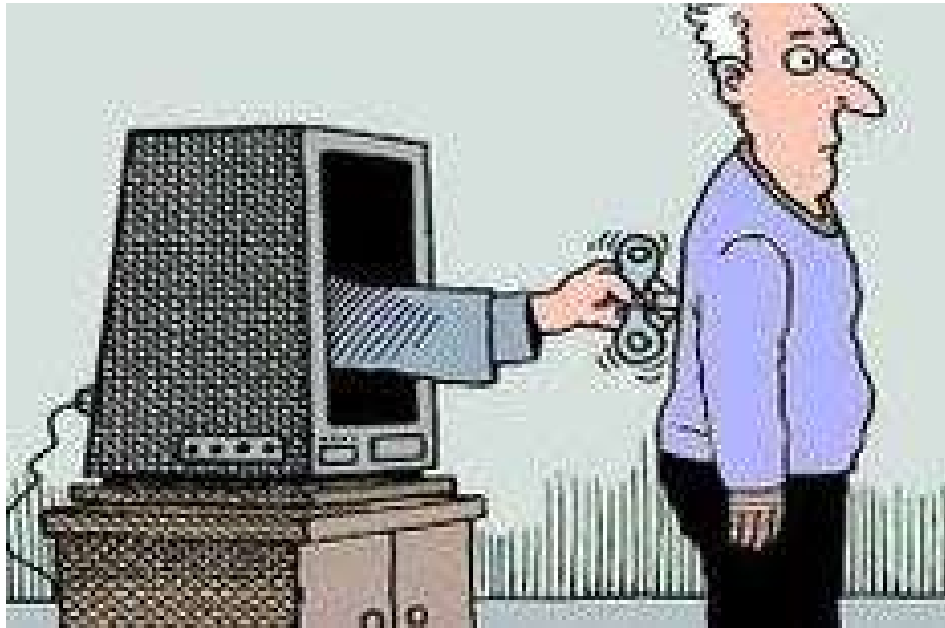


Figure 3.21: The role of the media.



Figure 3.22: Liberty?

and children. Old people are marginalized. They live by themselves in communities or homes especially for the old. Their cultural education knowledge and norms are not valued because they are “out of date”. In fact, during the life of a young person in one of the rapidly-changing industrial societies of the modern world, there is often a period when they rebel against the authority of their parents and are acutely embarrassed by their parents, who are “so old-fashioned that they don’t understand anything”.

Although the intergenerational transmission of values, norms, and culture is much less important in industrial societies than it is in traditional ones, modern young people of the West and North are by no means at a loss over where to find their values, fashions and role models. With every breath, they inhale the values and norms of the mass media. Totally surrounded by a world of television and film images, they accept this world as their own.

### 3.17 Neglect of climate change in the mass media

The predicament of humanity today has been called “a race between education and catastrophe”: How do the media fulfil this life-or-death responsibility? Do they give us insight? No, they give us pop music. Do they give us an understanding of the sweep of evolution and history? No, they give us sport. Do they give us an understanding of the ecological catastrophes that threaten our planet because of unrestricted growth of population and industries? No, they give us sit-coms and soap operas. Do they give us unbiased news? No, they give us news that has been edited to conform with the interests of powerful lobbys. Do they present us with the urgent need to leave fossil fuels in the ground? No, they do not, because this would offend the powerholders. Do they tell of the danger of passing tipping points after which human efforts to prevent catastrophic climate change will be useless? No, they give us programs about gardening and making food.

A consumer who subscribes to the “package” of broadcasts sold by a cable company can often search through all 95 channels without finding a single program that offers insight into the various problems that are facing the world today. What the viewer finds instead is a mixture of pro-establishment propaganda and entertainment. Meanwhile the neglected global problems are becoming progressively more severe.

In general, the mass media behave as though their role is to prevent the peoples of the world from joining hands and working to change the world and to save it from thermonuclear war, environmental catastrophes and threatened global famine. The television viewer sits slumped in a chair, passive, isolated, disempowered and stupefied. The future of the world hangs in the balance, the fate of children and grandchildren hangs in the balance, but the television viewer feels no impulse to work actively to change the world or to save it. The Roman emperors gave their people bread and circuses to numb them into political inactivity. The modern mass media seem to be playing a similar role.





Figure 3.23: Network administrators have noticed that programs about climate change often have low viewer ratings. Since they see delivering high viewer ratings to their advertisers as their primary duty, these executives seldom allow programs dealing with the danger of catastrophic climate change. The duty to save the earth from environmental catastrophe is neglected for the sake of money. As Al Gore said, “Instead of having a well-informed electorate, we have a well-amused audience”.

### 3.18 Climate change denial in mass media

The Wikipedia article on climate change denial describes it with the following words: “Although scientific opinion on climate change is that human activity is extremely likely to be the primary driver of climate change, the politics of global warming have been affected by climate change denial, hindering efforts to prevent climate change and adapt to the warming climate. Those promoting denial commonly use rhetorical tactics to give the appearance of a scientific controversy where there is none.”

It is not surprising that the fossil fuel industry supports, on a vast scale, politicians and mass media that deny the reality of climate change. The amounts of money at stake are vast. If catastrophic climate change is to be avoided, coal, oil and natural gas “assets” worth trillions of dollars must be left in the ground. Giant fossil fuel corporations are desperately attempting to turn these “assets” into cash.



## Preventing an ecological apocalypse

Here are some excerpts from an article entitled “**Only Rebellion will prevent an ecological apocalypse**” by George Monbiot, which was published on April 15 2019 in The Guardian<sup>8</sup>:

No one is coming to save us. Mass civil disobedience is essential to force a political response.

Had we put as much effort into preventing environmental catastrophe as we’ve spent on making excuses for inaction, we would have solved it by now. Everywhere I look, I see people engaged in furious attempts to fend off the moral challenge it presents...

As the environmental crisis accelerates, and as protest movements like YouthStrike4Climate and Extinction Rebellion make it harder not to see what we face, people discover more inventive means of shutting their eyes and shedding responsibility. Underlying these excuses is a deep-rooted belief that if we really are in trouble, someone somewhere will come to our rescue: “they” won’t let it happen. But there is no they, just us.

The political class, as anyone who has followed its progress over the past three years can surely now see, is chaotic, unwilling and, in isolation, strategically incapable of addressing even short-term crises, let alone a vast existential predicament. Yet a widespread and wilful naivety prevails: the belief that voting is the only political action required to change a system. Unless it is accompanied by the concentrated power of protest - articulating precise de-

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<sup>8</sup><https://www.theguardian.com/commentisfree/2019/apr/15/rebellion-prevent-ecological-apocalypse-civil-disobedience>

mands and creating space in which new political factions can grow - voting, while essential, remains a blunt and feeble instrument.

The media, with a few exceptions, is actively hostile. Even when broadcasters cover these issues, they carefully avoid any mention of power, talking about environmental collapse as if it is driven by mysterious, passive forces, and proposing microscopic fixes for vast structural problems. The BBC's Blue Planet Live series exemplified this tendency.

Those who govern the nation and shape public discourse cannot be trusted with the preservation of life on Earth. There is no benign authority preserving us from harm. No one is coming to save us. None of us can justifiably avoid the call to come together to save ourselves...

## Predatory delay

Here are some excerpts from a May 3 2019 article by Bill Henderson entitled "Neoliberalism, Solution Aversion, Implicatory Denial and Predatory Delay"<sup>9</sup>:

Looking back at the history, that it's not really a failure of human beings and human nature that's the problem here. It's a hijacking of our political and economic system by the fossil fuel industry and a small number of like-minded people. It was our bad luck that this idea that markets solve all problems and that government should be left to wither away crested just at the moment when it could do the most damage.

Despite the urgent need to reduce greenhouse gas emissions globally if we are to lower the risks of catastrophic climate change, wealthy industrialized nations persist with a widespread public silence on the issue and fail to address climate change. This is despite there being ever more conclusive evidence of its severity. Why is there an undercurrent of inaction, despite the challenge of climate change being ever more daunting? One element is denial.

George Marshall discovered that there has not been a single proposal, debate or even position paper on limiting fossil fuel production put forward during international climate negotiations. From the very outset fossil fuel production lay outside the frame of the discussions and, as with other forms of socially constructed silence, the social norms among the negotiators and policy specialists kept it that way.

Global climate leadership is being redefined. There is a growing recognition that you cannot be a climate leader if you continue to enable new fossil fuel production, which is inconsistent with climate limits. If no major producers step up to stop the expansion of extraction and begin phasing out existing fields and mines, the Paris goals will become increasingly difficult to achieve.

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<sup>9</sup><https://countercurrents.org/2019/05/03/neoliberalism-solution-aversion-implicatory-denial-and-predatory-delay-bill-henderson/>

Wealthy fossil fuel producers have a responsibility to lead, and this must include planning for a just and equitable managed decline of existing production.

The (emissions reduction) curve we've been forced onto bends so steeply, that the pace of victory is part of victory itself. Winning slowly is basically the same thing as losing outright. We cannot afford to pursue past strategies, aimed at limited gains towards distant goals. In the face of both triumphant denialism and predatory delay, trying to achieve climate action by doing the same things, the same old ways, means defeat. It guarantees defeat.

A fast, emergency-scale transition to a post-fossil fuel world is absolutely necessary to address climate change. But this is excluded from consideration by policymakers because it is considered to be too disruptive. The orthodoxy is that there is time for an orderly economic transition within the current short-termist political paradigm. Discussion of what would be safe - less warming than we presently experience - is non-existent. And so we have a policy failure of epic proportions. Policymakers, in their magical thinking, imagine a mitigation path of gradual change, to be constructed over many decades in a growing, prosperous world...

### 3.19 Showing unsustainable lifestyles in mass media

Television and other mass media contribute indirectly to climate change denial by showing unsustainable lifestyles. Television dramas show the ubiquitous use of gasoline-powered automobiles and highways crowded with them. just as though there did not exist an urgent need to transform our transportation systems. Motor racing is shown. A program called "Top Gear" tells viewers about the desirability of various automobiles. In general, cyclists are not shown. In television dramas, the protagonists fly to various parts of the world for their holidays. The need for small local self-sustaining communities is not shown.

Advertisements in the mass media urge us to consume more, to fly, to purchase large houses, and to buy gasoline-driven automobiles, just as though such behavior ought to be the norm. Such norms are leading us towards environmental disaster.

### 3.20 Alternative media

Luckily, the mass media do not have a complete monopoly on public information. With a little effort, citizens who are concerned about the future can find alternative media. These include a large number of independent on-line news services that are supported by subscriber donations rather than by corporate sponsors. *YouTube* videos also represent an extremely important source of public information.



## 3.21 Outstanding voices calling for climate action

### The Guardian

There are exceptions to the general rule that the mass media downplay or completely ignore the climate emergency. The Guardian is a newspaper with absolutely outstanding coverage of all issues related to climate change. No praise can be strong enough for the courageous environmental editorial policy of this famous old British newspaper.

### Al Gore

Albert Arnold Gore Jr. served as the 45th Vice President of the United States from January 1985 to January 1993. He then ran for the office of President, but was defeated by George W. Bush in a controversial election whose outcome was finally decided by the US Supreme Court<sup>10</sup>.

Al Gore is the founder and current Chairman of the Alliance for Climate Protection. He was one of the first important political figures to call attention to the problem of steadily increasing CO<sub>2</sub> levels in the atmosphere and the threat of catastrophic climate change. He produced the highly influential documentary film *An Inconvenient Truth*<sup>11</sup>. Because of his important efforts to save the global environment, Al Gore shared the 2007 Nobel Peace Prize with the Intergovernmental Panel on Climate Change.

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<sup>10</sup>Many people believe that Al Gore won the election.

<sup>11</sup><https://www.youtube.com/watch?v=I-SV13UQXdk>

### Al Gore's TED talk: The Case for Optimism on Climate Change

In 2016, Al Gore gave an important talk to a TED audience<sup>12</sup>. in which he pointed out the an economic tipping point has just been passed. Solar energy and wind energy are now cheaper than energy form fossil fuels. This means that economic forces alone can drive a rapid transition to 100% renewable energy. Investors will realize that renewables represent an unparalleled investment opportunity.

### Sir David Attenborough

In a 2011 interview in The Guardian, Sir David Attenborough was asked: “What will it take to wake people up about climate change?”. He replied “Disaster. It’s a terrible thing to say, isn’t it? And even disaster doesn’t always do it. I mean, goodness me, there have been disasters in North America, with hurricanes, and one thing and another, and floods; and still a lot of people would deny it, and say it’s nothing to do with climate change. Well it visibly has to do with climate change!”

Sir David Attenborough’s almost unbelievably enormous and impressive opus of television programs about the natural world have helped to raise public awareness of the importance of the natural environment. He also has made a number of television programs specifically related to questions such as saving threatened species, the dangers of exploding global human populations, and the destruction of forests for the sake of palm oil plantations.

Let us return to The Guardian’s 2011 interview with Sir David. Had it been made in the autumn of 2017, the interview would certainly have included a discussion of recent hurricanes of unprecedented power and destructiveness, such as Harvey, Irma and Maria, as well as 2017’s wildfires and Asian floods. It is possible that such events, which will certainly become more frequent and severe during the next few years, will provide the political will needed to silence climate change denial, to stop fossil fuel extraction, and to promote governmental policies favoring renewable energy.

Although the mass media almost have entirely neglected the link between climate change and recent disastrous hurricanes, floods droughts and wildfires, many individuals and organizations emphasized the cause and effect relationship. For example, UK airline billionaire Sir Richard Branson, whose Caribbean summer residence was destroyed by Hurricane Irma said:

“Look, you can never be 100 percent sure about links, But scientists have said the storms are going to get more and more and more intense and more and more often. We’ve had four storms within a month, all far greater than that have ever, ever, ever happened in history, Sadly, I think this is the start of things to come. Climate change is real. Ninety-nine percent of scientists know it’s real. The whole world knows it’s real except for maybe one person in the White House.”

May Boeve, executive director of the NGO 350.org, said “With a few exceptions, the major TV networks completely failed to cover the scientifically proven ways that climate

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<sup>12</sup><https://www.youtube.com/watch?v=I-SV13UQXdk>

change is intensifying extreme weather events like hurricanes Harvey and Irma. That's not just disappointing, it's dangerous. We won't be able to turn this crisis around if our media is asleep at the wheel."

Commenting on the destruction of Puerto Rico by Hurricane Maria, historian Juan Cole wrote: "When you vote for denialist politicians, you are selecting people who make policy. The policy they make will be clueless and will actively endanger the public. Climate change is real. We are causing it by our emissions. If you don't believe that, you are not a responsible steward of our infrastructure and of our lives."

When interviewed by Amy Goodman of *Democracy Now*, musician Stevie Wonder said: "... we should begin to love and value our planet, and anyone who believes that there is no such thing as global warming must be blind or unintelligent."

Another well-known musician, Beyoncé, added: "The effects of climate change are playing out around the world every day. Just this past week, we've seen devastation from the monsoon in India...and multiple catastrophic hurricanes. Irma alone has left a trail of death and destruction from the Caribbean to Florida to Southern United States. We have to be prepared for what comes next..."

In her September 2017 publication *Season of Smoke*<sup>13</sup>, prizewinning author Naomi Klein wrote:

"We hear about the record-setting amounts of water that Hurricane Harvey dumped on Houston and other Gulf cities and towns, mixing with petrochemicals to pollute and poison on an unfathomable scale. We hear too about the epic floods that have displaced hundreds of thousands of people from Bangladesh to Nigeria (though we don't hear enough). And we are witnessing, yet again, the fearsome force of water and wind as Hurricane Irma, one of the most powerful storms ever recorded, leaves devastation behind in the Caribbean, with Florida now in its sights.

"Yet for large parts of North America, Europe, and Africa, this summer has not been about water at all. In fact it has been about its absence; it's been about land so dry and heat so oppressive that forested mountains exploded into smoke like volcanoes. It's been about fires fierce enough to jump the Columbia River; fast enough to light up the outskirts of Los Angeles like an invading army; and pervasive enough to threaten natural treasures, like the tallest and most ancient sequoia trees and Glacier National Park.

"For millions of people from California to Greenland, Oregon to Portugal, British Columbia to Montana, Siberia to South Africa, the summer of 2017 has been the summer of fire. And more than anything else, it's been the summer of ubiquitous, inescapable smoke.

"For years, climate scientists have warned us that a warming world is an extreme world, in which humanity is buffeted by both brutalizing excesses and stifling absences of the core elements that have kept fragile life in equilibrium for millennia. At the end of the summer of 2017, with major cities submerged in water and others licked by flames, we are currently living through Exhibit A of this extreme world, one in which natural extremes

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<sup>13</sup><https://theintercept.com/2017/09/09/in-a-summer-of-wildfires-and-hurricanes-my-son-asks-why-is-everything-going-wrong/>





Figure 3.24: Sir David Attenborough: “Disaster. It’s a terrible thing to say, isn’t it?”

come head-to-head with social, racial, and economic ones.”

It seems likely that the climate-linked disasters of 2019 and 2020 will be even more severe than those that we have witnessed during 2017 and 2018. But will such disasters be enough to wake us up?

The BBC has recently announced that Sir David Attenborough is currently producing a new series, *Blue Planet II*, which will focus on environmental issues.<sup>14</sup>

“My hope is that the world is coming to its senses ... I’m so old I remember a time when ... we didn’t talk about climate change, we talked about animals and species extermination,” Sir David told Greenpeace in an interview, “For the first time I’m beginning to think there is actually a groundswell, there is a change in the public view. I feel many more people are concerned and more aware of what the problems are. Young people - people who’ve got 50 years of their life ahead of them - they are thinking they ought to be doing something about this. That’s a huge change.”

## Climate Change, The Facts

Now Sir David Attenborough has completed a new one-hour BBC program on the danger of catastrophic climate change. Here are some excerpts from an April 18 2019 review of the program by Rebecca Nicholson in *The Guardian*:

**The Facts is a rousing call to arms. It is an alarm clock set at a horrifying volume. The first 40 minutes are given over to what Attenborough calls, without hyperbole, “our greatest threat in thousands of years”. Expert af-**

<sup>14</sup><http://www.bbcearth.com/blueplanet2/>





Figure 3.25: Speaking at the opening ceremony of COP24, the universally loved and respected naturalist Sir David Attenborough said: “If we don’t take action, the collapse of our civilizations and the extinction of much of the natural world is on the horizon.”

ter expert explains the consequences of rising CO<sub>2</sub> levels, on the ice caps, on coastal regions, on weather and wildlife and society itself. The most powerful moments are in footage shot not by expert crews who have spent years on location, but on shaky cameras, capturing the very moment at which the reality of our warming planet struck the person holding the phone. In Cairns, Australia, flying foxes are unable to survive the extreme temperatures; rescuers survey the terrible massacre, and we learn that while 350 were saved, 11,000 died. A man and his son talk through their escape from raging wildfires, over the film they took while attempting to drive through a cavern of blazing red trees. These are horror movies playing out in miniature. It is difficult to watch even five minutes of this and remain somehow neutral, or unconvinced.

Yet as I kept on, scribbling down an increasingly grim list of statistics, most of which I knew, vaguely, though compiled like this they finally sound as dreadful as they truly are - 20 of the warmest years on record happened in the last 22 years; Greenland’s ice sheet is melting five times faster than it was 25 years ago - I started to wonder about responsibility, and if and where it would be placed. This would be a toothless film, in the end, if it were hamstrung by political neutrality, and if its inevitable “it’s not too late” message rested solely on individuals and what relatively little tweaks we might make as consumers. What about corporations? What about governments?

Then, at that exact moment, having played the despair through to its crescendo, the experts served up unvarnished honesty. They lined up to lay out the facts, plain and simple. Fossil fuel companies are the most profitable businesses man has ever known, and they engage in PR offensives, using the same consultants as tobacco companies, and the resulting uncertainty and denial, designed to safeguard profits, has narrowed our window for action. It is unforgivable. I find it hard to believe that anyone, regardless of political affiliation, can watch footage of Trump calling climate change “a hoax ... a money-making industry” and not be left winded by such staggering ignorance or astonishing deceit, though it is, more likely, more bleakly, a catastrophic combination of the two. At least Nigel Lawson only appears here in archive footage, and his argument sounds limp, to put it kindly.

Climate Change: The Facts should not have to change minds, but perhaps it will change them anyway, or at least make this seem as pressing as it needs to be. With the Extinction Rebellion protests across London this week, disrupting day-to-day business, and this, on primetime BBC One, maybe the message will filter through. At the very least, it should incite indignation that more was not done, sooner, and then urgency and a decision to both change and push for change at a much higher level. Because there is, for a brief moment, just possibly, still time.

## Greta Thunberg meets Pope Francis

On 19 April 2019, Greta Thunberg met briefly with Pope Francis at the end of his general audience. “Continue, continue!” the Pope told her, “Go on, go ahead!” Greta answered Pope Francis with the words: “Thank you for standing up for the climate, for speaking the truth. It means a lot.” Greta’s father, Svante Thunberg, expressed his gratitude to the pope: “Thank you so much for what you are doing. It means everything. Everything.”

The Pope has made fighting climate change and caring for God’s creation a pillar of his papacy. He wrote an entire encyclical about it, blaming a thirst for money for turning the Earth into a wasteland and demanding immediate action to curb global warming.

While in Rome, Greta Thunberg will also address the Italian Parliament and participate in a school strike for action to avoid catastrophic climate change.

In June, 2015, His Holiness Pope Francis I addressed the climate crisis in an encyclical entitled “*Laudato Si’*”<sup>15</sup>. Here are a few excerpts from this enormously important encyclical, which is addressed not only to the world’s 1.2 billion Catholics, but also to concerned people of all faiths. After reviewing the contributions of his predecessors. Pope Francis makes the following points:

**23. The climate is a common good, belonging to all and meant for all. At the global level, it is a complex system linked to many of the essential conditions**

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<sup>15</sup><https://unfccc.int/news/pope-francis-releases-encyclical-on-climate-and-environment>

for human life. A very solid scientific consensus indicates that we are presently witnessing a disturbing warming of the climatic system. In recent decades this warming has been accompanied by a constant rise in the sea level and, it would appear, by an increase of extreme weather events, even if a scientifically determinable cause cannot be assigned to each particular phenomenon. Humanity is called to recognize the need for changes of lifestyle, production and consumption, in order to combat this warming or at least the human causes which produce or aggravate it. It is true that there are other factors (such as volcanic activity, variations in the earth's orbit and axis, the solar cycle), yet a number of scientific studies indicate that most global warming in recent decades is due to the great concentration of greenhouse gases (carbon dioxide, methane, nitrogen oxides and others) released mainly as a result of human activity. As these gases build up in the atmosphere, they hamper the escape of heat produced by sunlight at the earth's surface. The problem is aggravated by a model of development based on the intensive use of fossil fuels, which is at the heart of the worldwide energy system. Another determining factor has been an increase in changed uses of the soil, principally deforestation for agricultural purposes.

24. Warming has effects on the carbon cycle. It creates a vicious circle which aggravates the situation even more, affecting the availability of essential resources like drinking water, energy and agricultural production in warmer regions, and leading to the extinction of part of the planet's biodiversity. The melting in the polar ice caps and in high altitude plains can lead to the dangerous release of methane gas, while the decomposition of frozen organic material can further increase the emission of carbon dioxide. Things are made worse by the loss of tropical forests which would otherwise help to mitigate climate change. Carbon dioxide pollution increases the acidification of the oceans and compromises the marine food chain. If present trends continue, this century may well witness extraordinary climate change and an unprecedented destruction of ecosystems, with serious consequences for all of us. A rise in the sea level, for example, can create extremely serious situations, if we consider that a quarter of the world's population lives on the coast or nearby, and that the majority of our megacities are situated in coastal areas.

25. Climate change is a global problem with grave implications: environmental, social, economic, political and for the distribution of goods. It represents one of the principal challenges facing humanity in our day. Its worst impact will probably be felt by developing countries in coming decades. Many of the poor live in areas particularly affected by phenomena related to warming, and their means of subsistence are largely dependent on natural reserves and ecosystemic services such as agriculture, fishing and forestry. They have no other financial activities or resources which can enable them to adapt to climate change or to



Figure 3.26: Greta Thunberg had the privilege of meeting Pope Francis. Both are outstanding voices for climate action.

face natural disasters, and their access to social services and protection is very limited. For example, changes in climate, to which animals and plants cannot adapt, lead them to migrate; this in turn affects the livelihood of the poor, who are then forced to leave their homes, with great uncertainty for their future and that of their children. There has been a tragic rise in the number of migrants seeking to flee from the growing poverty caused by environmental degradation. They are not recognized by international conventions as refugees; they bear the loss of the lives they have left behind, without enjoying any legal protection whatsoever. Sadly, there is widespread indifference to such suffering, which is even now taking place throughout our world. Our lack of response to these tragedies involving our brothers and sisters points to the loss of that sense of responsibility for our fellow men and women upon which all civil society is founded.

At a London event arranged by The Guardian, Greta Thunberg was asked whether she believed that a general strike could alert politicians to the urgency of the climate emergency. She replied “yes”. Here are some of her other comments:





Figure 3.27: Of the fossil fuels, all are bad, but coal is the worst.



Figure 3.28: Speaking to a crowd of many thousands at Marble Arch, London, on April 21, 2019, Greta Thunberg said: “For way too long the politicians and the people in power have gotten away with not doing anything ... But we will make sure that they will not get away with it any longer, We will never stop fighting, we will never stop fighting for this planet, for ourselves, our futures and for the futures of our children and grandchildren.”

**This is not just young people being sick of politicians. It's an existential crisis. It is something that will affect the future of our civilization. It's not just a movement. It's a crisis and we must take action accordingly.**

At a later meeting with members of the U.K. Parliament, Greta Thunberg said:

**The U.K.'s active current support of new exploitation of fossil fuels, like for example the U.K. shale gas fracking industry, the expansion of its North Sea oil and gas fields, the expansion of airports, as well as the planning permission for a brand new coalmine, is beyond absurd.**

**This ongoing irresponsible behavior will no doubt be remembered in history as one of the greatest failures of humankind. .**

## Leonardo DiCaprio

Leonardo DiCaprio has won many awards for his work as an actor, writer and producer in both television and films. These include 50 awards from 167 nominations. DiCaprio has been nominated for six Academy Awards, four British Academy Film Awards and nine Screen Actors Guild Awards, winning one award each from them and three Golden Globe Awards from eleven nominations.

In accepting his Best Actor award at the 2016 Oscars ceremony, DiCaprio said: "Climate change is real, it is happening right now. It is the most urgent threat facing our entire species, and we need to work collectively together and stop procrastinating. We need to support leaders around the world who do not speak for the big polluters, but who speak for all of humanity, for the indigenous people of the world, for the billions and billions of underprivileged people out there who would be most affected by this. For our children's children, and for those people out there whose voices have been drowned out by the politics of greed."

Leonardo DiCaprio has used his great success as an actor in the service of environmental causes. In 1997, following the box office success of *Titanic*, he set up the Leonardo DiCaprio Foundation, which is devoted to environmental causes. He chaired the national Earth Day celebrations in 2000 during which he interviewed US President Bill Clinton, with whom he discussed the actions needed to avoid catastrophic climate change. In 2007 he had a major role in *The 11th Hour*, a documentary about people's relationship to nature and global warming. He also co-produced and co-wrote the film.

DiCaprio's most influential film on climate change is *Before the Flood*<sup>16</sup>. This film, released in 2016, is a 1 hour and 36 minute documentary in which Leonardo DiCaprio travels to many countries to let viewers observe the already visible effects of global warming. He also talks with many of the world's leaders, including Pope Francis I, US Presidents Bill Clinton and Barack Obama, and UN Secretary General Ban Ki-moon.

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<sup>16</sup><http://www.get.filmovie.us/play.php?movie=tt5929776t>



Figure 3.29: Leonardo DiCaprio at a press conference in 2000 (Wikipedia).



Figure 3.30: **Thom Hartmann speaks to the 2010 Chicago Green Festival (Wikipedia).**

## Thom Hartmann

Thom Hartmann was born in 1951 in Lansing Michigan. He worked as a disk jockey during his teens, and, after a highly successful business career, he sold his businesses and devoted his energies to writing, humanitarian projects and public education. His influential book, *Last Hours of Ancient Sunlight* was published by Three Rivers Press in 1997 and republished in a revised edition in 2004. In 2013, Hartmann published another extremely important book on the same theme: *The Last Hours of Humanity: Warming the World To Extinction*<sup>17</sup>.

Hartmann has hosted a nationally syndicated radio show, The Thom Hartmann Program, since 2003 and a nightly television show, The Big Picture, since 2008.

Concerning Hartmann's radio show, Wikipedia states that "As of March 2016, the show was carried on 80 terrestrial radio stations in 37 states as well as on Sirius and XM satellite radio. A community radio station in Africa, Radio Builsa in Ghana, also broadcasts the show. Various local cable TV networks simulcast the program. In addition to Westwood One, the show is now also offered via Pacifica Audioport to non-profit stations in a non-profit compliant format and is simulcast on Dish Network channel 9415 and DirecTV channel 348 via Free Speech TV. The program is carried on Radio Sputnik in London, England."

"Sen. Bernie Sanders (I-VT) appears every Friday during the first hour of the show titled 'Brunch with Bernie'. Ellen Ratner of the Talk Radio News Service provides Washington commentary daily. Victoria Jones who is the White House correspondent for Talk

<sup>17</sup><https://www.amazon.com/Last-Hours-Humanity-Warming-Extinction/dp/1629213640>



Radio News Service appears occasionally as does Dr. Ravi Batra an economics professor at SMU.”

Together with Leonardo DiCaprio, Thom Hartman recently produced and narrated an extremely important short film entitled *Last Hours*<sup>18</sup>. This film, draws a parallel between the Permian-Triassic mass extinction, and the danger of a human-induced 6th mass extinction. Various experts who appear in the film confirm that our release of CO<sub>2</sub> into the atmosphere is similar to the greenhouse gasses produced by volcanic eruptions prior to the Permian event. The methane hydrate feedback loop is also discussed. The film should be seen by everyone concerned with the future of human civilization and the biosphere. Concerned citizens should also urgently see Hartman and DiCaprio’s short films *Carbon*, *Green World Rising* and *Reforestation*, also available on YouTube .

## James Hansen

James Hansen was born in 1941 in Denison, Iowa. He was educated in physics, mathematics and astronomy at the University of Iowa in the space sciences program initiated James Van Allen. He graduated with great distinction. The studies of the atmosphere and temperature of Venus which Hansen made under Van Allen’s supervision lead him to become extremely concerned about similar effects in the earth’s atmosphere.

From 1962 to 1966, James Hansen participated in the National Aeronautical and Space Administration graduate traineeship and, at the same time, between 1965 and 1966, he was a visiting student at the Institute of Astrophysics at the University of Kyoto and in the Department of Astronomy at the University of Tokyo. Hansen then began work at the Goddard Institute for Space Studies in 1967. He began to work for the Goddard Institute for Space Studies in 1967. Between 1981 and 2013, he was head of the Goddard Institute of Space Studies in New York, and since 2014, he has been the director of the Program on Climate Science, Awareness and Solutions at Columbia University’s Earth Institute.

Hansen continued his work with radiative transfer models, attempting to understand the Venusian atmosphere. Later he applied and refined these models to understand the Earth’s atmosphere, in particular, the effects that aerosols and trace gases have on Earth’s climate. Hansen’s development and use of global climate models has contributed to the further understanding of the Earth’s climate. In 2009 his first book, *Storms of My Grandchildren*, was published.

James Hansen has refined climate change models, focusing on the balance between aerosols and greenhouse gases. He believes that there is a danger that climate change will become much more rapid if the balance shifts towards the greenhouse gases.

## Hansen’s Congressional testimony leads to broad public awareness of the dangers

In 1988, Prof. Hansen was asked to testify before the US Congress on the danger of uncontrolled climate change. The testimony marked the start of broad public awareness

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<sup>18</sup><https://www.youtube.com/watch?v=2bRrg96UtMc>



Figure 3.31: **Prof. James Hansen**

of the seriousness of the danger, and it was reported in a front page article by the New York Times. However, Hansen believes that governmental energy policies still favor fossil fuels. Therefore he has participated in public demonstrations and he was even arrested in 2011 together with more than a thousand other activists for protesting outside the White House.

### **James Hansen’s TED talk and book**

In 2012 he presented a TED Talk: *Why I Must Speak Out About Climate Change*. This talk is easily available on the Internet, and it should be required viewing for everyone who is concerned with the earth’s future.

Hansen’s book, *Storms of My Grandchildren: The Truth About The Coming Climate Catastrophe, and Our Last Chance To Save Humanity* was published in New York by Bloomsbury Publishing in 2009.

## **3.22 Benefits of equality**

“If Trump is a symptom, what is the disease?” One often encounters this interesting question in alternative media articles. I think that at least part of the answer is “Excessive economic inequality”.

### **Hobson’s explanation of imperialism**

The English economist and Fabian, John Atkinson Hobson (1858-1940), offered a famous explanation of the colonial era in his book *Imperialism: A Study* (1902). According to

Hobson, the basic problem that led to colonial expansion was an excessively unequal distribution of incomes in the industrialized countries. The result of this unequal distribution was that neither the rich nor the poor could buy back the total output of their society. The incomes of the poor were insufficient, and rich were too few in number. The rich had finite needs, and tended to reinvest their money. As Hobson pointed out, reinvestment in new factories only made the situation worse by increasing output.

Hobson had been sent as a reporter by the Manchester Guardian to cover the Second Boer War. His experiences had convinced him that colonial wars have an economic motive. Such wars are fought, he believed, to facilitate investment of the excess money of the rich in African or Asian plantations and mines, and to make possible the overseas sale of excess manufactured goods. Hobson believed imperialism to be immoral, since it entails suffering both among colonial peoples and among the poor of the industrial nations. The cure that he recommended was a more equal distribution of incomes in the manufacturing countries.

Interestingly, TED Talks (ideas worth spreading) was recently under fire from many progressive groups for censoring a short talk by the adventure capitalist, Nick Hanauer, entitled “Income Inequality”. In this talk, Hanauer said exactly the same thing as John Hobson, but he applied the ideas, not to colonialism, but to current unemployment in the United States. Hanauer said that the rich are unable to consume the products of society because they are too few in number. To make an economy work, demand must be increased, and for this to happen, the distribution of incomes must become much more equal than it is today in the United States.

TED has now posted Hanauer’s talk, and the interested reader can find another wonderful TED talk dealing with the same issues from the standpoint of health and social problems. In a splendid lecture entitled *How economic inequality harms societies*, Richard Wilkinson demonstrates that there is almost no correlation between gross national product and a number of indicators of the quality of life, such as physical health, mental health, drug abuse, education, imprisonment, obesity, social mobility, trust, violence, teenage pregnancies and child well-being. On the other hand he offers comprehensive statistical evidence that these indicators are strongly correlated with the degree of inequality within countries, the outcomes being uniformly much better in nations where income is more equally distributed.

Warren Buffet famously remarked, “There’s class warfare, all right. But it’s my class, the rich class, that’s making war, and we’re winning.” However, the evidence presented by Hobson, Hanauer and Wilkinson shows conclusively that no one wins in a society where inequality is too great, and everyone wins when incomes are more evenly distributed.

## Extreme inequality today

Here are two quotations from a report by the Global Inequality organization:<sup>19</sup>

“Inequality has been on the rise across the globe for several decades. Some countries have reduced the numbers of people living in extreme poverty. But economic gaps have

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<sup>19</sup><https://inequality.org/facts/global-inequality/>

continued to grow as the very richest amass unprecedented levels of wealth. Among industrial nations, the United States is by far the most top-heavy, with much greater shares of national wealth and income going to the richest 1 percent than any other country.”

“The world’s 10 richest billionaires, according to Forbes, own \$745 billion in combined wealth, a sum greater than the total goods and services most nations produce on an annual basis. The globe is home to 2,208 billionaires, according to the 2018 Forbes ranking.”

## **Corporate oligarchs control governments and the mainstream media**

Today, the world faces two existential threats, the threat of an all-destroying thermonuclear war, and the threat of uncontrollable catastrophic climate change. In the United States, and several other countries, immensely rich corporate oligarchies use money to control both the mass media and politics, and the result is that no action is taken to save the future of the earth for our children and grandchildren.

It is not surprising that the fossil fuel industry supports, on a vast scale, politicians and mass media that deny the reality of climate change. The amounts of money at stake are vast. If catastrophic climate change is to be avoided, coal, oil and natural gas “assets” worth trillions of dollars must be left in the ground. Giant fossil fuel corporations are desperately attempting to turn these “assets” into cash.

Our military-industrial complexes maintain the threat of thermonuclear war, as well as speeding vast amounts of government money that could alternatively be used for social programs or renewable energy infrastructure. A military-industrial complex involves a circular flow of money. The money flows like the electrical current in a dynamo, driving a diabolical machine. Money from immensely rich corporate oligarchs buys the votes of politicians and the propaganda of the mainstream media. Numbed by the propaganda, citizens allow the politicians to vote for obscenely bloated military budgets, which further enrich the corporate oligarchs, and the circular flow continues.

Excessive economic inequality is at the root of the decay of democracy and the drift towards neofascism in a number of countries. It is not a coincidence that the United States and Brazil, two of the countries where inequality is the greatest, now have governments characterized by racism, militarism, cruelty, mysogeny, decay of democracy and climate change denial.

## **Economic equality and climate action in Scandinavia**

Senator Bernie Sanders, a popular reformist candidate for the US Presidency in 2016 and 2020, has said that he is a socialist. When asked to explain in detail what he meant by that, Sanders said that he believed that the US would benefit from having a social and economic system similar to those of Scandinavia.

The Green New Deal can simultaneously address the climate crisis and the problem of excessive economic inequality. In this context, it is interesting to look at the social and

economic systems of the Scandinavian countries, Norway, Sweden, Finland, Denmark and Iceland. In these countries the contrast between the rich and poor has been very much reduced. It is almost true to say that poverty has been eliminated in these countries. At the same time, the Scandinavians have strong policies to address the climate emergency. Thus Scandinavian successes are a counter-argument to those who say that the Green New Deal cannot be put into practice.

## **Renewable energy in Denmark**

Here are some excerpts from a recent report by the Danish Ministry of Energy, Utilities and Climate:

“Denmark’s success in transforming into a sustainable, green society is widely recognized. Denmark is at the forefront of numerous international initiatives and collaborative endeavors. In 2017, for the second consecutive year in a row, Denmark won the World Energy Council award for the world’s best energy system.”

“In 2017, Denmark achieved a world record of 43.4% power produced solely by wind turbines. Denmark can cover the largest share of its electricity production with green power from wind turbines. Denmark is also a European leader in the export of energy technology, as exports of energy equipment account for a larger share of total exports than in any other EU country.”

“The government has set ambitious goals that few other countries can match: At least 50% of Denmark’s energy needs must be covered by renewable energy by 2030. Coal must be completely phased out of the power supply by 2030. Moratorium on all exploration and drilling activities for oil, gas and shale gas on land and inland waters of Denmark. Denmark must be a low-emission society independent of fossil fuels in 2050.”

## **Eliminating excessive economic inequality increases happiness**

For many years, the Scandinavian countries have ranked as the best places to live, according to the World Happiness Report. Perhaps these countries can serve as models, if we wish the future of human society to be a happy one. A step towards both happiness and sustainability must be the elimination of excessive economic inequality.

## **3.23 How do elites keep their power and wealth?**

### **Control of the mass media**

The media are a battleground where reformers struggle for attention, but are defeated with great regularity by the wealth and power of the establishment. This is a tragedy because today there is an urgent need to make public opinion aware of the serious problems facing civilization, and the steps that are needed to solve these problems. The mass media could

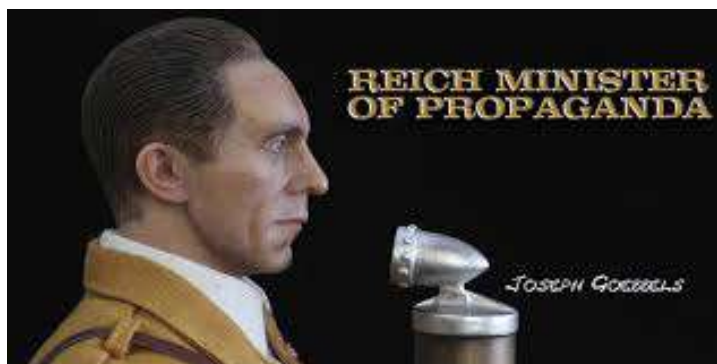


Figure 3.32: Goebbels said: “Propaganda works best when those who are being manipulated are confident that they are acting on their own free will”.

potentially be a great force for public education, but in general their role is not only unhelpful - it is often negative.

War and conflict are blatantly advertised by television and newspapers. Think, for example, of television programs like the National Geographic Channel’s “Battleground” series or the Discovery Channel and National Geographic Channel’s enthusiastic programs praising the deadliness and efficiency of various modern weapons systems. Such outright advertisements for the institution of war seem to have the wholehearted support of the networks. Meanwhile the peace movement has almost no access to the mainstream media.

It did not escape the notice of politicians that control of the media is the key to political power in the modern world. For example, Hitler was extremely conscious of the force of propaganda, and it became one of his favorite instruments for exerting power.

With the advent of radio and television, the influence of the mass media became still greater. Today, state-controlled or money-controlled newspapers, radio and television are widely used by the power elite to manipulate public opinion. This is true in most countries of the world, even in those that pride themselves on allowing freedom of speech. For example, during the US-led invasion of Iraq in 2003, the official version of events was broadcast by CNN, and criticism of the invasion was almost absent from their transmissions.

Today we are faced with the task of creating a new global ethic in which loyalty to family, religion and nation will be supplemented by a higher loyalty to humanity as a whole. In case of conflicts, loyalty to humanity as a whole must take precedence. In addition, our present culture of violence must be replaced by a culture of peace. To achieve these essential goals, we urgently need the cooperation of the mass media.

The predicament of humanity today has been called “a race between education and catastrophe”: Human emotions have not changed much during the last 40,000 years. As we saw in Chapter 8, human nature still contains an element of tribalism to which nationalistic politicians successfully appeal. The completely sovereign nation-state is still the basis of our global political system. The danger in this situation is due to the fact that modern science has given the human race incredibly destructive weapons. Because of these weapons, the tribal tendencies in human nature and the politically fragmented structure of our world

have both become dangerous anachronisms.

After the tragedies of Hiroshima and Nagasaki, Albert Einstein said, “The unleashed power of the atom has changed everything except our way of thinking, and thus we drift towards unparalleled catastrophes.” We have to learn to think in a new way. Will we learn this in time to prevent disaster? When we consider the almost miraculous power of our modern electronic media, we can be optimistic. Cannot our marvelous global communication network be used to change anachronistic ways of thought and anachronistic social and political institutions in time, so that the system will not self-destruct as science and technology revolutionize our world? If they were properly used, our instantaneous global communications could give us hope.

The success of our species is built on cultural evolution, the central element of which is cooperation. Thus human nature has two sides, tribal emotions are present, but they are balanced by the human genius for cooperation. The case of Scandinavia - once war-torn, now cooperative - shows that education is able to bring out either the kind and cooperative side of human nature, or the xenophobic and violent side. Which of these shall it be? It is up to our educational systems to decide, and the mass media are an extremely important part of education. Hence the great responsibility that is now in the hands of the media.

The predicament of humanity today has been called “a race between education and catastrophe”: How do the media fulfil this life-or-death responsibility? Do they give us insight? No, they give us pop music. Do they give us an understanding of the sweep of evolution and history? No, they give us sport. Do they give us an understanding of the ecological catastrophes that threaten our planet because of unrestricted growth of population and industries? No, they give us sit-coms and soap operas. Do they give us unbiased news? No, they give us news that has been edited to conform with the interests of powerful lobbys. Do they present us with the urgent need to leave fossil fuels in the ground? No, they do not, because this would offend the powerholders. Do they tell of the danger of passing tipping points after which human efforts to prevent catastrophic climate change will be useless? No, they give us programs about gardening and making food.

A consumer who subscribes to the “package” of broadcasts sold by a cable company can often search through all 95 channels without finding a single program that offers insight into the various problems that are facing the world today. What the viewer finds instead is a mixture of pro-establishment propaganda and entertainment. Meanwhile the neglected global problems are becoming progressively more severe.

In general, the mass media behave as though their role is to prevent the peoples of the world from joining hands and working to change the world and to save it from thermonuclear war, environmental catastrophes and threatened global famine. The television viewer sits slumped in a chair, passive, isolated, disempowered and stupefied. The future of the world hangs in the balance, the fate of children and grandchildren hangs in the balance, but the television viewer feels no impulse to work actively to change the world or to save it. The Roman emperors gave their people bread and circuses to numb them into political inactivity. The modern mass media seem to be playing a similar role.

Here are some quotations from the Wikipedia article entitled “Propaganda model”:

“The propaganda model is a conceptual model in political economy advanced by Edward S. Herman and Noam Chomsky to explain how propaganda and systemic biases function in corporate mass media. The model seeks to explain how populations are manipulated and how consent for economic, social, and political policies is ‘manufactured’ in the public mind due to this propaganda. The theory posits that the way in which corporate media is structured (e.g. through advertising, concentration of media ownership, government sourcing) creates an inherent conflict of interest that acts as propaganda for undemocratic forces.

“First presented in their 1988 book *Manufacturing Consent: The Political Economy of the Mass Media*, the propaganda model views private media as businesses interested in the sale of a product—readers and audiences—to other businesses (advertisers) rather than that of quality news to the public. Describing the media’s ‘societal purpose’, Chomsky writes, ‘... the study of institutions and how they function must be scrupulously ignored, apart from fringe elements or a relatively obscure scholarly literature’. The theory postulates five general classes of ‘filters’ that determine the type of news that is presented in news media. These five classes are: Ownership of the medium, Medium’s funding sources, Sourcing, Flak, and Anti-communism or ‘fear ideology’.

“The first three are generally regarded by the authors as being the most important. In versions published after the 9/11 attacks on the United States in 2001, Chomsky and Herman updated the fifth prong to instead refer to the ‘War on Terror’ and ‘counter-terrorism’, although they state that it operates in much the same manner.

“Although the model was based mainly on the characterization of United States media, Chomsky and Herman believe the theory is equally applicable to any country that shares the basic economic structure and organizing principles that the model postulates as the cause of media biases.”

## Control of elections

In the United States, the November 2020 election is a crucial one because the Republican party’s climate change denial and support for fossil fuels threatens the future of human society and the biosphere, and because Donald Trump’s neo-fascism threatens America’s constitutional government and democratic institutions. The Republicans know that they will lose the election if it is fair, and they are doing everything they can to make it unfair. Here is a quotation from Senator Bernie Sanders:

“Donald Trump is a pathological liar. According to documented reports he has told more than 20,000 lies and distortions since he has been president. This is, obviously, deeply disturbing behavior for anyone who is president of the United States.

“But what is even more disturbing is that Trump is now using his lies



and misinformation to sow confusion and chaos in the election process and undermine American democracy. In other words, he does not intend to accept the results of the election if he loses and leave office voluntarily. This is not just a constitutional crisis. This is a threat to everything this country stands for.

“In order to be effective in combating Trump’s attempt to sabotage the November election, it is important that you, and everyone you know, recognize the warning signs as to what he and his Republican allies are doing...

“Over the course of the past few weeks, Trump has consistently sought to cast doubt on the legitimacy of the coming election. At a time when he is behind in almost every national poll and in most battleground state polls, Trump recently stated, ‘The only way they can take this election away from us is if this is a rigged election.’

“Think about what that means. What he is saying is that if he wins the election, that’s great. But if he loses, it’s rigged. And if it’s rigged, then he is not leaving office. Heads I win. Tails you lose...

“Trump is not only trying to create chaos and delegitimize the election process. He and the Republican Party are now spending tens of millions of dollars in the courts to make it harder for people to vote. They are attempting to defund and destroy the U.S. Postal Service so that people will not be able to cast mail-in ballots. And their allies in state legislatures like Pennsylvania’s are refusing to pass legislation to ensure all legitimate votes are counted in a timely manner.”

According to the divorce filings of Trump’s first wife, he kept a copy of translations of Hitler’s speeches beside his bedside and studied them thoroughly. His 2016 campaign was openly racist, and since taking office he has been a racist in word and deed. Trump’s use of unidentified troops in unmarked vehicles to tear-gas, beat and terrorize peaceful protesters is reminiscent of Hitler’s Brown Shirts. We can recall that Hitler came to power legally, but retained power through illegal methods. There is a worrying similarity between what is happening in the USA today and what happened in Germany in the 1930’s.

Here are some quotations from an article by Larry Cohen entitled *Vandalizing The Post Office*, published by Popular Resistance on October 6, 2020:

“Undermining democracy to win elections and protect investors and property interests in the United States is well documented and has been a consistent part of our history. However, Donald Trump’s attacks on our democracy, including his effort to privatize and disparage the public Post Office are unprecedented, and unpopular with most voters. Article 1 of the Constitution requires Congress to establish the post office, and the enabling legislation dates back to 1792.

“Donald Trump is constantly expanding his party’s decades-long reliance on holding down turnout to win, as white supremacist Democrats once did for

nearly 100 years, beginning after the Civil War with poll taxes, literacy tests, and other restrictions on voting rights. Currently, Republicans are counting on the pandemic to shrink turnout, while Democrats are using vote by mail to expand turnout. Democrats should view the public post office as an ongoing tool to expand voting rights, following the lead of five states where vote by mail is the norm...

“Currently there is a popular uprising to ‘Save the public post office’. This summer there have been demonstrations at hundreds of post offices around our nation, urban, suburban, and rural. The ‘Grand Alliance to Save Our Public Post Office’ not only includes the four postal unions representing over 400,000 union members, but a wide range of public service groups from every field. Recent polls have shown that 91 percent of the public supports the USPS and it ranks at the top of federal agencies in popularity.”

## Control of the legal systems

Let us recall from Chapter 1, William Godwin’s opinion of the legal system in England at the time when he was writing *Political Justice*: “In its present state”, Godwin wrote, “society decrees that the majority of its citizens “should be kept in abject penury, rendered stupid with ignorance and disgusting with vice, perpetuated in nakedness and hunger, goaded to the commission of crimes, and made victims to the merciless laws which the rich have instituted to oppress them”. But human behavior is produced by environment and education, Godwin pointed out. If the conditions of upbringing were improved, behavior would also improve. In fact, Godwin believed that men and women are subject to natural laws no less than the planets of Newton’s solar system. “In the life of every human”, Godwin wrote, “there is a chain of causes, generated in that eternity which preceded his birth, and going on in regular procession through the whole period of his existence, in consequence of which it was impossible for him to act in any instance otherwise than he has acted.”

In one of his letters to Gandhi, Count Leo Tolstoy wrote: “This year in the spring, at a Scripture examination at a girls’ high school in Moscow, the teacher and the bishop present asked the girls questions on the Commandments, and especially on the sixth. After a correct answer, the bishop generally put another question, whether murder was always in all cases forbidden by God’s law: and the unhappy young ladies were forced by previous instruction to answer ‘Not always’ - that murder was permitted in war and in the execution of criminals. Still, when one of these unfortunate young ladies (what I am telling you is not an invention but a fact, told to me by an eye witness) after her first answer, was asked the usual question, if killing was always sinful, she, agitated and blushing, decisively answered ‘Always’, and to the usual sophisms of the bishop, she answered with decided conviction that killing was always forbidden by the Old Testament and forbidden by Christ, not only killing, but every wrong against a brother. Notwithstanding his grandeur and his arts of speech, the bishop became silent, and the girl remained victorious.”



Figure 3.33: US Supreme Court Justice Ruth Bader Ginsburg in a commissioned portrait from 2000. She was known for her liberal opinions and her defense of women's rights. Her death at the age of 87 from pancreatic cancer on September 18, 2020, only a month and a half away from the November election, was followed immediately by Republican attempts to ram through the appointment of an ultra-conservative judge to replace her, Amy Cony Barrett. An emboldened 6-3 conservative majority on the Supreme Court could dramatically loosen gun laws, hurt immigrant communities, hurt women's rights, and play a possibly central role in deciding a close presidential election. Brett Kavanaugh, an earlier Republican choice for the Supreme Court, is both a multiple perjurer under oath before congress and a multiple attempted rapist. His tenure on the US supreme court will always be tainted by the highly partisan and morally bankrupt process that forced through his US senate confirmation on October 7, 2018.

## Control of the police forces

Here is a quotation from Wikipedia's article on the Gestapo:

“The force was created by Hermann Göring in 1933 by combining the various security police agencies of Prussia into one organisation. On 20 April 1934, oversight of the Gestapo passed to the head of the SS, Heinrich Himmler, who was also appointed Chief of German Police by Hitler in 1936. Instead of being exclusively a Prussian state agency, the Gestapo became a national one as a sub-office of the Sicherheitspolizei (SiPo; Security Police). From 27 September 1939, it was administered by the Reich Main Security Office (RSHA). It became known as Amt (Dept) 4 of the RSHA and was considered a sister organisation to the Sicherheitsdienst (SD; Security Service). During World War II, the Gestapo played a key role in the Nazi plan to exterminate the Jews of Europe.”

A quotation from Wikipedia's article on police brutality in the United States:

“Police brutality is the use of excessive or unnecessary force by personnel affiliated with law enforcement duties when dealing with suspects and civilians. The term is also applied to abuses by corrections personnel in municipal, state, and federal penal facilities, including military prisons.

“The term police brutality is usually applied in the context of causing physical harm to a person. It may also involve psychological harm through the use of intimidation tactics beyond the scope of officially sanctioned police procedure. From the 18th-20th centuries, those who engaged in police brutality may have acted with the implicit approval of the local legal system, such as during the Civil Rights Movement era. In the contemporary era, individuals who engage in police brutality may do so with the tacit approval of their superiors or they may be rogue officers. In either case, they may perpetrate their actions under cover of law and, more often than not, engage in a subsequent cover-up of their unlawful activity.

“Since the 20th century, there have been many public, private, and community efforts to combat police corruption and brutality. These efforts have identified various core issues that contribute to police brutality, including the insular culture of police departments (including the Blue wall of silence), the aggressive defense of police officers and resistance to change in police unions,[6] the broad legal protections granted to police officers (such as qualified immunity), the historic racism of police departments, the militarization of the police, the adoption of tactics that escalate tension (such as zero tolerance policing and stop-and-frisk), the inadequacies of police training and/or police academies, and the psychology of possessing absolute power. The US legal doctrine of qualified immunity has been widely criticized as ‘[having] become a

nearly failsafe tool to let police brutality go unpunished and deny victims their constitutional rights,’ as summarized in a 2020 Reuters report.”

## Control of military forces

Control of military forces is a traditional method by which leaders or elites seize power. For example, we can recall how Julius Caesar used his control of the army to seize power in Rome. Here is a list of current leaders who have assumed power via military coups d’état:

- President Teodoro Obiang Nguema Mbasogo of Equatorial Guinea
- President Yoweri Museveni of Uganda
- President Idriss Déby of Chad
- President Emomali Rahmon of Tajikistan
- Prime Minister Hun Sen of Cambodia
- President Denis Sassou Nguesso of the Republic of the Congo
- Prime Minister Frank Bainimarama of Fiji
- President Abdel Fattah el-Sisi of Egypt
- Prime Minister Prayut Chan-o-cha of Thailand
- President of the Revolutionary Committee Mohammed Ali al-Houthi of Yemen
- President Emmerson Mnangagwa of Zimbabwe
- Chair of the National Committee for the Salvation of the People of Mali Assimi Goita of Mali

## 3.24 Resistance to tyranny

### The tradition of nonviolent resistance

A number of the great historical figures whose lives are described in this book were pioneers of the tradition of nonviolent resistance to tyranny: Percy Busshe Shelley, Henry David Thoreau, Count Leo Tolstoy, Mahatma Gandhi and Dr. Martin Luther King , Jr. all contributed importantly to this tradition.

We can especially remember Gandhi’s answer to the insidious argument that “the end justifies the means”: Gandhi answered firmly: “They say that ’means are after all means’. I would say that ’means are after all everything’. As the means, so the end. Indeed, the Creator has given us limited power over means, none over end... The means may be likened to a seed, and the end to a tree; and there is the same inviolable connection between the means and the end as there is between the seed and the tree. Means and end are convertible terms in my philosophy of life.”

Gandhi believed that violent methods for achieving a desired social result would inevitably result in an escalation of violence. The end achieved would always be contaminated by the methods used. He was influenced by Leo Tolstoy with whom he exchanged many letters, and he in turn influenced Martin Luther King and Nelson Mandela.

Because the independence of India was achieved through Gandhi's nonviolent methods, India's separation from Britain was achieved without excessive bitterness, and many of the good institutions that Britain had brought to India were retained. We can contrast this with many violent revolutions, for example the French Revolution, where the old tyranny was quickly replaced by a new repressive regime. The end achieved was contaminated by the end used to achieve it.

In our own time, Gene Sharp (1928-2018) contributed importantly to the tradition of nonviolent resistance to tyranny. His research confirmed the premise that authority is based on the obedience and goodwill of the subjects. When that obedience is withdrawn from presumed authorities, their authority is lost.

Gene Sharp was a professor of political science at the University of Massachusetts Dartmouth. He founded the Albert Einstein Institution, a nonprofit organization dedicated to the study of nonviolent action. Readers may find many useful suggestions for action on the Institution's website, <https://www.aeinstein.org/>.

### Some suggestions for further reading

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## Chapter 4

# WE MUST BREAK THE POWER OF CORPORATE GREED

### 4.1 Why corporations are socially and ecologically destructive

The nations of the world urgently need to give their economic systems both a social conscience and an ecological conscience. However, in many nations, corporations control political systems; and the rules that govern corporations prevent them from having a conscience of any kind.

As the famous linguist and public intellectual Professor Noam Chomsky has pointed out, the overriding duty of the Chief Executive Officer of a corporation is to deliver a profit to the stockholders. If the CEO deviates from this duty out of respect for the environment or social justice, the CEO must be fired, according to the rules, and replaced by someone who follows the profit motive more strictly.

Because of the rules that govern them, corporations are intrinsically both antisocial and environmentally destructive. To save the ecosphere, and to save human society, we must rid the world of corporate rule.



Figure 4.1: Mussolini defined fascism as “corporatism”. It unites the corporate state and the mob.

## 4.2 An article in The Guardian by George Monbiot

Here are some quotations from the article:

“Imagine if the people of the Soviet Union had never heard of communism. The ideology that dominates our lives has, for most of us, no name. Mention it in conversation and you’ll be rewarded with a shrug. Even if your listeners have heard the term before, they will struggle to define it. Neoliberalism: do you know what it is?”

“Its anonymity is both a symptom and cause of its power. It has played a major role in a remarkable variety of crises: the financial meltdown of 2007-8, the offshoring of wealth and power, of which the Panama Papers offer us merely a glimpse, the slow collapse of public health and education, resurgent child poverty, the epidemic of loneliness, the collapse of ecosystems, the rise of Donald Trump. But we respond to these crises as if they emerge in isolation, apparently unaware that they have all been either catalyzed or exacerbated by the same coherent philosophy; a philosophy that has - or had - a name. What greater power can there be than to operate namelessly?”

“So pervasive has neoliberalism become that we seldom even recognize it as an ideology. We appear to accept the proposition that this utopian, millenarian faith describes a neutral force; a kind of biological law, like Darwin’s theory of evolution. But the philosophy arose as a conscious attempt to reshape human

life and shift the locus of power.

“Neoliberalism sees competition as the defining characteristic of human relations. It redefines citizens as consumers, whose democratic choices are best exercised by buying and selling, a process that rewards merit and punishes inefficiency. It maintains that ‘the market’ delivers benefits that could never be achieved by planning.

“Attempts to limit competition are treated as inimical to liberty. Tax and regulation should be minimized, public services should be privatized. The organization of labour and collective bargaining by trade unions are portrayed as market distortions that impede the formation of a natural hierarchy of winners and losers. Inequality is recast as virtuous: a reward for utility and a generator of wealth, which trickles down to enrich everyone. Efforts to create a more equal society are both counterproductive and morally corrosive. The market ensures that everyone gets what they deserve.

“We internalize and reproduce its creeds. The rich persuade themselves that they acquired their wealth through merit, ignoring the advantages - such as education, inheritance and class - that may have helped to secure it. The poor begin to blame themselves for their failures, even when they can do little to change their circumstances.

“Never mind structural unemployment: if you don’t have a job it’s because you are unenterprising. Never mind the impossible costs of housing: if your credit card is maxed out, you’re feckless and improvident. Never mind that your children no longer have a school playing field: if they get fat, it’s your fault. In a world governed by competition, those who fall behind become defined and self-defined as losers...

“The term neoliberalism was coined at a meeting in Paris in 1938. Among the delegates were two men who came to define the ideology, Ludwig von Mises and Friedrich Hayek. Both exiles from Austria, they saw social democracy, exemplified by Franklin Roosevelt’s New Deal and the gradual development of Britain’s welfare state, as manifestations of a collectivism that occupied the same spectrum as nazism and communism.

“In *The Road to Serfdom*, published in 1944, Hayek argued that government planning, by crushing individualism, would lead inexorably to totalitarian control. Like Mises’s book *Bureaucracy*, *The Road to Serfdom* was widely read. It came to the attention of some very wealthy people, who saw in the philosophy an opportunity to free themselves from regulation and tax. When, in 1947, Hayek founded the first organisation that would spread the doctrine of neoliberalism - the Mont Pelerin Society - it was supported financially by millionaires and their foundations.

“With their help, he began to create what Daniel Stedman Jones describes in *Masters of the Universe* as ‘a kind of neoliberal international’: a transatlantic network of academics, businessmen, journalists and activists. The movement’s rich backers funded a series of thinktanks which would refine and pro-

mote the ideology. Among them were the American Enterprise Institute, the Heritage Foundation, the Cato Institute, the Institute of Economic Affairs, the Centre for Policy Studies and the Adam Smith Institute. They also financed academic positions and departments, particularly at the universities of Chicago and Virginia.

“As it evolved, neoliberalism became more strident. Hayek’s view that governments should regulate competition to prevent monopolies from forming gave way - among American apostles such as Milton Friedman - to the belief that monopoly power could be seen as a reward for efficiency.

“Something else happened during this transition: the movement lost its name. In 1951, Friedman was happy to describe himself as a neoliberal. But soon after that, the term began to disappear. Stranger still, even as the ideology became crisper and the movement more coherent, the lost name was not replaced by any common alternative...”

### 4.3 Pinochet’s terror, and the boys from Chicago

#### Pinochet’s U.S.-backed coup

Here are some quotations from Wikipedia’s article on Augusto Pinochet:

“Augusto Pinochet rose through the ranks of the Chilean Army to become General Chief of Staff in early 1972 before being appointed its Commander-in-Chief on 23 August 1973 by President Salvador Allende. On 11 September 1973, Pinochet seized power in Chile in a U.S.-backed coup d’état that toppled Allende’s democratically elected Unidad Popular government and ended civilian rule. In December 1974, the ruling military junta appointed Pinochet Supreme Head of the nation by joint decree, although without the support of one of the coup’s instigators, Air Force General Gustavo Leigh. After his rise to power, Pinochet persecuted leftists, socialists, and political critics, resulting in the executions of from 1,200 to 3,200 people, the internment of as many as 80,000 people, and the torture of tens of thousands. According to the Chilean government, the number of executions and forced disappearances was 3,095. Operation Condor was founded at the behest of the Pinochet regime in late November 1975, his 60th birthday.

“Under the influence of the free market-oriented ‘Chicago Boys,’ Pinochet’s military government implemented economic liberalization, including currency stabilization, removed tariff protections for local industry, banned trade unions, and privatized social security and hundreds of state-owned enterprises. Some of the government properties were sold below market price to politically connected buyers, including Pinochet’s own son-in-law. The regime used censorship of entertainment as a way to reward supporters of the regime and punish

opponents. These policies produced high economic growth, but critics state that economic inequality dramatically increased and attribute the devastating effects of the 1982 monetary crisis on the Chilean economy to these policies.”

The “Chicago Boys” were Chilean economists who had studied under or were influenced by the neoliberal ideas of Milton Friedman, who taught economics at the University of Chicago,

### Torture methods used by the Pinochet dictatorship

Here are some quotations for the Wikipedia article on Pinochet’s torture methods:

“One torture method which was very commonly used was the ‘grill’ or ‘La Parrilla.’ In this torture, electricity was fed from a standard wall outlet through a control box into two wires each terminating in electrodes. The control box gave the torturers the option of adjusting the voltage being administered to the prisoner. The naked prisoner was stretched out and strapped onto a metal bedframe, or a set of bedsprings, and tied down. He or she was subjected to electrical shocks on several parts of the body, especially on sensitive areas like the genitals and on open wounds. The Valech Report includes a testimony of a Chilean man who was interrogated by prison captors. They took off his clothes and ‘attached electrodes to his chest and testicles. They put something in his mouth so he would bite his tongue while they shocked him.’ In another method, one of the wires would be fixed to the prisoner (typically to the victim’s genitalia) while another wire could be applied to other parts of the body. This caused an electric current to pass through the victim’s body, with a strength inversely proportional to the distance between the two electrodes. A smaller distance between the electrodes led to a stronger current and thus more intense pain for the prisoner. A particularly barbaric version of the ‘grill’ was the use of a metal bunk bed; the victim was placed on the bottom bunk while a relative or friend was simultaneously tortured on the top bunk.

“Most prisoners suffered from severe beatings, and broken or even amputated limbs. At Villa Grimaldi, DINA forced non-compliant prisoners to lie down on the ground. The captors ran over their legs with a large vehicle, and crushed the prisoners’ bones. The assailants also beat prisoners in the ear until they became deaf, and entirely unconscious; this torture method was called the ‘telephone.’ Most of the acts of punishment were intended to severely humiliate the prisoners. At the Pisagua Concentration Camp, captors intimidated prisoners by forcing them to crawl on the ground and lick the dirt off the floors. If the prisoners complained or even collapsed from exhaustion, they were promptly executed. Prisoners were also immersed into vats of excrement, and were occasionally forced to ingest it...

“Women were the primary targets of gruesome acts of sexual abuse. Ac-

cording to the Valech Commission, almost every single female prisoner was a victim of repeated rape. Not only would military men rape women, they would also use foreign objects and even animals to inflict more pain and suffering. Women (and occasionally men) reported that spiders and live rats were often implanted on their genitals. One woman testified that she had been ‘raped and sexually assaulted with trained dogs and with live rats.’ She was forced to have sex with her father and brother - who were also detained...”

## Operation Condor

Below are some quotations from the Wikipedia article on Operation Condor:

“Operation Condor... was a United States-backed campaign of political repression and state terror involving intelligence operations and assassination of opponents, officially and formally implemented in November 1975 by the right-wing dictatorships of the Southern Cone of South America.

“Due to its clandestine nature, the precise number of deaths directly attributable to Operation Condor is highly disputed. Some estimates are that at least 60,000 deaths can be attributed to Condor, roughly 30,000 of these in Argentina, and the so-called ‘Archives of Terror’ list 50,000 killed, 30,000 disappeared and 400,000 imprisoned...”

## 4.4 *The Shock Doctrine*, by Naomi Klein

Below are some quotations from the Wikipedia article on *The Shock Doctrine*:

“...The book is divided into seven parts with a total of 21 chapters.

“Part 1 begins with a chapter on psychiatric shock therapy and the covert experiments conducted by the psychiatrist Ewen Cameron in collusion with the Central Intelligence Agency. The second chapter introduces Milton Friedman and his Chicago school of economics, whom Klein describes as leading a laissez-faire capitalist movement committed to creating free markets that are even less regulated than those that existed before the Great Depression.

“Part 2 discusses the use of ‘shock doctrine’ to transform South American economies in the 1970s, focusing on the 1973 coup in Chile led by General Augusto Pinochet and influenced by a prominent group of Chilean economists who had been trained at the University of Chicago in the Economics department, funded by the CIA, and advised by Milton Friedman. Klein connects torture with economic shock therapy.

“Part 3 covers attempts to apply the shock doctrine without the need for extreme violence against sections of the population. Klein says that Margaret Thatcher applied mild shock ‘therapy’ facilitated by the Falklands War, while free market reform in Bolivia was possible due to a combination of pre-existing economic crises and the charisma of Jeffrey Sachs.

“Part 4 reports on how Klein thinks the shock doctrine was applied in Poland, China, South Africa, Russia, and the Four Asian Tigers. In Poland she discusses how the left-leaning trade union Solidarity won the country’s 1989 legislative elections, but subsequently employed the shock doctrine as result of IMF pressure. The section on China discusses the 1989 Tienanmen Square Protests, and the liberalization of China’s economy. In South Africa she explains that the negotiations to end apartheid resulted in economic policy that went against the core of the Freedom Charter. In Russia she describes how Boris Yeltsin took power after the collapse of the soviet union and crafted economic policy that made the Russian oligarchs of 2020 possible. Finally she shows that during the 1997 Asian financial crisis the Tiger Nations were forced to sell of numerous state enterprises to private, foreign, companies.

“Part 5 introduces the ‘Disaster Capitalism Complex,’ a complex series of networks and influence employed by private companies that allows them to profit off of disasters. She mirrors this new Disaster Capitalism Complex with the Military Industrial Complex and explains that both employ the blurring of the line between private and public, through tactics like the revolving door.

“Part 6 discusses the use of ‘Shock and awe’ in the 2003 invasion of Iraq and the subsequent occupation of Iraq, which Klein describes as the most comprehensive and full-scale implementation of the shock doctrine ever attempted.

“Part 7 is about winners and losers of economic shock therapy - how small groups will often do very well by moving into luxurious gated communities while large sections of the population are left with decaying public infrastructure, declining incomes and increased unemployment. Klein describes economic policy after Hurricane Katrina, the 2004 Sri Lanka Tsunami, and the Apartheid-style policy of the Israeli government toward Palestinians...”

### Suggestions for further reading

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13. Peter Kornbluh, *The Pinochet File: A Declassified Dossier on Atrocity and Accountability* (The New Press, 2013)
14. Cecilia Menjivar and Néstor Rodríguez (eds). *When States Kill: Latin America, the U.S., and Technologies of Terror*. (University of Texas Press, 2005)
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16. J. Patrice McSherry, *Predatory States: Operation Condor and Covert War in Latin America*. (Rowman & Littlefield Publishers, 2005)
17. McSherry, J. Patrice (2011). *Chapter 5: Industrial repression" and Operation Condor in Latin America*. In Esparza, Marcia; Henry R. Huttenbach; Daniel Feierstein (eds.). *State Violence and Genocide in Latin America: The Cold War Years* (Critical Terrorism Studies). Routledge.
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21. *Informe de la Comisión Nacional sobre prisión política y tortura (Report of the National Commission on Political Imprisonment and Torture)*. Santiago de Chile, Ministerio del Interior - Comisión Nacional sobre Prisión Política y Tortura, 2005.

## APPENDIX



## Chapter 5

# WE MUST LEAVE FOSSIL FUELS IN THE GROUND

### 5.1 Blood for oil

There is a close relationship between petroleum and war. James A. Paul, Executive Director of the Global Policy Forum, has described this relationship very clearly in the following words:

“Modern warfare particularly depends on oil, because virtually all weapons systems rely on oil-based fuel - tanks, trucks, armored vehicles, self-propelled artillery pieces, airplanes, and naval ships. For this reason, the governments and general staffs of powerful nations seek to ensure a steady supply of oil during wartime, to fuel oil-hungry military forces in far-flung operational theaters.”

“Just as governments like the US and UK need oil companies to secure fuel for their global war-making capacity, so the oil companies need their governments to secure control over global oilfields and transportation routes. It is no accident, then, that the world’s largest oil companies are located in the world’s most powerful countries.”

“Almost all of the world’s oil-producing countries have suffered abusive, corrupt and undemocratic governments and an absence of durable development. Indonesia, Saudi Arabia, Libya, Iraq, Iran, Angola, Colombia, Venezuela, Kuwait, Mexico, Algeria - these and many other oil producers have a sad record, which includes dictatorships installed from abroad, bloody coups engineered by foreign intelligence services, militarization of government and intolerant right-wing nationalism.”

### The resource curse

The way in which the industrialized countries maintain their control over less developed nations can be illustrated by the “resource curse”, i.e. the fact that resource-rich developing countries are no better off economically than those that lack resources, but are cursed with corrupt and undemocratic governments. This is because foreign corporations extracting

local resources under unfair agreements exist in a symbiotic relationship with corrupt local officials.

One might think that taxation of foreign resource-extracting firms would provide developing countries with large incomes. However, there is at present no international law governing multinational tax arrangements. These are usually agreed to on a bilateral basis, and the industrialized countries have stronger bargaining powers in arranging the bilateral agreements.

## **5.2 Attacks on Iran, past and present**

### **The assassination of General Qasem Soleimani**

On Friday, 3 January, 2020, progressives in the United States and all peace-loving people throughout the world were horrified to learn that Donald Trump had added to his long list of crimes and imbecilities by ordering the assassination of General Qasem Soleimani, who is a hero in his own country, Iran. The murder, which was carried out by means of a drone strike on Friday, immediately and drastically increased the probability of a new large-scale war in the Middle East and elsewhere. Against this background, I would like to review the history of oil-motivated attacks on Iran.

### **The desire to control Iran's oil**

Iran has an ancient and beautiful civilization, which dates back to 5,000 BC, when the city of Susa was founded. Some of the earliest writing that we know of, dating from from approximately 3,000 BC, was used by the Elamite civilization near to Susa. Today's Iranians are highly intelligent and cultured, and famous for their hospitality, generosity and kindness to strangers. Over the centuries, Iranians have made many contributions to science, art and literature, and for hundreds of years they have not attacked any of their neighbors. Nevertheless, for the last century, they have been the victims of foreign attacks and interventions, most of which have been closely related to Iran's oil and gas resources. The first of these took place in the period 1921-1925, when a British-sponsored coup overthrew the Qajar dynasty and replaced it by Reza Shah.

Reza Shah (1878-1944) started his career as Reza Khan, an army officer. Because of his high intelligence he quickly rose to become commander of the Tabriz Brigade of the Persian Cossacks. In 1921, General Edmond Ironside, who commanded a British force of 6,000 men fighting against the Bolsheviks in northern Persia, masterminded a coup (financed by Britain) in which Reza Khan lead 15,000 Cossacks towards the capital. He overthrew the government, and became minister of war. The British government backed this coup because it believed that a strong leader was needed in Iran to resist the Bolsheviks. In 1923, Reza Khan overthrew the Qajar Dynasty, and in 1925 he was crowned as Reza Shah, adopting the name Pahlavi.

Reza Shah believed that he had a mission to modernize Iran, in much the same way

that Kamil Ata Turk had modernized Turkey. During his 16 years of rule in Iran, many roads were built, the Trans-Iranian Railway was constructed, many Iranians were sent to study in the West, the University of Tehran was opened, and the first steps towards industrialization were taken. However, Reza Shah's methods were sometimes very harsh.

In 1941, while Germany invaded Russia, Iran remained neutral, perhaps leaning a little towards the side of Germany. However, Reza Shah was sufficiently critical of Hitler to offer safety in Iran to refugees from the Nazis. Fearing that the Germans would gain control of the Abadan oil fields, and wishing to use the Trans-Iranian Railway to bring supplies to Russia, Britain invaded Iran from the south on August 25, 1941. Simultaneously, a Russian force invaded the country from the north. Reza Shah appealed to Roosevelt for help, citing Iran's neutrality, but to no avail. On September 17, 1941, he was forced into exile, and replaced by his son, Crown Prince Mohammed Reza Pahlavi. Both Britain and Russia promised to withdraw from Iran as soon as the war was over. During the remainder of World War II, although the new Shah was nominally the ruler of Iran, the country was governed by the allied occupation forces.

Reza Shah, had a strong sense of mission, and felt that it was his duty to modernize Iran. He passed on this sense of mission to his son, the young Shah Mohammed Reza Pahlavi. The painful problem of poverty was everywhere apparent, and both Reza Shah and his son saw modernization of Iran as the only way to end poverty.

In 1951, Mohammad Mosaddegh became Prime Minister of Iran through democratic elections. He was from a highly-placed family and could trace his ancestry back to the shahs of the Qajar dynasty. Among the many reforms made by Mosaddegh was the nationalization of the Anglo-Iranian Oil Company's possessions in Iran. Because of this, the AIOC (which later became British Petroleum), persuaded the British government to sponsor a secret coup that would overthrow Mosaddegh. The British asked US President Eisenhower and the CIA to join M16 in carrying out the coup claiming that Mosaddegh represented a communist threat (a ludicrous argument, considering Mosaddegh's aristocratic background). Eisenhower agreed to help Britain in carrying out the coup, and it took place in 1953. The Shah thus obtained complete power over Iran.

The goal of modernizing Iran and ending poverty was adopted as an almost-sacred mission by the young Shah, Mohammed Reza Pahlavi, and it was the motive behind his White Revolution in 1963, when much of the land belonging to the feudal landowners and the crown was distributed to landless villagers. However, the White Revolution angered both the traditional landowning class and the clergy, and it created fierce opposition. In dealing with this opposition, the Shah's methods were very harsh, just as his fathers had been. Because of alienation produced by his harsh methods, and because of the growing power of his opponents, Shah Mohammed Reza Pahlavi was overthrown in the Iranian Revolution of 1979. The revolution of 1979 was to some extent caused by the British-American coup of 1953.

One can also say that the westernization, at which both Shah Reza and his son aimed, produced an anti-western reaction among the conservative elements of Iranian society. Iran was "falling between two stools", on the one hand western culture and on the other hand the country's traditional culture. It seemed to be halfway between, belonging to neither.

Finally in 1979 the Islamic clergy triumphed and Iran chose tradition. Meanwhile, in 1963, the US had secretly backed a military coup in Iraq that brought Saddam Hussein's Ba'ath Party to power. In 1979, when the western-backed Shah of Iran was overthrown, the United States regarded the fundamentalist Shiite regime that replaced him as a threat to supplies of oil from Saudi Arabia. Washington saw Saddam's Iraq as a bulwark against the Shiite government of Iran that was thought to be threatening oil supplies from pro-American states such as Kuwait and Saudi Arabia.

In 1980, encouraged to do so by the fact that Iran had lost its US backing, Saddam Hussein's government attacked Iran. This was the start of an extremely bloody and destructive war that lasted for eight years, inflicting almost a million casualties on the two nations. Iraq used both mustard gas and the nerve gases Tabun and Sarin against Iran, in violation of the Geneva Protocol. Both the United States and Britain helped Saddam Hussein's government to obtain chemical weapons.

The present attacks on Iran by Israel and the United States, both actual and threatened, have some similarity to the war against Iraq, which was launched by the United States in 2003. In 2003, the attack was nominally motivated by the threat that nuclear weapons would be developed, but the real motive had more to do with a desire to control and exploit the petroleum resources of Iraq, and with Israel's extreme nervousness at having a powerful and somewhat hostile neighbor. Similarly, hegemony over the huge oil and gas reserves of Iran can be seen as one the main reasons why the United States is presently demonizing Iran, and this is combined with Israel's almost paranoid fear of a large and powerful Iran. Looking back on the "successful" 1953 coup against Mosaddegh, Israel and the United States perhaps feel that sanctions, threats, murders and other pressures can cause a regime change that will bring a more compliant government to power in Iran - a government that will accept US hegemony. But aggressive rhetoric, threats and provocations can escalate into full-scale war.

I do not wish to say that Iran's present government is without serious faults. However, any use of violence against Iran would be both insane and criminal. Why insane? Because the present economy of the US and the world cannot support another large-scale conflict; because the Middle East is already a deeply troubled region; and because it is impossible to predict the extent of a war which, if once started, might develop into World War III, given the fact that Iran is closely allied with both Russia and China. Why criminal? Because such violence would violate both the UN Charter and the Nuremberg Principles. There is no hope at all for the future unless we work for a peaceful world, governed by international law, rather than a fearful world, where brutal power holds sway.

## **An attack on Iran could escalate**

We recently passed the 100th anniversary World War I, and we should remember that this colossal disaster escalated uncontrollably from what was intended to be a minor conflict. There is a danger that an attack on Iran would escalate into a large-scale war in the Middle East, entirely destabilizing a region that is already deep in problems.

The unstable government of Pakistan might be overthrown, and the revolutionary Pak-

istani government might enter the war on the side of Iran, thus introducing nuclear weapons into the conflict. Russia and China, firm allies of Iran, might also be drawn into a general war in the Middle East.

In the dangerous situation that could potentially result from an attack on Iran, there is a risk that nuclear weapons would be used, either intentionally, or by accident or miscalculation. Recent research has shown that besides making large areas of the world uninhabitable through long-lasting radioactive contamination, a nuclear war would damage global agriculture to such a extent that a global famine of previously unknown proportions would result.

Thus, nuclear war is the ultimate ecological catastrophe. It could destroy human civilization and much of the biosphere. To risk such a war would be an unforgivable offense against the lives and future of all the peoples of the world, US citizens included.

## 5.3 The agony of Iraq

There is a close relationship between petroleum and war. James A. Paul, Executive Director of the Global Policy Forum, has described this relationship very clearly in the following words:

“Modern warfare particularly depends on oil, because virtually all weapons systems rely on oil-based fuel - tanks, trucks, armored vehicles, self-propelled artillery pieces, airplanes, and naval ships. For this reason, the governments and general staffs of powerful nations seek to ensure a steady supply of oil during wartime, to fuel oil-hungry military forces in far-flung operational theaters.”

“Just as governments like the US and UK need oil companies to secure fuel for their global war-making capacity, so the oil companies need their governments to secure control over global oilfields and transportation routes. It is no accident, then, that the world’s largest oil companies are located in the world’s most powerful countries.”

“Almost all of the world’s oil-producing countries have suffered abusive, corrupt and undemocratic governments and an absence of durable development. Indonesia, Saudi Arabia, Libya, Iraq, Iran, Angola, Colombia, Venezuela, Kuwait, Mexico, Algeria - these and many other oil producers have a sad record, which includes dictatorships installed from abroad, bloody coups engineered by foreign intelligence services, militarization of government and intolerant right-wing nationalism.”

Iraq, in particular, has been the scene of a number of wars motivated by the West’s thirst for oil. During World War I, 1914-1918, the British captured the area (then known as Mesopotamia) from the Ottoman Empire after four years of bloody fighting. Although Lord Curzon (a member of the British War Cabinet who became Foreign Minister immediately after the war) denied that the British conquest of Mesopotamia was motivated by oil, there is ample evidence that British policy was indeed motivated by a desire for control of the region’s petroleum. For example, Curzon’s Cabinet colleague Sir Maurice Hankey stated in a private letter that oil was “a first-class war aim”. Furthermore, British forces continued to fight after the signing of the Mudros Armistice.

In this way, they seized Mosul, the capital of a major oil-producing region, thus frustrating the plans of the French, who had been promised the area earlier in the secret Sykes-Picot Agreement. Lord Curzon was well aware of the military importance of oil, and following the end of the First World War he remarked: "The Allied cause has floated to victory on a wave of oil".

The Sykes-Picot Agreement essentially took away from the Arabs the autonomy that they had been promised if they fought on the side of the Allies against the Turks. Today this secret double-cross continues to be a great source of bitterness.<sup>1</sup>

During the period between 1918 and 1930, fierce Iraqi resistance to the occupation was crushed by the British, who used poison gas, airplanes, incendiary bombs, and mobile armored cars, together with forces drawn from the Indian Army. Winston Churchill, who was Colonial Secretary at the time, regarded the conflict in Iraq as an important test of modern military-colonial methods.

An article in *The Guardian* explains that "Churchill was particularly keen on chemical weapons, suggesting that they be used 'against recalcitrant Arabs as an experiment... I am strongly in favour of using poison gas against uncivilized tribes...'"<sup>2</sup>

In 1932, Britain granted nominal independence to Iraq, but kept large military forces in the country and maintained control of it through indirect methods. In 1941, however, it seemed likely that Germany might try to capture the Iraqi oilfields, and therefore the British again seized direct political power in Iraq by means of military force. It was not only Germany that Britain feared, but also US attempts to gain access to Iraqi oil.

The British fear of US interest in Iraqi oil was soon confirmed by events. In 1963 the US secretly backed a military coup in Iraq that brought Saddam Hussein's Ba'ath Party to power. In 1979 the western-backed Shah of Iran was overthrown, and the United States regarded the fundamentalist Shi'ite regime that replaced him as a threat to supplies of oil from Saudi Arabia.

Washington saw Saddam's Iraq as a bulwark against the militant Shi'ite extremism of Iran that was threatening oil supplies from pro-American states such as Kuwait and Saudi Arabia.

In 1980, encouraged to do so by the fact that Iran had lost its US backing, Saddam Hussein's government attacked Iran. This was the start of an extremely bloody and destructive war that lasted for eight years, inflicting almost a million casualties on the two nations. Iraq used both mustard gas and the nerve gases Tabun and Sarin against Iran, in violation of the Geneva Protocol.

Both the United States and Britain helped Saddam Hussein's government to obtain chemical weapons. A chemical plant, called Falluja 2, was built by Britain in 1985, and this plant was used to produce mustard gas and nerve gas. Also, according to the Rigel Report to the US Senate, May 25, (1994), the Reagan Administration turned a blind eye to the export of chemical weapon precursors to Iraq, as well as anthrax and plague cultures

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<sup>1</sup> <https://www.khanacademy.org/humanities/history/euro-hist/middle-east-20th-century/v/sykes-picot-agreement-and-the-balfour-declaration>

<sup>2</sup> <http://www.theguardian.com/world/2003/apr/19/iraq.arts>



that could be used as the basis for biological weapons. According to the Riegel Report, “records available from the supplier for the period 1985 until the present show that during this time, pathogenic (meaning disease producing) and toxigenic (meaning poisonous), and other biological research materials were exported to Iraq pursuant to application and licensing by the US Department of Commerce.”

In 1984, Donald Rumsfeld, Reagan’s newly appointed Middle East Envoy, visited Saddam Hussein to assure him of America’s continuing friendship, despite Iraqi use of poison gas. When (in 1988) Hussein went so far as to use poison gas against civilian citizens of his own country in the Kurdish village of Halabja, the United States worked to prevent international condemnation of the act. Indeed US support for Saddam was so unconditional that he obtained the false impression that he had a free hand to do whatever he liked in the region.

On July 25, 1990, US Ambassador April Glaspie met with Saddam Hussein to discuss oil prices and how to improve US-Iraq relations. According to the transcript of the meeting, Ms Glaspie assured Saddam that the US “had no opinion on the Arab-Arab conflicts, like your border disagreement with Kuwait.” She then left on vacation. Mistaking this conversation for a green light, Saddam invaded Kuwait eight days later.

By invading Kuwait, Hussein severely worried western oil companies and governments, since Saudi Arabia might be next in line. As George Bush senior said in 1990, at the time of the Gulf War, “Our jobs, our way of life, our own freedom and the freedom of friendly countries around the world would all suffer if control of the world’s great oil reserves fell into the hands of Saddam Hussein.”

On August 6, 1990, the UN Security Council imposed comprehensive economic sanctions against Iraq with the aim of forcing Iraq to withdraw from Kuwait. Meanwhile, US Secretary of State James A. Baker III used arm-twisting methods in the Security Council to line up votes for UN military action against Iraq. In Baker’s own words, he undertook the process of “cajoling, extracting, threatening and occasionally buying votes”.

On November 29, 1990, the Council passed Resolution 678, authorizing the use of “all necessary means” (by implication also military means) to force Iraq to withdraw from Kuwait. There was nothing at all wrong with this, since the Security Council had been set up by the UN Charter to prevent states from invading their neighbors. However, one can ask whether the response to Saddam Hussein’s invasion of Kuwait would have been so wholehearted if oil had not been involved.

There is much that can be criticized in the way that the Gulf War of 1990-1991 was carried out. Besides military targets, the US and its allies bombed electrical generation facilities with the aim of creating postwar leverage over Iraq. The electrical generating plants would have to be rebuilt with the help of foreign technical assistance, and this help could be traded for postwar compliance. In the meantime, hospitals and water-purification plants were without electricity. Also, during the Gulf War, a large number of projectiles made of depleted uranium were fired by allied planes and tanks. The result was a sharp increase in cancer in Iraq.

Finally, both Shi’ites and Kurds were encouraged by the Allies to rebel against Saddam Hussein’s government, but were later abandoned by the allies and slaughtered by Saddam.

The most terrible misuse of power, however, was the US and UK insistence the sanctions against Iraq should remain in place after the end of the Gulf War. These two countries used their veto power in the Security Council to prevent the removal of the sanctions. Their motive seems to have been the hope that the economic and psychological impact would provoke the Iraqi people to revolt against Saddam. However that brutal dictator remained firmly in place, supported by universal fear of his police and by massive propaganda. The effect of the sanctions was to produce more than half a million deaths of children under five years of age, as is documented by UNICEF data. The total number of deaths that the sanctions produced among Iraqi civilians probably exceeded a million, if older children and adults are included.<sup>3</sup>

Ramsey Clark, who studied the effects of the sanctions in Iraq from 1991 onwards, wrote to the Security Council that most of the deaths “are from the effects of malnutrition including marasmas and kwashiorkor, wasting or emaciation which has reached twelve per cent of all children, stunted growth which affects twenty-eight per cent, diarrhea, dehydration from bad water or food, which is ordinarily easily controlled and cured, common communicable diseases preventable by vaccinations, and epidemics from deteriorating sanitary conditions. There are no deaths crueler than these. They are suffering slowly, helplessly, without simple remedial medication, without simple sedation to relieve pain, without mercy.”

In discussing Iraq, we mentioned oil as a motivation for western interest. Similar considerations hold also for Afghanistan. US-controlled oil companies have long had plans for an oil pipeline from Turkmenistan, passing through Afghanistan to the Arabian Sea, as well as plans for a natural gas pipeline from Turkmenistan through Afghanistan to Pakistan.

The September 11 terrorist attacks resulted in a spontaneous worldwide outpouring of sympathy for the United States, and within the US, patriotic support of President George W. Bush at a time of national crisis. Bush’s response to the attacks seems to have been to inquire from his advisors whether he was now free to invade Iraq. According to former counterterrorism chief, Richard Clarke, Bush was “obsessed” with Iraq as his principal target after 9/11.

The British Prime Minister, Tony Blair, was a guest at a private White House dinner nine days after the terrorist attacks on New York and Washington. Sir Christopher Meyer, former UK Ambassador to Washington, was also present at the dinner. According to Meyer, Blair said to Bush that they must not get distracted from their main goal - dealing with the Taliban and al-Qaeda in Afghanistan, and Bush replied: “I agree with you Tony. We must deal with this first. But when we have dealt with Afghanistan, we must come back to Iraq.” Faced with the prospect of wars in both Iraq and Afghanistan, Blair did not protest, according to Meyer.

During the summer of 2002, Bush and Blair discussed Iraq by telephone. A senior

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<sup>3</sup> <https://www.transcend.org/tms/2014/09/usauk-committed-genocide-against-iraq-people/>  
<http://www.informationclearinghouse.info/article37511.htm>

official from Vice-President Dick Cheney's office who read the transcript of the call is quoted by the magazine *Vanity Fair* as saying: "The way it read was that come what may, Saddam was going to go; they said that they were going forward, they were going to take out the regime, and they were doing the right thing. Blair did not need any convincing. There was no 'Come on, Tony, we've got to get you on board'. I remember reading it and then thinking, 'OK, now I know what we're going to be doing for the next year.'" On June 1, 2002, Bush announced a new US policy which not only totally violated all precedents in American foreign policy but also undermined the United Nations Charter and international law<sup>6</sup>. Speaking at the graduation ceremony of the US Military Academy at West Point he asserted that the United States had the right to initiate a preemptive war against any country that might in the future become a danger to the United States. "If we wait for threats to fully materialize", he said, "we will have waited too long." He indicated that 60 countries might fall into this category, roughly a third of the nations of the world.

The assertion that the United States, or any other country, has the right to initiate preemptive wars specifically violates Chapter 1, Articles 2.3 and 2.4, of the United Nations Charter. These require that "All members shall settle their disputes by peaceful means in such a manner that international peace, security and justice are not endangered", and that "All members shall refrain in their international relations from the threat or use of force against the territorial integrity of any state, or in any other manner inconsistent with the purposes of the United Nations." The UN Charter allows a nation that is actually under attack to defend itself, but only until the Security Council has had time to act.

Bush's principle of preemptive war was promptly condemned by the Catholic Church. Senior Vatican officials pointed to the Catholic teaching that "preventive" war is unjustifiable, and Archbishop Renato Martino, prefect of the Vatican Council for Justice and Peace, stated firmly that "unilateralism is not acceptable".

However, in the United States, the shocking content of Bush's West Point address was not fully debated. The speech was delivered only a few months after the 9/11 terrorist attacks, and the US supported whatever exceptional measures its President thought might be necessary for the sake of national security. American citizens, worried by the phenomenon of terrorism, did not fully appreciate that the principle of preemptive war could justify almost any aggression, and that in the long run, if practiced by all countries, it would undermine the security of the United States as well as that of the entire world.

During the spring of 2003, our television and newspapers presented us with the spectacle of an attack by two technologically superior powers on a much less industrialized nation, a nation with an ancient and beautiful culture. The ensuing war was one-sided. Missiles guided by laser beams and signals from space satellites were more than a match for less sophisticated weapons. Speeches were made to justify the attack. It was said to be needed because of weapons of mass destruction (some countries are allowed to have them, others not). It was said to be necessary to get rid of a cruel dictator (whom the attacking powers had previously supported and armed). But the suspicion remained that the attack was resource-motivated. It was about oil, or at least largely about oil. The war on Iraq was also designed to destroy a feared enemy of Israel.

The Nobel Peace Prize winner, Mairead Corrigan Maguire estimates that US and UK

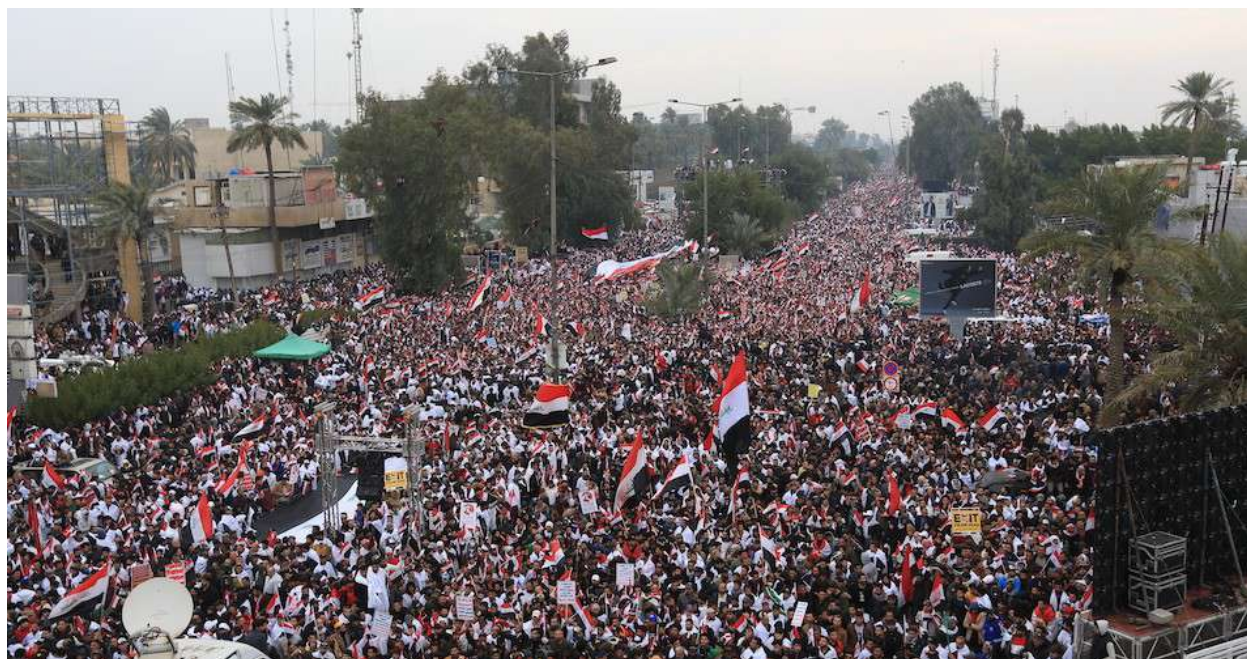


Figure 5.1: Over 200,000 Iraqis gathering at Jadariya, a neighborhood in the Baghdad city center at a rally against the presence of U.S. troops in the country, in Baghdad, Iraq on January 24, 2020. Demonstrators rejected foreign influence in their country's affairs.

actions between 1990 and 2012 killed 3.3 million people, including 750,000 children.

## Venezuela also targeted because of oil

An article entitled *U.S.-backed coup in Venezuela moves into "final phase" April 30, 2019* 12:04 PM CST By C.J. Atkins<sup>4</sup> stated that

**In an all-or-nothing gamble, the Trump administration's man in Caracas, opposition leader Juan Guaidó, has opened what he's calling the "final phase" of the effort to overthrow the elected government of Venezuela.**

## Pipeline wars

It is disturbing to see how little effect the the earth's present critical climate emergency has on the behavior of politicians and the mass media. Recent data show that the earth is heating much faster than expected, and that this is most pronounced in the Arctic and Antarctic regions. An extremely dangerous methane hydrate feedback loop could be initiated by melting permafrost and by the warming Arctic seas. This feedback loop could

<sup>4</sup><https://www.peoplesworld.org/article/u-s-backed-coup-in-venezuela-moves-into-final-phase/>



Figure 5.2: **A view of oil refineries from the Galveston Channel in Texas (Photo: Roy Luck/flick/CC)**

lead to uncontrollable and catastrophic climate change. But although the use of fossil fuels must stop within one or two decades if a planetary disaster is to be avoided, pipeline wars continue as usual.<sup>5</sup>

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<sup>5</sup><http://www.commondreams.org/news/2016/03/14/nasa-drops-major-bomb-march-toward-ever-warmer-planet>  
<http://www.theguardian.com/environment/2016/mar/15/record-breaking-temperatures-have-robbed-the-arctic-of-its-winter>

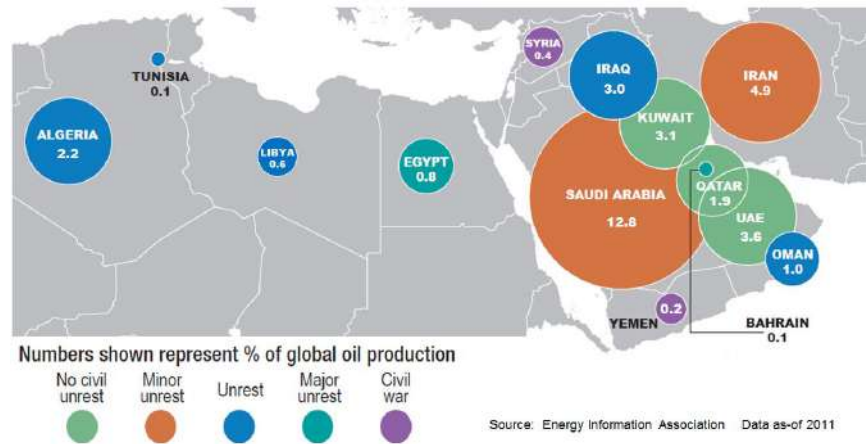


Figure 5.3: A map showing the major oil-producing countries of the Middle East and North Africa. The percent of global oil production is indicated. Many of the countries shown have some degree of civil unrest or civil war.



Figure 5.4: Burning of coal in China has contributed to rapid industrial growth, but besides being a major factor in the threat of catastrophic climate change, it has produced hundreds of thousands of deaths each year through air pollution (an estimated 366,000 in 2013).

## 5.4 The Middle East

According to current estimates, 81.5% of the world's proven crude oil reserves are located in OPEC Member Countries, with the bulk of OPEC oil reserves in the Middle East, amounting to 65.5% of the OPEC total.

## 5.5 China

China's large reserves of coal lie near to the surface, and are thus very easily accessible. Mining of coal has driven the country's rapid industrial growth, but it has also produced a severe public health problem because of air pollution.

In April, 2017, China's rate of economic growth was 6.9%<sup>6</sup>. This rate of growth, if continued, would mean that China's economy would double every ten years. and increase by a factor of 1024 every century. Obviously this is impossible. Never-ending economic growth on a finite planet is a logical absurdity. China's high economic growth rate, is driven by its use of coal, and this must quickly stop if ecological disaster is to be avoided.

## 5.6 India

The MIT Technology Review recently published an important article entitled *India's Energy Crisis*<sup>7</sup>.

The article makes alarming reading in view of the world's urgent need to make a very rapid transition from fossil fuels to 100% renewable energy. We must make this change quickly in order to avoid a tipping point beyond which catastrophic climate change will be unavoidable.

The MIT article states that "Since he took power in May, 2014, Prime Minister Narendra Modi has made universal access to electricity a key part of his administration's ambitions. At the same time, he has pledged to help lead international efforts to limit climate change. Among other plans, he has promised to increase India's total power generating capacity to 175 gigawatts, including 100 gigawatts of solar, by 2022. (That's about the total power generation of Germany.)"

However India plans to expand its industrial economy, and to do this, it is planning to very much increase its domestic production and use of coal. The MIT article continues, pointing out that

However India plans to expand its industrial economy, and to do this, it is planning to very much increase its domestic production and use of coal. The MIT article continues, pointing out that "Such growth would easily swamp efforts elsewhere in the world to curtail carbon emissions, dooming any chance to head off the dire effects of global climate change. (Overall, the world will need to reduce its current annual emissions of 40 billion tons by 40

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<sup>6</sup><https://tradingeconomics.com/china/gdp-growth-annual>

<sup>7</sup><http://www.technologyreview.com/featuredstory/542091/indias-energy-crisis/>



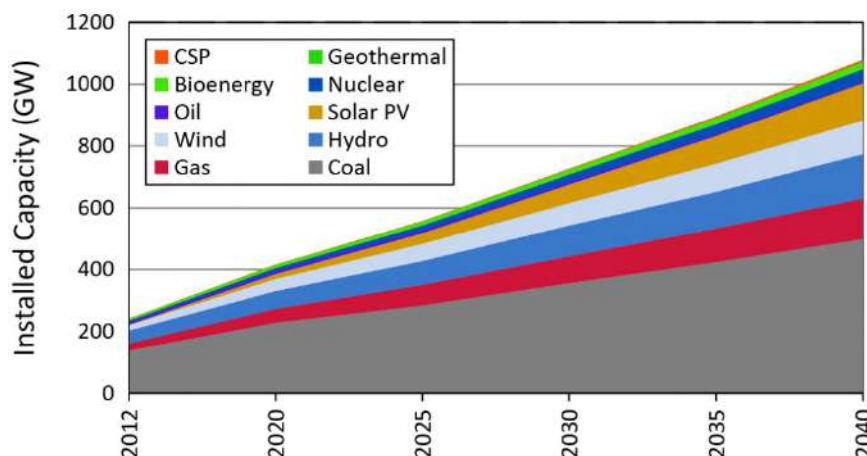


Figure 5.5: **India's installed and future energy mix, as visualized by the World Coal Association**

to 70 percent between now and 2050.) By 2050, India will have roughly 20 percent of the world's population. If those people rely heavily on fossil fuels such as coal to expand the economy and raise their living standards to the level people in the rich world have enjoyed for the last 50 years, the result will be a climate catastrophe regardless of anything the United States or even China does to decrease its emissions. Reversing these trends will require radical transformations in two main areas: how India produces electricity, and how it distributes it."

The Indian Minister of Power, Piyush Goyal, is an enthusiastic supporter of renewable energy expansion, but he also supports, with equal enthusiasm, the large-scale expansion of domestic coal production in India.

Meanwhile, the consequences of global warming are being felt by the people of India. For example, last May, a heat wave killed over 1,400 people and melted asphalt streets.<sup>8</sup>

Have India's economic planners really thought about the long-term future? Have they considered the fact that drastic climate change could make India completely uninhabitable?

## 5.7 Russia

According to Wikipedia, "The petroleum industry in Russia is one of the largest in the world. Russia has the largest reserves, and is the largest exporter, of natural gas. It has the second largest coal reserves, the eighth largest oil reserves, and is one of the largest producer of oil. It is the third largest energy user."

One of the difficulties of reducing Russia's fossil fuel production is that the Russian economy depends so heavily on its oil and gas industries. Many European countries also depend on natural gas from Russia for winter heating of homes and workplaces.

<sup>8</sup><https://www.rt.com/news/262641-india-heat-wave-killed/>





Figure 5.6: Protesters at the 2017 G20 meeting in Hamburg Germany.



Figure 5.7: Oil production on the shelf in the Russian Arctic.

## 5.8 North America

### Canadian oil sands

Canada's oil-sands deposits contain an amount of carbon comparable to the world's total reserves of conventional oil. Oil is currently being extracted by methods that release four times as much carbon into the atmosphere as is contained in the refined oil from the deposits. Nevertheless, the government of Canada wholeheartedly supports extraction of oil from the tar sands.

The position of the Canadian government has been strongly criticized by leading climate scientist Professor James Hansen. A recent article in *The Guardian*<sup>9</sup>, reported him as saying; "To leave our children with a manageable situation, we need to leave the unconventional fuel in the ground. Canada's ministers are acting as salesmen for those people who will gain from the profits of that industry. But I don't think they are looking after the rights and wellbeing of the population as a whole.

"The thing we are facing overall is that the fossil fuel industry has so much money that they are buying off governments. Our democracies are seriously handicapped by the money that is driving decisions in Washington and other capitals."

### Fracking in the United States

According to the US Department of Energy (DOE), in 2013 at least two million oil and gas wells in the US have been hydraulically fractured, and that of new wells being drilled, up to 95% are hydraulically fractured. The output from these wells makes up 43% of the oil production and 67% of the natural gas production in the United States.

Because of earthquakes and poisoning of water supplies caused by fracking, this practice has been banned by several states in the US, and nine countries or regions in Europe: France, Bulgaria, Roumania, Germany, The Czech Republic, Luxembourg, Northern Ireland, Spain and Switzerland,

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<sup>9</sup><https://www.theguardian.com/environment/2013/may/19/tar-sands-exploitation-climate-scientist>



Figure 5.8: Get rich quick at the oil sands.

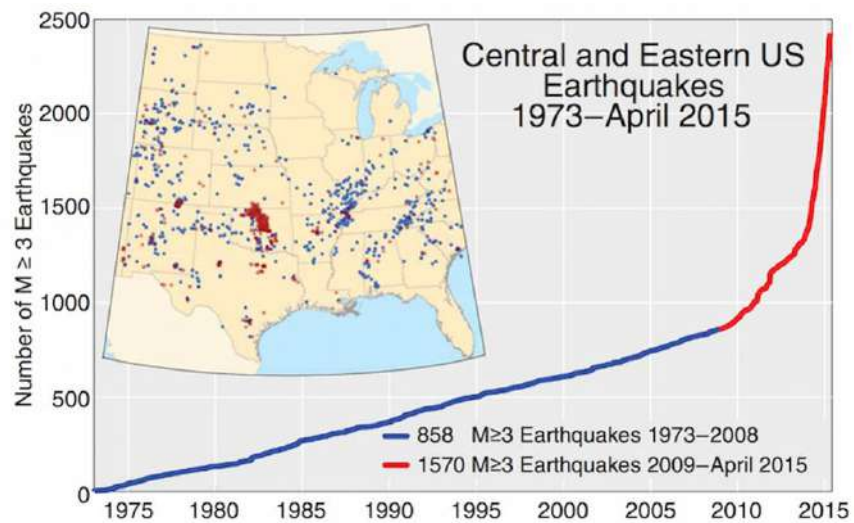


Figure 5.9: The sharply increased number of earthquakes in the United States has been linked to fracking. The use of fracking has also caused poisoning of water supplies.

## 5.9 Latin America

### Venezuela's Belt of Tar

The Orinoco River Basin in Venezuela contains the world's largest deposit of extra-heavy oil and tar. The amount of carbon contained in this deposit is comparable to the carbon content of all the world's known reserves of conventional oil, and also larger than the carbon contained in Canada's oil sands.

The Belt of Tar follows the line of the Orinoco river. It is approximately 600 kilometers (370 mi) from east to west, and 70 kilometers (43 mi) from north to south, with an area about 55,314 square kilometers (21,357 sq mi). The Orinoco deposit is estimated to contain 1.2 trillion barrels of extra-heavy oil.

The government of Venezuela has no plans for halting extraction from the Belt of Tar. On the contrary, detailed plans have been made for expanded exploitation of the deposit<sup>10</sup>.

### Extraction of oil in Brazil

According to a recent article in *The Guardian*<sup>11</sup> "The discovery of tens of billions of barrels of oil in fields far off the coast of Rio de Janeiro was billed as one of the biggest finds of this century when it was announced in 2006.

"Many hoped it would deliver a bonanza for education and health and make Brazil one of world's major economies.

"But with the country's biggest energy company, Petrobras, mired in debt and scandal, the low price of oil and the dangers of a second Deepwater Horizon, the viability of this massive undertaking has never been under more scrutiny."

The Brazilian offshore deposits are called "presalt oil", since they lie under a thick layer of salt deposits.

According to the article in *The Guardian*, "Suggestions by climate campaigners that this reservoir of fossil fuel is a 'carbon bomb' that should be left in the ground, are dismissed as hypocrisy."

The article quotes the geologist who discovered the off-shore fields as saying "The big countries of the world today developed without any concern for the environment. The base of US development was the oil in the Gulf of Mexico. The base of the UK's industrial revolution was coal. How can they now say we can't use our own pre-salt?"

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<sup>10</sup><https://en.wikipedia.org/wiki/PDVSA>

<sup>11</sup><https://www.theguardian.com/environment/ng-interactive/2015/jun/25/brazils-gamble-on-deep-water-oil-guanabara-bay>



Figure 5.10: Venezuela's Belt of Tar under the Orinoco River Basin is the world's largest deposit of extra-heavy oil and tar.

## 5.10 The European Union

### Coal in Germany and Poland

In 2016, Germany produced 176,100,000 tonnes of coal while Poland produced 131,100,000 tonnes. In the past, Poland experienced severe ecological effects from acid rain due to the burning of coal. Polish forests were destroyed by the effects of acid rain, and the facades of statues and buildings in Krakow and elsewhere were dissolved by the acid. Today the situation is improving, but the two countries are still heavily dependant on coal.

### North Sea oil

According to Wikipedia, “The British and Norwegian sections hold most of the remainder of the large oil reserves. It is estimated that the Norwegian section alone contains 54% of the sea’s oil reserves and 45% of its gas reserves- More than half of the North Sea oil reserves have been extracted, according to official sources in both Norway and the UK. For Norway, the Norwegian Petroleum Directorate [28] gives a figure of 4,601 million cubic meters of oil (corresponding to 29 billion barrels) for the Norwegian North Sea alone (excluding smaller reserves in Norwegian Sea and Barents Sea) of which 2,778 million cubic meters (60%) has already been produced prior to January 2007. UK sources give a range of estimates of reserves, but even using the most optimistic ‘maximum’ estimate of ultimate recovery, 76% had been recovered at end 2010.[citation needed] Note the UK figure includes fields which are not in the North Sea (onshore, West of Shetland).

## 5.11 Major producers of fossil fuels

### The top 20 oil-producing nations in 2016

Wikipedia’s article entitles *List of countries by oil production* gives information shown in the table below. In the table, which is based on data from the International Energy Agency, production is measured in barrels of oil per day

1	Russia	10,551,497
2	Saudi Arabia	10,460,710
3	United States	8,875,817
4	Iraq	4,451,516
5	Iran	3,990,956
6	China	3,980,650
7	Canada	3,662,694
8	United Arab Emirates	3,106,077
9	Kuwait	2,923,825
10	Brazil	2,515,459
11	Venezuela	2,276,967
12	Mexico	2,186,877
13	Nigeria	1,999,885
14	Angola	1,769,615
15	Norway	1,647,975
16	Kazakhstan	1,595,199
17	Qatar	1,522,902
18	Algeria	1,348,361
19	Oman	1,006,841
20	United Kingdom	939,760

### The top 10 coal producing nations in 2016

Wikipedia gives a similar list of coal producing nations. Only the top 10 are shown here, since these countries completely dominate global coal production. In the table, production is measured in millions of tonnes per year.

1	China	3411.0
2	India	692.4
3	United States	660.6
4	Australia	492.8
5	Indonesia	434.0
6	Russia	385.4
7	South Africa	251.3
8	Germany	176.1
9	Poland	131.1
10	Kazakhstan	102.4
	World	7,460.4

The world production of coal is falling. In 2014 it was 8,164.9 tonnes, in 2015, 7,861.1 tonnes, and in 2016 7,460.4 tonnes. Nevertheless, global production of coal remains worryingly high. If catastrophic climate change is to be avoided, it must stop altogether within one or two decades. At the moment the world is still producing roughly 1 tonne of coal per capita each year.

## List of countries by natural gas production

Here is a similar table for natural gas. Production is measured in m<sup>3</sup> per year. The final column indicates the date of the data.

1	United States	728,200,000,000	2014
2	Russia	578,700,000,000	2014
3	Iran	438,000,000,000	2017
4	Canada	143,100,000,000	2012
5	Qatar	133,200,000,000	2011
6	Norway	114,700,000,000	2012
7	China	107,200,000,000	2012
8	Saudi Arabia	103,200,000,000	2012
9	Algeria	82,760,000,000	2011
10	Netherlands	80,780,000,000	2012
	World	4,359,000,000,000	2010

## 5.12 Fossil fuel extraction must stop!

“Leave the oil in the soil! Leave the coal in the hole! Leave the gas under the grass!” That was message of protesters at the 2017 G20 meeting. But from the facts shown in this chapter, we can see that on the whole, fossil fuels are not being left in the ground, where they have to remain if an ecological disaster is to be avoided. On the contrary, the extraction of coal, oil and gas continues almost as though the climate emergency did not exist. Most politicians, with their eyes focused on the present, seem blind to future dangers. They think primarily about the jobs and living standards of their constituents, and about the next election. Meanwhile, the future of human civilization is neglected and remains in peril.<sup>12</sup>

The fact that historically, the highly industrialized nations were primarily responsible for atmospheric CO<sub>2</sub> increases does not excuse the developing countries from their responsibility for saving the future. Today China’s coal, India’s coal, Venezuela’s tar sands and Brazil’s pre-salt oil are among the greatest threats, and in these countries as elsewhere, extraction must stop.

We have to wake up! Business as usual cannot continue!

### Excerpts from Boris Johnson’s speech

“Good afternoon, everybody. Welcome to COP. Welcome to Glasgow and to Scotland, whose most globally famous fictional son is almost certainly a man called James Bond, who generally comes to the climax of his highly lucrative films, strapped to a doomsday device, desperately trying to work out which

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<sup>12</sup>See <https://www.theguardian.com/commentisfree/2017/sep/18/enough-tiptoeing-around-lets-make-this-clear-coal-kills-people>



colored wire to pull to turn it off, while a red digital clock ticks down remorselessly to a detonation that will end human life as we know it. And we are in roughly the same position, my fellow global leaders, as James Bond today. Except that the tragedy is this is not a movie, and the doomsday device is real. And the clock is ticking to the furious rhythm of hundreds of billions of pistons and turbines and furnaces and engines with which we are pumping carbon into the air faster and faster, record outputs, and quilting the earth in an invisible and suffocating blanket of CO<sub>2</sub>, raising the temperature of the planet with a speed and an abruptness that is entirely man-made. And we know what the scientists tell us, and we have learned not to ignore them.

“Two degrees more, and we jeopardize the food supply for hundreds of millions of people as crops, wither locusts swarm. Three degrees and you can add more wildfires and cyclones, twice as many, five times as many droughts, and 36 times as many heat waves. Four degrees, and we say goodbye to whole cities. Miami, Alexandria, Shanghai, all lost beneath the waves. And the longer we fail to act, the worse it gets and the higher the price when we are eventually forced, by catastrophe, to act. Because humanity has long since run down the clock on climate change. It’s one minute to midnight on that doomsday clock, and we need to act now. If we don’t get serious about climate change today, it will be too late for our children to do so tomorrow.

“I was there with many of you in Copenhagen 11 years ago, when we acknowledged we had a problem. I was there in Paris six years ago when we agreed to net zero, and to try to restrain the rise in the temperature of the planet to 1.5 degrees. And all those promises will be nothing but ‘blah, blah, blah,’ to coin a phrase, and the anger and the impatience of the world will be uncontainable unless we make this COP26 in Glasgow the moment when we get real about climate change.

“And we can. We can get real on coal, cars, cash, and trees. We have the technology to deactivate that ticking doomsday device. Not all at once. I’m afraid it’s too late for that. But one by one, and with ever greater speed and efficiency, we can begin to close down those billions of hydrocarbon combustion chambers that you find currently in every corner of the planet...”

### Excerpts from Antonio Guterres’ speech

The six years since the Paris Climate Agreement have been the six hottest years on record. Our addiction to fossil fuels is pushing humanity to the brink.

We face a stark choice. Either we stop it - or it stops us.

It’s time to say ‘enough’. Enough of brutalizing biodiversity, killing ourselves with carbon, treating nature like a toilet, burning, and drilling and mining our way deeper... We are digging our own graves-

G20 countries have a particular responsibility as they represent around 80 per cent of emissions.

We need maximum ambition - from all countries on all fronts - to make Glasgow a success.

### Excerpts from Prince Charles' speech

"Prime Minister, thank you for inviting me to address this immensely important meeting. You have many pressing issues of the day but none is more pressing than the future health of our planet and of the people who inhabit it. The planet's health today will dictate the health, happiness and economic prosperity of generations to come - hence our overwhelming responsibility to generations yet unborn.

"Now after, I suppose, very nearly fifty years of trying to raise awareness of the growing climate and environmental crisis, I am at last sensing a change in attitudes and the build-up of positive momentum.

"As you know, listening is often more important than speaking and I have listened closely to leaders of many countries, particularly Commonwealth nations, whose communities are some of the most climate-vulnerable on this Earth. It is also impossible not to hear the despairing voices of young people who see you, ladies and gentlemen, as the stewards of the planet, holding the viability of their future in your hands. And I have listened to those leaders of the private sector who are now more and more anxious to invest in the projects and new technologies that could establish a more rapid transition to sustainability. Some 300 of the world's top C.E.O.'s from every sector of the economy, including financial services, representing well over sixty trillion dollars of assets under management, joined my Sustainable Markets Initiative and demonstrated how acutely sensitive they are to the way both consumers, who control more than sixty per cent of global G.D.P., and shareholders who are now demanding changes in the way businesses behave. Which is why they want to make a big difference with the kind of investment only they can provide.

"Following the recent COP15 Biodiversity meeting in China and with this week's COP26 Climate Change conference in the United Kingdom, it is only too clear that we will need trillions of dollars of investment every year to create the necessary new infrastructure and meet the vital 1.5 degree climate target that will save our forests and farms, our oceans and our wildlife. No government has those sorts of sums - which is why I have spent so much time over the past nineteen months trying to form a global alliance amongst the private sector, as I have long believed it holds the ultimate key to the solutions we seek. That is why, Prime Minister, I am so grateful to you for recognizing this central truth and for bringing them in; giving them a seat at this most important table so that climate change can be tackled in partnership. It is why I also wish President Widodo every possible success when you pass the baton to him in a month's time..."



Figure 5.11: 95-year-old British broadcaster and naturalist Sir David Attenborough speaks during the opening ceremony of the COP26 U.N. Climate Summit, in Glasgow, Scotland, Nov. 1, 2021. His speech drew a standing ovation from the other delegates.

### Excerpts from Sir David Attenborough's speech

Sir David spoke for seven minutes alongside screens showing a graph that tracked the rise of carbon concentration in the Earth's atmosphere. He began by describing an era before the Earth's climate was stable, describing it as a "brutal world." But he said that by 10,000 years ago the temperature had stabilized, which led to a period that allowed civilizations to flourish - and that situation had stayed the same, "until now."

"As you spend the next two weeks debating, negotiating, persuading, and compromising as you surely must, it's easy to forget that ultimately the emergency of the climate comes down to a single number - the measure of carbon dioxide in our atmosphere.

"Our burning of fossil fuels, our destruction of nature, our approach to industry, construction and learning, are releasing carbon into the atmosphere at an unprecedented pace and scale,.. We are already in trouble.

"If working apart we are a force powerful to destabilize our planet, surely working together we are powerful enough to save it...

"Today the ones that did the least to cause this crisis are the ones experiencing the most impact...

"In my lifetime I've witnessed a terrible decline. In yours, you could and should witness a wonderful recovery."

## 5.13 Xi Jinping and Putin absent from COP26

### China: the world's largest greenhouse gas emitter

Today, China is the world's largest emitter of greenhouse gasses. This is mainly due to the massive Chinese use of coal to power the country's industries. Large deposits of coal lie near to the surface throughout the country, and the temptation to use it has been irresistible. One result has been a terrible air pollution problem. which causes hundreds of thousands of deaths per year.

The Chinese economy is currently growing at the rate of roughly 5% per year. If the earth is to be saved from catastrophic climate change, both China's greenhouse gas emissions and its enormous rate of economic growth must stop quickly, but the political will for these changes is lacking. The ordinary people of China have been lifted out of poverty by China's rapidly growing economy, and they have no wish to slow that growth.

Before very long, China's economic growth must certainly stop, simply because the endless growth of anything physical on a finite planet is a logical impossibility.



Figure 5.12: Air pollution from the burning of coal has become a serious problem in China.

## **The Russian economy depends on gas and oil**

### **Russia supplies Europe with gas**

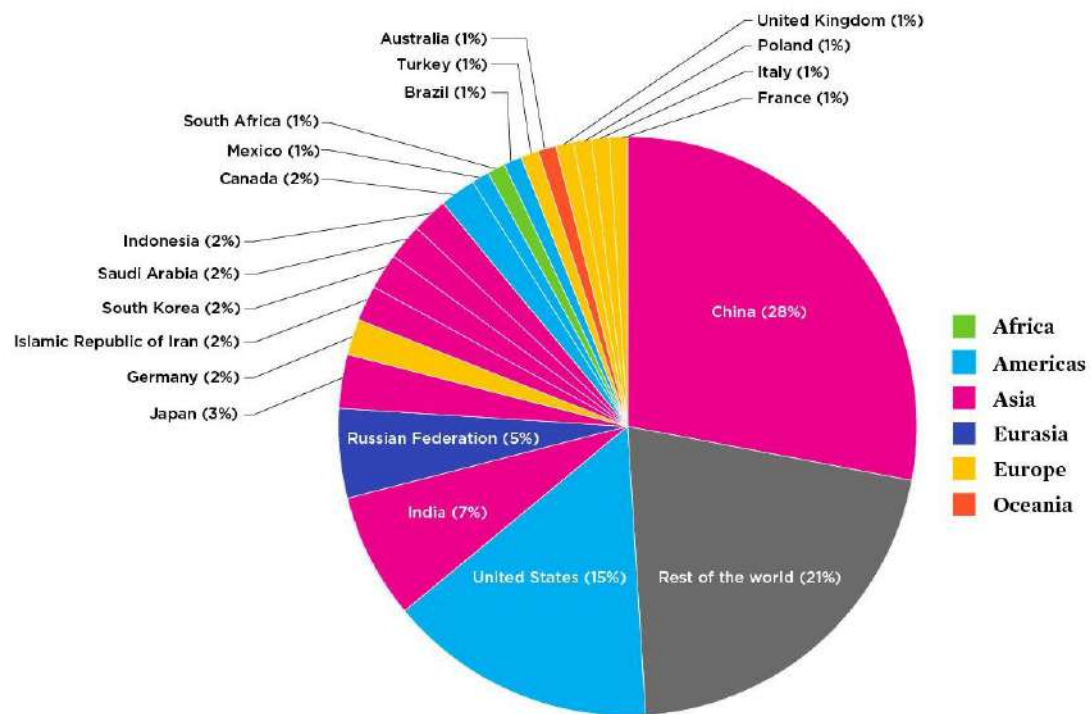
During a televised meeting on October 27, 2021, Vladimir Putin told Gazprom CEO Aleksei Miller to finish filling underground gas storage facilities in Russia by November 8, and to then “start gradually increasing the volume of gas” in the company’s storage facilities in Austria and Germany.

### **Russian extraction of oil**

Russia is the third-largest producer of oil worldwide, accounting for over 12 percent of global crude oil production.

### **Wildfires in Siberia**

On one level, the Siberian fires are part of an annual cycle. But many climate experts see the staggering scope of this year’s fires as another sign of greater fire risks on a warming planet that is potentially being made even hotter by huge carbon emissions from the blazes.



© 2020 Union of Concerned Scientists  
Data: Earth Systems Science Data 11, 1783–1838, 2019

Figure 5.13: China, India, the United States and Russia, together, emit more greenhouse gases than the rest of the world.

## 5.14 Joe Biden's climate hypocrisy exposed

### Biden asked OPEC to increase oil production

On Wednesday, August 11, 2021, US President Joe Biden asked the OPEC nations to increase their oil production. He did this because of rising petroleum prices in the United States, but the move contradicts his promises to act boldly to save the earth from catastrophic climate change.

### Biden continues to grant oil exploration leases

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Here are some quotations from an article by Kenny Stancil, published on November 3, 2021, in Truthout:

“As U.S. President Joe Biden professed Washington’s alleged commitment to decarbonization during the ongoing COP26 climate summit, the White House on Tuesday authorized more fossil fuel pollution - advancing its plan to sell oil and gas leases on public lands even after concluding that the resultant emissions could generate billions of dollars in social and ecological damage.

“Environmental advocates denounced the Biden administration’s decision, which came the same day the U.S. rejoined the so-called High Ambition Coalition, as ‘scientifically ignorant and legally indefensible.’

“ ‘While President Biden is talking a good talk on climate action, the reality is his administration is actively working to fan the flames of the climate crisis by selling more public lands for fracking,’ Jeremy Nichols, climate and energy program director for WildEarth Guardians, said in a statement. ‘This isn’t just hypocritical, it’s outright deceitful and it truly calls into question whether the Biden administration’s climate agenda is nothing but broken promises’.”

### The Production Gap

Here are some quotations from the Executive Summary of the 80-page United Nations report, *The Production Gap*<sup>13</sup>:

Governments are planning to produce about 50% more fossil fuels by 2030 than would be consistent with a 2 degree C pathway and 120% more than would be consistent with a 1.5 degree C pathway...

- This production gap is largest for coal. By 2030, countries plan to produce 150% (5.2 billion tonnes) more coal than would be consistent with a 2

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<sup>13</sup><http://productiongap.org/wp-content/uploads/2019/11/Production-Gap-Report-2019.pdf>

degrees C pathway, and 280% (6.4 billion tonnes) more than would be consistent with a 1.5 degree C pathway.

- Oil and gas are also on track to exceed carbon budgets, as countries continue to invest in fossil fuel infrastructure that ‘locks in’ oil and gas use. The effects of this lock-in widen the production gap over time, until countries are producing 43% (36 million barrels per day) more oil and 47% (1,800 billion cubic meters) more gas by 2040 than would be consistent with a 2 degree C pathway.

This global production gap is even larger than the already-significant global emissions gap, due to minimal policy attention on curbing fossil fuel production.

## 5.15 “Phase down coal” instead of “Phase out coal”

The final document of COP26 gave some promise of progress towards reducing emissions of greenhouse gases, but not nearly enough. Among the glaring shortcomings of the final declaration was a last-minute change of wording forced through by China and India. Instead of calling for coal to be phased out, the final document now calls for coal to be “phases down”, a fatal weakening of the goal. China is currently the largest emitter of greenhouse gases, although the country’s per-capita emissions are relatively low.

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## Chapter 6

# WE MUST STABILIZE AND ULTIMATELY REDUCE POPULATION

### 6.1 All the needed reforms are desirable in themselves

Experts agree that the following steps are needed if we are to avoid a catastrophic global famine and population crash:

1. Higher education and higher status for women throughout the world. Women need higher education to qualify for jobs outside their homes, and higher status within their families so they will not be forced into the role of baby-producing machines.
2. Primary health care for all. Children should be vaccinated against preventable diseases. Materials and information for family planning should be provided for all women who desire smaller families. Advice should be given on improving sanitation.
3. The provision of clean water supplies near to homes is needed in order to reduce the incidence of water-borne diseases. In some countries today, family members, including children, spend large amounts of time carrying water home from distant sources.
4. State provision of care for the elderly is a population-stabilization measure because in many countries, parents produce many children so that the children will provide for them in their old age.
5. In many countries child labor is common, and in some there is even child slavery. Parents who regard their children as a source of income are motivated to produce large families. Enforceable laws against child labor and slavery contribute to population stabilization.
6. General economic progress has been observed to contribute to population stabilization. However in some countries there is a danger of population growing so rapidly that it prevents the economic progress that would otherwise have stabilized population. This situation is known as the demographic trap.



Figure 6.1: **Professor Sir Partha Dasgupta of Cambridge University has pointed out that all of the steps that are needed for population stabilization are desirable in themselves.**

## 6.2 Higher status and higher education for women

It is only recently that women have had the right to vote. In most of the industrialized countries, this right was only granted during the early part of the 20th century. In some countries, this reform was even slower. For example, in Switzerland, it was only in 1971 that women gained the right to vote in federal elections. In Lichtenstein, women's right to vote was delayed until 1981. It was only in December, 2015 that Saudi Arabia granted the right to vote to women. Currently, the only country in the world where this right is denied is the Vatican City.

It is important that women should have equal political representation because female representation not only advances gender equality in legal matters, such as the inheritance of property, but also promotes the rights of children.

Prior to the 20th century, women were very largely barred from higher education. In later chapters we will look at some particular cases. For example, the famous pioneer of modern educational methods, Dr. Maria Montessori, had to overcome many barriers to obtain her medical degree.

With higher education, comes the motivation and the opportunity for women to have jobs outside their homes. With lower rates of infant mortality, and the aid of machines, being a housewife and mother has become less and less a lifelong full-time occupation. Experts agree that higher education for women, and jobs for women outside their homes are vitally important measures for population stabilization; but these reforms are also very desirable for their own sake, for the sake of justice, and for the sake of the uniquely life-oriented vision that women can bring to public life.





Figure 6.2: Higher education and higher political representation for women are vitally needed reforms.

## 6.3 Primary health care for all

An International Conference on Primary Health Care took place at Alma-Ata, USSR, 6-12 September, 1978. Point **VII** of the Alma-Ata Declaration defines primary health care as follows:

### *Primary health care*

1. *reflects and evolves from the economic conditions and sociocultural and political characteristics of the country and its communities and is based on the application of the relevant results of social, biomedical and health services research and public health experience;*
2. *addresses the main health problems in the community, providing promotive, preventive, curative and rehabilitative services accordingly;*
3. *includes at least: education concerning prevailing health problems and the methods of preventing and controlling them; promotion of food supply and proper nutrition; an adequate supply of safe water and basic sanitation; maternal and child health care, including family planning; immunization against the major infectious diseases; prevention and control of locally endemic diseases; appropriate treatment of common diseases and injuries; and provision of essential drugs;*
4. *involves, in addition to the health sector, all related sectors and aspects of national and community development, in particular agriculture, animal husbandry, food, industry, education, housing, public works, communications and other sectors; and demands the coordinated efforts of all those sectors;*
5. *requires and promotes maximum community and individual self-reliance and participation in the planning, organization, operation and control of primary health care,*



Figure 6.3: The provision of primary health care to all countries throughout the world should include not only measures, such as vaccination, for the prevention of diseases, but also making advice and materials for family planning available to all women who desire them.



Figure 6.4: Bill and Melinda Gates.

*making fullest use of local, national and other available resources; and to this end develops through appropriate education the ability of communities to participate;*

- 6. should be sustained by integrated, functional and mutually supportive referral systems, leading to the progressive improvement of comprehensive health care for all, and giving priority to those most in need;*
- 7. relies, at local and referral levels, on health workers, including physicians, nurses, midwives, auxiliaries and community workers as applicable, as well as traditional practitioners as needed, suitably trained socially and technically to work as a health team and to respond to the expressed health needs of the community.*

Provision of primary health care is high on the list of priorities of the World Health Organization. The Bill and Melinda Gates Foundation has also made great financial contributions to this goal.



Figure 6.5: **Carrying water from distant sources to homes is a time-consuming burden. Often this task is performed by children.**

## 6.4 Clean water supplies near homes

According to the World Health Organization, 842,000 deaths per year are attributable to a lack of safe drinking water supply, sanitation and hygiene. Wikipedia states that “Waterborne diseases can have a significant impact on the economy, locally as well as internationally. People who are infected by a waterborne disease are usually confronted with related costs and not seldom with a huge financial burden. This is especially the case in less developed countries. The financial losses are mostly caused by e.g. costs for medical treatment and medication, costs for transport, special food, and by the loss of manpower. Many families must even sell their land to pay for treatment in a proper hospital. On average, a family spends about 10% of the monthly households income per person infected.”

## 6.5 State provision of care for the elderly

In many countries, elderly parents have traditionally been cared for by their children. This is one of the motives for large family size. Parents with many children feel that they will have a secure old age. For example, in India, parents are typically cared for by their children into old age, most commonly by their sons. Thus, many parents in India continue to have children until they produce a son, and this often leads to large family sizes. State supported care for the elderly throughout the world is an important step that is needed for population stabilization.



Figure 6.6: **Government-provided care for the elderly will help to stabilize the currently-exploding global population of humans.**

## 6.6 Abolition of child labor and slavery

Today the hard-won achievements of reformers in the industrialized countries are being undermined and lost because of uncritical and unregulated globalization. A factory owner or CEO, anxious to avoid high labor costs, and anxious to violate environmental regulations merely moves his factory to a country where laws against child labor and rape of the environment do not exist or are poorly enforced. In fact, he must do so or be fired, since the only thing that matters to the stockholders is the bottom line. One might say (as someone has done), that Adam Smith's invisible hand is at the throat of the world's peoples and at the throat of the global environment.

The movement of a factory from Europe or North America to a country with poorly enforced laws against environmental destruction, child labor and slavery puts workers into unfair competition. Unless they are willing to accept revival of the unspeakable conditions of the early Industrial Revolution, they are unable to compete.

Today, child labor accounts for 22% of the workforce in Asia, 32% in Africa, and 17% in Latin America. Large-scale slavery also exists today, although there are formal laws against it in every country. There are more slaves now than ever before - their number is estimated to be between 12 million and 27 million. Besides outright slaves, who are bought and sold for as little as 100 dollars, there many millions of workers whose lack of options and dreadful working conditions must be described as slave-like.

We need to reform our economic system to give it both a social conscience and an ecological conscience. Perhaps some of the things that the world produces and consumes today are not really necessary.



Figure 6.7: Laws prohibiting child labor are non-existent in many countries, or poorly enforced.



Figure 6.8: More slaves exist today than ever before.

## 6.7 General economic progress

It has been observed that general economic progress leads to population stabilization. However, it often happens that population growth in a country is so rapid that it prevents economic progress. This phenomenon is known as the *demographic trap*. For example, if we look at the population-age structure of Egypt in 2005, shown in Figure 2.9, we see that there are very many young people approaching reproductive age, and very few old people. Thus the birth rate will not be balanced by the death rate, and the population of any country with a similar population-age structure can be expected to grow rapidly, preventing the economic development that might have slowed population growth. In such a situation, strong state-supported birth control programs are clearly needed.

Very early marriage and forced marriage must also be discouraged. We can recall that Malthus mentions late marriage as one of the preventive checks to population growth. Forced and child marriages entrap women and young girls in relationships that deprive them of their basic human rights. Forced marriage constitutes a human rights violation in and of itself.

According to the website Stop Violence Against Women, “In 2003, the International Centre for Research on Women estimated that more than 51 million girls under 18 years were married and they expected the figure to rise to over 100 million within the next ten years. Similarly, in 2006, experts estimated that thirty-eight percent of young women aged 20 to 24 in the fifty least developed countries were married before the age of 18.

“In *Early Marriage: A Harmful Traditional Practice*, UNICEF estimates that among women aged 15 to 24, 48 percent were married before the age of 18 in South Asia. In Bangladesh, 27.3 percent of women aged 15 to 19 years old were married by the age of 15, and 65.3 percent of women aged 20 to 24 were married before the age of 18.

“UNICEF estimates that in Africa 42 percent of women aged 15 to 24 were married before the age of 18. In Niger, 27.3 percent of women ages 15 to 19 were married before the age of 15, and 76.6 percent of women ages 20 to 24 were married before the age of 18. According to surveys conducted by the National Committee on Traditional Practices of Ethiopia (NCTPE), the prevalence of marriage by abduction is as high as 92 per cent in Southern Nations Nationalities and Peoples Region (SNNPR), with a national average of 69 percent.”

Today’s world is one in which the wealth of the richest 1% of the global population increased by 82% in 2017, while for the poorest half of humanity there was no increase at all. It is a world where an estimated 11 million children die every year from starvation or from diseases related to poverty. It is a world where obesity is a serious public health problem in rich nations, while at the same time, children in poorer countries scavenge among toxic wastes in garbage dumps. It is a world where almost a billion people are undernourished.

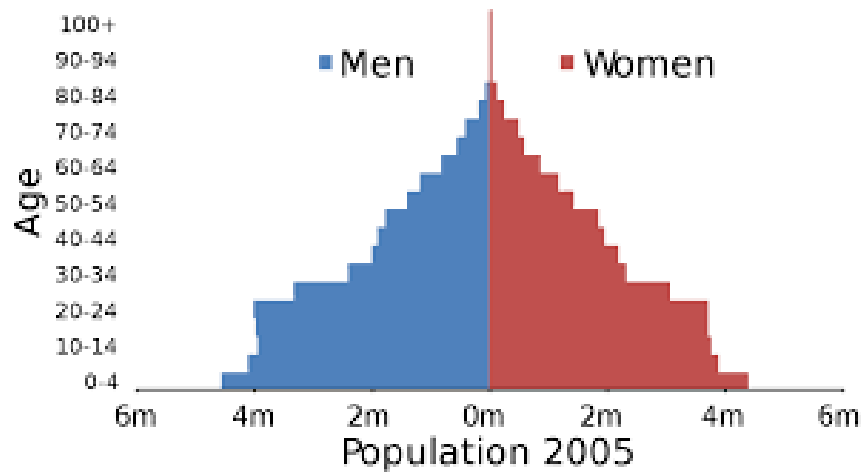


Figure 6.9: The population pyramid of Egypt in 2005.



Figure 6.10: A slum in India



Figure 6.11: Children scavenging at a garbage dump.

## 6.8 Population and fossil fuel consumption

Today we are able to estimate the population of the world at various periods in history, and we can also make estimates of global population in prehistoric times. Looking at the data, we can see that the global population of humans has not followed an exponential curve as a function of time, but has instead followed an information-driven and technology-driven hyperbolic trajectory. At the time of Christ, the population of the world is believed to have been approximately 220 million. By 1500, the earth contained 450 million people, and by 1750, the global population exceeded 700 million. As the industrial and scientific revolution has accelerated, global population has responded by increasing at a break-neck speed: In 1930, the population of the world reached two billion; in 1958 three billion; in 1974 four billion; in 1988 five billion, and in 1999, six billion.

Almost a billion people are currently being added to the world's population every decade. But our food supply cannot keep increasing at this rate. On the contrary, the amount of food available to us is threatened by water shortages, climate change and the end of petroleum-supported high-yield agriculture. Thus, facing the threat of an extremely large-scale global famine, we need to listen to the warning voice of Malthus.



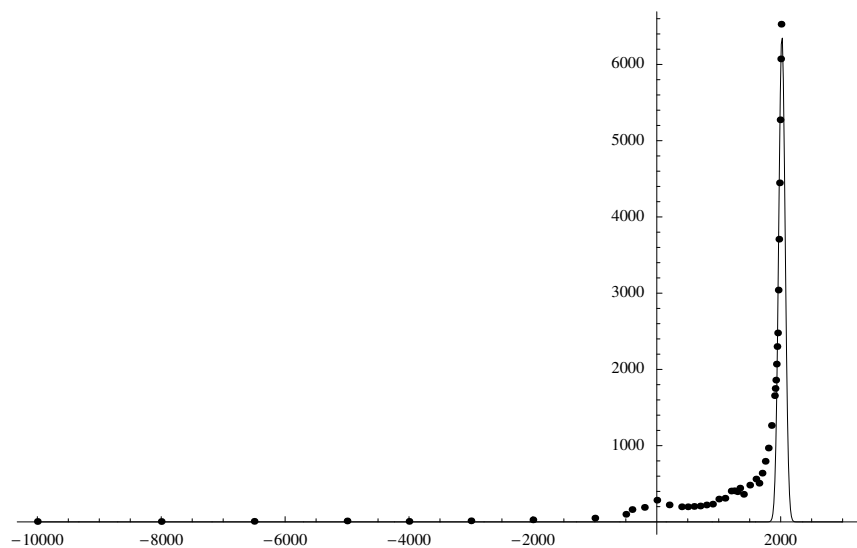


Figure 6.12: When global population and fossil fuel use are plotted on the same graph over a period of several thousand years, the burning of fossil fuels appears as a sharp spike, rising from almost nothing to a high value over a period of a few hundred years and then falling abruptly to almost zero again. Recent population growth appears to be simultaneous with, and perhaps driven by, fossil fuel use. This raises the question of whether population of humans is headed for a crash when the fossil fuel era inevitably ends.

## 6.9 Population stabilization today

The phrase “developing countries” is more than a euphemism; it expresses the hope that with the help of a transfer of technology from the industrialized nations, all parts of the world can achieve prosperity. Some of the forces that block this hope have just been mentioned. Another factor that prevents the achievement of worldwide prosperity is population growth.

In the words of Dr. Halfdan Mahler, former Director General of the World Health Organization, “Country after country has seen painfully achieved increases in total output, food production, health and educational facilities and employment opportunities reduced or nullified by excessive population growth.”

The growth of population is linked to excessive urbanization, infrastructure failures and unemployment. In rural districts in the developing countries, family farms are often divided among a growing number of heirs until they can no longer be subdivided. Those family members who are no longer needed on the land have no alternative except migration to overcrowded cities, where the infrastructure is unable to cope so many new arrivals. Often the new migrants are forced to live in excrement-filled makeshift slums, where dysentery, hepatitis and typhoid are endemic, and where the conditions for human life sink to the lowest imaginable level. In Brazil, such shanty towns are called “favelas”.

If modern farming methods are introduced in rural areas while population growth continues, the exodus to cities is aggravated, since modern techniques are less labor-intensive and favor large farms. In cities, the development of adequate infrastructure requires time, and it becomes a hopeless task if populations are growing rapidly. Thus, population stabilization is a necessary first step for development.

It can be observed that birth rates fall as countries develop. However, development is sometimes blocked by the same high birth rates that economic progress might have prevented. In this situation (known as the “demographic trap”), economic gains disappear immediately because of the demands of an exploding population.

For countries caught in the demographic trap, government birth control programs are especially important, because one cannot rely on improved social conditions to slow birth rates. Since health and lowered birth rates should be linked, it is appropriate that family-planning should be an important part of programs for public health and economic development.

A recent study conducted by Robert F. Lapham of Demographic Health Surveys and W. Parker Maudlin of the Rockefeller Foundation has shown that the use of birth control is correlated both with socio-economic setting and with the existence of strong family-planning programs. The implication of this study is that even in the absence of increased living standards, family-planning programs can be successful, provided they have strong government support.

China, the world’s most populous nation, has adopted the somewhat draconian policy of allowing only one child for families in living in towns and cities (35.9% of the population). Chinese leaders obtained popular support for their one-child policy by means of an educational program which emphasized future projections of diminishing water resources

and diminishing cropland per person if population increased unchecked. Like other developing countries, China has a very young population, which will continue to grow even when fertility has fallen below the replacement level because so many of its members are contributing to the birth rate rather than to the death rate. China's present population is 1.4 billion. Its projected population for the year 2025 is 1.6 billion. China's one-child policy is supported by 75% of the country's people, but the methods of enforcement are sometimes criticized, and it has led to a M/F sex ratio of 1.17/1.00. The natural baseline for the sex ratio ranges between 1.03/1.00 and 1.07/1.00.

Education of women and higher status for women are vitally important measures, not only for their own sake, but also because in many countries these social reforms have proved to be the key to lower birth rates. Religious leaders who oppose programs for the education of women and for family planning on "ethical" grounds should think carefully about the scope and consequences of the catastrophic global famine which will undoubtedly occur within the next 50 years if population is allowed to increase unchecked. Do these leaders really wish to be responsible for the suffering and death from starvation of hundreds of millions of people?

At the United Nations Conference on Population and Development, held in Cairo in September, 1994, a theme which emerged very clearly was that one of the most important keys to controlling the global population explosion is giving women better education and equal rights. These goals are desirable for the sake of increased human happiness, and for the sake of the uniquely life-oriented point of view which women can give us; but in addition, education and improved status for women have shown themselves to be closely connected with lowered birth rates. When women lack education and independent careers outside the home, they can be forced into the role of baby-producing machines by men who do not share in the drudgery of cooking, washing and cleaning; but when women have educational, legal, economic, social and political equality with men, experience has shown that they choose to limit their families to a moderate size.

Sir Partha Dasgupta of Cambridge University has pointed out that the changes needed to break the cycle of overpopulation and poverty are all desirable in themselves. Besides education and higher status for women, they include state-provided social security for old people, provision of water supplies near to dwellings, provision of health services to all, abolition of child labor and general economic development.

## 6.10 How many earths does it take to support us?

The total ecological footprint of humanity is a concept used to measure the relationship between the resources that humans demand from their environment, compared with the ability of nature to provide those resources. In recent years humans have been asking the earth to provide the with much more than the earth can regenerate. Our collective footprint on the face of nature has become too large.

Here are some quotations from the homepage of the Footprint Network organization:<sup>1</sup>

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<sup>1</sup><https://www.footprintnetwork.org/our-work/ecological-footprint/>

“If a population’s Ecological Footprint exceeds the region’s biocapacity, that region runs an ecological deficit. Its demand for the goods and services that its land and seas can provide - fruits and vegetables, meat, fish, wood, cotton for clothing, and carbon dioxide absorption - exceeds what the region’s ecosystems can renew. A region in ecological deficit meets demand by importing, liquidating its own ecological assets (such as overfishing), and/or emitting carbon dioxide into the atmosphere. If a region’s biocapacity exceeds its Ecological Footprint, it has an ecological reserve.

“Conceived in 1990 by Mathis Wackernagel and William Rees at the University of British Columbia, the Ecological Footprint launched the broader Footprint movement, including the carbon Footprint, and is now widely used by scientists, businesses, governments, individuals, and institutions working to monitor ecological resource use and advance sustainable development.

“A rich introduction to the theory and practice of the approach is available in the book *Ecological Footprint: Managing Our Biocapacity Budget* (2019).”

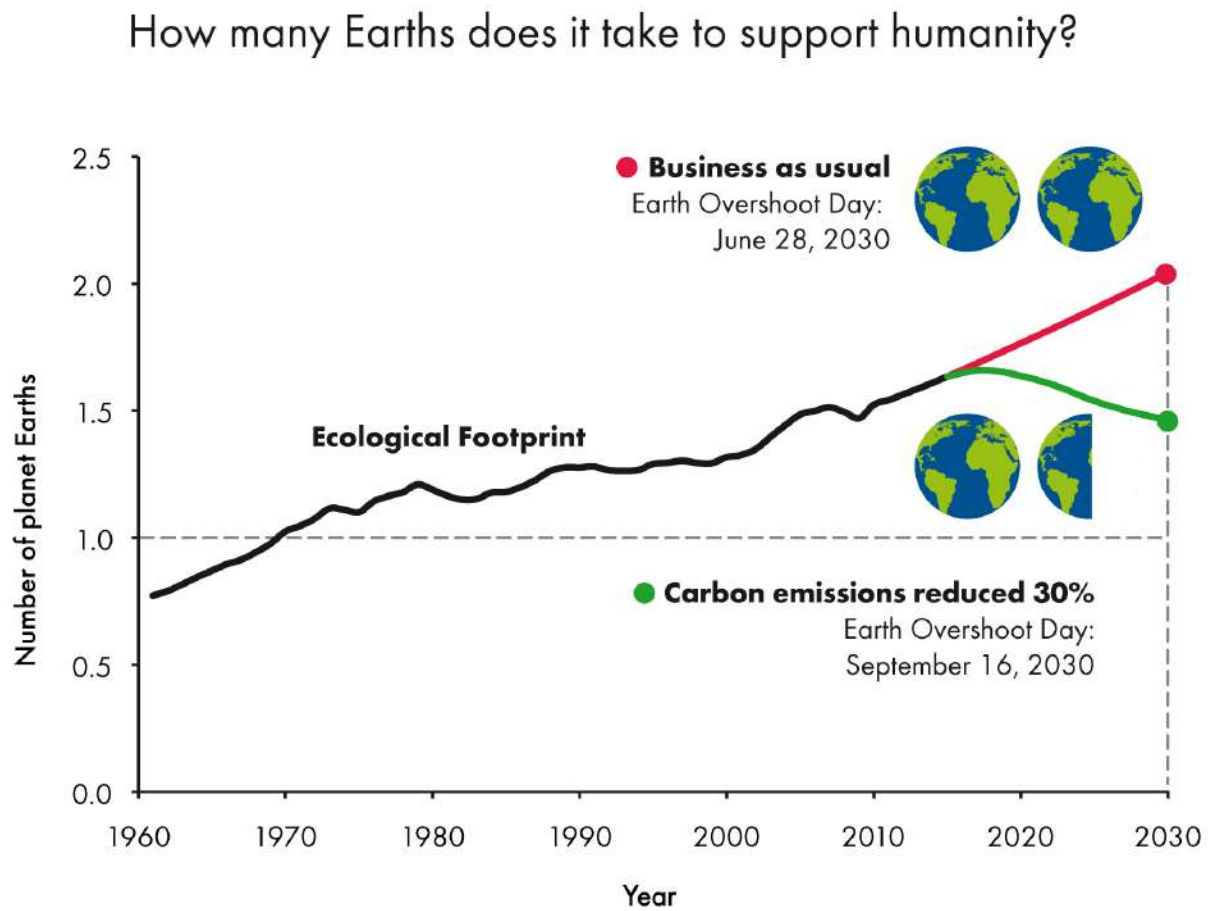


Figure 6.13: The business as usual course would lead us to disaster.

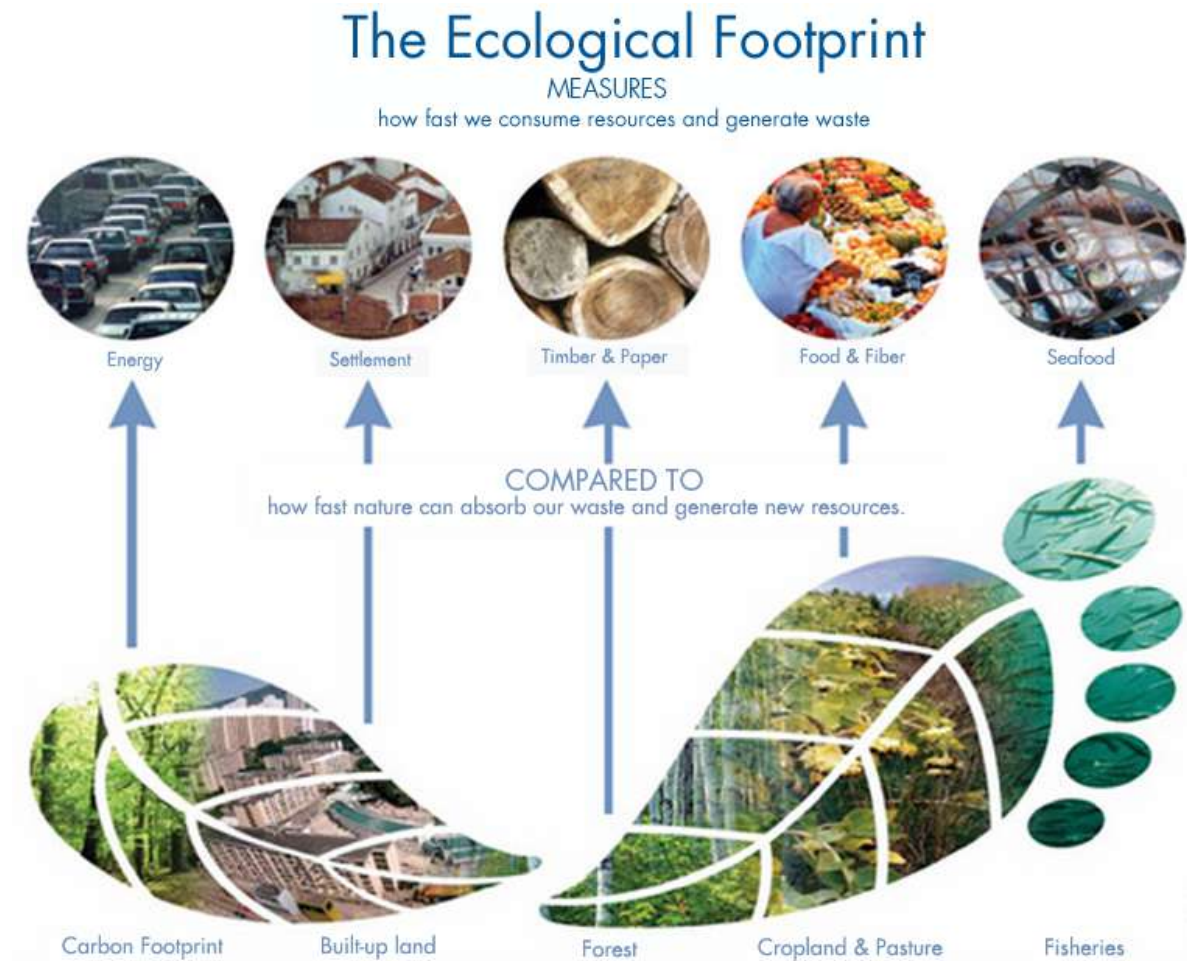


Figure 6.14: Both the Ecological Footprint and biocapacity are expressed in global hectares - globally comparable, standardized hectares with world average productivity.

## 6.11 Overuse of pesticides and the insect apocalypse

### Loss of flying insects, especially bees

Studies have shown an annual decline of 5.2% in flying insect biomass found in nature reserves in Germany - about 75% loss in 26 years.

In the United States the managed bee populations have declined dramatically. According to one study, for the single year, from April 1, 2018, to April 1, 2019, the managed bee population decreased by 40.7%.

### Overuse of pesticides degrades topsoil

It is not only the loss of bees and other pollinator insects that is dangerous to agriculture. The excessive use of pesticides and other agricultural chemicals also degrades topsoil. Normally, topsoil contains richly numerous and diverse populations of tiny worms and bacteria, that aid the recycling of crop residue from previous years into nutrients for plant growth. However, the overuse of pesticides and other agricultural chemicals kills these vitally important populations. Carbon from the dead topsoil is released into the atmosphere, thus increasing the concentrations of dangerous greenhouse gases. Having killed the living topsoil, farmers then find that they need increased quantities of petroleum-derived fertilizers to make their crops grow.

### The Stockholm Convention on Persistent Organic Pollutants

An environmental treaty, signed in 2001 and effective since May, 2004, aims at restricting the production and use of persistent organic pollutants (POPs). These are defined by the United Nations Environmental Institute as “chemical substances that persist in the environment, bio-accumulate through the food web, and pose a risk of causing adverse effects to human health and the environment”. Besides DDT, the Stockholm Treaty also lists Aldrin,  $\alpha$ -Hexachlorocyclohexane,  $\beta$ -Hexachlorocyclohexane, Chlordane, Chlordecone, Decabromodiphenyl ether, Dicofol, Dieldrin, Endosulfan, Endrin, Heptachlor, Hexabromobiphenyl, Hexabromocyclododecane, Hexabromodiphenylether, Hexachlorobenzene, Hexachlorobutadiene, Lindane, Mirex, Pentachlorobenzene, Pentachlorophenol, Perfluorooctanoic acid, Perfluorooctane sulfonic acid, Polychlorinated biphenyls, Polychlorinated dibenzodioxins, Polychlorinated naphthalenes, Tetrabromodiphenyl ether, Short-chain chlorinated paraffins, and Toxaphene.

Although some critics have claimed that the treaty is responsible for the continuing death toll from malaria, in reality it specifically permits the public health use of DDT for the control of malaria-carrying mosquitoes. In 2016, there were 216 million cases of malaria worldwide, resulting in an estimated 445,000 to 731,000 deaths.



Figure 6.15: 20 May 2019, Rome - The global decline in bee populations poses a serious threat to a wide variety of plants critical to human well-being and livelihoods, and countries should do more to safeguard our key allies in the fight against hunger and malnutrition, FAO stressed today as it marked UN World Bee Day. Bees and other pollinator are declining in abundance in many parts of the world largely due to intensive farming practices, mono-cropping, excessive use of agricultural chemicals and higher temperatures associated with climate change, affecting not only crop yields but also nutrition. If this trend continues, nutritious crops such as fruits, nuts, and many vegetables will be substituted increasingly by staple crops like rice, corn, and potatoes, eventually resulting in an imbalanced diet.



## 6.12 The Silent Spring

### Dangers from pesticide pollution

Rachel Carson's most influential book, *The Silent Spring*, was published in 1962, when she was already suffering from breast cancer. Eventually it sold over two million copies. The book expresses Carson's worries about the environmental consequences of overuse of pesticides, such as DDT, which were killing not only their targeted pests, but also many vitally important insects, as well as causing health problems in humans. Part of the anger that Carson expressed in the book may have come because the cancer from which she was suffering could have been caused by mutagenic pesticides.

### The town was fictitious, but the problems were real

*The Silent Spring* begins by describing a fictitious Midwestern American town, where people are mysteriously suffering and dying from a variety of unexplained illnesses previously unseen by doctors. Sheep and cattle, fish in the river, and birds, all sicken and die. Orchards bear no fruit and vegetation withers. It gradually becomes clear that the people of the town are themselves to blame. That have been poisoning themselves and their environment by overuse of pesticides.

### Some quotations from *The Silent Spring*

Here are two quotations from the book:

As crude a weapon as the cave man's club, the chemical barrage has been hurled against the fabric of life - a fabric on the one hand delicate and destructible, on the other miraculously tough and resilient, and capable of striking back in unexpected ways... It is our alarming misfortune that so primitive a science has armed itself with the most modern and terrible weapons, and that in turning them against the insects it has also turned them against the earth...

Among the herbicides are some that are classified as 'mutagens,' or agents capable of modifying the genes, the materials of heredity. We are rightly appalled by the genetic effects of radiation; how then, can we be indifferent to the same effect in chemicals that we disseminate widely in our environment?

Although extremely ill with cancer and in constant pain, Carson gave newspaper interviews and appeared on television to make her case. In July, 1962, the US Department of agriculture issued the following statement: "Miss Carson provides a lucid description of the real and potential dangers of misusing chemical pesticides... She expresses the concern of many people about the effect of chemical pesticides on birds, animals and people. We are fully aware of and share this concern."

## 'Silent Spring' Is Now Noisy Summer

*Pesticides Industry  
Up in Arms Over  
a New Book*

By JOHN M. LEE

The \$300,000,000 pesticides industry has been highly irritated by a quiet woman author whose previous works on science have been praised for the beauty and precision of the writing.

The author is Rachel Carson, whose "The Sea Around Us" and "The Edge of the Sea" were best sellers in 1951 and 1955. Miss Carson, trained as a marine biologist, wrote gracefully of sea and shore life.

In her latest work, however, Miss Carson is not so gentle,



*Rachel Carson Stirs  
Conflict—Producers  
Are Crying 'Foul'*

fending the use of their products. Meetings have been held in Washington and New York. Statements are being drafted and counter-attacks plotted.

A drowsy midsummer has suddenly been enlivened by the greatest uproar in the pesticides industry since the cranberry scare of 1959.

Miss Carson's new book is entitled "Silent Spring." The title is derived from an idealized situation in which Miss Carson envisions an imaginary town where chemical pollution has silenced "the voices of nature."

Figure 6.16: Rachel Carson's book, *The Silent Spring*, was controversial, to say the least, but it focused public attention on problems of ecology.

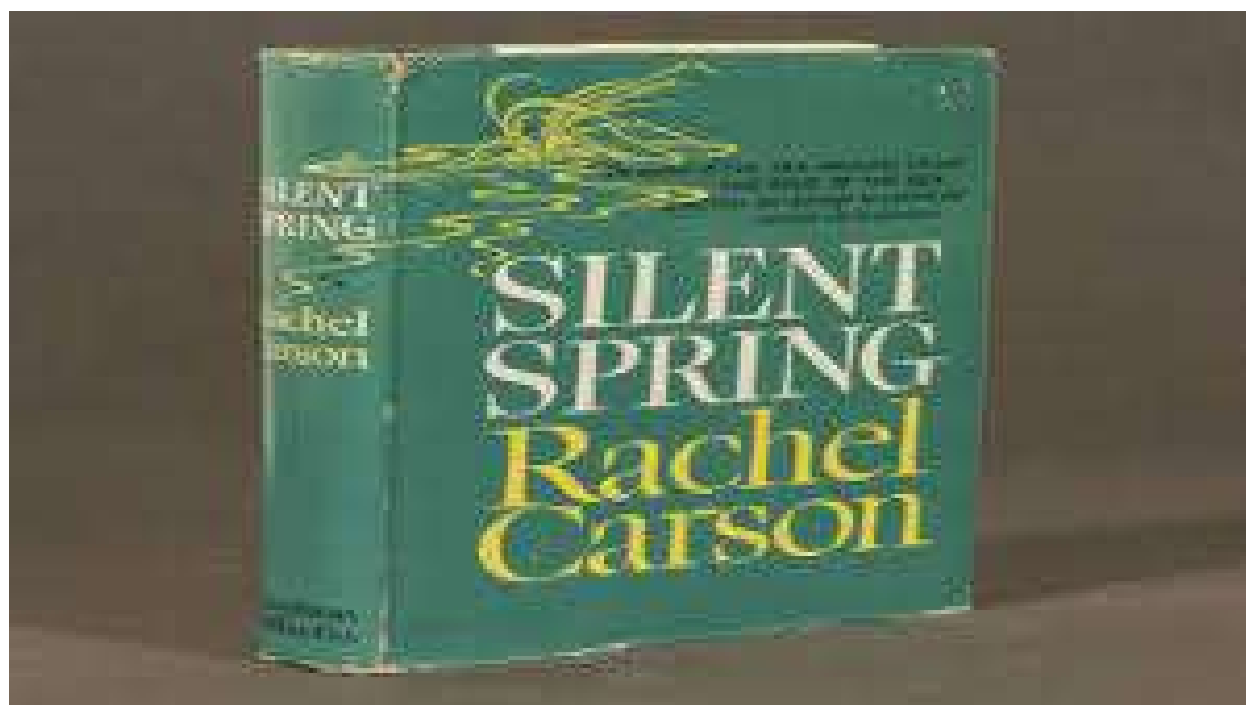


Figure 6.17: *The Silent Spring* was an international best-seller, and it ignited the environmental movement.

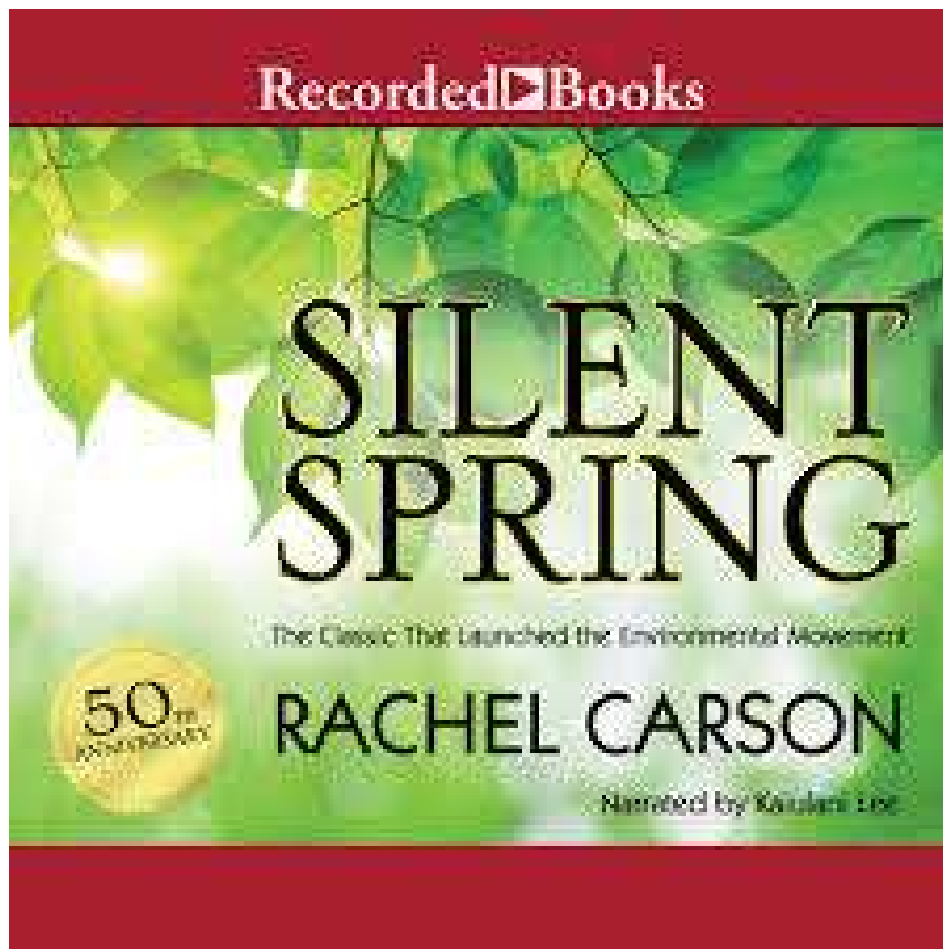


Figure 6.18: An audio version of *The Silent Spring*.



Figure 6.19: As Rachel Carson's influence increased, she began speaking to large audiences.



Figure 6.20: Statue of Carson at the Museo Rocsen, Nono, Argentina.

## 6.13 Biodiversity loss

According to Wikipedia's article on *Biodiversity Loss*,

“The current rate of global diversity loss is estimated to be 100 to 1000 times higher than the (naturally occurring) background extinction rate and expected to still grow in the upcoming years...

“According to the UN's Global Biodiversity Outlook 2014 estimates that 70 percent of the projected loss of terrestrial biodiversity are caused by agriculture use. Moreover, more than 1/3 of the planet's land surface is utilized for crops and grazing of livestock. Agriculture destroys biodiversity by converting natural habitats to intensely managed systems and by releasing pollutants, including greenhouses gases. Food value chains further amplify impacts including through energy use, transport and waste. The direct effects of urban growth on habitat loss are well understood: Building construction often results in habitat destruction and fragmentation. The rise of urbanization greatly reduced biodiversity when large areas of natural habitat are fragmented. Small habitat patches are unable to support the same level of genetic or taxonomic diversity as they formerly could while some of the more sensitive species may become locally extinct.

“Pollution from burning fossil fuels such as oil, coal and gas can remain in the air as particle pollutants or fall to the ground as acid rain. Acid rain, which is primarily composed of sulfuric and nitric acid, causes acidification of lakes, streams and sensitive forest soils, and contributes to slower forest growth and tree damage at high elevations. Moreover, Carbon dioxide released from burning fossil fuels and biomass, deforestation, and agricultural practices contributes to greenhouse gases, which prevent heat from escaping the earth's surface. With the increase in temperature expected from increasing greenhouse gases, there will be higher levels of air pollution, greater variability in weather patterns, and changes in the distribution of vegetation in the landscape. These two factors play a huge role towards biodiversity loss and entirely depended on human-driven factors.”

## 6.14 Illegal burning for palm oil plantations

According to a recent article published by the Union of Concerned Scientists, “One huge source of global warming emissions associated with palm oil is the draining and burning of the carbon-rich swamps known as peatlands. Peatlands can hold up to 18 to 28 times as much carbon as the forests above them; when they are drained and burned, both carbon and methane are released into the atmosphere - and unless the water table is restored, peatlands continue to decay and release global warming emissions for decades.

“As if that wasn't bad enough, the burning of peatlands releases a dangerous haze into

the air, resulting in severe health impacts and significant economic losses. Each year, more than 100,000 deaths in Southeast Asia can be attributed to particulate matter exposure from landscape fires, many of which are peat fires.

“Beyond its global warming and human health impacts, palm oil production also takes a toll on biodiversity and human rights. Only about 15 percent of native animal species can survive the transition from primary forest to plantation. Among the species vulnerable to palm oil expansion are orangutans, tigers, rhinoceros, and elephants. Furthermore, palm oil growers have also been accused of using forced labor, seizing land from local populations, and other human rights abuses.”

Licences to burn forests for palm oil plantations are often granted by corrupt government officials. Fortunately, through the efforts of NGO's the public has become increasingly aware of the problem, and supermarkets are being urged to purchase products containing deforestation-free palm oil.

Another recent article<sup>2</sup> states that “Indonesia is being deforested faster than any other country in the world, and it has everything to do with one product: palm oil.

“According to a new study in the journal *Nature Climate Change*, deforestation in the Southeast Asian archipelago is nearly double the rate in the Amazon. Indonesia is said to have lost 840,000 hectares (3,250 square miles) of forest in 2012 while Brazil - which has four times Indonesia's rainforest - lost a still-massive 460,000 hectares.

“The report's authors found that government figures underestimated the true toll of forest clearing by as much as half. In the last 12 years, it's possible that the destruction of one million hectares of 'primary forest' went unreported.

“The tree-killing spree is largely due to slashing and burning vegetation for the expansion of palm oil plantations to feed growing demand in countries like China and India. Americans and Europeans are still far and away the top consumers per capita - it's estimated that palm oil can be found in roughly half the manufactured goods in any supermarket or drug store. Everything from peanut butter to soap to cosmetics contains the oil in its various forms.

“In Indonesia, where much of the land consists of carbon-rich soil known as peat, the problem is acute. Water-logged peat is commonly found in the jungles of Sumatra and Borneo, and merely exposing it to the air releases carbon dioxide into the atmosphere.”

## 6.15 Jair Bolsonaro's attack on the Amazon rainforest

### Beef is killing the rainforest

*Beef Production is Killing the Amazon Rainforest.* That is the title of an article published by [onegreenplanet.org](http://onegreenplanet.org)<sup>3</sup>. Here are some excerpts from the article

<sup>2</sup><https://news.vice.com/article/indonesia-is-killing-the-planet-for-palm-oil>

<sup>3</sup><http://www.onegreenplanet.org/animalsandnature/beef-production-is-killing-the-amazon-rainforest/>

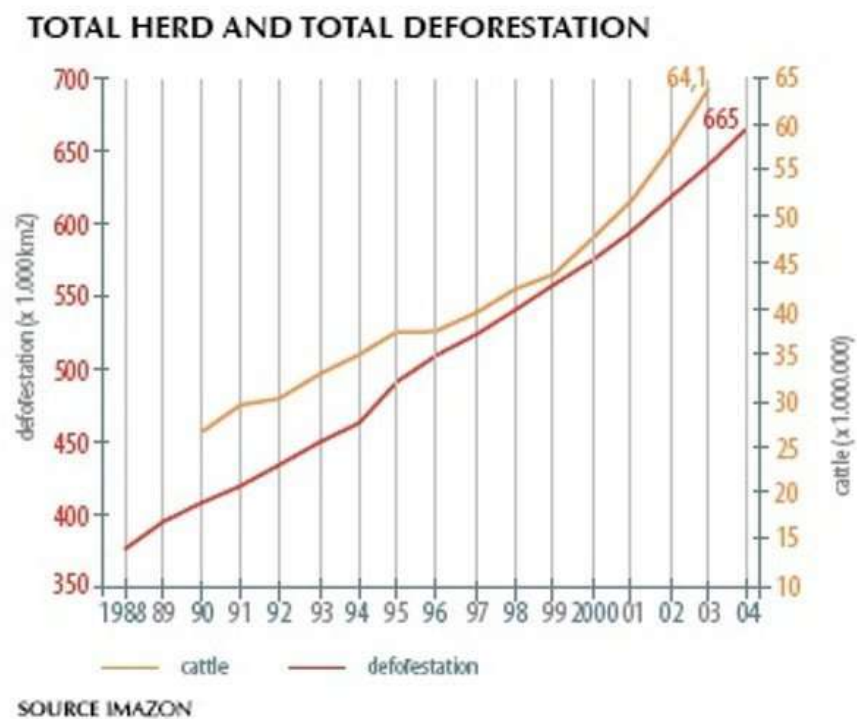


Figure 6.21: Total cattle herds and total deforestation in Amazonia between 1988 and 2004. Deforestation is measured in thousands of square kilometers, while herd size is measured in millions.

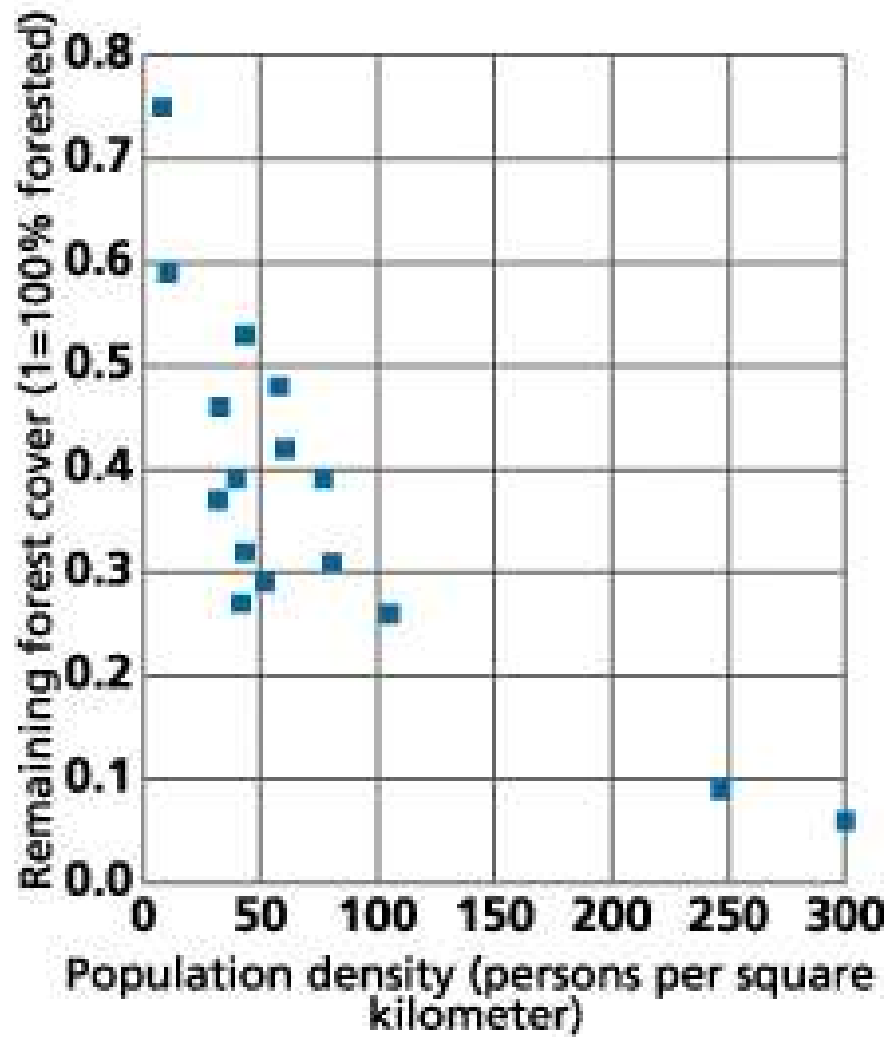


Figure 6.22: Population density and forest size.



"The Amazon rainforest has been facing severe deforestation problems for several decades - it has lost about a fifth of its forest in the past three. While there are many causes, one of the main causes is cattle ranching, particularly in Brazil. Trees are cut and the land is converted into a pasture for cattle grazing. According to one report, an estimated 70 percent of deforestation in the Amazon basin can be attributed to cattle ranching. Using these numbers, cattle ranching in the Amazon has resulted in the loss of an area larger than the state of Washington.

"The government of Brazil offers loans of billions of dollars to support the expansion of its beef industry. Approximately 200 million pounds of beef is imported by the United States from Central America every year. While the chief importers of Brazilian beef were previously Europe and North America, nowadays Asian countries such as China and Russia consume more Brazilian beef than the European market. So, the demand is increasing day by day.

"With increasing population and increased per capita meat consumption, the rate of deforestation is increasing every day as well. It is expected that by 2018, the beef export will increase 93 percent, thereby increasing Brazil's beef market share of world exports to 61 percent. Beef is the most carbon-intensive form of meat production on the planet. The United Nations Food and Agriculture Organization finds that beef production gives rise to more greenhouse gases than the transportation industry."

## **Beef production and methane**

A cow (or a bull) releases between 70 and 120 kg of methane per year. Methane is a greenhouse gas like carbon dioxide, but the negative effect on the climate of methane ( $\text{CH}_4$ ) is 23 times higher than the effect of  $\text{CO}_2$ . Therefore the release of about 100 kg methane per year for each cow is equivalent to about 2,300 kg  $\text{CO}_2$  per year.

World-wide, there are about 1.5 billion cows and bulls. All ruminants (animals which regurgitates food and re-chews it) on the world emit about two billion metric tons of  $\text{CO}_2$ , equivalents per year. In addition, clearing of tropical forests and rain forests to get more grazing land and farm land is responsible for an extra 2.8 billion metric tons of  $\text{CO}_2$  emission per year!

According to the Food and Agriculture Organization of the United Nations (FAO) agriculture is responsible for 18% of the total release of greenhouse gases world-wide (this is more than the whole transportation sector). Cattle-breeding is taking a major factor for these greenhouse gas emissions according to FAO. Says Henning Steinfeld, Chief of FAO's Livestock Information and Policy Branch and senior author of the report: "Livestock are one of the most significant contributors to today's most serious environmental problems. Urgent action is required to remedy the situation."

Livestock now use 30 percent of the earth's entire land surface, mostly permanent pasture but also including 33 percent of the global arable land used to producing feed for livestock, the report notes. As forests are cleared to create new pastures, it is a major driver of deforestation, especially in Latin America where, for example, some 70 percent of former forests in the Amazon have been turned over to grazing.

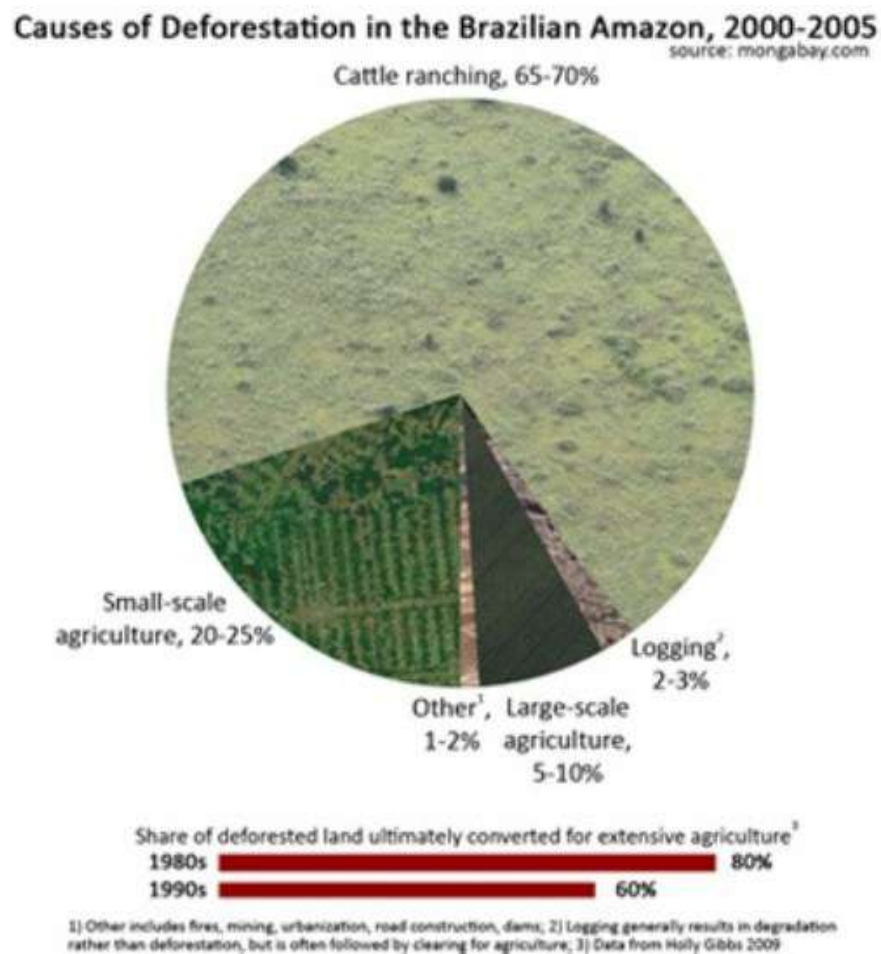


Figure 6.23: This figure shows the causes of Amazonian deforestation. The largest is beef production.

## Dietary changes can help

You and I can help to save our common future by changing our diets, especially by cutting out beef. Not only does beef production produce methane and destroy rainforests, it also requires much more land per calorie than other forms of agriculture. By switching from beef to other protein-rich foods, we not only substantially reduce greenhouse gas emissions, but we also shorten the food chain, so that more grain will be available to feed the world's growing population. Furthermore a changed diet with less meat would improve our health, since animal fats have been linked with heart disease, circulatory problems and strokes.

## 6.16 Growing populations and forest loss

Deforestation is occurring at alarming rates, especially in countries that have high levels of population growth.<sup>4</sup> The following table shows the forest loss in some countries where it is particularly high, together with their present and projected populations<sup>5</sup>. In the table, the annual rate of forest loss in the period 2000-2010, measured both in thousands of hectares and in percent. Populations in millions in 2010 are shown, together with projected populations in 2050.

country	forest loss	percent	pop. 2010	pop. 2050
Brazil	-2642	-0.49	194.9	222.8
Australia	-562	-0.37	22.3	31.4
Indonesia	-498	-0.51	239.9	293.5
Nigeria	-410	-3.67	158.4	389.6
Tanzania	-403	-1.13	44.8	138.3
Zimbabwe	-327	-1.88	12.6	20.6
Dem. Rep. Congo	.311	-0.20	66.0	148.5
Myanmar	-310	-0.93	47.9	55.3
Bolivia	-290	-0.49	9.9	16.8
Venezuela	-288	-0.60	28.0	41.8

The main mechanism through which rapid population growth is linked to forest loss is felling forests for the sake of agriculture.

Notice that Nigeria is losing 3.67% of its forests each year. The population of Nigeria is projected to more than double by 2050, but rising death rates from heat, famine and

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<sup>4</sup><http://www.prb.org/Publications/Articles/2004/PopulationGrowthandDeforestationACriticalandComplexRelationship.aspx>

<sup>5</sup>Population Action International, *Why Population Matters to Forests*

conflicts may prevent this. In general, rising death rates from these causes may ultimately lead populations in the tropics to decrease rather than increase.

Population Action International points out that “Deforestation threatens the well-being and livelihoods of millions of people who heavily depend on forest resources. It is particularly devastating for women and children in poor rural communities.” The organization recommends that information and materials for family planning be made available to all through universal provision of primary health care.

## 6.17 Desertification and soil erosion

The Princeton University Dictionary defines *desertification* as “the process of fertile land transforming into desert typically as a result of deforestation, drought or improper/inappropriate agriculture”. It is estimated that approximately a billion people are under threat from further expansions of deserts.

### Southward expansion of the Gobi desert

The Gobi desert is the fastest moving desert on earth. The rapid southward expansion of the Gobi is mainly due to human activities, such as overgrazing, deforestation and overuse of water. Dust storms from the Gobi desert are becoming more and more frequent. Sand dunes are reportedly forming only 70 km north of Beijing.

### The Sahel

Another region in which the threat of desertification is extremely acute is the Sahel, which is the boundary between Africa’s Sahara desert to the north and a region of savanna to the south. The Sahel stretches between the Atlantic Ocean and the Red Sea. During the last 50 years, the Sahel has lost approximately 650,000 km<sup>2</sup> of fertile land to the desert, and the boundary of the Sahara has moved 250 km southward.

The southward expansion of the Sahara has been caused partly by climate change, and partly by human activities. Growing human populations have put pressure on the fragile arid environment by overgrazing, tree-cutting for firewood and inappropriate agriculture.

## 6.18 Forest drying and wildfires: a feedback loop

When climate change produces aridity in a forested region, wildfires produced by lightning, stray sparks from falling stones, or human carelessness become increasingly likely. Forest fires contribute to global warming by releasing CO<sub>2</sub> into the atmosphere and by destroying climate-friendly tree-covered areas. Thus a dangerous feedback loop can be formed, and as was discussed in Chapter 4, with every feedback loop there is an associated tipping point. In the case of forest drying and wildfires, passing the tipping point means that forest cover will be lost irrevocably. We must avoid passing wildfire tipping points through human

activities, such as the deliberate burning of rainforests for the sake of oil palm plantations.

## 6.19 Degraded forests are carbon emitters

According to an article published in the journal *Science* on 28 September, 2017<sup>6</sup>, degraded tropical forest throughout the world have stopped being carbon absorbers, and are now carbon emitters.

Reporting on the study, *The Guardian*,<sup>7</sup> noted that “Researchers found that forest areas in South America, Africa and Asia - which have until recently played a key role in absorbing greenhouse gases - are now releasing 425 teragrams of carbon annually, which is more than all the traffic in the United States.

“The study went further than any of its predecessors in measuring the impact of disturbance and degradation - the thinning of tree density and the culling of biodiversity below an apparently protected canopy - usually as a result of selective logging, fire, drought and hunting.

“Overall, more carbon was lost to degradation and disturbance than deforestation. The researchers stressed this was an opportunity as well as a concern because it was now possible to identify which areas are being affected and to restore forests before they disappeared completely.”

## 6.20 Replanting forests

Around the world, people interested in replanting forests can take inspiration from the Green Belt Movement, which was founded in 1977 by Wangari Maathai.

The Green Belt Movement organizes women in rural Africa to combat deforestation by planting trees. In this way they restore their main source of fuel for cooking, generate income and stop soil erosion. Since its foundation in 1977, the movement has planted 51 million trees. Over 30,000 women have been trained in forestry, food processing, bee-keeping, and other trades. The movement emphasizes economic justice and empowerment of women. This work is particularly valuable in regions of water scarcity, because besides preventing soil erosion, forests prevent the rapid run-off of water.

In order to combat climate change and to prevent southward expansion of the Sahara, the African Union has initiated a project called the Great Green Wall. The project aims at creating a mosaic of green and productive landscapes stretching across Africa, the Sahel region to the Horn of Africa, a strip of forested land 15 km wide and 7,500 km long, stretching from Dakar to Djibouti.

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<sup>6</sup>A. Baccini et al., *Tropical forests are a net carbon source based on aboveground measurements of gain and loss*, DOI: 10.1126/science.aam5962

<sup>7</sup><https://www.theguardian.com/environment/2017/sep/28/alarm-as-study-reveals-worlds-tropical-forests-are-huge-carbon-emission-source>



Figure 6.24: Nobel Laureate Wangari Maathai (1940-2011).



Figure 6.25: Wangari Maathai speaks about deforestation.

In China, the Green Great Wall project aims at preventing the expansion of the Gobi desert by planting a 4,500-kilometer-long windbreaking line of forests. The project is expected to be completed by 2050.

Reforestation initiatives also exist in other countries, for example in India, Lebanon, Philippines, Japan, Germany, Canada and the United States.

## 6.21 Human ecology

By definition, “**Human Ecology is the study of the interactions between man and nature in different cultures. Human Ecology combines the ideas and methods from several disciplines, including anthropology, sociology, biology, economic history and archeology.**”

## 6.22 Paul R. Ehrlich and Anne H. Ehrlich

### Education

Paul R. Ehrlich was born in 1932 in Philadelphia, Pennsylvania. He studied zoology at the University of Pennsylvania, and later received a Ph.D. from the University of Kansas, where he specialized in the study of insects. In 1959, Ehrlich joined the staff of Stanford University, where he was appointed to the Bing Professorship in Zoology in 1977.

### Involvement in the population debate

In 1967, a lecture on population that Ehrlich gave at the Commonwealth Club of California was broadcast on the radio. Because of the publicity that followed the radio broadcast, Ehrlich was invited by the Sierra Club and Ballantine Books to write a book on the dangers of a human population explosion. Paul R. Ehrlich and his wife, Anne H. Ehrlich together wrote a book entitled *The Population Bomb*, which was published in 1968. Although the book was a joint husband and wife production, the publisher insisted that only Paul’s name should appear as author. Although others had written about the dangers of overpopulation, it was this book that brought the problem to a wide audience.

### Books by Paul R. Ehrlich

- *How to Know the Butterflies* (1960)
- *Process of Evolution* (1963)
- *Butterflies and Plants: A Study in Coevolution* (1964)
- *The Population Bomb* (1968, revised 1971, updated 1978, re-issued 1988, 1998, 2008 and 2018)
- *Population, Resources, Environments: Issues in Human Ecology* (1970)
- *How to Be a Survivor* (1971)

- *Man and the Ecosphere: Readings from Scientific American* (1971)
- *Population, Resources, Environments: Issues in Human Ecology* Second Edition (1972)
- *Human Ecology: Problems and Solutions* (1973)
- *Introductory Biology* (1973)
- *The End of Affluence* (1975)
- *Biology and Society* (1976)
- *Ecoscience: Population, Resources, Environment* (1978)
- *The Race Bomb* (1978)
- *Extinction* (1981)
- *The Golden Door: International Migration, Mexico, and the United States* (1981)
- *The Cold and the Dark: The World after Nuclear War* (1984, with Carl Sagan, Donald Kennedy, and Walter Orr Roberts)
- *The Machinery of Nature: The Living World Around Us and How it Works* (1986)
- *Earth* (1987, co-authored with Anne Ehrlich)
- *Science of Ecology* (1987, with Joan Roughgarden)
- *The Cassandra Conference: Resources and the Human Predicament* (1988)
- *The Birder's Handbook: A field Guide to the Natural History of North American Birds* (1988, with David S. Dobkin and Darryl Wheye)
- *New World, New Mind: Moving Towards Conscious Evolution* (1988, co-authored with Robert E. Ornstein)
- *The Population Explosion* (1990, with Anne Ehrlich)
- *Healing the Planet: Strategies for Resolving the Environmental Crisis* (1991, co-authored with Anne Ehrlich)
- *Birds in Jeopardy: The Imperiled and Extinct Birds of the United States and Canada, Including Hawaii and Puerto Rico* (1992, with David S. Dobkin and Darryl Wheye)
- *The Stork and the Plow : The Equity Answer to the Human Dilemma* (1995, with Anne Ehrlich and Gretchen C. Daily)
- *A World of Wounds: Ecologists and the Human Dilemma* (1997)
- *Betrayal of Science and Reason: How Anti-Environment Rhetoric Threatens Our Future* (1998, with Anne Ehrlich)
- *Wild Solutions: How Biodiversity is Money in the Bank* (2001, with Andrew Beattie)
- *Human Natures: Genes, Cultures, and the Human Prospect* (2002)
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- *On the Wings of Checkerspots: A Model System for Population Biology* (2004, edited volume, co-edited with Ilkka Hanski)
- *The Dominant Animal: Human Evolution and the Environment* (2008, with Anne Ehrlich)
- *Humanity on a Tightrope: Thoughts on Empathy, Family, and Big Changes for a Viable Future* (2010, with Robert E. Ornstein)
- *Conservation Biology for All* (2010, edited volume, co-edited with Navjot S. Sodhi)
- *Hope on Earth: A Conversation* (2014, co-authored with Michael Charles Tobias)





Figure 6.26: **Paul R. Ehrlich** in 1974.

- *Killing the Koala and Poisoning the Prairie: Australia, America and the Environment* (2015, co-authored with Corey J. A. Bradshaw)
- *The Annihilation of Nature: Human Extinction of Birds and Mammals* (2015, with Anne Ehrlich and Gerardo Ceballos)



Figure 6.27: Ehrlich speaking in 2008.



Figure 6.28: Anne H. Ehrlich, Paul Ehrlich's wife, is the co-author of many of his books. I know her personally because of the many Pugwash Conferences that we both have attended. I also know John P. Holdren for the same reason,

## 6.23 John P. Holdren

### Education

John P. Holdren was born in Pennsylvania in 1944, but grew to in California. He graduated from MIT with a B.Sc. degree in 1965, and was awarded a Ph.D. by Stanford University in 1970, having studied aeronautics, astronautics and plasma physics.

### Professor of environmental science

Holdren taught for 13 years at Harvard, and later for more than 20 years at the University of California, Berkeley. His research interests centered on environmental questions. These included global environmental change, population stabilization, energy technologies and policies, ways to reduce the dangers from nuclear weapons and materials, and science and technology policy.

### Pugwash Conferences on Science and World Affairs

John P. Holdren served as the Chairman of the Executive Committee of Pugwash Conferences on Science and World Affairs. The Russell-Einstein Manifesto of 1955 called for a meeting of scientists from both sides of the Cold War to try to minimize the danger of a thermonuclear conflict. The first meeting took place at the summer home of the Canadian philanthropist Cyrus Eaton at the small village of Pugwash, Nova Scotia.

From this small beginning, a series of conferences developed, in which scientists, especially physicists, attempted to work for peace, and tried to address urgent global problems related to science, and especially to reduce the danger of a thermonuclear war. In 1995, Pugwash Conferences, and its president, Sir Joseph Rotblat, shared the Nobel Peace Prize. John P. Holdren delivered the acceptance speech on behalf of the organization.

### Some books and articles by John P. Holdren

Holdren has authored over 200 articles and papers and has co-authored and co-edited some 20 books and book-length reports including

- *Ecoscience : Population, Resources, Environment* by John P. Holdren, Paul R. Ehrlich, Ann H. Ehrlich
- *Global Ecology* by John P. Holdren and Paul R. Ehrlich
- *The Cassandra Conference : Resources and the Human Predicament* by John P. Holdren and Paul R. Ehrlich
- *Strategic Defense and the Future of the Arms Race : A Pugwash Symposium* by John P. Holdren
- *Energy* by John P. Holdren
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Figure 6.29: John P. Holdren held the position of Assistant to the President for Science and Technology between 2009 and 2017.



Figure 6.30: John P. Holdren with Barack Obama.



Figure 6.31: John P. Holdren: “Trump has no science policy to speak of”.

## 6.24 Barry Commoner

### Early life and education

Barry Commoner (1917-2012) was born in Brooklyn, New York, the son of Jewish immigrants from Russia. After a B.Sc. from Columbia University, he received a doctoral degree in cell biology from Harvard. In 1947, he became a professor of plant physiology at Washington University, Sr. Louis. and he taught there for the next 34 years.

### A pioneer of ecology

While teaching at Washington University, Barry Commoner established the Center for the Biology of Natural Systems to study “the science of the total environment”. During the late 1950’s, Commoner’s attention was drawn to health and environmental consequences of nuclear testing. His Baby Tooth Survey demonstrated that radioactive substances, such as Strontium 90, were being incorporated in the teeth of infants as a result of the testing of nuclear weapons. Commoner wrote: “The greatest single cause of environmental contamination of this planet is radioactivity from test explosions of nuclear weapons in the atmosphere.”

### Barry Commoner’s US presidential campaign

In 1980, Barry Commoner founded the Citizens Party, and he ran as the party’s candidate for the US presidency. Although he received only a very small percentage of the votes in the election, the campaign nevertheless made a wide public aware of the seriousness of ecological problems. During the last phase of his career, Commoner returned to New York as a professor at Queens College, part of the City University of New York. Although he stepped down from his professorship in 2000, he remained a senior scientist at Queens College until his death in 2012 at the age of 95.

### Books and reports by Barry Commoner

- *Science and Survival* (1966), New York: Viking OCLC 225105 - on “the uses of science and technology in relation to environmental hazards”.
- *The Closing Circle: Nature, Man, and Technology* (1971), New York: Knopf.
- *The Poverty of Power: Energy and the Economic Crisis* (1976), New York: Random House.
- *The Politics of Energy* (1979), New York: Knopf.
- *Making Peace With the Planet* (1990), New York: Pantheon.
- *Long-range Air Transport of Dioxin from North American Sources to Ecologically Vulnerable Receptors in Nunavut, Arctic Canada*, (2000), Commoner, Barry; Bartlett, Paul Woods; Eisl, Holger; Couchot, Kim; Center for the Biology of Natural Systems, Queens College, City University of New York, published by the North American Commission for Environmental Cooperation, Montréal, Québec, Canada.

## A few things that Barry Commoner said or wrote

The proper use of science is not to conquer nature but to live in it.

Everything is connected to everything else. Everything must go somewhere. Nature knows best. There is no such thing as a free lunch.

If you ask what you are going to do about global warming, the only rational answer is to change the way in which we do transportation, energy production, agriculture and a good deal of manufacturing. The problem originates in human activity in the form of the production of goods.

The environmental crisis is somber evidence of an insidious fraud hidden in the vaunted productivity and wealth of modern, technology-based society. This wealth has been gained by rapid short-term exploitation of the environmental system, but it has blindly accumulated a debt to nature - a debt so large and so pervasive that in the next generation it may, if unpaid, wipe out most of the wealth it has gained us.

Our assaults on the ecosystem are so powerful, so numerous, so finely interconnected, that although the damage they do is clear, it is very difficult to discover how it was done. By which weapon? In whose hand? Are we driving the ecosphere to destruction simply by our growing numbers? By our greedy accumulation of wealth? Or are the machines which we have built to gain this wealth-the magnificent technology that now feeds us out of neat packages, that clothes us in man-made fibers, that surrounds us with new chemical creations-at fault?

The environmental crisis arises from a fundamental fault: our systems of production - in industry, agriculture, energy and transportation - essential as they are, make people sick and die.

Sooner or later, wittingly or unwittingly, we must pay for every intrusion on the natural environment.

Air pollution is not merely a nuisance and a threat to health. It is a reminder that our most celebrated technological achievements - the automobile, the jet plane, the power plant, industry in general, and indeed the modern city itself - are, in the environment, failures.

All of the clean technologies are known, it's a question of simply applying them.





Figure 6.32: Time reported in its February 1970 issue that "the national concern over the environment has reached an unprecedented level of intensity." On the cover, the visage of Barry Commoner projected a powerful image of ecology, which took the stage for the first time in the public eye.

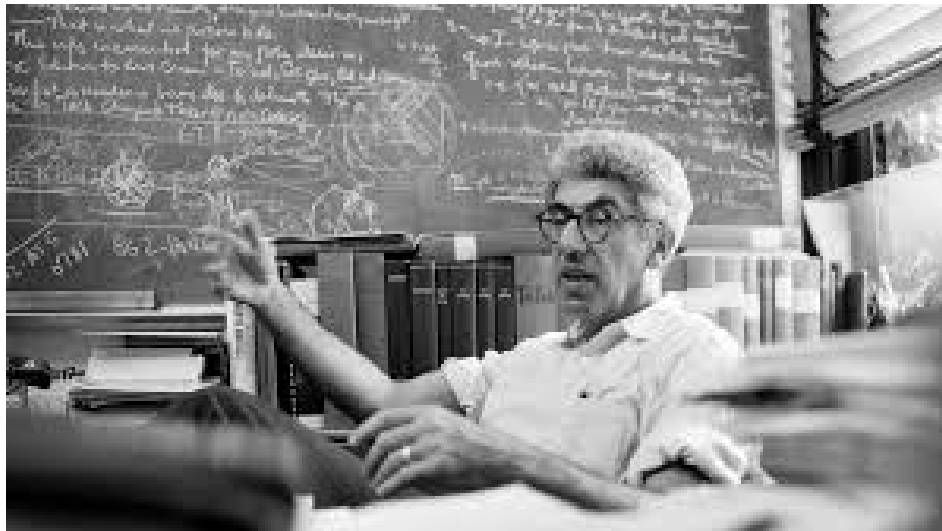
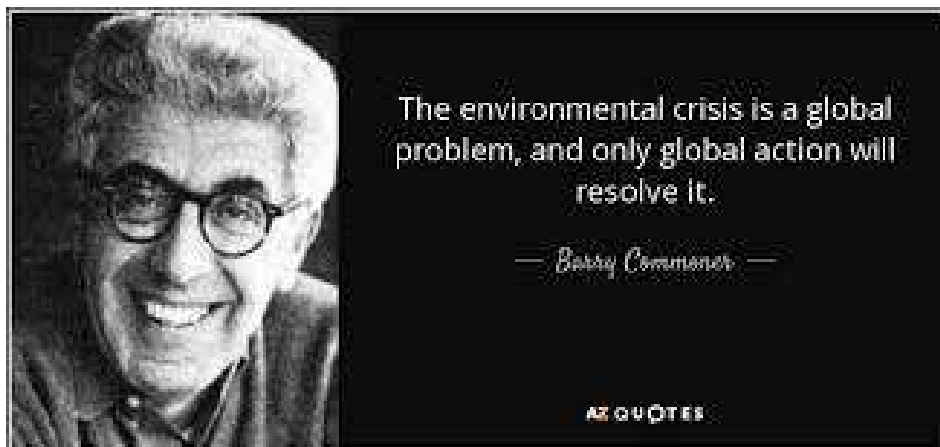
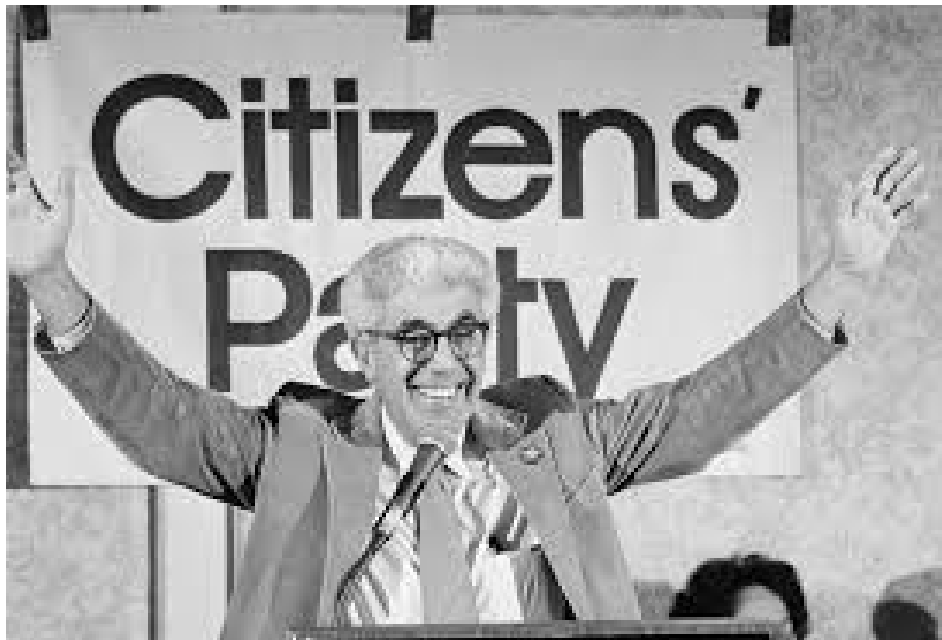


Figure 6.33: Barry Commoner died at the age of 95 in 2012.





The favorite statistic is that the U.S. contains 6 to 7% of the world population but consumes more than half the world's resources and is responsible for that fraction of the total environmental pollution. But this statistic hides another vital fact: that not everyone in the U.S. is so affluent.

Perhaps the simplest example is a synthetic plastic, which unlike natural materials, is not degraded by biological decay. It therefore persists as rubbish or is burned - in both cases causing pollution. In the same way, a substance such as DDT or lead, which plays no role in the chemistry of life and interferes with the actions of substances that do, is bound to cause ecological damage if sufficiently concentrated.

Because the global ecosystem is a connected whole, in which nothing can be gained or lost and which is not subject to over-all improvement, anything extracted from it by human effort must be replaced. Payment of this price cannot be avoided; it can only be delayed. The present environmental crisis is a warning that we have delayed nearly too long.

Despite the dazzling successes of modern technology and the unprecedented power of modern military systems, they suffer from a common and catastrophic fault. While providing us with a bountiful supply of food, with great industrial plants, with high-speed transportation, and with military weapons of unprecedented power, they threaten our very survival.

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## Chapter 7

# WE MUST ELIMINATE THE INSTITUTION OF WAR

### 7.1 War as a political, economic and social institution

Because the world spends roughly two trillion dollars each year on armaments, it follows that very many people make their living from war. This is the reason why it is correct to speak of war as a social, political and economic institution, and also one of the main reasons why war persists, although everyone realizes that it is the cause of much of the suffering of humanity.

We know that war is madness, but it persists. We know that it threatens the survival of our species, but it persists, entrenched in the attitudes of historians, newspaper editors and television producers, entrenched in the methods by which politicians finance their campaigns, and entrenched in the financial power of arms manufacturers - entrenched also in the ponderous and costly hardware of war, the fleets of warships, bombers, tanks, nuclear missiles and so on.

### 7.2 Eisenhower's farewell address

In his farewell address, US President Dwight D. Eisenhower warned his nation against the excessive power that had been acquired during World War II by the military-industrial complex: "We have been compelled to create an armaments industry of vast proportions," Eisenhower said, "...Now this conjunction of an immense military establishment and a large arms industry is new in American experience. The total influence - economic, political, even spiritual - is felt in every city, every state house, every office in the federal government. ... We must not fail to comprehend its grave implications. Our toil, resources and livelihood are all involved; so is the very structure of our society. ... We must stand guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex. The potential for the disastrous rise of misplaced power exists and will persist. We must never let the weight of this combination endanger our democratic

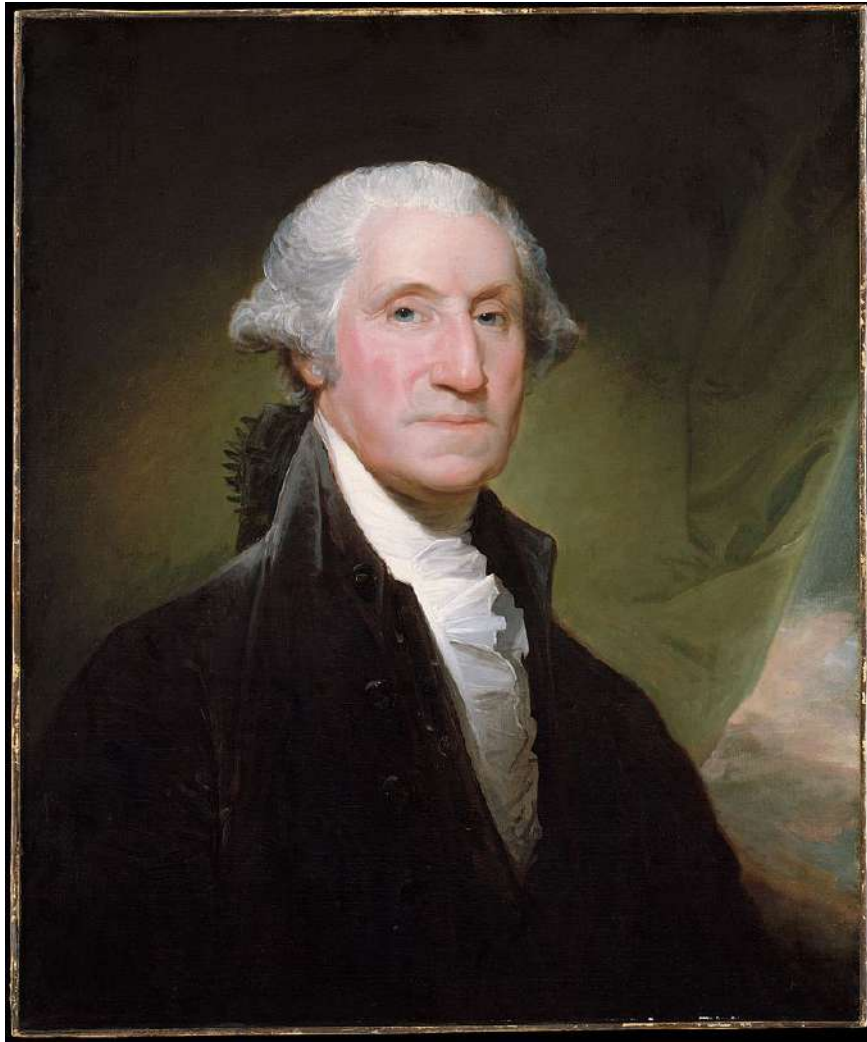


Figure 7.1: George Washington, the first U.S. president, warned against “Overgrown Military Establishments”.

processes. We should take nothing for granted.”

Eisenhower’s words echoed those of another US President, George Washington, who warned against “overgrown Military Establishments which, under any form of government, are inauspicious to liberty, and which are regarded as particularly hostile to Republican Liberty.”



Figure 7.2: An official portrait of Dwight D. Eisenhower. In his famous farewell address, he warned against the misplaced power of a military-industrial complex.

### 7.3 The “War on Terror”

The military-industrial complex needs enemies. Without them it would wither. Thus at the end of the Second World War, this vast power complex was faced with a crisis, but it was saved by the discovery of a new enemy: Communism. However, at the end of the Cold War there was another terrible crisis for the military establishment, the arms manufacturers and their supporters in research, government and the mass media. People spoke of the “peace dividend”, i.e., constructive use of the trillion dollars that the world wastes each year on armaments. However, just in time, the military-industrial complex was saved from the nightmare of the “peace dividend” by the September 11 attacks on New York and Washington.

No matter that the attacks were crimes committed by individuals rather than acts of war, crimes against which police action rather than military action would have been appropriate. The Bush Administration (and CNN, Fox, etc.) quickly proclaimed that a state of war existed, and that the rules of war were in effect. The Cold War was replaced with the “War on Terror”.

To a large extent, this over-reaction to the events of 9/11/2001 can be interpreted in terms of the needs of the military-industrial complex against which Eisenhower had warned. Without a state of war and without enemies, this vast conglomerate of organizations and pressure groups would have languished.

If the aim of the “War on Terror” had been to rid the world of the threat of terrorism, acts like illegal assassination using drones would have been counterproductive, since they create many more terrorists than they destroy. But since the real aim is to produce a state of perpetual war, thus increasing the profits of the military-industrial complex, such methods are the best imaginable. Urinating on Afghan corpses or burning the Koran or murderous night-time raids on civilian homes also help to promote the real goal: perpetual war.

Even the events that initiated the “War on Terror”, seem to have been made worse than they otherwise might have been, in order to give a better excuse for invading Iraq, attacking Afghanistan, and attacking civil liberties. There is evidence that a number of highly placed officials in the US government knew as early as April 2001 that the World Trade Center might soon be attacked. The testimony given by CIA insider Susan Lindauer is very explicit about this point. There is also evidence that charges of thermite were placed on steel structures of several buildings, to melt the steel and ensure their collapse. Molten steel and traces of thermite were found in the ruins before these were sealed off from public scrutiny by the FBI.

The collapse of Building 7 (which was not hit by the aircraft) is particularly suspicious. Larry Silverstein, the leaseholder of the World Trade Center, said shortly afterwards in a PBS interview: “I remember getting a call from the fire department commander telling me that they were not sure that they would be able to contain the fire...” (and he said that) “I think that the smartest thing to do is to pull it.” The phrase “pull it” is one used to speak of controlled demolition, and the subsequent free-falling collapse of Building 7 had all the earmarks of this process.



Figure 7.3: Melted steel pouring from the burning World Trade Center. An ordinary fire is not hot enough to melt steel.



Figure 7.4: Building 7 was not hit by any aircraft, and yet it collapsed many hours later, during the afternoon, in a manner that looked exactly like a controlled demolition.

For those who belong to the military-industrial complex, perpetual war is a blessing, but for the majority of the people of the world it is a curse. Since we who oppose war are the vast majority, can we not make our wills felt?

## 7.4 We are militarism's hostages

Do our "Defense Departments" really defend us? Absolutely not! Their very title is a lie. The military-industrial complex sells itself by claiming to defend civilians. It justifies vast and crippling budgets by this claim; but it is a fraud. For the military-industrial complex, the only goal is money and power. Civilians like ourselves are just hostages. We are expendable. We are pawns in the power game, the money game.

Nations possessing nuclear weapons threaten each other with "Mutually Assured Destruction", which has the very appropriate acronym MAD.

What does this mean? Does it mean that civilians are being protected? Not at all. Instead they are threatened with complete destruction. Civilians here play the role of hostages in the power games of their leaders.

A thermonuclear war today would be not only genocidal but also omnicidal. It would kill people of all ages, babies, children, young people, mothers, fathers and grandparents, without any regard whatever for guilt or innocence. Such a war would be the ultimate ecological catastrophe, destroying not only human civilization but also much of the biosphere.

There is much worry today about climate change, but an ecological catastrophe of equal magnitude could be produced by a nuclear war. One can gain a small idea of what this would be like by thinking of the radioactive contamination that has made an area half the size of Italy near to Chernobyl permanently uninhabitable. It is too soon to know the full effects of the Fukushima disaster, but it appears that it will be comparable with Chernobyl.

The testing of hydrogen bombs in the Pacific half a century ago continues to cause cancer and birth defects in the Marshall Islands today. This too can give us a small idea of the environmental effects of a nuclear war.

In 1954, the United States tested a hydrogen bomb at Bikini. The bomb was 1,300 times more powerful than the bombs that destroyed Hiroshima and Nagasaki. Fallout from the bomb contaminated the island of Rongelap, one of the Marshall Islands 120 kilometers from Bikini.

The islanders experienced radiation illness, and many died from cancer. Even today, half a century later, both people and animals on Rongelap and other nearby islands suffer from birth defects. The most common defects have been "jelly fish babies", born with no bones and with transparent skin. Their brains and beating hearts can be seen. The babies usually live a day or two before they stop breathing.

The environmental effects of a nuclear war would be catastrophic. A war fought with hydrogen bombs would produce radioactive contamination of the kind that we have already experienced in the areas around Chernobyl and Fukushima and in the Marshall Islands,

but on an enormously increased scale.

We have to remember that the total explosive power of the nuclear weapons in the world today is 500,000 times as great as the power of the bombs that destroyed Hiroshima and Nagasaki. What is threatened by a nuclear war today is the complete breakdown of human civilization.

Besides spreading deadly radioactivity throughout the world, a nuclear war would inflict catastrophic damage on global agriculture. Firestorms in burning cities would produce many millions of tons of black, thick, radioactive smoke.

The smoke would rise to the stratosphere where it would spread around the earth and remain for a decade. Prolonged cold, decreased sunlight and rainfall, and massive increases in harmful ultraviolet light would shorten or eliminate growing seasons, producing a nuclear famine.

Even a small nuclear war could endanger the lives of the billion people who today are chronically undernourished. A full-scale war fought with hydrogen bombs would mean that most humans would die from hunger. Many animal and plant species would also be threatened with extinction.

## **7.5 We have come within a hair's breadth of disaster**

Incidents in which global disaster is avoided by a hair's breadth are constantly occurring.

For example, on the night of 26 September, 1983, Lt. Col. Stanislav Petrov, a young software engineer, was on duty at a surveillance center near Moscow. Suddenly the screen in front of him turned bright red. An alarm went off. It's enormous piercing sound filled the room. A second alarm followed, and then a third, fourth and fifth, until the noise was deafening.

The computer showed that the Americans had launched a strike against Russia. Petrov's orders were to pass the information up the chain of command to Secretary General Yuri Andropov. Within minutes, a nuclear counterattack would be launched.

However, because of certain inconsistent features of the alarm, Petrov disobeyed orders and reported it as a computer error, which indeed it was. Most of us probably owe our lives to his brave and coolheaded decision and his knowledge of software systems.

The narrowness of this escape is compounded by the fact that Petrov was on duty only because of the illness of another officer with less knowledge of software, who would have accepted the alarm as real.

Narrow escapes such as this show us clearly that in the long run, the combination of space-age science and stone-age politics will destroy us. We urgently need new political structures and new ethics to match our advanced technology.

Recently the United States has made provocative moves that seriously risk starting a war with Russia that might develop into a nuclear war.

At the same time, the United States is making aggressive moves in an attempt to "contain China".

What can be the reason for these actions, which seem to border on insanity? One reason can be found in the power-drunk thinking of the “Project for a New American Century”, one of whose members was US Under Secretary of Defense for Policy, Paul Wolfowitz.

The Wolfowitz Doctrine states that “Our first objective is to prevent the re-emergence of a new rival, either on the territory of the former Soviet Union or elsewhere, that poses a threat on the order of that posed formerly by the Soviet Union.”

In other words, the Wolfowitz Doctrine is a declaration that the United States intends to control the entire world through military power. No thought is given to the protection of civilian populations, either in the United States or elsewhere. Civilians are mere hostages in the power game.

The money game is important too. A great driving force behind militarism is the almost unimaginably enormous river of money that buys the votes of politicians and the propaganda of the mainstream media.

Numbed by the propaganda, citizens allow the politicians to vote for obscenely bloated military budgets, which further enrich the corporate oligarchs, and the circular flow continues.

As long as tensions are maintained; as long as there is a threat of war, the military-industrial complex gets the money for which it lusts, and the politicians and journalists get their blood money. The safety of civilians plays no role in the money game. We are just hostages.

There is a danger that our world, with all the beauty and value that it contains, will be destroyed by this cynical game for power and money, in which civilians are militarism’s hostages. Will we let this happen?

## 7.6 Killing civilians

Between 2 September and 5 September, 1807, the civilian population of Copenhagen was subjected to a bombardment by British military forces, without any declaration of war. The purpose of the bombardment was to induce terror in the population, and to thereby force the surrender of the Danish fleet, which the British feared might otherwise fall into the hands of Napoleon. It was one of the first occasions on which civilians were deliberately targeted in this manner.

Copenhagen was almost undefended, since the Danish army was positioned at the southern boundary of the country, ready to repel a possible attack by Napoleon’s army. British troops and artillery were thus easily able to surround the city, while the British fleet occupied the harbor. On the first night of the bombardment, 5000 rounds were fired into the city, on the second night 2000, and on the third night 7000. New incendiary rockets developed by William Congreve were also used. More than 2000 civilians were killed by the bombardment, and about 30 percent of Copenhagen’s buildings were destroyed. The bicentenary of this barbaric event might be an appropriate time to think about state-sponsored terror, in which innocent civilians are deliberately targeted.





Figure 7.5: Contemporary Danish painting of the bombardment at night.



Figure 7.6: An illustration by Eckersberg of the Church of Our Lady being bombarded.





Figure 7.7: *The Most Terrible Night*. View of Kongens Nytorv in Copenhagen During the English Bombardment of Copenhagen at Night between 4 and 5 September 1807.

## The erosion of ethical principles during World War II

When Hitler invaded Poland in September, 1939, US President Franklin Delano Roosevelt appealed to Great Britain, France, and Germany to spare innocent civilians from terror bombing. "The ruthless bombing from the air of civilians in unfortified centers of population during the course of the hostilities", Roosevelt said (referring to the use of air bombardment during World War I) "...has sickened the hearts of every civilized man and woman, and has profoundly shocked the conscience of humanity." He urged "every Government which may be engaged in hostilities publicly to affirm its determination that its armed forces shall in no event, and under no circumstances, undertake the bombardment from the air of civilian populations or of unfortified cities."

Two weeks later, British Prime Minister Neville Chamberlain responded to Roosevelt's appeal with the words: "Whatever the lengths to which others may go, His Majesty's Government will never resort to the deliberate attack on women and children and other civilians for purposes of mere terrorism."

Much was destroyed during World War II, and among the casualties of the war were the ethical principles that Roosevelt and Chamberlain announced at its outset. At the time of Roosevelt and Chamberlain's declarations, terror bombing of civilians had already begun in the Far East. On 22 and 23 September, 1937, Japanese bombers attacked civilian populations in Nanjing and Canton. The attacks provoked widespread protests. The British Under Secretary of State for Foreign Affairs, Lord Cranborne, wrote: "Words cannot express the feelings of profound horror with which the news of these raids has been received by the whole civilized world. They are often directed against places far from the actual area of hostilities. The military objective, where it exists, seems to take a completely second place. The main object seems to be to inspire terror by the indiscriminate slaughter of civilians..."

On the 25th of September, 1939, Hitler's air force began a series of intense attacks on Warsaw. Civilian areas of the city, hospitals marked with the Red Cross symbol, and fleeing refugees all were targeted in a effort to force the surrender of the city through terror. On the 14th of May, 1940, Rotterdam was also devastated. Between the 7th of September 1940 and the 10th of May 1941, the German Luftwaffe carried out massive air attacks on targets in Britain. By May, 1941, 43,000 British civilians were killed and more than a million houses destroyed.

Although they were not the first to start it, by the end of the war the United States and Great Britain were bombing of civilians on a far greater scale than Japan and Germany had ever done. For example, on July 24-28, 1943, British and American bombers attacked Hamburg with an enormous incendiary raid whose official intention "the total destruction" of the city.

The result was a firestorm that did, if fact, lead to the total destruction of the city. One airman recalled, that "As far as I could see was one mass of fire. 'A sea of flame' has been the description, and that's an understatement. It was so bright that I could read the target maps and adjust the bomb-sight." Another pilot was "...amazed at the awe-inspiring sight of the target area. It seemed as though the whole of Hamburg was on fire from one



Figure 7.8: Picasso's famous painting *Guernica* was a protest following the Nazi bombing of civilians in a Basque town,

end to the other and a huge column of smoke was towering well above us - and we were on 20,000 feet! It all seemed almost incredible and, when I realized that I was looking at a city with a population of two millions, or about that, it became almost frightening to think of what must be going on down there in Hamburg."

Below, in the burning city, temperatures reached 1400 degrees Fahrenheit, a temperature at which lead and aluminum have long since liquefied. Powerful winds sucked new air into the firestorm. There were reports of babies being torn by the high winds from their mothers' arms and sucked into the flames. Of the 45,000 people killed, it has been estimated that 50 percent were women and children and many of the men killed were elderly, above military age. For weeks after the raids, survivors were plagued by "...droves of vicious rats, grown strong by feeding on the corpses that were left unburied within the rubble as well as the potatoes and other food supplies lost beneath the broken buildings."

The German cities Kassel, Pforzheim, Mainz, Dresden and Berlin were similarly destroyed, and in Japan, US bombing created firestorms in many cities, for example Tokyo, Kobe and Yokohama. In Tokyo alone, incendiary bombing caused more than 100,000 civilian casualties.

## Hiroshima and Nagasaki

On August 6, 1945, at 8.15 in the morning, a nuclear fission bomb was exploded in the air over the civilian population of Hiroshima in an already virtually defeated Japan. The force of the explosion was equivalent to fifteen thousand tons of TNT. Out of a city of two hundred and fifty thousand, one hundred thousand were killed immediately, and another





hundred thousand were hurt. Many of the injured died later from radiation sickness. A few days later, Nagasaki was similarly destroyed.

The tragic destruction of the two Japanese cities was horrible enough in itself, but it also marked the start of a nuclear arms race that continues to cast a very dark shadow over the future of civilization. Not long afterwards, the Soviet Union exploded its own atomic bomb, creating feelings of panic in the United States. President Truman authorized an all-out effort to build superbombs based on thermonuclear reactions, the reactions that heat the sun and stars.

In March, 1954, the US tested a thermonuclear bomb at Bikini Atoll in the Pacific Ocean. It was 1000 times more powerful than the Hiroshima bomb. The Japanese fishing boat, Lucky Dragon, was 135 kilometers from the Bikini explosion, but radioactive fallout

from the explosion killed one crew member and made all the others seriously ill. The distance to the Marshall Islands was equally large, but even today, islanders continue to suffer from the effects of fallout from the test, for example frequent birth defects.

Driven by the paranoia of the Cold War, the number of nuclear weapons on both sides reached truly insane heights. At the worst point, there were 50,000 nuclear weapons in the world, with a total explosive power roughly a million times the power of the Hiroshima bomb. This was equivalent to 4 tons of TNT for every person on the planet - enough to destroy human civilization many times over - enough to threaten the existence of all life on earth.

At the end of the Cold War, most people heaved a sigh of relief and pushed the problem of nuclear weapons away from their minds. It was a threat to life too horrible to think about. People felt that they could do nothing in any case, and they hoped that the problem had finally disappeared.

Today, however, many thoughtful people realize that the problem of nuclear weapons has by no means disappeared, and in some ways it is even more serious now than it was during the Cold War. There are still over 15,000 nuclear weapons in the world, many of them hydrogen bombs, many on hair-trigger alert, ready to be fired with only a few minutes warning. The world has frequently come extremely close to accidental nuclear war. If nuclear weapons are allowed to exist for a long period of time, the probability for such a catastrophic accident to happen will grow into a certainty.

Current dangers also come from proliferation. Recently, more and more nations have come to possess nuclear weapons, and thus the danger that they will be used increases. For example, if Pakistan's less-than-stable government should fall, its nuclear weapons might find their way into the hands of terrorists, and against terrorism deterrence has no effect.

Thus we live at a special time in history - a time of crisis for civilization. We did not ask to be born at a moment of crisis, but such is our fate. Every person now alive has a special responsibility: We owe it, both to our ancestors and to future generations, to build a stable and cooperative future world. It must be a war-free world, from which nuclear weapons have been completely abolished. No person can achieve these changes alone, but together we can build the world that we desire. This will not happen through inaction, but it can happen through the dedicated work of large numbers of citizens.

Civilians have for too long played the role of passive targets, hostages in the power struggles of politicians. It is time for civil society to make its will felt. If our leaders continue to enthusiastically support the institution of war, if they will not abolish nuclear weapons, then let us have new leaders.

## 7.7 The direct and indirect costs of war

The costs of war, both direct and indirect, are so enormous that they are almost beyond comprehension. We face a direct threat because a thermonuclear war may destroy human civilization and much of the biosphere, and an indirect threat because the institution of war interferes seriously with the use of tax money for constructive and peaceful purposes.



Today, despite the end of the Cold War, the world spends roughly 1.7 trillion (i.e. 1.7 million million) US dollars each year on armaments. This colossal flood of money could have been used instead for education, famine relief, development of infrastructure, or on urgently needed public health measures.

The World Health Organization lacks funds to carry through an antimalarial program on as large a scale as would be desirable, but the entire program could be financed for less than our military establishments spend in a single day. Five hours of world arms spending is equivalent to the total cost of the 20-year WHO campaign that resulted in the eradication of smallpox. For every 100,000 people in the world, there are 556 soldiers, but only 85 doctors. Every soldier costs an average of \$20,000 per year, while the average spent on education is only \$380 per school-aged child. With a diversion of funds consumed by three weeks of military spending, the world could create a sanitary water supply for all its people, thus eliminating the cause of almost half of all human illness.

A new drug-resistant form of tuberculosis has recently become widespread in Asia and in the former Soviet Union. In order to combat this new and highly dangerous form of tuberculosis and to prevent its spread, WHO needs \$500 million, an amount equivalent to 1.2 hours of world arms spending.

Today's world is one in which roughly ten million children die every year from starvation or from diseases related to poverty. Besides this enormous waste of young lives through malnutrition and preventable disease, there is a huge waste of opportunities through inadequate education. The rate of illiteracy in the 25 least developed countries is 80%, and the total number of illiterates in the world is estimated to be 800 million. Meanwhile every 60 seconds the world spends \$6.5 million on armaments.

It is plain that if the almost unbelievable sums now wasted on the institution of war were used constructively, most of the pressing problems of humanity could be solved, but today the world spends more than 20 times as much on war as it does on development.

## 7.8 Medical and psychological consequences; loss of life

While in earlier epochs it may have been possible to confine the effects of war mainly to combatants, in the 20th century the victims of war were increasingly civilians, and especially children. For example, according to Quincy Wright's statistics, the First and Second World Wars cost the lives of 26 million soldiers, but the toll in civilian lives was much larger: 64 million.

Since the Second World War, despite the best efforts of the UN, there have been over 150 armed conflicts; and, if civil wars are included, there are on any given day an average of 12 wars somewhere in the world. In the conflicts in Indo-China, the proportion of civilian victims was between 80% and 90%, while in the Lebanese civil war some sources state that the proportion of civilian casualties was as high as 97%.

Civilian casualties often occur through malnutrition and through diseases that would

be preventable in normal circumstances. Because of the social disruption caused by war, normal supplies of food, safe water and medicine are interrupted, so that populations become vulnerable to famine and epidemics.<sup>1</sup>

## 7.9 Effects of war on children

According to UNICEF figures, 90% of the casualties of recent wars have been civilians, and 50% children. The organization estimates that in recent years, violent conflicts have driven 20 million children from their homes. They have become refugees or internally displaced persons within their own countries.

During the last decade 2 million children have been killed and 6 million seriously injured or permanently disabled as the result of armed conflicts, while 1 million children have been orphaned or separated from their families. Of the ten countries with the highest rates of death of children under five years of age, seven are affected by armed conflicts. UNICEF estimates that 300,000 child soldiers are currently forced to fight in 30 armed conflicts throughout the world. Many of these have been forcibly recruited or abducted.

Even when they are not killed or wounded by conflicts, children often experience painful psychological traumas: the violent death of parents or close relatives, separation from their families, seeing family members tortured, displacement from home, disruption of ordinary life, exposure to shelling and other forms of combat, starvation and anxiety about the future.<sup>2</sup>

## 7.10 Refugees

Human Rights Watch estimates that in 2001 there were 15 million refugees in the world, forced from their countries by war, civil and political conflict, or by gross violations of human rights. In addition, there were an estimated 22 million internally displaced persons, violently forced from their homes but still within the borders of their countries.

In 2001, 78% of all refugees came from ten areas: Afghanistan, Angola, Burma, Burundi, Congo-Kinshasa, Eritrea, Iraq, the Palestinian territories, Somalia and Sudan. A quarter of all refugees are Palestinians, who make up the world's oldest and largest refugee population. 45% of the world's refugees have found sanctuaries in Asia, 30% in Africa, 19% in Europe and 5% in North America.

Refugees who have crossed an international border are in principle protected by Article 14 of the Universal Declaration of Human Rights, which affirms their right "to seek and to enjoy in other countries asylum from persecution". In 1950 the Office of the High Commissioner for Refugees was created to implement Article 14, and in 1951 the Convention Relating to the Status of Refugees was adopted by the UN. By 2002 this legally binding

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<sup>1</sup><http://www.cadmusjournal.org/article/volume-2/issue-2-part-3/lessons-world-war-i>  
<http://www.truth-out.org/opinion/item/27201-the-leading-terrorist-state>

<sup>2</sup><http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2080482/>

treaty had been signed by 140 nations. However the industrialized countries have recently adopted a very hostile and restrictive attitude towards refugees, subjecting them to arbitrary arrests, denial of social and economic rights, and even forcible return to countries in which they face persecution.

The status of internally displaced persons is even worse than that of refugees who have crossed international borders. In many cases the international community simply ignores their suffering, reluctant to interfere in the internal affairs of sovereign states. In fact, the United Nations Charter is self-contradictory in this respect, since on the one hand it calls for non-interference in the internal affairs of sovereign states, but on the other hand, people everywhere are guaranteed freedom from persecution by the Charter's Universal Declaration of Human Rights.<sup>3</sup>

## 7.11 Damage to infrastructure

Most insurance policies have clauses written in fine print exempting companies from payment of damage caused by war. The reason for this is simple. The damage caused by war is so enormous that insurance companies could never come near to paying for it without going bankrupt.

We mentioned above that the world spends 1.7 trillion dollars each year on preparations for war. A similarly colossal amount is needed to repair the damage to infrastructure caused by war. Sometimes this damage is unintended, but sometimes it is intentional.

During World War II, one of the main aims of air attacks by both sides was to destroy the industrial infrastructure of the opponent. This made some sense in a war expected to last several years, because the aim was to prevent the enemy from producing more munitions. However, during the Gulf War of 1990, the infrastructure of Iraq was attacked, even though the war was expected to be short. Electrical generating plants and water purification facilities were deliberately destroyed with the apparent aim of obtaining leverage over Iraq after the war.

In general, because war has such a catastrophic effect on infrastructure, it can be thought of as the opposite of development. War is the greatest generator of poverty.<sup>4</sup>

## 7.12 Ecological damage

Warfare during the 20th century has not only caused the loss of 175 million lives (primarily civilians) - it has also caused the greatest ecological catastrophes in human history. The damage takes place even in times of peace. Studies by Joni Seager, a geographer at the

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<sup>3</sup><https://www.hrw.org/topic/refugees>

<sup>4</sup><https://www.wsws.org/en/articles/2002/11/iraq-n04.html>  
<http://www.globalresearch.ca/crimes-against-humanity-the-destruction-of-iraqs-electricity-infrastructure-the-social-economic-and-environmental-impacts/5355665>  
<http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/00157630-EN-ERP-48.PDF>

University of Vermont, conclude that “a military presence anywhere in the world is the single most reliable predictor of ecological damage”.

Modern warfare destroys environments to such a degree that it has been described as an “environmental holocaust.” For example, herbicides use in the Vietnam War killed an estimated 6.2 billion board-feet of hardwood trees in the forests north and west of Saigon, according to the American Association for the Advancement of Science. Herbicides such as Agent Orange also made enormous areas of previously fertile land unsuitable for agriculture for many years to come. In Vietnam and elsewhere in the world, valuable agricultural land has also been lost because land mines or the remains of cluster bombs make it too dangerous for farming.

During the Gulf War of 1990, the oil spills amounted to 150 million barrels, 650 times the amount released into the environment by the notorious Exxon Valdez disaster. During the Gulf War an enormous number of shells made of depleted uranium were fired. When the dust produced by exploded shells is inhaled it often produces cancer, and it will remain in the environment of Iraq for decades.

Radioactive fallout from nuclear tests pollutes the global environment and causes many thousands of cases of cancer, as well as birth abnormalities. Most nuclear tests have been carried out on lands belonging to indigenous peoples. Agent Orange also produced cancer, birth abnormalities and other serious forms of illness both in the Vietnamese population and among the foreign soldiers fighting in Vietnam<sup>5</sup>

## 7.13 Links between poverty and war

There are several relationships between intolerable economic inequality and war. Today 2.7 billion people live on less than 2 dollars a day - 1.1 billion on less than 1 dollar per day. 18 million of our fellow humans die each year from poverty-related causes. In 2006, 1.1 billion people lacked safe drinking water, and waterborne diseases killed an estimated 1.8 million people. The developing countries are also the scene of a resurgence of other infectious diseases, such as malaria, drug-resistant tuberculosis and HIV/AIDS.

Meanwhile, in 2011, world military budgets reached 1,700,000,000,000 dollars (i.e. 1.7 million million dollars). This amount of money is almost too large to be imagined. The fact that it is being spent means that many people are making a living from the institution of war. Wealthy and powerful lobbies from the military-industrial complex are able to influence mass media and governments. Thus the institution of war persists, although we know very well that it is a threat to civilization and that it responsible for much of the suffering that humans experience.

Today’s military spending of almost two trillion US dollars per year would be more than enough to finance safe drinking water for the entire world, and to bring primary health care and family planning advice to all. If used constructively, the money now wasted (or worse

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<sup>5</sup><http://www.dailymail.co.uk/news/article-2401378/Agent-Orange-Vietnamese-children-suffering-effects-herbicide-sprayed-US-Army-40-years-ago.html>

than wasted) on the institution of war could also help the world to make the transition from fossil fuel use to renewable energy systems.

Military might is used by powerful industrialized nations to maintain economic hegemony over less developed countries. This is true today, even though the colonial era is supposed to be over (as has been amply documented by Professor Michael Klare in his books on “Resource Wars”).

The way in which the industrialized countries maintain their control over less developed nations can be illustrated by the “resource curse”, i.e. the fact that resource-rich developing countries are no better off economically than those that lack resources, but are cursed with corrupt and undemocratic governments. This is because foreign corporations extracting local resources under unfair agreements exist in a symbiotic relationship with corrupt local officials.

One might think that taxation of foreign resource-extracting firms would provide developing countries with large incomes. However, there is at present no international law governing multinational tax arrangements. These are usually agreed to on a bilateral basis, and the industrialized countries have stronger bargaining powers in arranging the bilateral agreements.

Another important poverty-generating factor in the developing countries is war - often civil war. The five permanent members of the U.N. Security Council are, ironically, the five largest exporters of small arms. Small arms have a long life. The weapons poured into Africa by both sides during the Cold War are still there, and they contribute to political chaos and civil wars that block development and cause enormous human suffering.

The United Nations website on Peace and Security through Disarmament states that “Small arms and light weapons destabilize regions; spark, fuel and prolong conflicts; obstruct relief programmes; undermine peace initiatives; exacerbate human rights abuses; hamper development; and foster a ‘culture of violence’.”

An estimated 639 million small arms and light weapons are in circulation worldwide, one for every ten people. Approximately 300,000 people are killed every year by these weapons, many of them women and children.

There is also another, less obvious, link between intolerable economic inequality war: Abolition of the institution of war will require the replacement of “might makes right” by the rule international law. It will require development of effective global governance. But reform and strengthening of the United Nations is blocked by wealthy countries because they are afraid of losing their privileged positions. If global economic inequality were less enormous, the problem of unifying the world would be simplified.

Let us work to break the links between poverty and war! To do that, we must work for laws that will restrict the international sale of small arms; we must work for a fair relationship between developing countries and multinational corporations; and above all, we must question the need for colossal military budgets. By following this path we can free the world from the intolerable suffering caused by poverty and from the equally intolerable suffering caused by war.

## 7.14 The threat of nuclear war

As bad as conventional arms and conventional weapons may be, it is the possibility of a catastrophic nuclear war that poses the greatest threat to humanity. There are today roughly 16,000 nuclear warheads in the world. The total explosive power of the warheads that exist or that could be made on short notice is approximately equal to 500,000 Hiroshima bombs.

To multiply the tragedy of Hiroshima by a factor of half a million makes an enormous difference, not only quantitatively, but also qualitatively. Those who have studied the question believe that a nuclear catastrophe today would inflict irreversible damage on our civilization, genetic pool and environment.

Thermonuclear weapons consist of an inner core where the fission of uranium-235 or plutonium takes place. The fission reaction in the core is able to start a fusion reaction in the next layer, which contains isotopes of hydrogen. It is possible to add a casing of ordinary uranium outside the hydrogen layer, and under the extreme conditions produced by the fusion reaction, this ordinary uranium can undergo fission. In this way, a fission-fusion-fission bomb of almost limitless power can be produced.

For a victim of severe radiation exposure, the symptoms during the first week are nausea, vomiting, fever, apathy, delirium, diarrhoea, oropharyngeal lesions and leukopenia. Death occurs during the first or second week.

We can perhaps be helped to imagine what a nuclear catastrophe means in human terms by reading the words of a young university professor, who was 2,500 meters from the hypocenter at the time of the bombing of Hiroshima: "Everything I saw made a deep impression: a park nearby covered with dead bodies... very badly injured people evacuated in my direction... Perhaps most impressive were girls, very young girls, not only with their clothes torn off, but their skin peeled off as well. ... My immediate thought was that this was like the hell I had always read about. ... I had never seen anything which resembled it before, but I thought that should there be a hell, this was it."

One argument that has been used in favor of nuclear weapons is that no sane political leader would employ them. However, the concept of deterrence ignores the possibility of war by accident or miscalculation, a danger that has been increased by nuclear proliferation and by the use of computers with very quick reaction times to control weapons systems.

Recent nuclear power plant accidents remind us that accidents frequently happen through human and technical failure, even for systems which are considered to be very "safe." We must also remember the time scale of the problem. To assure the future of humanity, nuclear catastrophe must be avoided year after year and decade after decade. In the long run, the safety of civilization cannot be achieved except by the abolition of nuclear weapons, and ultimately the abolition of the institution of war.

In 1985, International Physicians for the Prevention of Nuclear War received the Nobel Peace Prize. IPPNW had been founded in 1980 by six physicians, three from the Soviet Union and three from the United States. Today, the organization has wide membership among the world's physicians. Professor Bernard Lowen of the Harvard School of Public Health, one of the founders of IPPNW, said in a recent speech:

“...No public health hazard ever faced by humankind equals the threat of nuclear war. Never before has man possessed the destructive resources to make this planet uninhabitable... Modern medicine has nothing to offer, not even a token benefit, in the event of nuclear war...”

“We are but transient passengers on this planet Earth. It does not belong to us. We are not free to doom generations yet unborn. We are not at liberty to erase humanity’s past or dim its future. Social systems do not endure for eternity. Only life can lay claim to uninterrupted continuity. This continuity is sacred.”

The danger of a catastrophic nuclear war casts a dark shadow over the future of our species. It also casts a very black shadow over the future of the global environment. The environmental consequences of a massive exchange of nuclear weapons have been treated in a number of studies by meteorologists and other experts from both East and West. They predict that a large-scale use of nuclear weapons would result in fire storms with very high winds and high temperatures, which would burn a large proportion of the wild land fuels in the affected nations. The resulting smoke and dust would block out sunlight for a period of many months, at first only in the northern hemisphere but later also in the southern hemisphere.

Temperatures in many places would fall far below freezing, and much of the earth’s plant life would be killed. Animals and humans would then die of starvation. The nuclear winter effect was first discovered as a result of the Mariner 9 spacecraft exploration of Mars in 1971. The spacecraft arrived in the middle of an enormous dust-storm on Mars, and measured a large temperature drop at the surface of the planet, accompanied by a heating of the upper atmosphere. These measurements allowed scientists to check their theoretical models for predicting the effect of dust and other pollutants distributed in planetary atmospheres.

Using experience gained from the studies of Mars, R.P. Turco, O.B. Toon, T. Ackerman, J.B. Pollack and C. Sagan made a computer study of the climatic effects of the smoke and dust that would result from a large-scale nuclear war. This early research project is sometimes called the TTAPS Study, after the initials of the authors.

In April 1983, a special meeting was held in Cambridge, Massachusetts, where the results of the TTAPS Study and other independent studies of the nuclear winter effect were discussed by more than 100 experts. Their conclusions were presented at a forum in Washington, D.C., the following December, under the chairmanship of U.S. Senators Kennedy and Hatfield. The numerous independent studies of the nuclear winter effect all agreed of the following main predictions:

High-yield nuclear weapons exploded near the earth’s surface would put large amounts of dust into the upper atmosphere. Nuclear weapons exploded over cities, forests, oilfields and refineries would produce fire storms of the type experienced in Dresden and Hamburg after incendiary bombings during the Second World War. The combination of high-altitude dust and lower altitude soot would prevent sunlight from reaching the earth’s surface, and the degree of obscuration would be extremely high for a wide range of scenarios.

A baseline scenario used by the TTAPS study assumes a 5,000-megaton nuclear exchange, but the threshold for triggering the nuclear winter effect is believed to be much

lower than that. After such an exchange, the screening effect of pollutants in the atmosphere might be so great that, in the northern and middle latitudes, the sunlight reaching the earth would be only 1% of ordinary sunlight on a clear day, and this effect would persist for many months. As a result, the upper layers in the atmosphere might rise in temperature by as much as 100 °C, while the surface temperatures would fall, perhaps by as much as 50 °C.

The temperature inversion produced in this way would lead to superstability, a condition in which the normal mixing of atmospheric layers is suppressed. The hydrological cycle (which normally takes moist air from the oceans to a higher and cooler level, where the moisture condenses as rain) would be strongly suppressed. Severe droughts would thus take place over continental land masses. The normal cleansing action of rain would be absent in the atmosphere, an effect which would prolong the nuclear winter.

In the northern hemisphere, forests would die because of lack of sunlight, extreme cold, and drought. Although the temperature drop in the southern hemisphere would be less severe, it might still be sufficient to kill a large portion of the tropical forests, which normally help to renew the earth's oxygen.

The oxygen content of the atmosphere would then fall dangerously, while the concentration of carbon dioxide and oxides of nitrogen produced by firestorms would remain high. The oxides of nitrogen would ultimately diffuse to the upper atmosphere, where they would destroy the ozone layer.

Thus, even when the sunlight returned after an absence of many months, it would be sunlight containing a large proportion of the ultraviolet frequencies which are normally absorbed by the ozone in the stratosphere, and therefore a type of light dangerous to life. Finally, after being so severely disturbed, there is no guarantee that the global climate would return to its normal equilibrium.

Even a nuclear war below the threshold of nuclear winter might have climatic effects very damaging to human life. Professor Paul Ehrlich, of Stanford University, has expressed this in the following words:

"...A smaller war, which set off fewer fires and put less dust into the atmosphere, could easily depress temperatures enough to essentially cancel grain production in the northern hemisphere. That in itself would be the greatest catastrophe ever delivered upon Homo Sapiens, just that one thing, not worrying about prompt effects. Thus even below the threshold, one cannot think of survival of a nuclear war as just being able to stand up after the bomb has gone off."<sup>6</sup>

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<sup>6</sup><http://www.voanews.com/content/pope-francis-calls-for-nuclear-weapons-ban/2909357.html>  
<http://www.cadmusjournal.org/article/issue-4/flaws-concept-nuclear-deterrence>  
<http://www.countercurrents.org/avery300713.htm>  
<https://www.wagingpeace.org/author/john-avery/>  
<http://www.commondreams.org/news/2015/08/06/70-years-after-bombing-hiroshima-calls-abolish-nuclear-weapons>  
<http://www.informationclearinghouse.info/article42488.htm>  
<http://www.informationclearinghouse.info/article42492.htm>  
<http://www.commondreams.org/views/2015/08/06/hiroshima-and-nagasaki-remembering-power>  
<http://human-wrongs-watch.net/2015/07/22/israel-iran-and-the-nuclear-non-proliferation-treaty/>





Figure 7.9: U.N. Secretary General Antonio Guterres addressed the Human Rights Council at the United Nations in Geneva, Switzerland February 26, 2018.

Speaking to the Conference on Disarmament at the U.N. complex in Geneva, Guterres said many states still wrongly thought that nuclear weapons made the world safer.

“There is great and justified anxiety around the world about the threat of nuclear war,” he said.

“Countries persist in clinging to the fallacious idea that nuclear arms make the world safer ... At the global level, we must work towards forging a new momentum on eliminating nuclear weapons.”

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<http://human-wrongs-watch.net/2015/06/25/militarisms-hostages/>  
<http://human-wrongs-watch.net/2015/05/24/the-path-to-zero-dialogues-on-nuclear-dangers-by-richard-falk-and-david-krieger/>  
<http://human-wrongs-watch.net/2015/03/30/europe-must-not-be-forced-into-a-nuclear-war-with-russia/>  
<http://www.truth-out.org/opinion/item/32073-the-us-should-eliminate-its-nuclear-arsenal-not-modernize-it>  
<http://www.cadmusjournal.org/article/issue-4/flaws-concept-nuclear-deterrence>  
<http://www.cadmusjournal.org/article/issue-6/arms-trade-treaty-opens-new-possibilities-u>  
<http://eruditio.worldacademy.org/issue-6/article/remember-your-humanity>  
<http://www.informationclearinghouse.info/article42568.htm>  
<https://firstlook.org/theintercept/2014/09/23/nobel-peace-prize-fact-day-syria-7th-country-bombed-obama/>  
<http://www.informationclearinghouse.info/article42577.htm>  
<http://www.informationclearinghouse.info/article42580.htm>  
<http://human-wrongs-watch.net/2015/08/06/us-unleashing-of-atomic-weapons-against-civilian-populations-was-a-criminal-act-of-the-first-order/>  
<http://human-wrongs-watch.net/2015/08/06/hiroshima-and-nagasaki-remembering-the-power-of-peace/>  
<http://human-wrongs-watch.net/2015/08/04/atomic-bombing-hear-the-story-setsuko-thurlow/>  
<http://human-wrongs-watch.net/2015/08/04/atomic-bombing-hear-the-story-yasuaki-yamashita/>  
<http://human-wrongs-watch.net/2015/08/03/why-nuclear-weapons/>

### Two World War I poems by Wilfred Owen

Wilfred Owen and his mentor, Siegfried Sassoon were two poets who eloquently described the horrors of World War I. They met in a military hospital, after both had been wounded in the war. Owen had been writing poetry since the age of 11, but not about war. When he became friends with Sassoon during their hospital stay, Owen was inspired by Sassoon's example and realized that the horrors of trenches and gas warfare deserved to be described realistically in poetry. Against the strong advice of Sassoon, Owen insisted on returning to active duty in France, where he wrote the eloquent and bitter war poems for which he is remembered.

Owen was killed in action exactly one week before the end of the war. His mother received the telegram informing her of his death on Armistice Day, as the church bells were ringing out in celebration. Here are two of Owen's poems:

#### *Dulce et decorum Est*

*Bent double, like old beggars under sacks,  
Knock-kneed, coughing like hags, we cursed through sludge,  
Till on the haunting flares we turned our backs,  
And towards our distant rest began to trudge.  
Men marched asleep. Many had lost their boots,  
But limped on, blood-shod. All went lame, all blind;  
Drunk with fatigue; deaf even to the hoots  
Of gas-shells dropping softly behind.*

*Gas! GAS! Quick, boys! - An ecstasy of fumbling  
Fitting the clumsy helmets just in time,  
But someone still was yelling out and stumbling  
And flound'ring like a man in fire or lime.  
Dim through the misty panes and thick green light,  
As under a green sea, I saw him drowning.  
In all my dreams before my helpless sight  
He plunges at me, guttering, choking, drowning.*

*If in some smothering dreams, you too could pace  
Behind the wagon that we flung him in,  
And watch the white eyes writhing in his face,  
His hanging face, like a devil's sick of sin,  
If you could hear, at every jolt, the blood  
Come gargling from the froth-corrupted lungs  
Obscene as cancer, bitter as the cud  
Of vile, incurable sores on innocent tongues,  
My friend, you would not tell with such high zest*

*To children ardent for some desperate glory,  
The old Lie: Dulce et decorum est  
Pro patria mori.*

***The parable of the old man and the young***

*So Abram rose, and clave the wood, and went,  
And took the fire with him, and a knife.  
And as they sojourned both of them together,  
Isaac the first-born spake and said, My Father,  
Behold the preparations, fire and iron,  
But where the lamb for this burnt-offering?  
Then Abram bound the youth with belts and straps,  
and builded parapets and trenches there,  
And stretchèd forth the knife to slay his son.  
When lo! an angel called him out of heaven,  
Saying, Lay not thy hand upon the lad,  
Neither do anything to him. Behold,  
A ram, caught in a thicket by its horns;  
Offer the Ram of Pride instead of him.*

*But the old man would not so, but slew his son,  
And half the seed of Europe, one by one.*

We condemn human sacrifice in primitive cultures, but does not our modern industrial society also practice this abominable custom? We sacrifice countless young men and women in endless and unnecessary wars.

**World War II: a continuation of World War I**

In the Second World War, the number of soldiers killed was roughly the same as in World War I, but the numbers of civilian deaths was much larger. In the USSR alone, about 20 million people are thought to have been killed, directly or indirectly, by World War II, and of these only 7.5 million were battle deaths. Many of the USSR's civilian deaths were caused by starvation, disease or exposure. Civilian populations also suffered greatly in the devastating bombings of cities such as London, Coventry, Rotterdam, Warsaw, Dresden, Cologne, Berlin, Tokyo, Hiroshima and Nagasaki. In World War II, the total number of deaths, civilian and military, is estimated to have been between 62 and 78 million.

Do Benjamin Netanyahu and Ehud Barak, who are contemplating starting what might develop into World War III, have any imaginative concept of what it would be like? Netanyahu has told the Israeli people that only 500 of their citizens would be killed, and that the conflict would be over in a month. One is reminded of the Austrian leaders in 1914, who started a what they thought would be a small action to punish the Serbian nation-

alists for their Pan-Slavic ambitions. When the result was a world-destroying war, they said "That is not what we intended." Of course it is not what they intended, but nobody can control the escalation of conflicts. The astonishing unrealism of the Netanyahu-Barak statements also reminds one of Kaiser Wilhelm's monumentally unrealistic words to his departing troops: "You will be home before the leaves are off the trees."

The planned attack on Iran would not only violate international law, but would also violate common sense and the wishes of the people of Israel. The probable result would be a massive Iranian missile attack on Tel Aviv, and Iran would probably also close the Straits of Hormuz. If the United States responded by bombing Iranian targets, Iran would probably use missiles to sink one or more of the US ships in the Persian Gulf. One can easily imagine other steps in the escalation of the conflict: a revolution in Pakistan; the entry of nuclear-armed Pakistan into the war on the side of Iran; a preemptive nuclear strike by Israel against Pakistan's nuclear weapons; and Chinese-Russian support of Iran. In the tense atmosphere of such a war, the danger of a major nuclear exchange, due to accident or miscalculation, would be very great.

Today, because the technology of killing has continued to develop, the danger of a catastrophic war with hydrogen bombs hangs like a dark cloud over the future of human civilization. The total explosive power of today's weapons is equivalent to roughly half a million Hiroshima bombs. To multiply the tragedy of Hiroshima and Nagasaki by a factor of half a million changes the danger qualitatively. What is threatened today is the complete breakdown of human society.

There are more than 15,000 nuclear weapons in the world today, about 4,000 of them on hair-trigger alert. The phrase "hair trigger alert" means that the person in charge has only 15 minutes to decide whether the warning from the radar system was true or false, and to decide whether or not to launch a counterattack. The danger of accidental nuclear war continues to be high. Technical failures and human failures have many times brought the world close to a catastrophic nuclear war. Those who know the system of "deterrence" best describe it as "an accident waiting to happen".

No one can win a nuclear war, just as no one can win a natural catastrophe like an earthquake or a tsunami. The effects of a nuclear war would be global, and all the nations of the world would suffer - also neutral nations.

Recent studies by atmospheric scientists have shown that the smoke from burning cities produced by even a limited nuclear war would have a devastating effect on global agriculture. The studies show that the smoke would rise to the stratosphere, where it would spread globally and remain for a decade, blocking sunlight, blocking the hydrological cycle and destroying the ozone layer. Because of the devastating effect on global agriculture, darkness from even a small nuclear war could result in an estimated billion deaths from famine. This number corresponds to the fact that today, a billion people are chronically undernourished. If global agriculture were sufficiently damaged by a nuclear war, these vulnerable people might not survive. A large-scale nuclear war would be an even greater global catastrophe, completely destroying all agriculture for a period of ten years.

The tragedies of Chernobyl and Fukushima remind us that a nuclear war would make large areas of the world permanently uninhabitable because of long-lasting radioactive



contamination.

The First World War was a colossal mistake. Today, the world stands on the threshold of an equally enormous disaster. Must we again be lead into a world-destroying war by a few blind individuals who do not have the slightest idea of what such a war would be like?

## 7.15 Atoms for peace?

“Atoms for Peace”, the title of U.S. President Dwight D. Eisenhower’s 1953 speech to the U.N. General Assembly, may be regarded by future generations as being tragically self-contradictory. Nuclear power generation has led not only to dangerous proliferation of nuclear weapons, but also to disasters which have made large areas of the world permanently uninhabitable because of long-lived radioactive contamination.

According to Wikipedia, “...Under Atoms for Peace related programs, the US exported 25 tons of highly enriched uranium to 30 countries, mostly to fuel research reactors....The Soviet Union also exported 11 tons of HEU under a similar program.” This enormous quantity of loose weapons-usable highly enriched uranium, is now regarded as very worrying because of proliferation and terrorism risks.

A recent article in “The Examiner” (<http://www.examiner.com/article/nuclear-security-u-s-fails-to-protect-its-nuclear-materials-overseas>) pointed out that “...NRC and DOE could not account for the current location and disposition of U.S. HEW overseas in response to a 1992 congressional mandate. U.S. agencies, in a 1993 report produced in response to the mandate, were able to verify the location of only 1.160 kilograms out of 17,500 kilograms of U.S. HEW estimated to have been exported.”

The dangers of nuclear power generation are exemplified by the Chernobyl disaster: On the 26th of April, 1986, during the small hours of the morning, the staff of the Chernobyl nuclear reactor in Ukraine turned off several safety systems in order to perform a test. The result was a core meltdown in Reactor 4, causing a chemical explosion that blew off the reactor’s 1,000-ton steel and concrete lid. 190 tons of highly radioactive uranium and graphite were hurled into the atmosphere.

The resulting radioactive fallout was 200 times greater than that caused by the nuclear bombs that destroyed Hiroshima and Nagasaki. The radioactive cloud spread over Belarus, Ukraine, Russia, Finland, Sweden and Eastern Europe, exposing the populations of these regions to levels of radiation 100 times the normal background. Ultimately, the radioactive cloud reached as far as Greenland and parts of Asia.

The exact number of casualties resulting from the Chernobyl meltdown is a matter of controversy, but according to a United Nations report, as many as 9 million people have been adversely affected by the disaster. Since 1986, the rate of thyroid cancer in affected areas has increased ten-fold. An area of 155,000 square kilometers (almost half the size of Italy) in Belarus, Ukraine and Russia is still severely contaminated. Even as far away as Wales, hundreds of farms are still under restrictions because of sheep eating radioactive grass.

The more recent disaster of 11 March, 2011, may prove to be very much worse than Chernobyl. According to an article by Harvey Wasserman (<http://www.commondreams.org/view/2014/02/03-3>), the ongoing fallout from the Fukushima catastrophe is already far in excess of that from Chernobyl. Ecosystems of the entire Pacific ocean are being contaminated by the 300 tons of radioactive water from Fukushima that continue to pour into the Pacific every day.

Meanwhile, the increasingly militaristic government of Japan’s Prime Minister Shinzo Abe has passed a State Secrets Act that makes it an offense punishable by 5 year’s imprisonment for journalists to report on the situation. Under this cloak of secrecy, attempts are being made to remove highly radioactive used fuel rods balanced precariously in a partially destroyed container hanging in the air above the stricken Unit Four. If an accident should occur, the released radioactivity could dwarf previous disasters.

Public opinion turned against nuclear power generation as a result of the Chernobyl and Fukushima catastrophes. Nevertheless, many governments insist on pushing forward their plans for opening new nuclear power plants, despite popular opposition. Nuclear power could never compete in price with solar energy or wind energy if it were not heavily subsidized by governments. Furthermore, if a careful accounting is made of the CO<sub>2</sub> released in the construction of nuclear power plants, the mining, refining and transportation of uranium ore, and the final decommissioning of the plants, the amount of CO<sub>2</sub> released



is seen to be similar to that of coal-fired plants.

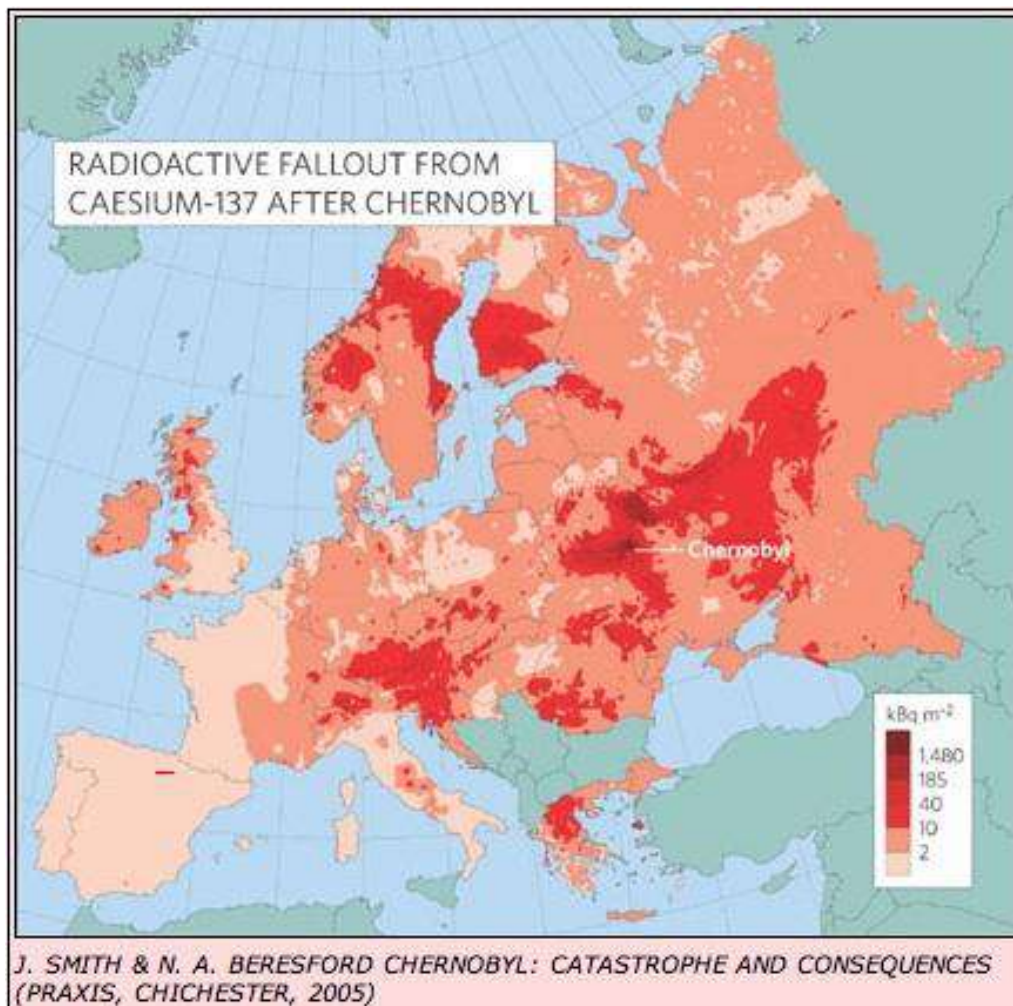
There are three basic reasons why nuclear power generation is one of the worst ideas ever conceived: First is the danger of proliferation of nuclear weapons, which will be discussed in detail below. Secondly, there is the danger of catastrophic accidents, such as the ones that occurred at Chernobyl and Fukushima. Finally, the problem of how to safely dispose of or store used fuel rods has not been solved.

In thinking about the dangers posed by radioactive waste, we should remember that many of the dangerous radioisotopes involved have half-lives of hundreds of thousands of years. Thus, it is not sufficient to seal them in containers that will last for a century, or even a millennium. We must find containers that will last for a hundred thousand years or more, longer than any human structure has ever lasted.

Of the two bombs that destroyed Hiroshima and Nagasaki, one made use of the rare isotope of uranium, U-235, while the other used plutonium. Both of these materials can be made by a nation with a nuclear power generation program.

Uranium has atomic number 92, i.e., a neutral uranium atom has a nucleus containing 92 positively-charged protons, around which 92 negatively-charged electrons circle. All of the isotopes of uranium have the same number of protons and electrons, and hence the same chemical properties, but they differ in the number of neutrons in their nuclei. For example, the nucleus of U-235 has 143 neutrons, while that of U-238 has 146. Notice that  $92+143=235$ , while  $92+146=238$ . The number written after the name of an element to specify a particular isotope is the number of neutrons plus the number of protons. This is called the “nucleon number”, and the weight of an isotope is roughly proportional to it. This means that U-238 is slightly heavier than U-235. If the two isotopes are to be separated, difficult physical methods dependent on mass must be used, since their chemical properties are identical. In natural uranium, the amount of the rare isotope U-235 is only









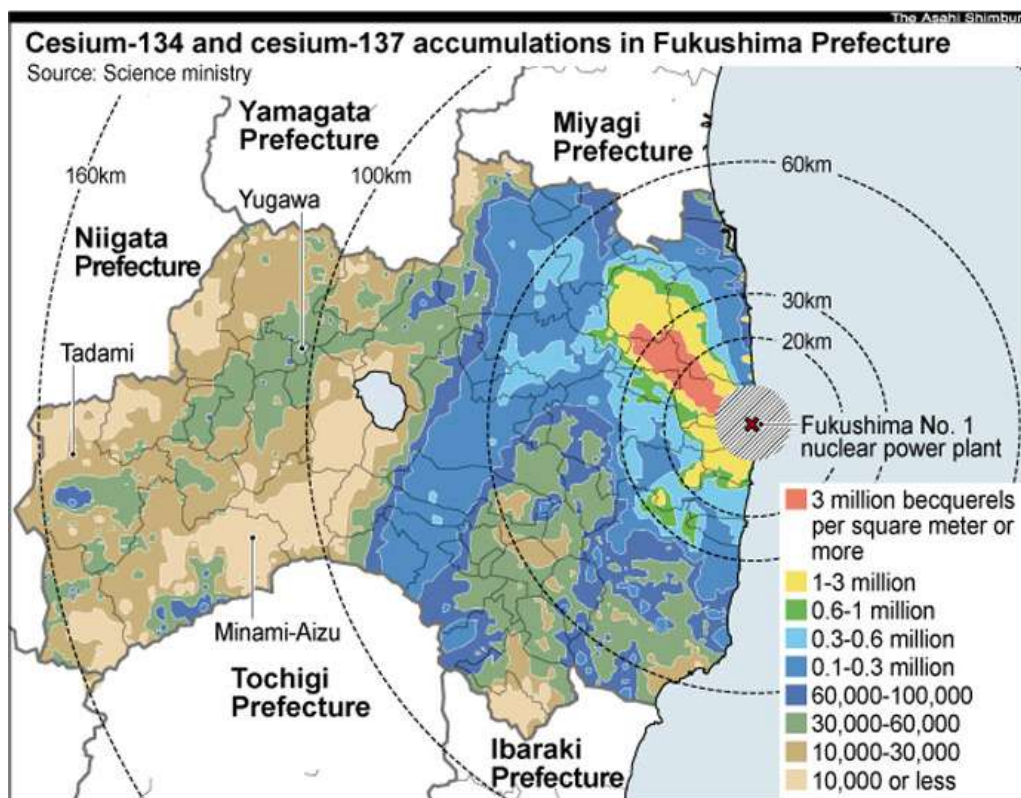


Figure 7.10: People evacuated from the region near to Fukushima wonder when they will be able to return to their homes. The honest answer is “never”.

0.7 percent.

A paper published in 1939 by Niels Bohr and John A. Wheeler indicated that it was the rare isotope of uranium, U-235, that undergoes fission. A bomb could be constructed, they pointed out, if enough highly enriched U-235 could be isolated from the more common isotope, U-238. Calculations later performed in England by Otto Frisch and Rudolf Peierls showed that the “critical mass” of highly enriched uranium needed is quite small: only a few kilograms.

The Bohr-Wheeler theory also predicted that an isotope of plutonium, Pu-239, should be just as fissionable as U-235. Both U-235 and Pu-239 have odd nucleon numbers. When U-235 absorbs a neutron, it becomes U-236, while when Pu-239 absorbs a neutron it becomes Pu-240. In other words, absorption of a neutron converts both these species to nuclei with even nucleon numbers.

According to the Bohr-Wheeler theory, nuclei with even nucleon numbers are especially tightly-bound. Thus absorption of a neutron converts U-235 to a highly-excited state of U-236, while Pu-239 is similarly converted to a highly excited state of Pu-240. The excitation energy distorts the nuclei to such an extent that fission becomes possible. Instead of trying to separate the rare isotope, U-235, from the common isotope, U-238, physicists could just operate a nuclear reactor until a sufficient amount of Pu-239 accumulated, and then separate it out by ordinary chemical means.

Thus in 1942, when Enrico Fermi and his coworkers at the University of Chicago produced the world’s first controlled chain reaction within a pile of cans containing ordinary (nonenriched) uranium powder, separated by blocks of very pure graphite, the chain-reacting pile had a double significance: It represented a new source of energy, but it also had a sinister meaning. It represented an easy path to nuclear weapons, since one of the by-products of the reaction was a fissionable isotope of plutonium, Pu-239. The bomb dropped on Hiroshima in 1945 used U-235, while the Nagasaki bomb used Pu-239.

By reprocessing spent nuclear fuel rods, using ordinary chemical means, a nation with a power reactor can obtain weapons-usable Pu-239. Even when such reprocessing is performed under international control, the uncertainty as to the amount of Pu-239 obtained is large enough so that the operation might superficially seem to conform to regulations while still supplying enough Pu-239 to make many bombs.

The enrichment of uranium, i.e. production of uranium with a higher percentage of U-235 than is found in natural uranium is also linked to reactor use. Many reactors of modern design make use of low enriched uranium (LEU) as a fuel. Nations operating such a reactor may claim that they need a program for uranium enrichment in order to produce LEU for fuel rods. However, by operating their ultracentrifuges a little longer, they can easily produce highly enriched uranium (HEU), i.e. uranium containing a high percentage of the rare isotope U-235, and therefore usable in weapons.

Nuclear power generation is not a solution to the problem of obtaining energy without producing dangerous climate change: Known reserves of uranium are only sufficient for the generation of about 25 terawatt-years of electrical energy (Craig, J.R., Vaughn, D.J. and Skinner, B.J., “Resources of the Earth: Origin, Use and Environmental Impact, Third Edition”, page 210). This can be compared with the world’s current rate of energy use of



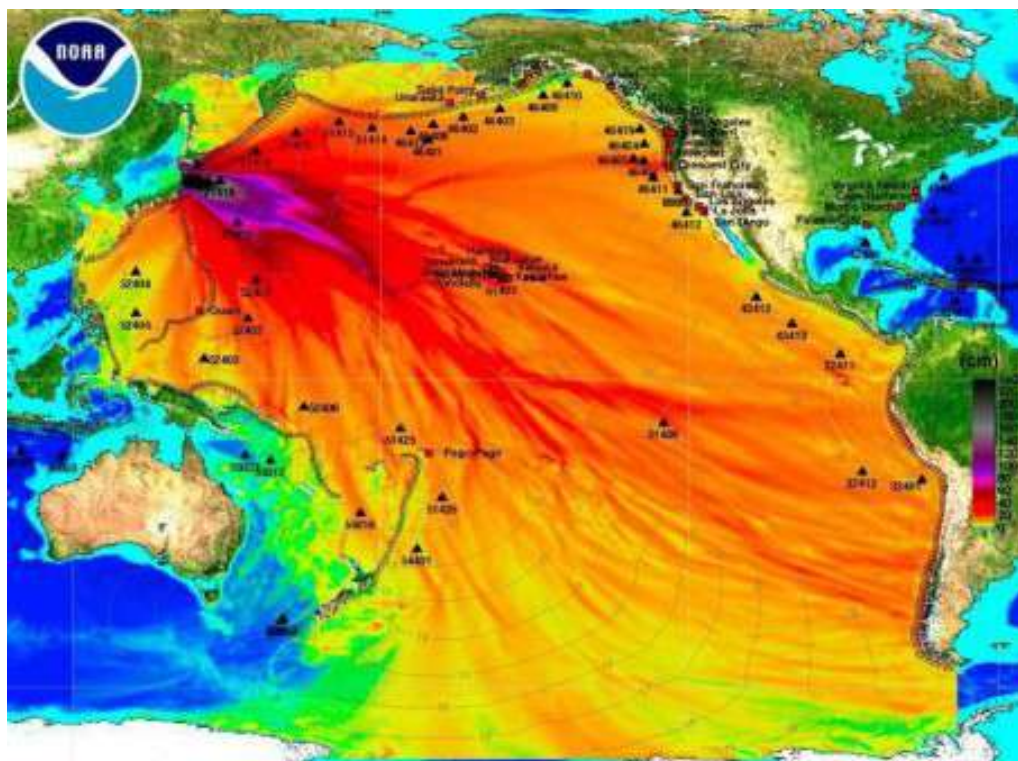


Figure 7.11: **Radioactive contamination from the Fukushima disaster is spreading through the food chain of marine life throughout the Pacific region.**

over 14 terrawatts. Thus, if all of our energy were obtained from nuclear power, existing reserves of uranium would only be sufficient for about 2 years.

It is sometimes argued that a larger amount of electricity could be obtained from the same amount of uranium through the use of fast breeder reactors, but this would involve totally unacceptable proliferation risks. In fast breeder reactors, the fuel rods consist of highly enriched uranium. Around the core, is an envelope of natural uranium. The flux of fast neutrons from the core is sufficient to convert a part of the U-238 in the envelope into Pu-239, a fissionable isotope of plutonium.

Fast breeder reactors are prohibitively dangerous from the standpoint of nuclear proliferation because both the highly enriched uranium from the fuel rods and the Pu-239 from the envelope are directly weapons-usable. It would be impossible, from the standpoint of equity, to maintain that some nations have the right to use fast breeder reactors, while others do not. If all nations used fast breeder reactors, the number of nuclear weapons states would increase drastically.

It is interesting to review the way in which Israel, South Africa, Pakistan, India and North Korea obtained their nuclear weapons, since in all these cases the weapons were constructed under the guise of “atoms for peace”, a phrase that future generations may someday regard as being tragically self-contradictory.

Israel began producing nuclear weapons in the late 1960’s (with the help of a “peaceful”



Figure 7.12: The Israeli nuclear technician and whistleblower Mordechai Vanunu called public attention to Israel's nuclear weapons while on a trip to England. He was lured to Italy by a Mossad "honey trap", where he was drugged, kidnapped and transported to Israel by Mossad.



Figure 7.13: Vanunu was imprisoned for 18 years, during 11 of which he was held in solitary confinement and subjected to psychological torture, such as not being allowed to sleep for long periods.

nuclear reactor provided by France, and with the tacit approval of the United States) and the country is now believed to possess 100-150 of them, including neutron bombs. Israel's policy is one of visibly possessing nuclear weapons while denying their existence.

South Africa, with the help of Israel and France, also weaponized its civil nuclear program, and it tested nuclear weapons in the Indian Ocean in 1979. In 1991 however, South Africa destroyed its nuclear weapons and signed the Nuclear Non-Proliferation Treaty.

India produced what it described as a "peaceful nuclear explosion" in 1974. By 1989 Indian scientists were making efforts to purify the lithium-6 isotope, a key component of the much more powerful thermonuclear bombs. In 1998, India conducted underground tests of nuclear weapons, and is now believed to have roughly 60 warheads, constructed from Pu-239 produced in "peaceful" reactors.

Pakistan's efforts to obtain nuclear weapons were spurred by India's 1974 "peaceful nuclear explosion". As early as 1970, the laboratory of Dr. Abdul Qadeer Khan, (a metallurgist who was to become Pakistan's leading nuclear bomb maker) had been able to obtain from a Dutch firm the high-speed ultracentrifuges needed for uranium enrichment. With unlimited financial support and freedom from auditing requirements, Dr. Khan purchased restricted items needed for nuclear weapon construction from companies in Europe and the United States. In the process, Dr. Khan became an extremely wealthy man. With additional help from China, Pakistan was ready to test five nuclear weapons in 1998.

The Indian and Pakistani nuclear bomb tests, conducted in rapid succession, presented the world with the danger that these devastating weapons would be used in the conflict over Kashmir. Indeed, Pakistan announced that if a war broke out using conventional weapons, Pakistan's nuclear weapons would be used "at an early stage".

In Pakistan, Dr. A.Q. Khan became a great national hero. He was presented as the person who had saved Pakistan from attack by India by creating Pakistan's own nuclear weapons. In a Washington Post article (1 February, 2004) Pervez Hoodbhoy wrote: "Nuclear nationalism was the order of the day as governments vigorously promoted the bomb as the symbol of Pakistan's high scientific achievement and self-respect..." Similar manifestations of nuclear nationalism could also be seen in India after India's 1998 bomb tests.

Early in 2004, it was revealed that Dr. Khan had for years been selling nuclear secrets and equipment to Libya, Iran and North Korea, and that he had contacts with Al Qaeda. However, observers considered that it was unlikely that Khan would be tried, since a trial might implicate Pakistan's army as well as two of its former prime ministers.

There is a danger that Pakistan's unpopular government may be overthrown, and that the revolutionists might give Pakistan's nuclear weapons to a subnational organization. This type of danger is a general one associated with nuclear proliferation. As more and more countries obtain nuclear weapons, it becomes increasingly likely that one of them will undergo a revolution, during the course of which nuclear weapons will fall into the hands of criminals or terrorists.

There is also a possibility that poorly-guarded fissionable material could fall into the hands of subnational groups, who would then succeed in constructing their own nuclear weapons. Given a critical mass of highly-enriched uranium, a terrorist group, or an or-

ganized criminal (Mafia) group, could easily construct a crude gun-type nuclear explosive device. Pu-239 is more difficult to use since it is highly radioactive, but the physicist Frank Barnaby believes that a subnational group could nevertheless construct a crude nuclear bomb (of the Nagasaki type) from this material.

We must remember the remark of U.N. Secretary General Kofi Annan after the 9/11/2001 attacks on the World Trade Center. He said, "This time it was not a nuclear explosion". The meaning of his remark is clear: If the world does not take strong steps to eliminate fissionable materials and nuclear weapons, it will only be a matter of time before they will be used in terrorist attacks on major cities, or by organized criminals for the purpose of extortion. Neither terrorists nor organized criminals can be deterred by the threat of nuclear retaliation, since they have no territory against which such retaliation could be directed. They blend invisibly into the general population. Nor can a "missile defense system" prevent criminals or terrorists from using nuclear weapons, since the weapons can be brought into a port in any one of the hundreds of thousands of containers that enter on ships each year, a number far too large to be checked exhaustively.

Finally we must remember that if the number of nations possessing nuclear weapons becomes very large, there will be a greatly increased chance that these weapons will be used in conflicts between nations, either by accident or through irresponsible political decisions.

The slogan "Atoms for Peace" has proved to be such a misnomer that it would be laughable if it were not so tragic. Nuclear power generation has been a terrible mistake. We must stop before we turn our beautiful earth into a radioactive wasteland.

## 7.16 Cancer threat from radioactive leaks at Hanford

On August 9, 1945, a nuclear bomb was dropped on the Japanese city of Nagasaki. Within a radius of one mile, destruction was total. People were vaporized so that the only shadows on concrete pavements were left to show where they had been. Many people outside the radius of total destruction were trapped in their collapsed houses, and were burned alive by the fire that followed. By the end of 1945, an estimated 80,000 men, women, young children, babies and old people had died as a result of the bombing. As the years passed more people continued to die from radiation sickness.

Plutonium for the bomb that destroyed Nagasaki had been made at an enormous nuclear reactor station located at Hanford in the state of Washington. During the Cold War, the reactors at Hanford produced enough weapons-usable plutonium for 60,000 nuclear weapons. The continued existence of plutonium and highly-enriched uranium-235 in the stockpiles of nuclear weapons states hangs like a dark cloud over the future of humanity. A full scale thermonuclear war would be the ultimate ecological catastrophe, threatening to make the world permanently uninhabitable.

Besides playing a large role in the tragedy of Nagasaki, the reactor complex at Hanford has damaged the health of many thousands of Americans. The prospects for the future are even worse. Many millions of gallons of radioactive waste are held in Hanford's aging



storage tanks, the majority of which have exceeded their planned lifetimes. The following quotations are taken from a Wikipedia article on Hanford, especially the section devoted to ecological concerns:

“A huge volume of water from the Columbia River was required to dissipate the heat produced by Hanford’s nuclear reactors. From 1944 to 1971, pump systems drew cooling water from the river and, after treating this water for use by the reactors, returned it to the river. Before being released back into the river, the used water was held in large tanks known as retention basins for up to six hours. Longer-lived isotopes were not affected by this retention, and several tetrabecquerels entered the river every day. These releases were kept secret by the federal government. Radiation was later measured downstream as far west as the Washington and Oregon coasts.”

“The plutonium separation process also resulted in the release of radioactive isotopes into the air, which were carried by the wind throughout southeastern Washington and into parts of Idaho, Montana, Oregon and British Columbia. Downwinders were exposed to radionuclides, particularly Iodine 131... These radionuclides filtered into the food chain via contaminated fields where dairy cows grazed; hazardous fallout was ingested by communities who consumed the radioactive food and drank the milk. Most of these airborne releases were a part of Hanford’s routine operations, while a few of the larger releases occurred in isolated incidents.”

“In response to an article in the Spokane Spokesman Review in September 1985, the Department of Energy announced its intent to declassify environmental records and in February, 1986 released to the public 19,000 pages of previously unavailable historical documents about Hanford’s operations. The Washington State Department of Health collaborated with the citizen-led Hanford Health Information Network (HHIN) to publicize data about the health effects of Hanford’s operations. HHIN reports concluded that residents who lived downwind from Hanford or who used the Columbia River downstream were exposed to elevated doses of radiation that placed them at increased risk for various cancers and other diseases.”

“The most significant challenge at Hanford is stabilizing the 53 million U.S. Gallons (204,000 m<sup>3</sup>) of high-level radioactive waste stored in 177 underground tanks. About a third of these tanks have leaked waste into the soil and groundwater. As of 2008, most of the liquid waste has been transferred to more secure double-shelled tanks; however, 2.8 million U.S. Gallons (10,600 m<sup>3</sup>) of liquid waste, together with 27 million U.S. gallons (100,000 m<sup>3</sup>) of salt cake and sludge, remains in the single-shelled tanks. That waste was originally scheduled to be removed by 2018. The revised deadline is 2040. Nearby aquifers contain an estimated 270 billion U.S. Gallons (1 billion m<sup>3</sup>) of contaminated groundwater as a result of the leaks. As of 2008, 1 million U.S. Gallons (4,000 m<sup>3</sup>) of highly radioactive waste is traveling through the groundwater toward the Columbia River.”

The documents made public in 1986 revealed that radiation was intentionally and secretly released by the plant and that people living near to it acted as unknowing guinea pigs in experiments testing radiation dangers. Thousands of people who live in the vicinity of the Hanford Site have suffered an array of health problems including thyroid cancers, autoimmune diseases and reproductive disorders that they feel are the direct result of these

releases and experiments.

In thinking about the dangers posed by leakage of radioactive waste, we should remember that many of the dangerous radioisotopes involved have half-lives of hundreds of thousands of years. Thus, it is not sufficient to seal them into containers that will last for a century or even a millennium. We must find containers that will last for a hundred thousand years or more, longer than any human structure has ever lasted. This logic has lead Finland to deposit its radioactive waste in a complex of underground tunnels carved out of solid rock. But looking ahead for a hundred thousand years involves other problems: If humans survive for that long, what language will they speak? Certainly not the languages of today. How can we warn them that the complex of tunnels containing radioactive waste is a death trap? The reader is urged to see a film exploring these problems, “Into Eternity”, by the young Danish film-maker Michael Madsen. Here is the link: <http://dotsub.com/view/8e40ebda-5966-4212-9b96-6abbce3c6577>.

We have already gone a long way towards turning our beautiful planet earth into a nuclear wasteland. In the future, let us be more careful, as guardians of a precious heritage, the natural world and the lives of all future generations.

## 7.17 An accident waiting to happen

In Stanley Kubrick’s film, “Dr. Strangelove”, a paranoid ultra-nationalist brigadier general, Jack D. Ripper, orders a nuclear attack on the Soviet Union because he believes that the Soviets are using water fluoridation as a means to rob Americans of their “precious bodily fluids”. Efforts are made to recall the US bombers, but this proves to be impossible, and the attack triggers the Soviet “Doomsday Machine”. The world is destroyed.

Kubrick’s film is a black comedy, and we all laugh at it, especially because of the brilliant performance of Peter Sellers in multiple roles. Unfortunately, however, the film comes uncomfortably close to reality. An all-destroying nuclear war could very easily be started by an insane or incompetent person whose hand happens to be on the red button.

This possibility (or probability) has recently come to public attention through newspaper articles revealing that 11 of the officers responsible for launching US nuclear missiles have been fired because of drug addiction. Furthermore, a larger number of missile launch officers were found to be cheating on competence examinations. Three dozen officers were involved in the cheating ring, and some reports state that an equal number of others may have known about it., and remained silent. Finally, it was shown that safety rules were being deliberately ignored. The men involved, were said to be “burned out”.

According to an article in The Guardian (Wednesday, 15 January, 2014), “Revelations of misconduct and incompetence in the nuclear missile program go back at least to 2007, when six nuclear-tipped cruise missiles were accidentally loaded onto a B-52 bomber in Minot, North Dakota, and flown to a base in Louisiana.”

“Last March, military inspectors gave officers at the ICBM base in Minot the equivalent of a ‘D’ grade for launch mastery. A month later, 17 officers were stripped of their



Figure 7.14: Peter Sellers (left) listens while Brigadier General Jack D. Ripper tells him about the Soviet conspiracy to steal his “precious bodily fluids”.

authority to launch the missiles.”

“In October, a senior air force officer in charge of 450 ICBM’s, major general Michael Carey, was fired after accusations of drunken misconduct during a summer trip to Moscow. An internal investigation found that Carey drank heavily, cavorted with two foreign women and visited a nightclub called La Cantina, where Maj. Gen. Carey had alcohol and kept trying to get the band to let him play with them.”

The possibility that a catastrophic nuclear war could be triggered by a madman gains force from the recent statements of Benjamin Netanyahu, who has said repeatedly that, with or without US help, Israel intends to attack Iran. Such an attack, besides being a war crime, would be literally insane.

If Netanyahu believes that a war with Iran would be short or limited, he is ignoring several very obvious dangers. Such a war would most probably escalate into a widespread general war in the Middle East. It could cause a revolution in Pakistan, and the new revolutionary government of Pakistan would be likely to enter the war on the side of Iran, bringing with it Pakistan’s nuclear weapons. Russia and China, both staunch allies of Iran, might be drawn into the conflict. There is a danger that the conflict could escalate into a Third World War, where nuclear weapons might easily be used, either by accident or intentionally.

China could do grave economic damage to the United States through its large dollar holdings. Much of the world’s supply of petroleum passes through the Straits of Hormuz, and a war in the region could greatly raise the price of oil, triggering a depression that might rival or surpass the Great Depression of the 1920’s and 1930’s. A

The probability of a catastrophic nuclear war occurring by accident is made greater



Figure 7.15: Peter Sellers as Dr. Strangelove. He has to restrain his black-gloved crippled hand, which keeps trying to give a Nazi salute.



Figure 7.16: General Buck Turgidson (George C. Scott) struggles with the Russian Ambassador. Peter Sellers (right) playing the US President, rebukes them for fighting in the War Room.



Figure 7.17: Major T. “King” Kong rides a nuclear bomb on its way down, where it will trigger the Soviet Doomsday Machine and ultimately destroy the world.

by the fact that several thousand nuclear weapons are kept on “hair-trigger alert” with a quasi-automatic reaction time measured in minutes. There is a constant danger that a nuclear war will be triggered by an error in evaluating a signal on a radar screen.



Figure 7.18: Benjamin Netanyahu has stated repeatedly that, with or without US support, Israel will attack Iran, an action that could escalate uncontrollably into World War III.



## 7.18 Flaws in the concept of nuclear deterrence

Before discussing other defects in the concept of deterrence, it must be said very clearly that the idea of “massive nuclear retaliation” is completely unacceptable from an ethical point of view. The doctrine of retaliation, performed on a massive scale, violates not only the principles of common human decency and common sense, but also the ethical principles of every major religion. Retaliation is especially contrary to the central commandment of Christianity which tells us to love our neighbor, even if he or she is far away from us, belonging to a different ethnic or political group, and even if our distant neighbor has seriously injured us. This principle has a fundamental place not only in Christianity but also in Buddhism. “Massive retaliation” completely violates these very central ethical principles, which are not only clearly stated and fundamental but also very practical, since they prevent escalatory cycles of revenge and counter-revenge.

Contrast Christian ethics with estimates of the number of deaths that would follow a US nuclear strike against Russia: Several hundred million deaths. These horrifying estimates shock us not only because of the enormous magnitude of the expected mortality, but also because the victims would include people of every kind: women, men, old people, children and infants, completely irrespective of any degree of guilt that they might have. As a result of such an attack, many millions of people in neutral countries would also die. This type of killing has to be classified as genocide.

When a suspected criminal is tried for a wrongdoing, great efforts are devoted to clarifying the question of guilt or innocence. Punishment only follows if guilt can be proved beyond any reasonable doubt. Contrast this with the totally indiscriminate mass slaughter that results from a nuclear attack!

It might be objected that disregard for the guilt or innocence of victims is a universal characteristic of modern war, since statistics show that, with time, a larger and larger percentage of the victims have been civilians, and especially children. For example, the air attacks on Coventry during World War II, or the fire bombings of Dresden and Tokyo, produced massive casualties which involved all segments of the population with complete disregard for the question of guilt or innocence. The answer, I think, is that modern war has become generally unacceptable from an ethical point of view, and this unacceptability is epitomized in nuclear weapons.

The enormous and indiscriminate destruction produced by nuclear weapons formed the background for an historic 1996 decision by the International Court of Justice in the Hague. In response to questions put to it by WHO and the UN General Assembly, the Court ruled that “the threat and use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict, and particularly the principles and rules of humanitarian law.” The only *possible* exception to this general rule might be “an extreme circumstance of self-defense, in which the very survival of a state would be at stake”. But the Court refused to say that even in this extreme circumstance the threat or use of nuclear weapons would be legal. It left the exceptional case undecided. In addition, the World Court added unanimously that “there exists an obligation to pursue in good faith *and bring to a conclusion* negotiations leading to nuclear disarmament in all its aspects under

strict international control.”

This landmark decision has been criticized by the nuclear weapon states as being decided “by a narrow margin”, but the structuring of the vote made the margin seem more narrow than it actually was. Seven judges voted against Paragraph 2E of the decision (the paragraph which states that the threat or use of nuclear weapons would be generally illegal, but which mentions as a possible exception the case where a nation might be defending itself from an attack that threatened its very existence.) Seven judges voted for the paragraph, with the President of the Court, Muhammad Bedjaoui of Algeria casting the deciding vote. Thus the Court adopted it, seemingly by a narrow margin. But three of the judges who voted against 2E did so because they believed that no possible exception should be mentioned! Thus, if the vote had been slightly differently structured, the result would have been ten to four.

Of the remaining four judges who cast dissenting votes, three represented nuclear weapons states, while the fourth thought that the Court ought not to have accepted the questions from WHO and the UN. However Judge Schwebel from the United States, who voted against Paragraph 2E, nevertheless added, in a separate opinion, “It cannot be accepted that the use of nuclear weapons on a scale which would - or could - result in the deaths of many millions in indiscriminate inferno and by far-reaching fallout, have pernicious effects in space and time, and render uninhabitable much of the earth, could be lawful.” Judge Higgins from the UK, the first woman judge in the history of the Court, had problems with the word “generally” in Paragraph 2E and therefore voted against it, but she thought that a more profound analysis might have led the Court to conclude in favor of illegality in all circumstances. Judge Fleischhauer of Germany said in his separate opinion, “The nuclear weapon is, in many ways, the negation of the humanitarian considerations underlying the law applicable in armed conflict and the principle of neutrality. The nuclear weapon cannot distinguish between civilian and military targets. It causes immeasurable suffering. The radiation released by it is unable to respect the territorial integrity of neutral States.”

President Bedjaoui, summarizing the majority opinion, called nuclear weapons “the ultimate evil”, and said “By its nature, the nuclear weapon, this blind weapon, destabilizes humanitarian law, the law of discrimination in the use of weapons... The ultimate aim of every action in the field of nuclear arms will always be nuclear disarmament, an aim which is no longer utopian and which all have a duty to pursue more actively than ever.”

Thus the concept of nuclear deterrence is not only unacceptable from the standpoint of ethics; it is also contrary to international law. The World Courts 1996 advisory Opinion unquestionably also represents the opinion of the majority of the world's peoples. Although no formal plebiscite has been taken, the votes in numerous resolutions of the UN General Assembly speak very clearly on this question. For example the New Agenda Resolution (53/77Y) was adopted by the General Assembly on 4 December 1998 by a massively affirmative vote, in which only 18 out of the 170 member states voted against the resolution.<sup>7</sup>

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<sup>7</sup>Of the 18 countries that voted against the New Agenda resolution, 10 were Eastern European countries hoping for acceptance into NATO, whose votes seem to have been traded for increased probability of



The New Agenda Resolution proposes numerous practical steps towards complete nuclear disarmament, and it calls on the Nuclear-Weapon States “to demonstrate an unequivocal commitment to the speedy and total elimination of their nuclear weapons and without delay to pursue in good faith and bring to a conclusion negotiations leading to the elimination of these weapons, thereby fulfilling their obligations under Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT)”. Thus, in addition to being ethically unacceptable and contrary to international law, nuclear weapons also contrary to the principles of democracy.

Having said these important things, we can now turn to some of the other defects in the concept of nuclear deterrence. One important defect is that nuclear war may occur through accident or miscalculation - through technical defects or human failings. This possibility is made greater by the fact that despite the end of the Cold War, thousands of missiles carrying nuclear warheads are still kept on a “hair-trigger” state of alert with a quasi-automatic reaction time measured in minutes. There is a constant danger that a nuclear war will be triggered by error in evaluating the signal on a radar screen. For example, the BBC reported recently that a group of scientists and military leaders are worried that a small asteroid entering the earths atmosphere and exploding could trigger a nuclear war if mistaken for a missile strike.

A number of prominent political and military figures (many of whom have ample knowledge of the system of deterrence, having been part of it) have expressed concern about the danger of accidental nuclear war. Colin S. Grey<sup>8</sup> expressed this concern as follows: “The problem, indeed the enduring problem, is that we are resting our future upon a nuclear deterrence system concerning which we cannot tolerate even a single malfunction.” General Curtis E. LeMay<sup>9</sup> has written, “In my opinion a general war will grow through a series of political miscalculations and accidents rather than through any deliberate attack by either side.” Bruce G. Blair<sup>10</sup> has remarked that “It is obvious that the rushed nature of the process, from warning to decision to action, risks causing a catastrophic mistake.”... “This system is an accident waiting to happen.”

Today, the system that is supposed to give us security is called Mutually Assured Destruction, appropriately abbreviated as MAD. It is based on the idea of deterrence, which maintains that because of the threat of massive retaliation, no sane leader would start a nuclear war.

Before discussing other defects in the concept of deterrence, it must be said very clearly that the idea of “massive nuclear retaliation” is a form of genocide and is completely unacceptable from an ethical point of view. It violates not only the principles of common human decency and common sense, but also the ethical principles of every major religion.

Having said this, we can now turn to some of the other faults in the concept of nuclear deterrence. One important defect is that nuclear war may occur through accident or miscalculation, through technical defects or human failings, or by terrorism. This possibility

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acceptance.

<sup>8</sup>Chairman, National Institute for Public Policy

<sup>9</sup>Founder and former Commander in Chief of the United States Strategic Air Command

<sup>10</sup>Brookings Institute

is made greater by the fact that despite the end of the Cold War, thousands of missiles carrying nuclear warheads are still kept on “hair-trigger alert” with a quasi-automatic reaction time measured in minutes. There is a constant danger that a nuclear war will be triggered by error in evaluating the signal on a radar screen.

Incidents in which global disaster is avoided by a hair’s breadth are constantly occurring.

Will we use the discoveries of modern science constructively, and thus choose the path leading towards life? Or will we use science to produce more and more lethal weapons, which sooner or later, through a technical or human failure, will result in a catastrophic nuclear war? Will we thoughtlessly destroy our beautiful planet through unlimited growth of population and industry? The choice among these alternatives is ours to make. We live at a critical moment of history, a moment of crisis for civilization.

No one alive today asked to be born at a time of crisis, but history has given each of us an enormous responsibility. Of course we have our ordinary jobs, which we need to do in order to stay alive; but besides that, each of us has a second job, the duty to devote both time and effort to solving the serious problems that face civilization during the 21st century. We cannot rely on our politicians to do this for us. Many politicians are under the influence of powerful lobbies. Others are waiting for a clear expression of popular will. It is the people of the world themselves who must choose their own future and work hard to build it.

No single person can achieve the changes that we need, but together we can do it. The problem of building a stable, just, and war-free world is difficult, but it is not impossible. The large regions of our present-day world within which war has been eliminated can serve as models. There are a number of large countries with heterogeneous populations within which it has been possible to achieve internal peace and social cohesion, and if this is possible within such extremely large regions, it must also be possible globally.

We must replace the old world of international anarchy, chronic war, and institutionalized injustice by a new world of law. The United Nations Charter, the Universal Declaration of Human Rights and the International Criminal Court are steps in the right direction. These institutions need to be greatly strengthened and reformed. We also need a new global ethic, where loyalty to one’s family and nation will be supplemented by a higher loyalty to humanity as a whole. Tipping points in public opinion can occur suddenly. We can think, for example, of the Civil Rights Movement, or the rapid fall of the Berlin Wall, or the sudden change that turned public opinion against smoking, or the sudden movement for freedom and democracy in the Arab world. A similar sudden change can occur soon regarding war and nuclear weapons.

We know that war is madness. We know that it is responsible for much of the suffering that humans experience. We know that war pollutes our planet and that the almost unimaginable sums wasted on war prevent the happiness and prosperity of mankind. We know that nuclear weapons are insane, and that the precariously balanced deterrence system can break down at any time through human error or computer errors or through terrorist actions, and that it definitely will break down within our lifetimes unless we abolish it. We know that nuclear war threatens to destroy civilization and much of the biosphere.

The logic is there. We must translate into popular action which will put an end to the undemocratic, money-driven, power-lust-driven war machine. The peoples of the world must say very clearly that nuclear weapons are an absolute evil; that their possession does not increase anyone's security; that their continued existence is a threat to the life of every person on the planet; and that these genocidal and potentially omnicidal weapons have no place in a civilized society.

Modern science has abolished time and distance as factors separating nations. On our shrunken globe today, there is room for one group only: the family of humankind. We must embrace all other humans as our brothers and sisters. More than that, we must feel that all of nature is part of the same sacred family; meadow flowers, blowing winds, rocks, trees, birds, animals, and other humans, all these are our brothers and sisters, deserving our care and protection. Only in this way can we survive together. Only in this way can we build a happy future.

"But nobody can predict that the fatal accident or unauthorized act will never happen", Fred Ikle of the Rand Corporation has written, "Given the huge and far-flung missile forces, ready to be launched from land and sea on on both sides, the scope for disaster by accident is immense... In a matter of seconds - through technical accident or human failure - mutual deterrence might thus collapse."

Another serious failure of the concept of nuclear deterrence is that it does not take into account the possibility that atomic bombs may be used by terrorists. Indeed, the threat of nuclear terrorism has today become one of the most pressing dangers that the world faces, a danger that is particularly acute in the United States.

Since 1945, more than 3,000 metric tons (3,000,000 kilograms) of highly enriched uranium and plutonium have been produced - enough for several hundred thousand nuclear weapons. Of this, roughly a million kilograms are in Russia, inadequately guarded, in establishments where the technicians are poorly paid and vulnerable to the temptations of bribery. There is a continuing danger that these fissile materials will fall into the hands of terrorists, or organized criminals, or irresponsible governments. Also, an extensive black market for fissile materials, nuclear weapons components etc. has recently been revealed in connection with the confessions of Pakistan's bomb-maker, Dr. A.Q. Khan. Furthermore, if Pakistan's less-than-stable government should be overthrown, complete nuclear weapons could fall into the hands of terrorists.

On November 3, 2003, Mohamed ElBaradei, Director General of the International Atomic Energy Agency, made a speech to the United Nations in which he called for "limiting the processing of weapons-usable material (separated plutonium and high enriched uranium) in civilian nuclear programmes - as well as the production of new material through reprocessing and enrichment - by agreeing to restrict these operations to facilities exclusively under international control." It is almost incredible, considering the dangers of nuclear proliferation and nuclear terrorism, that such restrictions were not imposed long ago. Nuclear reactors used for "peaceful" purposes unfortunately also generate fissionable isotopes of plutonium, neptunium and americium. Thus all nuclear reactors must be regarded as ambiguous in function, and all must be put under strict international control. One might ask, in fact, whether globally widespread use of nuclear energy is worth the

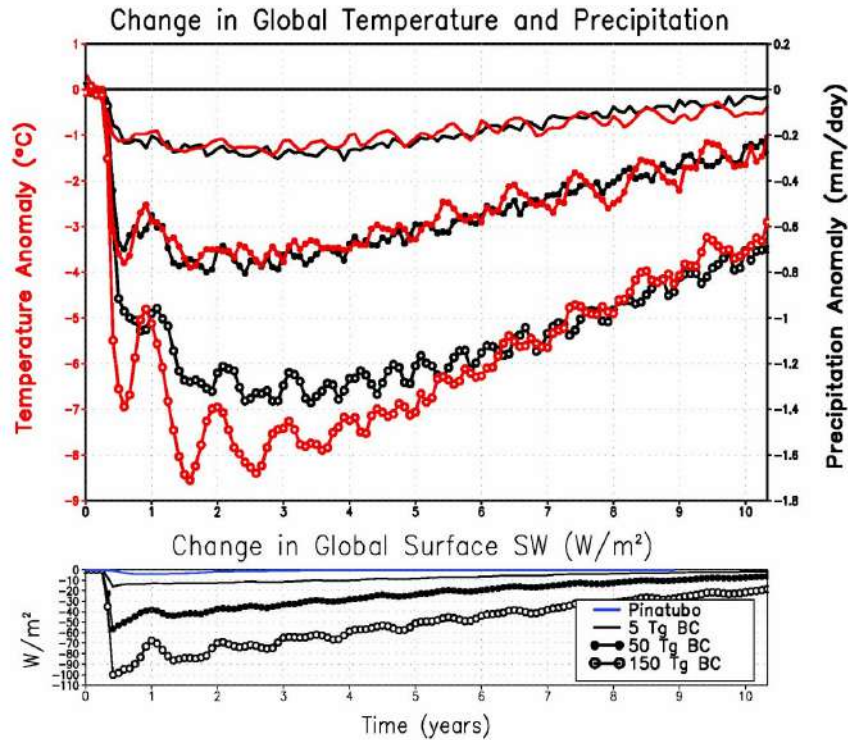


Figure 7.19: Recent studies by atmospheric scientists have shown that the smoke from burning cities produced by even a limited nuclear war would have a devastating effect on global agriculture. The studies show that the smoke would rise to the stratosphere, where it would spread globally and remain for a decade, blocking sunlight and destroying the ozone layer. Because of the devastating effect on global agriculture, darkness from even a small nuclear war (e.g. between India and Pakistan) would result in an estimated billion deaths from famine. (O. Toon, A. Robock and R. Turco, “The Environmental Consequences of Nuclear War”, *Physics Today*, vol. 61, No. 12, 2008, p. 37-42)

danger that it entails.

The Italian nuclear physicist Francesco Calogero, who has studied the matter closely, believes that terrorists could easily construct a simple gun-type nuclear bomb if they were in possession of a critical mass of highly enriched uranium. In such a simple atomic bomb, two grapefruit-sized subcritical portions of HEU are placed at opposite ends of the barrel of an artillery piece and are driven together by means of a conventional explosive. Prof. Calogero estimates that the fatalities produced by the explosion of such a device in the center of a large city could exceed 100,000.

We must remember the remark of U.N. Secretary General Kofi Annan after the 9/11/2001 attacks on the World Trade Center. He said, “*This time it was not a nuclear explosion*”. The meaning of his remark is clear: If the world does not take strong steps to eliminate fissionable materials and nuclear weapons, it will only be a matter of time before they will be used in terrorist attacks on major cities. Neither terrorists nor organized criminals can be deterred by the threat of nuclear retaliation, since they have no territory against which such retaliation could be directed. They blend invisibly into the general population. Nor can a “missile defense system” prevent terrorists from using nuclear weapons, since the weapons can be brought into a port in any one of the hundreds of thousands of containers that enter on ships each year, a number far too large to be checked exhaustively.

In this dangerous situation, the only logical thing for the world to do is to get rid of both fissile materials and nuclear weapons as rapidly as possible. We must acknowledge that the idea of nuclear deterrence is a dangerous fallacy, and acknowledge that the development of military systems based on nuclear weapons has been a terrible mistake, a false step that needs to be reversed. If the most prestigious of the nuclear weapons states can sincerely acknowledge their mistakes and begin to reverse them, nuclear weapons will seem less glamorous to countries like India, Pakistan, North Korea and Iran, where they now are symbols of national pride and modernism.

Civilians have for too long played the role of passive targets, hostages in the power struggles of politicians. It is time for civil society to make its will felt. If our leaders continue to enthusiastically support the institution of war, if they will not abolish nuclear weapons, then let us have new leaders.

## **7.19 Nuclear weapons are criminal! Every war is a crime!**

War was always madness, always immoral, always the cause of unspeakable suffering, economic waste and widespread destruction, and always a source of poverty, hate, barbarism and endless cycles of revenge and counter-revenge. It has always been a crime for soldiers to kill people, just as it is a crime for murderers in civil society to kill people. No flag has ever been wide enough to cover up atrocities.

But today, the development of all-destroying modern weapons has put war completely beyond the bounds of sanity and elementary humanity.

Today, war is not only insane, but also a violation of international law. Both the United Nations Charter and the Nuremberg Principles make it a crime to launch an aggressive war. According to the Nuremberg Principles, every soldier is responsible for the crimes that he or she commits, even while acting under the orders of a superior officer.

Nuclear weapons are not only insane, immoral and potentially omnicidal, but also criminal under international law. In response to questions put to it by WHO and the UN General Assembly, the International Court of Justice ruled in 1996 that “the threat and use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict, and particularly the principles and rules of humanitarian law.” The only possible exception to this general rule might be “an extreme circumstance of self-defense, in which the very survival of a state would be at stake”. But the Court refused to say that even in this extreme circumstance the threat or use of nuclear weapons would be legal. It left the exceptional case undecided. In addition, the Court added unanimously that “there exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control.”

Can we not rid ourselves of both nuclear weapons and the institution of war itself? We must act quickly and resolutely before our beautiful world and everything that we love are reduced to radioactive ashes.

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# Chapter 8

## WE NEED A WORLD FEDERATION

### THE HISTORY OF INTERNATIONAL LAW

“With law shall our land be built up, but with lawlessness laid waste.” Njal’s Saga, Iceland, c 1270.

#### 8.1 What is law?

After the invention of agriculture, roughly 10,000 years ago, humans began to live in progressively larger groups, which were sometimes multi-ethnic. In order to make towns, cities and finally nations function without excessive injustice and violence, both ethical and legal systems were needed. Today, in an era of global economic interdependence, instantaneous worldwide communication and all-destroying thermonuclear weapons, we urgently need new global ethical principles and a just and enforceable system of international laws.

The principles of law, ethics, politeness and kindness function in slightly different ways, but all of these behavioral rules help human societies to function in a cohesive and trouble-free way. Law is the most coarse. The mesh is made finer by ethics, while the rules of politeness and kindness fill in the remaining gaps.

Legal systems began at a time at a time when tribal life was being replaced by life in villages, towns and cities. One of the oldest legal documents that we know of is a code of laws enacted by the Babylonian king Hammurabi in about 1754 BC. It consists of 282 laws, with scaled punishments, governing household behavior, marriage, divorce, paternity, inheritance, payments for services, and so on. An ancient 2.24 meter stele inscribed with Hammurabi’s Code can be seen in the Louvre. The laws are written in the Akkadian language, using cuneiform script.

Humanity’s great ethical systems also began during a period when the social unit was growing very quickly. It is an interesting fact that many of history’s greatest ethical teachers lived at a time when the human societies were rapidly increasing in size. One can think,



Figure 8.1: A portion of Hammurabi's Code, c. 1754 BC

for example of Moses, Confucius, Lao-Tzu, Gautama Buddha, the Greek philosophers, and Jesus. Muhammad came slightly later, but he lived and taught at a time when tribal life was being replaced by city life in the Arab world. During the period when these great teachers lived, ethical systems had become necessary to over-write raw inherited human emotional behavior patterns in such a way that increasingly large societies could function in a harmonious and cooperative way, with a minimum of conflicts.

## 8.2 Magna Carta, 1215

2015 marks the 800th anniversary of the Magna Carta, which is considered to be the foundation of much of our modern legal system. It was drafted by the Archbishop of Canterbury to make peace between the unpopular Norman King John of England and a group of rebel barons. The document promised the protection of church rights, protection for the barons from illegal imprisonment, access to swift justice, and limitations feudal payments to the Crown. It was renewed by successive English sovereigns, and its protection against illegal imprisonment and provisions for swift justice were extended from the barons to ordinary citizens. It is considered to be the basis for British constitutional law, and in 1789, it influenced the drafting of the Constitution of the United States. Lord Denning described the Magna Carta as "the greatest constitutional document of all times: the





Figure 8.2: **King John is forced to sign the Magna Carta**

foundation of the freedom of the individual against the arbitrary authority of the despot”.



Figure 8.3: Lord Denning described the Magna Carta as “the greatest constitutional document of all times: the foundation of the freedom of the individual against the arbitrary authority of the despot”.

### 8.3 The English Bill of Rights, 1689

When James II was overthrown by the Glorious Revolution the Dutch stadholder William III of Orange-Nassau and his wife, Mary II of England were invited to be joint sovereigns of England. The Bill of Rights was originally part of the invitation, informing the couple regarding the limitations that would be imposed on their powers. Later the same year, it was incorporated into English law. The Bill of Rights guaranteed the supremacy of Parliament over the monarch. It forbid cruel and unusual punishments, excessive bail and excessive fines. Freedom of speech and free elections were also guaranteed, and a standing army in peacetime was forbidden without the explicit consent of Parliament. The Bill of Rights was influenced by the writings of the Liberal philosopher, John Locke (1632-1704).

### 8.4 The United States Constitution and Bill of Rights, 1789

The history of the Federal Constitution of the United States is an interesting one. It was preceded by the Articles of Confederation, which were written by the Second Continental Congress between 1776 and 1777, but it soon became clear that Confederation was too weak a form of union for a collection of states.

George Mason, one of the drafters of the Federal Constitution, believed that “such a government was necessary as could directly operate on individuals, and would punish those only whose guilt required it”, while another drafter, James Madison, wrote that the more he reflected on the use of force, the more he doubted “the practicality, the justice and the

efficacy of it when applied to people collectively, and not individually.”

Finally, Alexander Hamilton, in his *Federalist Papers*, discussed the Articles of Confederation with the following words: “To coerce the states is one of the maddest projects that was ever devised... Can any reasonable man be well disposed towards a government which makes war and carnage the only means of supporting itself, a government that can exist only by the sword? Every such war must involve the innocent with the guilty. The single consideration should be enough to dispose every peaceable citizen against such government... What is the cure for this great evil? Nothing, but to enable the... laws to operate on individuals, in the same manner as those of states do.”

In other words, the essential difference between a confederation and a federation, both of them unions of states, is that a federation has the power to make and to enforce laws that act on individuals, rather than attempting to coerce states (in Hamilton’s words, “one of the maddest projects that was ever devised.”) The fact that a confederation of states was found to be far too weak a form of union is especially interesting because our present United Nations is a confederation. We are at present attempting to coerce states with sanctions that are “applied to people collectively and not individually.” The International Criminal Court, which we will discuss below, is a development of enormous importance, because it acts on individuals, rather than attempting to coerce states.

There are many historical examples of successful federations; but in general, unions of states based on the principle of confederation have proved to be too weak. Probably our best hope for the future lies in gradually reforming and strengthening the United Nations, until it becomes a federation.

In the case of the Federal Constitution of the United States, there were Anti-Federalists who opposed its ratification because they feared that it would be too powerful. Therefore, on June 8, 1789, James Madison introduced in the House of Representatives a series of 39 amendments to the constitution, which would limit the government’s power. Of these, only amendments 3 to 12 were adopted, and these have become known collectively as the Bill of Rights.

Of the ten amendments that constitute the original Bill of Rights, we should take particular notice of the First, Fourth and Sixth, because they have been violated repeatedly and grossly by the present government of the United States.

The First Amendment requires that “Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances.” The right to freedom of speech and freedom of the press has been violated by the punishment of whistleblowers. The right to assemble peaceably has also been violated repeatedly and brutally by the present government’s militarized police.

The Fourth Amendment states that “The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.” It is hardly necessary to elaborate on the U.S. Government’s massive

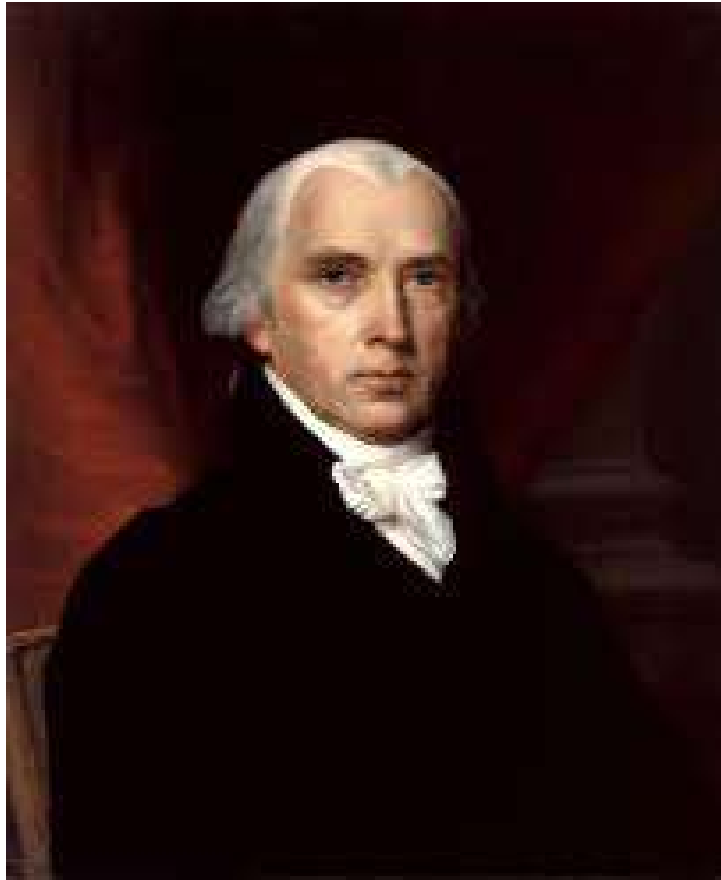


Figure 8.4: James Madison, wrote that the more he reflected on the use of force, the more he doubted “the practicality, the justice and the efficacy of it when applied to people collectively, and not individually.” He later introduced the Constitutional amendments that became the U.S. Bill of Rights.

violations of the Fourth Amendment. Edward Snowden's testimony has revealed a huge secret industry carrying out illegal and unwarranted searches and seizures of private data, not only in the United States, but also throughout the world. This data can be used to gain power over citizens and leaders through blackmail. True democracy and dissent are thereby eliminated.

The Sixth Amendment requires that "In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the State and district wherein the crime shall have been committed, which district shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favor, and to have the Assistance of Counsel for his defense." This constitutional amendment has also been grossly violated.

In the context of federal unions of states, the Tenth Amendment is also interesting. This amendment states that "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people." We mentioned above that historically, federations have been very successful. However, if we take the European Union as an example, it has had some problems connected with the principle of subsidiarity, according to which as few powers as possible should be decided centrally, and as many issues as possible should be decided locally. The European Union was originally designed as a free trade area, and because of its history commercial considerations have trumped environmental ones. The principle of subsidiarity has not been followed, and enlightened environmental laws of member states have been declared to be illegal by the EU because they conflicted with free trade. These are difficulties from which we can learn as we contemplate the conversion of the United Nations into a federation.

The United States Bill of Rights was influenced by John Locke and by the French philosophers of the Enlightenment. The French Declaration of the Rights of Man (August, 1789) was almost simultaneous with the U.S. Bill of Rights.

We can also see the influence of Enlightenment philosophy in the wording of the U.S. Declaration of independence (1776): "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness.—That to secure these rights, Governments are instituted among Men, deriving their just powers from the consent of the governed..." Another criticism that can be leveled against the present government of the United States is that its actions seem to have nothing whatever to do with the consent of the governed, not to mention the violations of the rights to life, liberty and the pursuit of happiness implicit in extrajudicial killings.

## 8.5 Kellogg-Briand Pact, 1928

World War I was a catastrophe that still casts a dark shadow over the future of humanity. It produced enormous suffering, brutalization of values, irreparable cultural loss, and a

total of more than 37 million casualties, military and civilian. Far from being the “war to end war”, the conflict prepared the way for World War II, during which nuclear weapons were developed; and these now threaten the existence the of human species and much of the biosphere.

After the horrors of World War I, the League of Nations was set up in the hope of ending the institution of war forever. However, many powerful nations refused to join the League, and it withered. Another attempt to outlaw war was made in 1928. in the form of a pact named after its authors, U.S. Secretary of State, Frank B. Kellogg and French Foreign Minister Astrid Briand. The Kellogg-Briand Pact is formally called the General Treaty for the Renunciation of War as an Instrument of National Policy. It was ultimately ratified by 62 Nations, including the United States (by a Senate vote of 85 to 1). Although frequently violated, the Pact remains in force today, establishing a norm which legally outlaws war.

## 8.6 United Nations Charter, 1945

The Second World War was even more disastrous than the First. Estimates of the total number of people who died as a result of the war range between 50 million and 80 million. With the unspeakable suffering caused by the war fresh in their minds, representatives of the victorious allied countries assembled in San Francisco to draft the charter of a global organization which they hoped would end the institution of war once and for all.

The Preamble to the United Nations Charter starts with the words: “We , the peoples of the United Nations, determined to save succeeding generations from the scourge of war, which twice in our lifetime has brought untold sorrow to mankind; and to unite our strength to maintain international peace and security; and to ensure, by the acceptance of principles and the institution of methods, that armed force shall not be used, save in the common interest; and to employ international machinery for the promotion of the economic and social advancement of all peoples, have resolved to combine our efforts to accomplish these aims.”

Article 2 of the UN Charter requires that “All members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state.” This requirement is somewhat qualified by Article 51, which says that “Nothing in the present Charter shall impair the inherent right of individual or collective self-defense if an armed attack occurs against a Member of the United Nations, until the Security Council has taken measures necessary to maintain international peace and security.” Thus, in general, war is illegal under the UN Charter. Self-defense against an armed attack is permitted, but only for a limited time, until the Security Council has had time to act. The United Nations Charter does not permit the threat or use of force in preemptive wars, or to produce regime changes, or for so-called “democratization”, or for the domination of regions that are rich in oil. <sup>1</sup>

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<sup>1</sup><http://www.un.org/en/documents/charter/preamble.shtml>



Figure 8.5: **Clearly, the United Nations Charter aims at abolishing the institution of war once and for all.**

Clearly, the United Nations Charter aims at abolishing the institution of war once and for all; but the present Charter has proved to be much too weak to accomplish this purpose, since it is a confederation of the member states rather than a federation. This does not mean that that our present United Nations is a failure. Far from it! The UN has achieved almost universal membership, which the League of Nations failed to do. The Preamble to the Charter speaks of “the promotion of the economic and social advancement of all peoples”, and UN agencies, such as the World Health Organization, the Food and Agricultural Organization and UNESCO, have worked very effectively to improve the lives of people throughout the world. Furthermore, the UN has served as a meeting place for diplomats from all countries, and many potentially serious conflicts have been resolved by informal conversations behind the scenes at the UN. Finally, although often unenforceable, resolutions of the UN General Assembly and declarations by the Secretary General have great normative value.

When we think of strengthening and reforming the UN, then besides giving it the power to make and enforce laws that are binding on individuals, we should also consider giving it an independent and reliable source of income. As it is, rich and powerful nations seek to control the UN by means of its purse strings: They give financial support only to those actions that are in their own interests.

A promising solution to this problem is the so-called “Tobin tax”, named after the Nobel-laureate economist James Tobin of Yale University. Tobin proposed that international currency exchanges should be taxed at a rate between 0.1 and 0.25 percent. He believed that even this extremely low rate of taxation would have the beneficial effect of

damping speculative transactions, thus stabilizing the rates of exchange between currencies. When asked what should be done with the proceeds of the tax, Tobin said, almost as an afterthought, "Let the United Nations have it."

The volume of money involved in international currency transactions is so enormous that even the tiny tax proposed by Tobin would provide the United Nations with between 100 billion and 300 billion dollars annually. By strengthening the activities of various UN agencies, the additional income would add to the prestige of the United Nations and thus make the organization more effective when it is called upon to resolve international political conflicts. The budgets of UN agencies, such as the World Health Organization, the Food and Agricultural Organization, UNESCO and the UN Development Programme, should not just be doubled but should be multiplied by a factor of at least twenty.

With increased budgets the UN agencies could sponsor research and other actions aimed at solving the world's most pressing problems: AIDS, drug-resistant infections diseases, tropical diseases, food insufficiencies, pollution, climate change, alternative energy strategies, population stabilization, peace education, as well as combating poverty, malnutrition, illiteracy, lack of safe water and so on. Scientists would be less tempted to find jobs with arms-related industries if offered the chance to work on idealistic projects. The United Nations could be given its own television channel, with unbiased news programs, cultural programs, and "State of the World" addresses by the UN Secretary General.

In addition, the voting system of the United Nations General Assembly needs to be reformed, and the veto power in the Security Council needs to be abolished.

## 8.7 International Court of Justice, 1946

The International Court of Justice (ICJ) is the judicial arm of the United Nations. It was established by the UN Charter in 1945, and it began to function in 1946. The ICJ is housed in the Peace Palace in the Hague, a beautiful building constructed with funds donated by Andrew Carnegie. Since 1946, the IJC has dealt with only 161 cases. The reason for this low number is that only disputes between nations are judged, and both the countries involved in a dispute have to agree to abide by the Court's jurisdiction before the case can be accepted.

Besides acting as an arbitrator in disputes between nations, the IJC also gives advisory opinions to the United Nations and its agencies. An extremely important judgment of this kind was given in 1996: In response to questions put to it by WHO and the UN General Assembly, the Court ruled that "the threat and use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict, and particularly the principles and rules of humanitarian law." The only possible exception to this general rule might be "an extreme circumstance of self-defense, in which the very survival of a state would be at stake". But the Court refused to say that even in this extreme circumstance the threat or use of nuclear weapons would be legal. It left the exceptional case undecided. In addition, the World Court added unanimously that "there exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all



its aspects under strict international control.”

This landmark decision has been criticized by the nuclear weapon states as being decided “by a narrow margin”, but the structuring of the vote made the margin seem more narrow than it actually was. Seven judges voted against Paragraph 2E of the decision (the paragraph which states that the threat or use of nuclear weapons would be generally illegal, but which mentions as a possible exception the case where a nation might be defending itself from an attack that threatened its very existence.) Seven judges voted for the paragraph, with the President of the Court, Muhammad Bedjaoui of Algeria casting the deciding vote. Thus the Court adopted it, seemingly by a narrow margin. But three of the judges who voted against 2E did so because they believed that no possible exception should be mentioned! Thus, if the vote had been slightly differently structured, the result would have been ten to four.

Of the remaining four judges who cast dissenting votes, three represented nuclear weapons states, while the fourth thought that the Court ought not to have accepted the questions from WHO and the UN. However Judge Schwebel from the United States, who voted against Paragraph 2E, nevertheless added, in a separate opinion, “It cannot be accepted that the use of nuclear weapons on a scale which would, or could, result in the deaths of many millions in indiscriminate inferno and by far-reaching fallout, have pernicious effects in space and time, and render uninhabitable much of the earth, could be lawful.”

Judge Higgins from the UK, the first woman judge in the history of the Court, had problems with the word “generally” in Paragraph 2E and therefore voted against it, but she thought that a more profound analysis might have led the Court to conclude in favor of illegality in all circumstances.

Judge Fleischhauer of Germany said, in his separate opinion, “The nuclear weapon is, in many ways, the negation of the humanitarian considerations underlying the law applicable in armed conflict and the principle of neutrality. The nuclear weapon cannot distinguish between civilian and military targets. It causes immeasurable suffering. The radiation released by it is unable to respect the territorial integrity of neutral States.”

President Bedjaoui, summarizing the majority opinion, called nuclear weapons “the ultimate evil”, and said “By its nature, the nuclear weapon, this blind weapon, destabilizes humanitarian law, the law of discrimination in the use of weapons... The ultimate aim of every action in the field of nuclear arms will always be nuclear disarmament, an aim which is no longer Utopian and which all have a duty to pursue more actively than ever.”

## 8.8 Nuremberg Principles, 1947

In 1946, the United Nations General Assembly unanimously affirmed “the principles of international law recognized by the Charter of the Nuremberg Tribunal and the judgment of the Tribunal”. The General Assembly also established an International Law Commission to formalize the Nuremberg Principles. The result was a list that included Principles VI, which is particularly important in the context of the illegality of NATO:



Figure 8.6: In 1946, the United Nations General Assembly unanimously affirmed “the principles of international law recognized by the Charter of the Nuremberg Tribunal and the judgment of the Tribunal”. The General Assembly also established an International Law Commission to formalize the Nuremberg Principles.

Principle VI: The crimes hereinafter set out are punishable as crimes under international law:

a) Crimes against peace: (I) Planning, preparation, initiation or waging of a war of aggression or a war in violation of international treaties, agreements or assurances; (II) Participation in a common plan or conspiracy for accomplishment of any of the acts mentioned under (I).

Robert H. Jackson, who was the chief United States prosecutor at the Nuremberg trials, said that “To initiate a war of aggression is therefore not only an international crime; it is the supreme international crime, differing from other war crimes in that it contains within itself the accumulated evil of the whole.” Furthermore, the Nuremberg principles state that “The fact that a person acted pursuant to order of his Government or of a superior does not relieve him from responsibility under international law, provided a moral choice was in fact possible to him.” The training of soldiers is designed to make the trainees into automatons, who have surrendered all powers of moral judgment to their superiors. The Nuremberg Principles put the the burden of moral responsibility squarely back where it ought to be: on the shoulders of the individual.

## 8.9 The Universal Declaration of Human Rights, 1948

On December 10, 1948, the General Assembly of the United Nations adopted a Universal Declaration of Human Rights. 48 nations voted for adoption, while 8 nations abstained from voting. Not a single state voted against the Declaration. In addition, the Gen-

eral Assembly decided to continue work on the problem of implementing the Declaration. The Preamble to the document stated that it was intended “as a common standard of achievement for all peoples and nations, to the end that every individual and every organ of society, keeping this Declaration constantly in mind, shall strive by teaching and education to promote respect for these rights and freedoms.”

Articles 1 and 2 of the Declaration state that “all human beings are born free and equal in dignity and in rights”, and that everyone is entitled to the rights and freedoms mentioned in the Declaration without distinctions of any kind. Neither race color, sex, language, religion, political or other opinion, national or social origin, property or social origin must make a difference. The Declaration states that everyone has a right to life, liberty and security of person and property. Slavery and the slave trade are prohibited, as well as torture and cruel, inhuman or degrading punishments. All people must be equal before the law, and no person must be subject to arbitrary arrest, detention or exile. In criminal proceedings an accused person must be presumed innocent until proven guilty by an impartial public hearing where all necessary provisions have been made for the defense of the accused.

No one shall be subjected to interference with his privacy, family, home or correspondence. Attacks on an individual’s honor are also forbidden. Everyone has the right of freedom of movement and residence within the borders of a state, the right to leave any country, including his own, as well as the right to return to his own country. Every person has the right to a nationality and cannot be arbitrarily deprived of his or her nationality.

All people of full age have a right to marry and to establish a family. Men and women have equal rights within a marriage and at its dissolution, if this takes place. Marriage must require the full consent of both parties.

The Declaration also guarantees freedom of religion, of conscience, and of opinion and expression, as well as freedom of peaceful assembly and association. Everyone is entitled to participate in his or her own government, either directly or through democratically chosen representatives. Governments must be based on the will of the people, expressed in periodic and genuine elections with universal and equal suffrage. Voting must be secret.

Everyone has the right to the economic, social and cultural conditions needed for dignity and free development of personality. The right to work is affirmed. The job shall be of a person’s own choosing, with favorable conditions of work, and remuneration consistent with human dignity, supplemented if necessary with social support. All workers have the right to form and to join trade unions.

Article 25 of the Declaration states that everyone has the right to an adequate standard of living, including food, clothing, housing and medical care, together with social services. All people have the right to security in the event of unemployment, sickness, disability, widowhood or old age. Expectant mothers are promised special care and assistance, and children, whether born in or out of wedlock, shall enjoy the same social protection. Everyone has the right to education, which shall be free in the elementary stages. Higher education shall be accessible to all on the basis of merit. Education must be directed towards the full development of the human personality and to strengthening respect for human rights and fundamental freedoms. Education must promote understanding, toler-

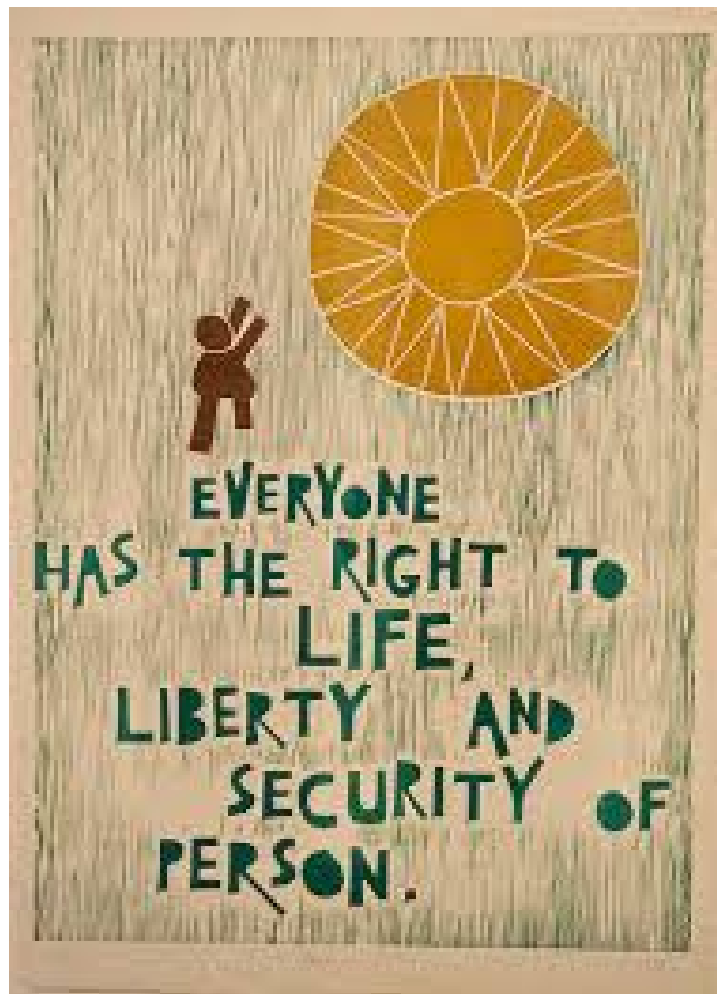


Figure 8.7: **The Universal Declaration of Human Rights has great value in defining the norms towards which the world ought to be striving.**

ance, and friendship among all nations, racial and religious groups, and it must further the activities of the United Nations for the maintenance of peace.

A supplementary document, the Convention on the Rights of the Child, was adopted by the United Nations General Assembly on the 12th of December, 1989. Furthermore, in July 2010, the General Assembly passed a resolution affirming that everyone has the right to clean drinking water and proper sanitation.

Many provisions of the Universal Declaration of Human Rights, for example Article 25, might be accused of being wishful thinking. In fact, Jean Kirkpatrick, former US Ambassador to the UN, cynically called the Declaration “a letter to Santa Claus”. Nevertheless, like the Millennium Development Goals, the Universal Declaration of Human Rights has great value in defining the norms towards which the world ought to be striving.

It is easy to find many examples of gross violations of basic human rights that have taken place in recent years. Apart from human rights violations connected with interventions of

powerful industrial states in the internal affairs of third world countries, there are many cases where governmental forces in the less developed countries have violated the human rights of their own citizens. Often minority groups have been killed or driven off their land by those who coveted the land, as was the case in Guatemala in 1979, when 1.5 million poor Indian farmers were forced to abandon their villages and farms and to flee to the mountains of Mexico in order to escape murderous attacks by government soldiers. The blockade of Gaza and extrajudicial killing by governments must also be regarded as blatant human rights violations, and there are many recent examples of genocide.

Wars in general, and in particular, the use of nuclear weapons, must be regarded as gross violations of human rights. The most basic human right is the right to life; but this is right routinely violated in wars. Most of the victims of recent wars have been civilians, very often children and women. The use of nuclear weapons must be regarded as a form of genocide, since they kill people indiscriminately, babies, children, young adults in their prime, and old people, without any regard for guilt or innocence.

## 8.10 Geneva Conventions, 1949

According to Wikipedia, “The Geneva Conventions comprise four treaties, and three additional protocols, that establish the standards of international law for the humanitarian treatment of war. The singular term, Geneva Convention, usually denotes the agreements of 1949, negotiated in the aftermath of the Second World War (1939-1945), which updated the terms of the first three treaties (1864, 1906, 1929) and added a fourth. The Geneva Conventions extensively defined the basic rights of wartime prisoners (civilians and military personnel); established protection for the wounded; and established protections for civilians in and around a war-zone. The treaties of 1949 were ratified, in whole or with reservations, by 196 countries.”

In a way, one might say that the Geneva Conventions are an admission of defeat by the international community. We tried to abolish war entirely through the UN Charter, but failed because the Charter was too weak.

Under the Fourth Geneva Convention, collective punishment is war crime. Article 33 states that “No protected person may be punished for an offense that he or she did not personally commit.” Articles 47-78 also impose substantial obligations on occupying powers, with numerous provisions for the general welfare of the inhabitants of an occupied territory. Thus Israel violated the Geneva Conventions by its collective punishment of the civilian population of Gaza in retaliation for largely ineffective Hamas rocket attacks. The larger issue, however, is the urgent need for lifting of Israel’s brutal blockade of Gaza, which has created what Noam Chomsky calls the “the world’s largest open-air prison”. This blockade violates the Geneva conventions because Israel, as an occupying power, has the duty of providing for the welfare of the people of Gaza.

## 8.11 Nuclear Non-Proliferation Treaty, 1968

In the 1960's, negotiations were started between countries that possessed nuclear weapons, and others that did not possess them, to establish a treaty that would prevent the spread of these highly dangerous weapons, but which would at the same time encourage cooperation in the peaceful uses of nuclear energy. The resulting treaty has the formal title Treaty on the Non-Proliferation of Nuclear Weapons (abbreviated as the NPT). The treaty also aimed at achieving general and complete disarmament. It was opened for signature in 1968, and it entered into force on the 11th of May, 1970.

190 parties have joined the NPT, and more countries have ratified it than any other arms limitation agreement, an indication of the Treaty's great importance. Four countries outside the NPT have nuclear weapons: India, Pakistan, North Korea and Israel. North Korea had originally joined the NPT, but it withdrew in 2003. The NPT has three main parts or "pillars", 1) non-proliferation, 2) disarmament, and 3) the right to peaceful use of nuclear technology. The central bargain of the Treaty is that "the NPT non-nuclear weapon states agree never to acquire nuclear weapons and the NPT nuclear weapon states agree to share the benefits of peaceful use of nuclear technology and to pursue nuclear disarmament aimed at the ultimate elimination of their nuclear arsenals".

Articles I and II of the NPT forbid states that have nuclear weapons to help other nations to acquire them. These Articles were violated, for example, by France, which helped Israel to acquire nuclear weapons, and by China, which helped Pakistan to do the same. They are also violated by the "nuclear sharing" agreements, through which US tactical nuclear weapons will be transferred to several countries in Europe in a crisis situation. It is sometimes argued that in the event of a crisis, the NPT would no longer be valid, but there is nothing in the NPT itself that indicates that it would not hold in all situations.

The most blatantly violated provision of the NPT is Article VI. It requires the member states to pursue "negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament", and negotiations towards a "Treaty on general and complete disarmament". In other words, the states that possess nuclear weapons agreed to get rid of them. However, during the 47 years that have passed since the NPT went into force, the nuclear weapon states have shown absolutely no sign of complying with Article VI. There is a danger that the NPT will break down entirely because of the majority of countries in the world are so dissatisfied with this long-continued non-compliance. Looking at the NPT with the benefit of hindsight, we can see the third "pillar", the "right to peaceful use of nuclear technology" as a fatal flaw of the treaty. In practice, it has meant encouragement of nuclear power generation, with all the many dangers that go with it.

The enrichment of uranium is linked to reactor use. Many reactors of modern design make use of low enriched uranium as a fuel. Nations operating such a reactor may claim that they need a program for uranium enrichment in order to produce fuel rods. However, by operating their ultracentrifuge a little longer, they can easily produce highly enriched (weapons-usable) uranium.

The difficulty of distinguishing between a civilian nuclear power generation program and a military nuclear program is illustrated by the case of Iran. In discussing Iran, it should be mentioned that Iran is fully in compliance with the NPT. It is very strange to see states that are long-time blatant violators of the NPT threaten Iran because of a nuclear program that fully complies with the Treaty. I believe that civilian nuclear power generation is always a mistake because of the many dangers that it entails, and because of the problem of disposing of nuclear waste. However, a military attack on Iran would be both criminal and insane. Why criminal? Because such an attack would violate the UN Charter and the Nuremberg Principles. Why insane? Because it would initiate a conflict that might escalate uncontrollably into World War III.

## 8.12 Biological Weapons Convention, 1972

During World War II, British and American scientists investigated the possibility of using smallpox as a biological weapon. However, it was never used, and in 1969 President Nixon officially ended the American biological weapons program, bowing to the pressure of outraged public opinion. In 1972, the United States, the United Kingdom and the Soviet Union signed a Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction. Usually this treaty is known as the Biological Weapons Convention (BWC), and it has now been signed by virtually all of the countries of the world.

However, consider the case of smallpox: A World Health Organization team led by D.A. Henderson devised a strategy in which cases of smallpox were isolated and all their contacts vaccinated, so that the disease had no way of reaching new victims. Descriptions of the disease were circulated, and rewards offered for reporting cases. The strategy proved to be successful, and finally, in 1977, the last natural case of smallpox was isolated in Somalia. After a two-year waiting period, during which no new cases were reported, WHO announced in 1979 that smallpox, one of the most frightful diseases of humankind, had been totally eliminated from the world. This was the first instance of the complete eradication of a disease, and it was a demonstration of what could be achieved by the enlightened use of science combined with international cooperation. The eradication of smallpox was a milestone in human history.

It seems that our species is not really completely wise and rational; we do not really deserve to be called “Homo sapiens”. Stone-age emotions and stone-age politics are alas still with us. Samples of smallpox virus were taken to “carefully controlled” laboratories in the United States and the Soviet Union. Why? Probably because these two Cold War opponents did not trust each other, although both had signed the Biological Weapons Convention. Each feared that the other side might intend to use smallpox as a biological weapon. There were also rumors that unofficial samples of the virus had been saved by a number of other countries, including North Korea, Iraq, China, Cuba, India, Iran, Israel, Pakistan and Yugoslavia.

## 8.13 Chemical Weapons Convention, 1997

On the 3rd of September, 1992, the Conference on Disarmament in Geneva adopted a Convention on the Prohibition of Development, Production, Stockpiling, and Use of Chemical Weapons and on their Destruction. This agreement, which is usually called the Chemical Weapons Convention (CWC), attempted to remedy some of the shortcomings of the Geneva Protocol of 1925. The CWC went into force in 1997, after Hungary deposited the 65th instrument of ratification.

The provisions of Article I of the CWC are as follows: 1. Each State Party to this convention undertakes never under any circumstances: (a) To develop, produce, otherwise acquire, stockpile or retain chemical weapons, or transfer, directly or indirectly, chemical weapons to anyone; (b) To use chemical weapons; (c) To engage in any military preparation to use chemical weapons; (d) To assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party in accordance with the provisions of this Convention. 2. Each State Party undertakes to destroy chemical weapons it owns or possesses, or that are located any place under its jurisdiction or control, in accordance with the provisions of this Convention. 3. Each State Party undertakes to destroy all chemical weapons it abandoned on the territory of another State Party, in accordance with the provisions of this Convention. 4. Each State Party undertakes to destroy any chemical weapons production facilities it owns or possesses, or that are located in any place under its jurisdiction or control, in accordance with the provisions of this Convention. 5. Each State Party undertakes not to use riot control agents as a method of warfare.

The CWC also makes provision for verification by teams of inspectors, and by 2004, 1,600 such inspections had been carried out in 59 countries. It also established an Organization for the Prevention of Chemical Warfare. All of the declared chemical weapons production facilities have now been inactivated, and all declared chemical weapons have been inventoried. However of the world's declared stockpile of chemical warfare agents (70,000 metric tons), only 12 percent have been destroyed. One hopes that in the future the CWC will be ratified by all the nations of the world and that the destruction of stockpiled chemical warfare agents will become complete.

## 8.14 Mine Ban Treaty, 1999

In 1991, six NGOs organized the International Campaign to Ban Landmines, and in 1996, the Canadian government launched the Ottawa process to ban landmines by hosting a meeting among like-minded anti-landmine states. A year later, in 1997, the Mine Ban Treaty was adopted and opened for signatures. In the same year, Jody Williams and the International Campaign to ban Landmines were jointly awarded the Nobel Peace Prize. After the 40th ratification of the Mine Ban Treaty in 1998, the treaty became binding international law on the 1st of March, 1999. The Ottawa Treaty functions imperfectly because of the opposition of several militarily powerful nations, but nevertheless it establishes a valuable norm, and it represents an important forward step in the development of



international law.

## 8.15 International Criminal Court, 2002

In 1998, in Rome, representatives of 120 countries signed a statute establishing an International Criminal Court (ICC), with jurisdiction over the crime of genocide, crimes against humanity, war crimes and the crime of aggression.

Four years were to pass before the necessary ratifications were gathered, but by Thursday, April 11, 2002, 66 nations had ratified the Rome agreement, 6 more than the 60 needed to make the court permanent. It would be impossible to overstate the importance of the ICC. At last, international law acting on individuals has become a reality! The only effective and just way that international laws can act is to make individuals responsible and punishable, since (in the words of Alexander Hamilton) "To coerce states is one of the maddest projects that was ever devised."

At present, the ICC functions very imperfectly because of the bitter opposition of several powerful countries, notable the United States. U.S. President George W. Bush signed into law the American Servicemembers Protection Act of 2002, which is intended to intimidate countries that ratify the treaty for the ICC. The new law authorizes the use of military force to liberate any American or citizen of a U.S.-allied country being held by the court, which is located in The Hague. This provision, dubbed the "Hague invasion clause," has caused a strong reaction from U.S. allies around the world, particularly in the Netherlands.

<http://www.hrw.org/news/2002/08/03/us-hague-invasion-act-becomes-law>

Despite the fact that the ICC now functions so imperfectly, it is a great step forward in the development of international law. It is there and functioning. We have the opportunity to make it progressively more impartial and to expand its powers.

## 8.16 Arms Trade Treaty, 2013

On April 2, 2013, a historic victory was won at the United Nations, and the world achieved its first treaty limiting international trade in arms. Work towards the Arms Trade Treaty (ATT) began in the Conference on Disarmament in Geneva, which requires a consensus for the adoption of any measure. Over the years, the consensus requirement has meant that no real progress in arms control measures has been made in Geneva, since a consensus among 193 nations is impossible to achieve.

To get around the blockade, British U.N. Ambassador Mark Lyall Grant sent the draft treaty to Secretary-General Ban Ki-moon and asked him on behalf of Mexico, Australia and a number of others to put the ATT to a swift vote in the General Assembly, and on Tuesday, April 3, 2013, it was adopted by a massive majority. Among the people who have worked hardest for the ATT is Anna Macdonald, Head of Arms Control at Oxfam. The

reason why Oxfam works so hard on this issue is that trade in small arms is a major cause of poverty and famine in the developing countries. On April 9, Anna Macdonald wrote: “Thanks to the democratic process, international law will for the first time regulate the 70 billion dollar global arms trade. Had the process been launched in the consensus-bound Conference on Disarmament in Geneva, currently in its 12th year of meeting without even being able to agree on an agenda, chances are it would never have left the starting blocks...”

The passage of the Arms Trade Treaty by a majority vote in the UN General Assembly opened new possibilities for progress on other seemingly-intractable issues. In particular, it gave hope that a Nuclear Weapons Convention might be adopted by a direct vote on the floor of the General Assembly. The adoption of the NWC, even if achieved against the bitter opposition of the nuclear weapon states, would make it clear that the world’s peoples consider the threat of an all-destroying nuclear war to be completely unacceptable.

## 8.17 Racism, Colonialism and Exceptionalism

A just system of laws must apply equally and without exception to everyone. If a person, or, in the case of international law, a nation, claims to be outside the law, or above the law, then there is something fundamentally wrong. For example, when U.S. President Obama said in a 2013 speech, “What makes America different, what makes us exceptional, is that we are dedicated to act”, then thoughtful people could immediately see that something was terribly wrong with the system. If we look closely, we find that there is a link between racism, colonialism and exceptionalism. The racist and colonialist concept of “the white man’s burden” is linked to the Neo-Conservative self-image of benevolent (and violent) interference in the internal affairs of other countries.<sup>2</sup>

## 8.18 The Oslo Principles on Climate Change Obligation, 2015

The future of human civilization and the biosphere is not only threatened by thermonuclear war: It is also threatened by catastrophic climate change. If prompt action is not taken to curb the use of fossil fuels: if the presently known reserves of fossil fuels are not left in the ground, then there is a great danger that we will pass a tipping point beyond which human efforts to stop a catastrophic increase in global temperatures will be useless because feedback loops will have taken over. There is a danger of a human-initiated 6th geological extinction event, comparable with the Permian-Triassic event, during which 96 percent of marine species and 70 percent of terrestrial vertebrates became extinct.

Recently there have been a number of initiatives which aim at making the human obligation to avert threatened environmental mega-catastrophes a part of international

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<sup>2</sup><http://www.countercurrents.org/avery101013.htm>  
<https://www.youtube.com/watch?v=efl6T8lovqY>  
<https://www.youtube.com/watch?v=IdBDRbjx9jo>



Figure 8.8: **Recently there have been a number of initiatives which aim at making the human obligation to avert threatened environmental mega-catastrophes a part of international law.**

law. One of these initiatives can be seen in the proposal of the Oslo Principles on Climate Change Obligations; another is the Universal Declaration of the Rights of Mother Earth; and a third can be found in the concept of Biocultural Rights. These are extremely important and hopeful initiatives, and they point to towards the future development of international law for which we must strive.

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<sup>3</sup><https://www.transcend.org/tms/2015/04/oslo-principles-on-global-climate-change-obligations/>

<https://www.transcend.org/tms/2015/04/climate-change-at-last-a-breakthrough-to-our-catastrophic-political-impasse/>

<http://www.commondreams.org/news/2015/04/14/lawsuit-out-love-unprecedented-legal-action-accuses-dutch-government-failing-climate>

<http://www.elgaronline.com/view/journals/jhre/6-1/jhre.2015.01.01.xml>

<http://therightsofnature.org/universal-declaration/>

## 8.19 Treaty on the Prohibition of Nuclear Weapons, 2017

A Treaty banning nuclear weapons was adopted by a majority vote on the floor of the UN General Assembly, following the precedent set by the Arms Trade Treaty. The Treaty on the Prohibition of Nuclear Weapons was passed on 7 July, 2017. It prohibits the development, testing, production, stockpiling, stationing, transfer, use and threat of use of nuclear weapons, as well as assistance and encouragement to the prohibited activities. For nuclear armed states joining the treaty, it provides for a time-bound framework for negotiations leading to the verified and irreversible elimination of its nuclear weapons programme. The International Campaign to Abolish Nuclear Weapons (ICAN) campaigned vigorously for the adoption of the Treaty, and was awarded the 2017 Nobel Peace Prize for its efforts. Although bitterly opposed by nuclear weapons states, the Treaty has great normative value, and one fervently hopes that the force of public opinion will eventually force all governments to give their citizens what the vast majority long for: a nuclear-weapon-free world.

It is generally agreed that a full-scale nuclear war would have disastrous effects, not only on belligerent nations but also on neutral countries. Mr. Javier Pérez de Cuéllar, former Secretary-General of the United Nations, emphasized this point in one of his speeches:

“I feel”, he said, “That the question may justifiably be put to the leading nuclear powers: by what right do they decide the fate of humanity? From Scandinavia to Latin America, from Europe and Africa to the Far East, the destiny of every man and woman is affected by their actions. No one can expect to escape from the catastrophic consequences of a nuclear war on the fragile structure of this planet...”

“Like supreme arbiters, with our disputes of the moment, we threaten to cut off the future and to extinguish the lives of innocent millions yet unborn. There can be no greater arrogance. At the same time, the lives of all those who lived before us may be rendered meaningless; for we have the power to dissolve in a conflict of hours or minutes the entire work of civilization, with the brilliant cultural heritage of humankind.”

## 8.20 Hope for the future, and responsibility for the future

Can we abolish the institution of war? Can we hope and work for a time when the terrible suffering inflicted by wars will exist only as a dark memory fading into the past? I believe that this is really possible. The problem of achieving internal peace over a large geographical area is not insoluble. It has already been solved. There exist today many nations or regions within each of which there is internal peace, and some of these are so large that they are almost worlds in themselves. One thinks of China, India, Brazil, the Russian Federation, the United States, and the European Union. Many of these enormous societies contain a variety of ethnic groups, a variety of religions and a variety of languages,

as well as striking contrasts between wealth and poverty. If these great land areas have been forged into peaceful and cooperative societies, cannot the same methods of government be applied globally?

Today, there is a pressing need to enlarge the size of the political unit from the nation-state to the entire world. The need to do so results from the terrible dangers of modern weapons and from global economic interdependence. The progress of science has created this need, but science has also given us the means to enlarge the political unit: Our almost miraculous modern communications media, if properly used, have the power to weld all of humankind into a single supportive and cooperative society.

We live at a critical time for human civilization, a time of crisis. Each of us must accept his or her individual responsibility for solving the problems that are facing the world today. We cannot leave this to the politicians. That is what we have been doing until now, and the results have been disastrous. Nor can we trust the mass media to give us adequate public discussion of the challenges that we are facing. We have a responsibility towards future generations to take matters into our own hands, to join hands and make our own alternative media, to work actively and fearlessly for better government and for a better society.

We, the people of the world, not only have the facts on our side; we also have numbers on our side. The vast majority of the world's peoples long for peace. The vast majority long for abolition of nuclear weapons, and for a world of kindness and cooperation, a world of respect for the environment. No one can make these changes alone, but together we can do it.

Together, we have the power to choose a future where international anarchy, chronic war and institutionalized injustice will be replaced by democratic and humane global governance, a future where the madness and immorality of war will be replaced by the rule of law.

We need a sense of the unity of all mankind to save the future, a new global ethic for a united world. We need politeness and kindness to save the future, politeness and kindness not only within nations but also between nations. To save the future, we need a just and democratic system of international law; for with law shall our land be built up, but with lawlessness laid waste.

## 8.21 The training of soldiers

Within individual countries, murder is rightly considered to be the worst of crimes. But the institution of war tries to convince us that if a soldier murders someone from another country, whom the politicians have designated as an "enemy", it is no longer a crime, no longer a violation of the common bonds of humanity. It is "heroic".

In their hearts, soldiers know that this is nonsense. Murder is always murder. The men, women and children who are supposed to be the "enemy", are just ordinary people, with whom the soldier really has no quarrel. Therefore when the training of soldiers wears off a little, so that they realize what they have done, they have to see themselves as murderers,

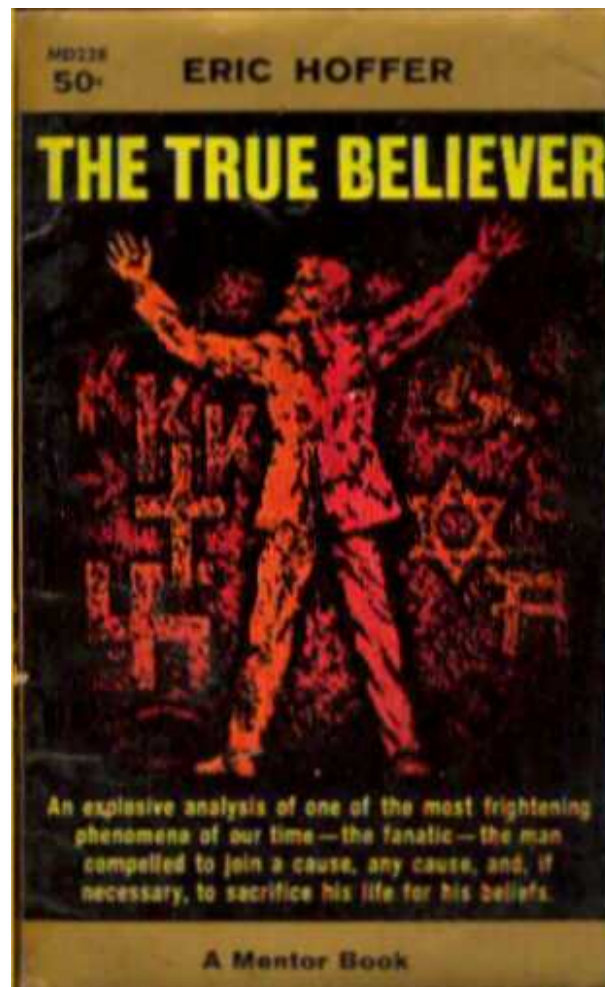


Figure 8.9: Eric Hoffer's book throws light on the training of soldiers, which turns compassionate humans into killing-machines.

and many commit suicide.

A recent article in the journal “Epidemiology” pointed out a startling statistic: for every American soldier killed in combat in 2012, 25 committed suicide. The article also quotes the Department of Veterans Affairs, which says that 18 veterans commit suicide every day.

Obviously, the training of soldiers must overwrite fundamental ethical principles. This training must make a soldier abandon his or her individual conscience and sense of responsibility. It must turn the soldier from a compassionate human being into an automaton, a killing machine. How is this accomplished? Through erosion of the soldier’s self-respect. Through the endless repetition of senseless rituals where obedience is paramount and from which rational thought and conscience are banished.

In his book on fanaticism, *The True Believer* (1951), the American author Eric Hoffer gives the following description of the factors promoting self-sacrifice:

“To ripen a person for self-sacrifice, he must be stripped of his individual identity. He must cease to be George, Hans, Ivan or Tado - a human atom with an existence bounded by birth and death. The most drastic way to achieve this end is by the complete assimilation of the individual into a collective body. The fully assimilated individual does not see himself and others as human beings. When asked who he is, his automatic response is that he is a German, a Russian, a Japanese, a Christian, a Muslim, a member of a certain tribe or family. He has no purpose, worth or destiny apart from his collective body, and as long as that body lives, he cannot really die. ...

“The effacement of individual separateness must be thorough. In every act, however trivial, the individual must, by some ritual, associate himself with the congregation, the tribe, the party, etcetera. His joys and sorrows, his pride and confidence must spring from the fortunes and capacities of the group, rather than from his individual prospects or abilities. Above all, he must never feel alone. Though stranded on a desert island, he must feel that he is under the eyes of the group. To be cast out from the group must be equivalent to being cut off from life.

“This is undoubtedly a primitive state of being, and its most perfect examples are found among primitive tribes. Mass movements strive to approximate this primitive perfection, and we are not imagining things when the anti-individualist bias of contemporary mass movements strikes us as being a throwback to the primitive.”

The conditioning of a soldier in a modern army follows the pattern described in Eric Hoffer’s book. The soldier’s training aims at abolishing his sense of individual separateness, individual responsibility, and moral judgment. It is filled with rituals, such as saluting, by which the soldier identifies with his tribe-like army group. His uniform also helps to strip him of his individual identity and to assimilate him into the group. The result of this psychological conditioning is that the soldier’s mind reverts to a primitive state. He surrenders his moral responsibility, and when the politicians tell him to kill, he kills.

## 8.22 The Nuremberg principles adopted by the UN

In 1946, the United Nations General Assembly unanimously affirmed “the principles of international law recognized by the Charter of the Nuremberg Tribunal and the judgment of the Tribunal”. The General Assembly also established an International Law Commission to formalize the Nuremberg Principles. The result was a list that included Principles VI, which is particularly important in the context of the illegality of NATO:

### Principle I

Any person who commits an act which constitutes a crime under international law is responsible therefor and liable to punishment.

### Principle II

The fact that internal law does not impose a penalty for an act which constitutes a crime under international law does not relieve the person who committed the act from responsibility under international law.

### Principle III

The fact that a person who committed an act which constitutes a crime under international law, acted as Head of State or responsible government official, does not relieve him from responsibility under international law.

### Principle IV

The fact that a person acted pursuant to order of his Government or of a superior does not relieve him from responsibility under international law, provided a moral choice was in fact possible to him.<sup>4</sup>

### Principle V

Any person charged with a crime under international law has the right to a fair trial on the facts and law.

### Principle VI

1. The crimes hereinafter set out are punishable as crimes under international law:

- (a) Crimes against peace and humanity:

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<sup>4</sup>This principle could be paraphrased as follows: “It is not an acceptable excuse to say ‘I was just following my superior’s orders’”.



- i. Planning, preparation, initiation or a plan of a war of aggression or a war in violation of international treaties, agreements or assurances;
  - ii. Participation in a common plan or conspiracy for the accomplishment of any of the acts mentioned under (i).
- (b) War crimes: Violations of the laws or customs of war which include, but are not limited to, murder, ill-treatment or deportation to slave labor or for any other purpose of civilian population of or in occupied territory; murder or ill-treatment of prisoners of war or persons on the Seas, killing of hostages, plunder of public or private property, wanton destruction of cities, towns, or villages, or devastation not justified by military necessity.
- (c) Crimes against humanity: Murder, extermination, enslavement, deportation and other inhumane acts done against any civilian population, or persecutions on political, racial, or religious grounds, when such acts are done or such persecutions are carried on in execution of or in connection with any crime against peace or any war crime.

## **Principle VII**

Complicity in the commission of a crime against peace, a war crime, or a crime against humanity as set forth in Principle VI is a crime under international law.



Figure 8.10: Nazi war criminals awaiting judgement at the Nuremberg trials.



Figure 8.11: You cannot just say “I was acting under orders”.



Figure 8.12: Judgement at Nuremberg

## 8.23 The International Criminal Court

The need for an International Criminal Court which would hold individuals responsible for such crimes as genocide had long been recognized, and at a special session of the United Nations General Assembly in Rome in June, 1998, the ICC was established by a vote of 120 to 7, with 21 countries abstaining. The seven countries that voted against the Rome Statute, which established the ICC, were China, Iraq, Israel, Libya, Qatar, the United States, and Yemen.

In 2002, after the 60 needed ratifications had been obtained, the International Criminal Court went into force. Today the ICC is located at the Hague, Netherlands. It has the power to judge cases involving genocide, crimes against humanity and war crimes, provided that no national court is willing to judge them.

Although the ICC functions imperfectly, and is opposed by several powerful nations, it is impossible to underestimate its importance. For the first time individuals are being held responsible for crimes against international law. As we mentioned above in connection with collective punishment, attempts to coerce nation-states by means of sanctions are neither just nor effective. Political Federations, where laws act on individuals, have historically proved to be effective, just and stable. Thus the establishment of the ICC can be seen as a vital step towards a United Nations Charter reform which would transform the UN from a confederation to a federation. The ICC deserves the wholehearted support of everyone who believes that institutionalized injustice and the brutal rule of military force should be replaced by a world of peace, justice and law. We must remember the words of the Icelandic saga of Njal: "With law shall our land be built up, but with lawlessness laid waste."

## 8.24 The illegality of NATO

### Violation of the UN Charter and the Nuremberg Principles

In recent years, participation in NATO has made European countries accomplices in US efforts to achieve global hegemony by means of military force, in violation of international law, and especially in violation of the UN Charter, the Nuremberg Principles.

Former UN Assistant Secretary General Hans Christof von Sponeck used the following words to express his opinion that NATO now violates the UN Charter and international law: "In the 1949 North Atlantic Treaty, the Charter of the United Nations was declared to be NATO's legally binding framework. However, the United-Nations monopoly of the use of force, especially as specified in Article 51 of the Charter, was no longer accepted according to the 1999 NATO doctrine. NATO's territorial scope, until then limited to the Euro-Atlantic region, was expanded by its members to include the whole world."

Article 2 of the UN Charter requires that "All members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state." This requirement is somewhat qualified by Article 51, which

says that “Nothing in the present Charter shall impair the inherent right of individual or collective self-defense if an armed attack occurs against a Member of the United Nations, until the Security Council has taken measures necessary to maintain international peace and security.”

Thus, in general, war is illegal under the UN Charter. Self-defense against an armed attack is permitted, but only for a limited time, until the Security Council has had time to act. The United Nations Charter does not permit the threat or use of force in preemptive wars, or to produce regime changes, or for so-called “democratization”, or for the domination of regions that are rich in oil. NATO must not be a party to the threat or use of force for such illegal purposes.

In 1946, the United Nations General Assembly unanimously affirmed “the principles of international law recognized by the Charter of the Nuremberg Tribunal and the judgment of the Tribunal”. The General Assembly also established an International Law Commission to formalize the Nuremberg Principles. The result was a list that included Principles VI and VII, which are particularly important in the context of the illegality of NATO:

Robert H. Jackson, who was the chief United States prosecutor at the Nuremberg trials, said that “To initiate a war of aggression is... not only an international crime, it is the supreme international crime, differing from other war crimes in that it contains within itself the accumulated evil of the whole.”

## **Violation of the Nuclear Nonproliferation Treaty**

At present, NATO’s nuclear weapons policies violate both the spirit and the text of the Nuclear Nonproliferation Treaty in several respects: Today there are an estimated 200 US nuclear weapons still in Europe. The air forces of the nations in which they are based are regularly trained to deliver the US weapons. This “nuclear sharing”, as it is called, violates Articles I and II of the NPT, which forbid the transfer of nuclear weapons to non-nuclear-weapon states. It has been argued that the NPT would no longer be in force if a crisis arose, but there is nothing in the NPT saying that the treaty would not hold under all circumstances.

Article VI of the NPT requires states possessing nuclear weapon to get rid of them within a reasonable period of time. This article is violated by fact that NATO policy is guided by a Strategic Concept, which visualizes the continued use of nuclear weapons in the foreseeable future.’

The principle of no-first-use of nuclear weapons has been an extremely important safeguard over the years, but it is violated by present NATO policy, which permits the first-use of nuclear weapons in a wide variety of circumstances.

## **Must Europe really be dragged into a potentially catastrophic war with Russia?**

At present the United States government is trying to force the European members of NATO to participate in aggressive military operations near to Russia. Europe must refuse.

The hubris, and reckless irresponsibility of the US government in risking a catastrophic war with Russia is almost beyond belief, but the intervention in Ukraine is only one in a long series of US interventions:

During the period from 1945 to the present, the US interfered, militarily or covertly, in the internal affairs of a large number of nations: China, 1945-49; Italy, 1947-48; Greece, 1947-49; Philippines, 1946-53; South Korea, 1945-53; Albania, 1949-53; Germany, 1950s; Iran, 1953; Guatemala, 1953-1990s; Middle East, 1956-58; Indonesia, 1957-58; British Guiana/Guyana, 1953-64; Vietnam, 1950-73; Cambodia, 1955-73; The Congo/Zaire, 1960-65; Brazil, 1961-64; Dominican Republic, 1963-66; Cuba, 1959-present; Indonesia, 1965; Chile, 1964-73; Greece, 1964-74; East Timor, 1975-present; Nicaragua, 1978-89; Grenada, 1979-84; Libya, 1981-89; Panama, 1989; Iraq, 1990-present; Afghanistan 1979-92; El Salvador, 1980-92; Haiti, 1987-94; Yugoslavia, 1999; and Afghanistan, 2001-present, Syria, 2013-present. Egypt, 2013-present.

Most of these interventions were explained to the American people as being necessary to combat communism (or more recently, terrorism), but an underlying motive was undoubtedly the desire of the ruling oligarchy to put in place governments and laws that would be favorable to the economic interests of the US and its allies. Also, the military-industrial complex needs justification for the incredibly bloated military budgets that drain desperately needed resources from social and environmental projects.

Do the people of Europe really want to participate in the madness of aggression against Russia? Of course not! What about European leaders? Why don't they follow the will of the people and free Europe from bondage to the United States? Have our leaders been bribed? Or have they been blackmailed through personal secrets, discovered by the long arm of NSA spying?

"To coerce the states is one of the maddest projects that was ever devised... What is the cure for this great evil? Nothing, but to enable the... laws to operate on individuals, in the same manner as those of states do." Alexander Hamilton, 1787

## 8.25 A personal note

I have been a World Federalist ever since 1954. Sixty-four years ago, I graduated from MIT and went on to do postgraduate work in theoretical physics at the University of Chicago. At that time, my political opinions were not very different from those of my parents, who were Eisenhower-supporting Republicans. I was very much against the institution of war, and in favor of world government. However, I thought that the establishment of a world authority would have to wait until most of the the member states had decent governments.

At the University of Chicago, the general atmosphere was quite liberal, and I may have been influenced by it. But what really changed my mind was hearing a speech by a World Federalist named Vernon Nash. Besides convincing me that a world government ought to be a federation, he also made me see that if we waited until all the member states had governments of which we could approve, we would have waited too long. We need global

governance precisely because of faults in the governments of the nations of the world.

Vernon Nash had once been in favor of abolishing the United Nations and starting again from scratch with a World Constitutional Convention. He had justified this position by saying “No one has ever got across a ditch of any size in two jumps”. However, other World Federalists had later made him see how impractical his position was, and he finally agreed that gradual reform of the UN was the best way to go forward.

After studying the writings of the World Federalists, I reached beliefs that are very close to the ones that I hold today. I recently expressed these ideas in an article in *Cadmus*, a journal of the World Academy of Art and Science. You can find the article by typing “John Scales Avery, *Cadmus*” into a search engine.

But what are the reforms that are needed? After the horrors of World War II, the United Nations was founded to eliminate the institution of war. However, the UN Charter drafted in 1945 was far too weak to achieve this goal because it was a confederation rather than a federation. This was very similar to what happened during the early history of the United States: First a confederation was tried, but it soon proved to be too weak, and it was replaced by the present US federal constitution. The debates that occurred at that time are very relevant to UN reform today.

George Mason, one of the architects of the federal constitution of the United States, believed that “such a government was necessary as could directly operate on individuals, and would punish those only whose guilt required it”, while James Madison (another drafter of the U.S. federal constitution) remarked that the more he reflected on the use of force, the more he doubted “the practicability, the justice and the efficacy of it when applied to people collectively, and not individually”.

Finally, Alexander Hamilton, in his *Federalist Papers*, discussed the Articles of Confederation with the following words: “To coerce the states is one of the maddest projects that was ever devised... Can any reasonable man be well disposed towards a government which makes war and carnage the only means of supporting itself - a government that can exist only by the sword? Every such war must involve the innocent with the guilty. The single consideration should be enough to dispose every peaceable citizen against such a government... What is the cure for this great evil? Nothing, but to enable the... laws to operate on individuals, in the same manner as those of states do.”

In other words, the essential difference between a confederation and a federation, both of them unions of states, is that a federation has the power to make and to enforce laws that act on individuals, rather than attempting to coerce states (in Hamilton’s words, “one of the maddest projects that was ever devised.”)

Other reforms are also needed: If the UN is to become an effective World Federation, it will need a reliable source of income to make the organization less dependent on wealthy countries, which tend to give support only to those interventions of which they approve. A promising solution to this problem is the so-called “Tobin tax”, named after the Nobel-laureate economist James Tobin of Yale University. Tobin proposed that international currency exchanges should be taxed at a rate between 0.1 and 0.25 percent. He believed that even this extremely low rate of taxation would have the beneficial effect of damping speculative transactions, thus stabilizing the rates of exchange between curren-



Figure 8.13: Alexander Hamilton believed that “To coerce the states is one of the maddest projects that was ever devised.”



cies. When asked what should be done with the proceeds of the tax, Tobin said, almost as an afterthought, "Let the United Nations have it."

The volume of money involved in international currency transactions is so enormous that even the tiny tax proposed by Tobin would provide the United Nations with between 100 billion and 300 billion dollars annually. By strengthening the activities of various UN agencies, the additional income would add to the prestige of the United Nations and thus make the organization more effective when it is called upon to resolve international political conflicts.

The budgets of UN agencies, such as the World Health Organization, the Food and Agricultural Organization, UNESCO and the UN Development Programme, should not just be doubled but should be multiplied by a factor of at least fifty. With increased budgets the UN agencies could sponsor research and other actions aimed at solving the world's most pressing problems - AIDS, drug-resistant infections diseases, tropical diseases, food insufficiencies, pollution, climate change, alternative energy strategies, population stabilization, peace education, as well as combating poverty, malnutrition, illiteracy, lack of safe water and so on. Scientists would be less tempted to find jobs with arms-related industries if offered the chance to work on idealistic projects. The United Nations could be given its own television channel, with unbiased news programs, cultural programs, and "State of the World" addresses by the UN Secretary General.

In addition, the voting system of the United Nations General Assembly needs to be reformed, and the veto power in the Security Council need to be abolished (or alternatively, the Security Council could be abolished).

So in 1954, convinced that war could only be eliminated by making the United Nations into a federation, I became an active World Federalist. In fact, during my stay at the University of Chicago, I became the Membership Chairman for the Chicago Area for the World Association of World Federalists.



Figure 8.14: James Tobin. When asked what should be done with the proceeds of the tax, Tobin said, almost as an afterthought, “Let the United Nations have it.”

## 8.26 Strengthening the United Nations

It is becoming increasingly clear that the concept of the absolutely sovereign nation-state is a dangerous anachronism in a world of thermonuclear weapons, instantaneous communication, and economic interdependence. Probably our best hope for the future lies in developing the United Nations into a World Federation. The strengthened United Nations should have a legislature with the power to make laws that are binding on individuals, and the ability to arrest and try individual political leaders for violations of these laws. The world federation should also have the power of taxation, and the military and legal powers necessary to guarantee the human rights of ethnic minorities within nations.

In 1945, the victors of World War II gathered in San Francisco to draft the United Nations Charter. The tragic experiences of two world wars, during which the lives of 26 million soldiers and 64 million civilians were lost, had convinced them that security based on national military forces must be replaced by a system of collective security. The first paragraph of the Charter states that the primary purpose of the organization is “to maintain international peace and security, and to that end to take effective measures for the prevention and removal of threats to the peace, and for the suppression of acts of aggression and other breaches of the peace, and to bring about by peaceful means, and in conformity with the principles of justice and international law, adjustment or settlement of international disputes or situations which might lead to a breach of the peace.”

In practice, the United Nations has developed several effective modes of action - peacekeeping, peacemaking, peacebuilding, preventative diplomacy and peace enforcement. Even though the organization has been hampered by Cold War tensions and frequently paralyzed by vetos in the Security Council, it nevertheless has made substantial contributions to global peace by resolving small-scale conflicts and by preventing large-scale ones. The term peacekeeping, in its narrow sense, is applied to operations where U.N. military personnel, often unarmed or only lightly armed, form a buffer between hostile forces in order to maintain a cease-fire. Peacemaking refers to U.N. assistance in the settlement of disputes or the resolution of conflicts.

The term peacebuilding was coined in recent years, and it denotes broad and fundamental efforts to create global conditions which promote peace. Thus peacebuilding includes all areas of international cooperation, including economic, social and humanitarian concerns. For example, U.N. action on problems of poverty, population, pollution, human rights, and the control of terrorism, narcotics and infectious disease all come under the heading of peacebuilding. In addition, the U.N. sometimes acts through preventative diplomacy, an example being the Secretary-General's recent negotiation of an agreement on arms inspection in Iraq. The term peace enforcement denotes active military intervention by the United Nations to stop aggression of one nation against another, for example in the Korean War or the Gulf War. During the half century which has passed since the founding of the United Nations, the need for effective government at the global level has greatly increased. Modern weapons have become so destructive that war is no longer an acceptable method for resolving international disputes. For this reason, and because of the enormous increase in global economic interdependence, we can no longer afford to have unlimited national

sovereignty, with anarchy at the global level.

We can clearly see that in the long run, security can only be achieved by an effective system of international law. The United Nations is the only institution whose authority and structure are suited to constructing and enforcing such a system of law at the global level. U.N. membership includes all nations; and the U.N. has had half a century of experience in addressing global problems.

The impartiality and neutrality of the Secretary-General are accepted and recognized, whereas regional organizations such as NATO cannot claim the same degree of impartiality. Thus it is urgent that the present U.N. Charter be made to function more justly and more effectively; and in the long run, the weaknesses of the present U.N. Charter must be corrected.

There are numerous reasons why, during the coming century, war must be abolished as a social institution; and a few of these reasons are as follows: It is extremely important that research funds be used to develop renewable energy sources and to solve other urgent problems now facing humankind, rather than for developing new and more dangerous weapons systems. In spite of the end of the Cold War, the world still spends roughly 1.7 trillion U.S. dollars per year on armaments. At present, more than 40 percent of all research funds are used for projects related to the arms industry.

Since the Second World War, in spite of the best efforts of the U.N., there have been over 150 armed conflicts; and on any given day, there are an average of 12 wars somewhere in the world. While in earlier epochs it may have been possible to confine the effects of war mainly to combatants, in recent decades the victims of war have increasingly been civilians, and especially children.

Civilian casualties often occur through malnutrition and through diseases which would be preventable in normal circumstances. Because of the social disruption caused by war, normal supplies of food, safe water and medicine are interrupted, so that populations become vulnerable to famine and epidemics. In the event of a nuclear war, starvation and disease would add greatly to the loss of life caused by the direct effects of nuclear weapons.

The indirect effects of war and the threat of war are also enormous. For example, the World Health Organization lacks funds to carry through an antimalarial programme on as large a scale as would be desirable; but the entire programme could be financed for less than the world spends on armaments in a single day. Five hours of world arms spending is equivalent to the total cost of the 20-year WHO programme which resulted, in 1979, in the eradication of smallpox. With a diversion of funds consumed by three weeks of the military expenditures, the world could create a sanitary water supply for all its people, thus eliminating the cause of more than half of all human illness.

It is often said that we are economically dependent on war-related industries; but if this is so, it is a most unhealthy dependence, analogous to drug-dependence or alcoholism. From a purely economic point of view, it is clearly better to invest in education, roads, railways, reforestation, retooling of factories, development of disease-resistant high-yield wheat varieties, industrial research, research on utilization of solar and geothermal energy, and other elements of future-oriented economic infrastructure, rather than building enor-

mously costly warplanes and other weapons. At worst, the weapons will contribute to the destruction of civilization. At best, they will become obsolete in a few years and will be scrapped. By contrast, investment in future-oriented infrastructure can be expected to yield economic benefits over a long period of time.

It is instructive to consider the example of Japan and of Germany, whose military expenditures were severely restricted after World War II. The impressive post-war development of these two nations can very probably be attributed to the restrictions on military spending which were imposed on them by the peace treaty.

As bad as conventional arms and conventional weapons may be, it is the possibility of a nuclear war that still poses the greatest threat to humanity. One argument that has been used in favor of nuclear weapons is that no sane political leader would employ them. However, the concept of deterrence ignores the possibility of war by accident or miscalculation, a danger that has been increased by nuclear proliferation and by the use of computers with very quick reaction times to control weapons systems.

With the end of the Cold War, the danger of a nuclear war between superpowers has diminished; but because of nuclear proliferation, there is still a substantial danger of such a war in the Middle East or in the India- Pakistan dispute, as well as the danger of nuclear blackmail by terrorists or political fanatics.

Recent nuclear power plant accidents remind us that accidents frequently happen through human and technical failure, even for systems which are considered to be very "safe". We must also remember the time scale of the problem. To assure the future of humanity, nuclear catastrophe must be avoided year after year and decade after decade. In the long run, the safety of civilization cannot be achieved except by the abolition of nuclear weapons, and ultimately the abolition of the institution of war.

In the long run, because of the terrible weapons which have been produced through the misuse of science, and because of the even more destructive weapons which are likely to be devised in the future, the only way that we can insure the survival of civilization is to abolish war as an institution. It seems likely that achievement of this goal will require revision and strengthening of the United Nations Charter. The Charter should not be thought of as cast in concrete for all time. It needs instead to grow with the requirements of our increasingly interdependent global society. We should remember that the Charter was drafted and signed before the first nuclear bomb was dropped on Hiroshima; and it also could not anticipate the extraordinary development of international trade and communication which characterizes the world today. Among the weaknesses of the present U.N. Charter is the fact that it does not give the United Nations the power to make laws which are binding on individuals. At present, in international law, we treat nations as though they were persons: We punish entire nations by sanctions when the law is broken, even when only the leaders are guilty, even though the burdens of the sanctions fall most heavily on the poorest and least guilty of the citizens, and even though sanctions often have the effect of uniting the citizens of a country behind the guilty leaders. To be effective, the United Nations needs a legislature with the power to make laws which are binding on individuals, and the power to arrest individual political leaders for flagrant violations of international law.

Another weakness of the present United Nations Charter is the principle of "one nation

one vote" in the General Assembly. This principle seems to establish equality between nations, but in fact it is very unfair: For example it gives a citizen of China or India less than a thousandth the voting power of a citizen of Malta or Iceland. A reform of the voting system is clearly needed.

The present United Nations Charter contains guarantees of human rights, but there is no effective mechanism for enforcing these guarantees. In fact there is a conflict between the parts of the Charter protecting human rights and the concept of absolute national sovereignty. Recent history has given us many examples of atrocities committed against ethnic minorities by leaders of nation-states, who claim that sovereignty gives them the right to run their internal affairs as they wish, free from outside interference.

One feels that it ought to be the responsibility of the international community to prevent gross violations of human rights, such as the use of poison gas against civilians (to mention only one of the more recent political crimes); and if this is in conflict with the notion of absolute national sovereignty, then sovereignty must yield. In fact, the concept of the absolutely sovereign nation-state as the the supreme political entity is already being eroded by the overriding need for international law. Recently, for example, the Parliament of Great Britain, one of the oldest national parliaments, acknowledged that laws made by the European Community take precedence over English common law.

Today the development of technology has made global communication almost instantaneous. We sit in our living rooms and watch, via satellite, events taking place on the opposite side of the globe. Likewise the growth of world trade has brought distant countries into close economic contact with each other: Financial tremors in Tokyo can shake New York. The impact of contemporary science and technology on transportation and communication has effectively abolished distance in relations between nations. This close contact and interdependence will increasingly require effective international law to prevent conflicts. However, the need for international law must be balanced against the desirability of local self-government. Like biological diversity, the cultural diversity of humankind is a treasure to be carefully guarded. A balance or compromise between these two desirable goals could be achieved by granting only a few carefully chosen powers to a strengthened United Nations with sovereignty over all other issues retained by the member states.

The United Nations has a number of agencies, such as the World Health Organization, the Food and Agricultural Organization, and UNESCO, whose global services give the UN considerable prestige and de facto power. The effectiveness of the UN as a global authority could be further increased by giving these agencies much larger budgets. In order to do this, and at the same time to promote the shift from fossil fuels to renewable energy sources, it has been proposed that the U.N. be given the power to tax CO<sub>2</sub> emissions.

The amount of money which could thus be made available for constructive purposes is very large; and a slight increase in the prices of fossil fuels could make a number of renewable energy technologies economically competitive. It has also been proposed that the United Nations should be given the power to impose a small tax on international currency transactions. The amount of money involved in these transactions is so large that even a few hundredths of a percent in tax on each transaction would be sufficient to solve the financial problems of the United Nations. A United Nations tax on air travel has

also been proposed.

The United Nations regular budget in 1992 amounted to 1.03 billion U.S. dollars. In addition, UNICEF, the U.N. Development Programme, and the World Food Programme used several billion dollars, but funds for these agencies were raised by voluntary contributions. Finally, in 1992, peacekeeping operations cost the U.N. 2.7 billion dollars. These sums seem very small when they are compared with the 1.7 trillion dollars which the world spends annually on armaments; and the reluctance of some nations to pay their dues to the U.N. seems shortsighted. It may be that the nations which starve the U.N. financially do so deliberately, in order to make the organization easier to control. They can then give financial support selectively to those interventions of which they approve. For this reason, the provision of a reliable income for the United Nations would have the effect of freeing it from undue influence by any nation, making it more impartial. Impartiality may prove to be the key factor required to give the U.N. the moral authority needed to settle disputes and to maintain peace with a minimum use of force.

The task of building a global political system which is in harmony with modern technology will require our best efforts, but it is not impossible. We can perhaps gain the courage needed for this task by thinking of the history of slavery. The institution of slavery was a part of human culture for so long that it was considered to be an inevitable consequence of human nature; but today slavery has been abolished almost everywhere in the world. The example of the dedicated men and women who worked to abolish slavery can give us courage to approach the even more important task which faces us today - the abolition of war.

## 8.27 The Success of Federations

Historically, the federal form of government has proved to be extremely robust and successful. Many of today's nations are federations of smaller, partially autonomous, member states. Among these nations are Argentina, Australia, Austria, Belgium, Brazil, Canada, Germany, India, Mexico, Russia, Spain, South Africa and the United States.

The Swiss Federation is an interesting example, because its regions speak three different languages: German, French and Italian. In 1291, citizens of Uri, Schwyz and Unterwalden, standing on the top of a small mountain called Rütli, swore allegiance to the first Swiss federation with the words "we will be a one and only nation of brothers". During the 14th century, Luzern, Zürich, Glarus, Zug and Bern also joined. Later additions during the 15th and 16th centuries included Fribourg, Solothurn, Basel, Schaffhausen and Appenzell. In 1648 Switzerland declared itself to be an independent nation, and in 1812, the Swiss Federation declared its neutrality. In 1815, the French-speaking regions Valais, Neuchatel and Genève were added, giving Switzerland its final boundaries.

In some ways, Switzerland is a very advanced democracy, and many issues are decided by the people of the cantons in direct referendums. On the other hand, Switzerland was very late in granting votes to women (1971), and it was only in 1990 that a Swiss federal court forced Appenzell Innerrhoden to comply with this ruling. Switzerland was also very

late in joining the United Nations (10 September, 2002).

The Federal Constitution of United States of America is one of the most important and influential constitutions in history. It later formed a model for many other governments, especially in South America. The example of the United States is especially interesting because the original union of states formed by the Articles of Confederation in 1777 proved to be too weak, and it had to be replaced eleven years later by a federal constitution.

During the revolutionary war against England the 13 former colonies sent representatives to a Continental Congress, and on May 10, 1776, the Congress authorized each of the colonies to form its own local provincial government. On July 4, 1776 it published a formal Declaration of Independence. The following year, the Congress adopted the Articles of Confederation defining a government of the new United States of America. The revolutionary war continued until 1783, when the Treaty of Paris was signed by the combatants, ending the war and giving independence to the United States. However, the Articles of Confederation soon proved to be too weak. The main problem with the Articles was that laws of the Union acted on its member states rather than on individual citizens.

In 1887, a Constitutional Convention was held in Philadelphia with the aim of drafting a new and stronger constitution. In the same year, Alexander Hamilton began to publish the *Federalist Papers*, a penetrating analysis of the problems of creating a workable government uniting a number of semi-independent states. The key idea of the *Federalist Papers* is that the coercion of states is neither just nor feasible, and that a government uniting several states must function by acting on individuals. This central idea was incorporated into the Federal Constitution of the United States, which was adopted in 1788. Another important feature of the new Constitution was that legislative power was divided between the Senate, where the states had equal representation regardless of their size, and the House of Representatives, where representation was proportional to the populations of the states. The functions of the executive, the legislature and the judiciary were separated in the Constitution, and in 1789 a Bill of Rights was added.

Because the states were initially distrustful of each other and jealous of their independence, the powers originally granted to the US federal government were minimal. However, as it evolved, the Federal Government of the United States gradually became stronger, and bit by bit it became involved in an increasingly wide range of activities.

The formation of the federal government of Australia is interesting because it illustrates the power of ordinary citizens to influence the large-scale course of events. In the 19th century, the six British colonies that were later to be welded into the Commonwealth of Australia imposed tariffs on each other, so that citizens living near the Murray River (for example) would have to stop and pay tolls each time they crossed the river. The tolls, together with disagreements over railways linking the colonies, control of river water and other common concerns, finally became so irritating that citizens' leagues sprang up everywhere to demand federation. By the 1890's such federation leagues could be found in cities and towns throughout the continent. In 1893, the citizens' leagues held a conference in Corowa, New South Wales, and proposed the "Corowa Plan", according to which a Constitutional Convention should be held. After this, the newly drafted constitution was to be put to a referendum in all of the colonies. This would be the first time in history



that ordinary citizens would take part in the nation-building process. In January, 1895, the Corowa Plan was adopted by a meeting of Premiers in Hobart, and finally, despite the apathy and inaction of many politicians, the citizens had their way: The first Australian federal election was held March, 1901, and on May 9, 1901, the Federal Parliament of Australia opened. Australia was early in granting votes for women (1903). Its voting system has evolved gradually. Today there is a system of compulsory voting by citizens for both the Australian House of Representatives and the Australian Senate.

The successes and problems of the European Union provide invaluable experience as we consider the measures that will be needed to make the United Nations into a federation. On the whole, the EU has been an enormous success, demonstrating beyond question that it is possible to begin with a very limited special-purpose federation and to gradually expand it, judging at each stage whether the cautiously taken steps have been successful. The European Union has today made war between its member states virtually impossible. This goal, now achieved, was in fact the vision that inspired the leaders who initiated the European Coal and Steel Community in 1950.

The European Union is by no means without its critics or without problems, but, as we try to think of what is needed for United Nations reform, these criticisms and problems are just as valuable to us as are the successes of the EU.

Countries that have advanced legislation protecting the rights of workers or protecting the environment complain that their enlightened laws will be nullified if everything is reduced to the lowest common denominator in the EU. This complaint is a valid one, and two things can be said about it: Firstly, diversity is valuable, and therefore it may be undesirable to homogenize legislation, even if uniform rules make trade easier. Secondly, if certain rules are to be made uniform, it is the most enlightened environmental laws or labor laws that ought to be made the standard, rather than the least enlightened ones. Similar considerations would hold for a reformed and strengthened United Nations.

Another frequently heard complaint about the EU is that it takes decision-making far away from the voters, to a remote site where direct political will of the people can hardly be felt. This criticism is also very valid. Often, in practice, the EU has ignored or misunderstood one of the basic ideas of federalism: A federation is a compromise between the desirability of local self-government, balanced against the necessity of making central decisions on a few carefully selected issues.

As few issues as possible should be taken to Bruxelles, but there are certain issues that are so intrinsically transnational in their implications that they must be decided centrally. This is the principle of subsidiarity, so essential for the proper operation of federations - local government whenever possible, and only a few central decisions when absolutely necessary. In applying the principle of subsidiarity to a world government of the future, one should also remember that UN reform will take us into new and uncharted territory. Therefore it is prudent to grant only a few carefully chosen powers, one at a time, to a reformed and strengthened UN, to see how these work, and then to cautiously grant other powers, always bearing in mind that wherever possible, local decisions are the best.

In the perspective of a longer time-frame, we need to work for a world where national armies will be very much reduced in size, where the United Nations will have a monopoly

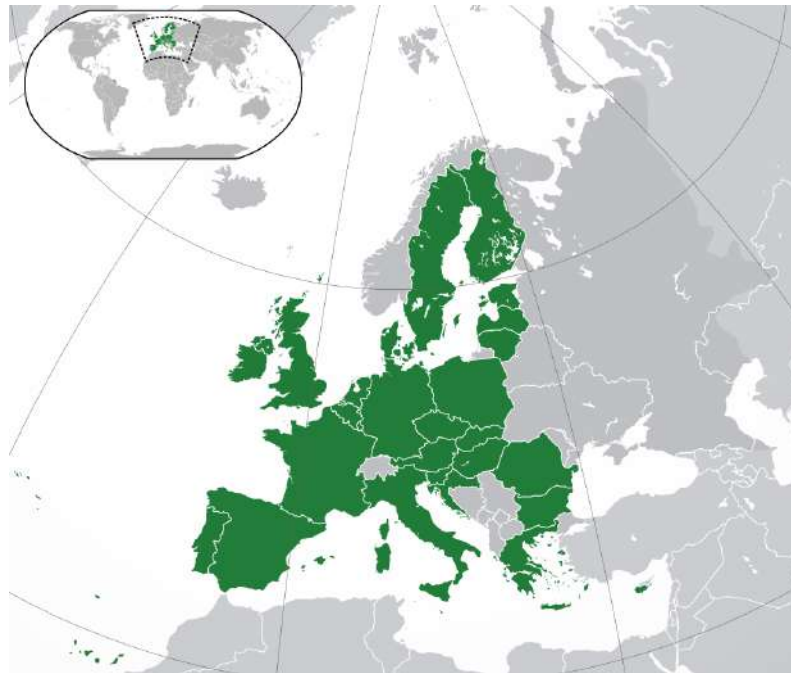


Figure 8.15: **A map of the European Union. Existing federations like the EU can give us insights as we work to develop the United Nations into a federation.**

on heavy armaments, and where the manufacture or possession of nuclear weapons, as well as the export of arms and ammunition from industrialized countries to the developing countries, will be prohibited. (See reference 3).

Looking towards the future, we can foresee a time when the United Nations will have the power to make and enforce international laws which are binding on individuals. Under such circumstances, true police action will be possible, incorporating all of the needed safeguards for lives and property of the innocent.

One can hope for a future world where public opinion will support international law to such an extent that a new Hitler or Saddam Hussein or a future Milosevic will not be able to organize large-scale resistance to arrest - a world where international law will be seen by all to be just, impartial and necessary - a well-governed global community within which each person will owe his or her ultimate loyalty to humanity as a whole.

### **The veto power in the Security Council must be eliminated**

We should remember that the UN Charter was drafted and signed before the first nuclear bomb was dropped on Hiroshima; and it also could not anticipate the extraordinary development of international trade and communication which characterizes the world today. The five permanent members of the Security Council, China, France, Russia, the United Kingdom and the United States, were the victors of World War II, and were given special privileges by the Charter as it was established in 1945, among these the power to veto UN

actions on security issues. In practice, the veto power of the P5 nations has made the UN ineffective, and it has become clear that changes are needed. If the Security Council is retained in a World Federation, the veto power must be eliminated.

### **Subsidiarity**

The need for international law must be balanced against the desirability of local self-government. Like biological diversity, the cultural diversity of humankind is a treasure to be carefully guarded. A balance or compromise between these two desirable goals can be achieved by granting only a few carefully chosen powers to a World Federation with sovereignty over all other issues retained by the member states. This leaves us with a question: Which issues should be decided centrally, and which locally?

The present United Nations Charter contains guarantees of human rights, but there is no effective mechanism for enforcing these guarantees. In fact there is a conflict between the parts of the Charter protecting human rights and the concept of absolute national sovereignty. Recent history has given us many examples of atrocities committed against ethnic minorities by leaders of nation-states, who claim that sovereignty gives them the right to run their internal affairs as they wish, free from outside interference. One feels that it ought to be the responsibility of the international community to prevent gross violations of human rights, such as genocide; and if this is in conflict with the concept of national sovereignty, then sovereignty must yield.

In the future, overpopulation and famine are likely to become increasingly difficult and painful problems in several parts of the world. Since various cultures take widely different attitudes towards birth control and family size, the problem of population stabilization seems to be one which should be decided locally. At the same time, aid for local family planning programs, as well as famine relief, might appropriately come from global agencies, such as WHO and FAO. With respect to large-scale migration, it would be unfair for a country which has successfully stabilized its own population, and which has eliminated poverty within its own borders, to be forced to accept a flood of migrants from regions of high fertility. Therefore the extent of immigration should be among those issues to be decided locally.

Security, and controls on the manufacture and export of armaments will require an effective authority at the global level.

The steps needed to convert the United Nations into a World Federation can be taken cautiously, one at a time. Having seen the results of a particular step, one can move on to the next. The establishment of the International Criminal Court is an important first step towards a system of international laws that acts on individuals. Another important step would be to give the UN a much larger and more reliable source of income. The establishment of a standing UN emergency military force is another step that ought to be taken in the near future.

## 8.28 Obstacles to a World Federation

It is easy to write down what is needed to convert the United Nations into a World Federation. But will not the necessary steps towards a future world of peace and law be blocked by the powerholders of today? Not everyone wants peace. Not everyone wants international law.<sup>5</sup>

The United Nations was established at the end of the most destructive war the world had ever seen, and its horrors were fresh in the minds of the delegates to the 1945 San Francisco Conference. The main purpose of the Charter that they drafted was to put an end to the institution of war. It was hoped that as a consequence, the UN would also end the colonial era, since war is needed to maintain the unequal relationships of colonialism. Neither of these things happened. War is still with us, and war is still used to maintain the intolerable economic inequalities of neocolonialism. The fact that military might is still used by powerful industrialized nations to maintain economic hegemony over less developed countries has been amply documented by Professor Michael Klare in his books on Resource Wars.

Today 2.7 billion people live on less than \$2 a day - 1.1 billion on less than \$1 per day. 18 million of our fellow humans die each year from poverty-related causes. In 2006, 1.1 billion people lacked safe drinking water, and waterborne diseases killed an estimated 1.8 million people. The developing countries are also the scene of a resurgence of other infectious diseases, such as malaria, drug-resistant tuberculosis and HIV/AIDS.<sup>6</sup>

Meanwhile, in 2011, world military budgets reached a total of 1.7 trillion dollars (i.e. 1.7 million million dollars). This amount of money is almost too large to be imagined. The fact that it is being spent means that many people are making a living from the institution of war. Wealthy and powerful lobbies from the military-industrial complex are able to influence mass media and governments. Thus the institution of war persists, although we know very well that it is a threat to civilization and that it responsible for much of the suffering that humans experience.

Today's military spending of almost two trillion US dollars per year would be more than enough to finance safe drinking water for the entire world, and to bring primary health care and family planning advice to all. If used constructively, the money now wasted (or worse than wasted) on the institution of war could also help the world to make the transition from fossil fuel use to renewable energy systems.

The way in which some industrialized countries maintain their control over less developed nations can be illustrated by the "resource curse", i.e. the fact that resource-rich developing countries are no better off economically than those that lack resources, but are cursed with corrupt and undemocratic governments. This is because foreign corporations extracting local resources under unfair agreements exist in a symbiotic relationship with

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<sup>5</sup>The interested reader can find the "Hague Invasion Act" described on the Internet

<sup>6</sup>It would be wrong to attribute poverty in the developing world entirely to war, and to exploitation by the industrialized countries. Rapid population growth is also a cause of poverty. Nevertheless, the enormous contrast between the rich and poor parts of the world is partly the result of unfair trade agreements imposed by means of "regime change" and "nation building", i.e. interference backed by military force.

corrupt local officials.

As long as enormous gaps exist between the rich and poor nations of the world, the task turning the United Nations into an equitable and just federation will be blocked. Thus we are faced with the challenge of breaking the links between poverty and war. Civil society throughout the world must question the need for colossal military budgets, since, according to the present UN Charter, as well as the Nuremberg Principles, war is a violation of international law, except when sanctioned by the Security Council. By following this path we can free the world from the intolerable suffering caused by poverty and from the equally intolerable suffering caused by war.

### Suggestions for further reading

1. Matt Wood, *Crunching the Numbers on the Rate of Suicide Among Veterans*, Epidemiology, April 27, (2012).
2. Eric Hoffer, *The True Believer*, Harper and Row, (1951).
3. Daniele Archibugi and Alice Pease, *Crime and Global Justice. The Dynamics of International Punishment*, Polity Press, (2018).
4. David Bosco, *Rough Justice: The International Criminal Court's Battle to Fix the World, One Prosecution at a Time*, Oxford University Press, (2014).
5. Bruce Broomhall, *International Justice and the International Criminal Court: Between Sovereignty and the Rule of Law*. Oxford: Oxford University Press (2003).
6. Anne-Marie de Brouwer, *Supranational Criminal Prosecution of Sexual Violence: The ICC and the Practice of the ICTY and the ICTR*. Antwerp - Oxford: Intersentia (2005).
7. Karin Calvo-Goller, *The Trial Proceedings of the International Criminal Court - ICTY and ICTR Precedents*, Martinus Nijhoff Publishers, (2006),



## Chapter 9

# WE NEED NEW GLOBAL ETHICS

### 9.1 The ethics of Mahatma Gandhi

If humans are ever to achieve a stable global society in the future, they will have to become much more modest in their economic behavior and much more peaceful in their politics. For both modesty and peace, Gandhi is a useful source of ideas. The problems with which he struggled during his lifetime are extremely relevant to us in the 21st Century, when both nuclear and ecological catastrophes threaten the world.

#### Avoiding escalation of conflicts

Today we read almost every day of killings that are part of escalating cycles of revenge and counter-revenge, for example in the Middle East. Gandhi's experiences both in South Africa and in India convinced him that such cycles could only be ended by unilateral acts of kindness and understanding from one of the parties in a conflict. He said, "An eye for an eye makes the whole world blind".

To the insidious argument that "the end justifies the means", Gandhi answered firmly: "They say that 'means are after all means'. I would say that 'means are after all everything'. As the means, so the end. Indeed, the Creator has given us limited power over means, none over end... The means may be likened to a seed, and the end to a tree; and there is the same inviolable connection between the means and the end as there is between the seed and the tree. Means and end are convertible terms in my philosophy of life."

Gandhi's advocacy of non-violence is closely connected to his attitude towards ends and means. He believed that violent methods for achieving a desired social result would inevitably result in an escalation of violence. The end achieved would always be contaminated by the methods used. He was influenced by Leo Tolstoy with whom he exchanged many letters, and he in turn influenced Martin Luther King and Nelson Mandela.

## **The power of truth**

Gandhi was trained as a lawyer, and when he began to practice in South Africa, in his first case, he was able to solve a conflict by proposing a compromise that satisfied both parties. Of this result he said, “My joy was boundless. I had learnt the true practice of law. I had learnt to find out the better side of human nature and to enter men’s hearts. I realized that the true function of a lawyer was to unite parties riven asunder.” When Gandhi became involved with the struggle for civil rights of the Indian minority in South Africa, his background as a lawyer once more helped him. This time his jury was public opinion in England. When Gandhi lead the struggle for reform, he insisted that the means of protest used by his followers should be non-violent, even though violence was frequently used against them. In this way they won their case in the court of public opinion. Gandhi called this method of protest “satyagraha”, a Sanskrit word meaning “the power of truth”. In today’s struggles for justice and peace, the moral force of truth and nonviolence can win victories in the court of world public opinion.

## **Harmony between religious groups**

Gandhi believed that at their core, all religions are based on the concepts of truth, love, compassion, nonviolence and the Golden Rule. When asked whether he was a Hindu, Gandhi answered, “Yes I am. I am also a Christian, a Muslim, a Buddhist and a Jew.” When praying at his ashram, Gandhi made a point of including prayers from many religions. One of the most serious problems that he had to face in his efforts to free India from British rule was disunity and distrust, even hate, between the Hindu and Muslim communities. Each community felt that with the British gone, they might face violence and repression from the other. Gandhi made every effort to bridge the differences and to create unity and harmony. His struggles with this problem are highly relevant to us today, when the world is split by religious and ethnic differences.

## **Solidarity with the poor**

Today’s world is characterized by intolerable economic inequalities, both between nations and within nations. 8 million children die each year from poverty-related causes. 1.3 billion people live on less than 1.25 dollars a day. Gandhi’s concern for the poor can serve as an example to us today, as we work to achieve a more equal world. He said, “There is enough for every man’s need, but not for every man’s greed.”

## **Voluntary reduction of consumption**

After Gandhi’s death, someone took a photograph of all his worldly possessions. It was a tiny heap, consisting of his glasses, a pair of sandals, a homespun cloth (his only garment) and a watch. That was all. By reducing his own needs and possessions to an absolute





Figure 9.1: Mahatma Gandhi firmly rejected the insidious doctrine that “the end justifies the means”.

minimum, Gandhi had tried to demonstrate that the commonly assumed connection between wealth and merit is false. This is relevant today, in a world where we face a crisis of diminishing resources. Not only fossil fuels, but also metals and arable land per capita will become scarce in the future. This will force a change in lifestyle, particularly in the industrialized countries, away from consumerism and towards simplicity. Gandhi’s example can teach us that we must cease to use wealth and “conspicuous consumption” as a measure of merit.

## Gandhian economics

In his autobiography, Mahatma Gandhi says: “Three moderns have left a deep impression on my life and captivated me: Raychandbhai (the Indian philosopher and poet) by his living contact; Tolstoy by his book ‘The Kingdom of God is Within You’; and Ruskin by his book ‘Unto This Last’.” Ruskin’s book, “Unto This Last”, which Gandhi read in 1904, is a criticism of modern industrial society. Ruskin believed that friendships and warm interpersonal relationships are a form of wealth that economists have failed to consider. He felt that warm human contacts are most easily achieved in small agricultural communities, and that therefore the modern tendency towards centralization and industrialization may be a step backward in terms of human happiness. While still in South Africa, Gandhi founded two religious Utopian communities based on the ideas of Tolstoy and Ruskin, Phoenix Farm (1904) and Tolstoy Farm (1910).

Because of his growing fame as the leader of the Indian civil rights movement in South

Africa, Gandhi was persuaded to return to India in 1914 and to take up the cause of Indian home rule. In order to re-acquaint himself with conditions in India, he travelled tirelessly, now always going third class as a matter of principle.

During the next few years, Gandhi worked to reshape the Congress Party into an organization which represented not only India's Anglicized upper middle class but also the millions of uneducated villagers who were suffering under an almost intolerable burden of poverty and disease. In order to identify himself with the poorest of India's people, Gandhi began to wear only a white loincloth made of rough homespun cotton. He traveled to the remotest villages, recruiting new members for the Congress Party, preaching non-violence and "firmness in the truth", and becoming known for his voluntary poverty and humility. The villagers who flocked to see him began to call him "Mahatma" (Great Soul).

Disturbed by the spectacle of unemployment and poverty in the villages, Gandhi urged the people of India to stop buying imported goods, especially cloth, and to make their own. He advocated the re-introduction of the spinning wheel into village life, and he often spent some hours spinning himself. The spinning wheel became a symbol of the Indian independence movement, and was later incorporated into the Indian flag.

The movement for boycotting British goods was called the "Swadeshi movement". The word Swadeshi derives from two Sanskrit roots: Swa, meaning self, and Desh, meaning country. Gandhi described Swadeshi as "a call to the consumer to be aware of the violence he is causing by supporting those industries that result in poverty, harm to the workers and to humans or other creatures."

Gandhi tried to reconstruct the crafts and self-reliance of village life that he felt had been destroyed by the colonial system. "I would say that if the village perishes, India will perish too", he wrote, "India will be no more India. Her own mission in the world will get lost. The revival of the village is only possible when it is no more exploited. Industrialization on a mass scale will necessarily lead to passive or active exploitation of the villagers as problems of competition and marketing come in. Therefore we have to concentrate on the village being self-contained, manufacturing mainly for use. Provided this character of the village industry is maintained, there would be no objection to villagers using even the modern machines that they can make and can afford to use. Only they should not be used as a means of exploitation by others."

"You cannot build nonviolence on a factory civilization, but it can be built on self-contained villages... Rural economy as I have conceived it, eschews exploitation altogether, and exploitation is the essence of violence... We have to make a choice between India of the villages that are as ancient as herself and India of the cities which are a creation of foreign domination..."

"Machinery has its place; it has come to stay. But it must not be allowed to displace necessary human labour. An improved plow is a good thing. But if by some chances, one man could plow up, by some mechanical invention of his, the whole of the land of India, and control all the agricultural produce, and if the millions had no other occupation, they would starve, and being idle, they would become dunces, as many have already become. There is hourly danger of many being reduced to that unenviable state."

In these passages we see Gandhi not merely as a pioneer of nonviolence; we see him also

as an economist. Faced with misery and unemployment produced by machines, Gandhi tells us that social goals must take precedence over blind market mechanisms. If machines are causing unemployment, we can, if we wish, and use labor-intensive methods instead. With Gandhi, the free market is not sacred; we can do as we wish, and maximize human happiness, rather than maximizing production and profits.

Mahatma Gandhi was assassinated by a Hindu extremist on January 30, 1948. After his death, someone collected and photographed all his worldly goods. These consisted of a pair of glasses, a pair of sandals, a pocket watch and a white homespun loincloth. Here, as in the Swadeshi movement, we see Gandhi as a pioneer of economics. He deliberately reduced his possessions to an absolute minimum in order to demonstrate that there is no connection between personal merit and material goods. Like Veblen, Mahatma Gandhi told us that we must stop using material goods as a means of social competition. We must start to judge people not by what they have, but by what they are.

## 9.2 The ethics of Albert Einstein

Besides being one of the greatest physicists of all time, Albert Einstein was a lifelong pacifist, and his thoughts on peace can speak eloquently to us today. We need his wisdom today, when the search for peace has become vital to our survival as a species.

### Einstein's letter to Freud: Why war?

Because of his fame, Einstein was asked to make several speeches at the Reichstag. and in all these speeches he condemned violence and nationalism, urging that these be replaced by and international cooperation and law under an effective international authority. He also wrote many letters and articles pleading for peace and for the renunciation of militarism and violence.

Einstein believed that the production of armaments is damaging, not only economically, but also spiritually. In 1930 he signed a manifesto for world disarmament sponsored by the Womens International League for Peace and Freedom. In December of the same year, he made his famous statement in New York that if two percent of those called for military service were to refuse to fight, governments would become powerless, since they could not imprison that many people. He also argued strongly against compulsory military service and urged that conscientious objectors should be protected by the international community. He argued that peace, freedom of individuals, and security of societies could only be achieved through disarmament, the alternative being "slavery of the individual and annihilation of civilization".

In letters, and articles, Einstein wrote that the welfare of humanity as a whole must take precedence over the goals of individual nations, and that we cannot wait until leaders give up their preparations for war. Civil society, and especially public figures, must take

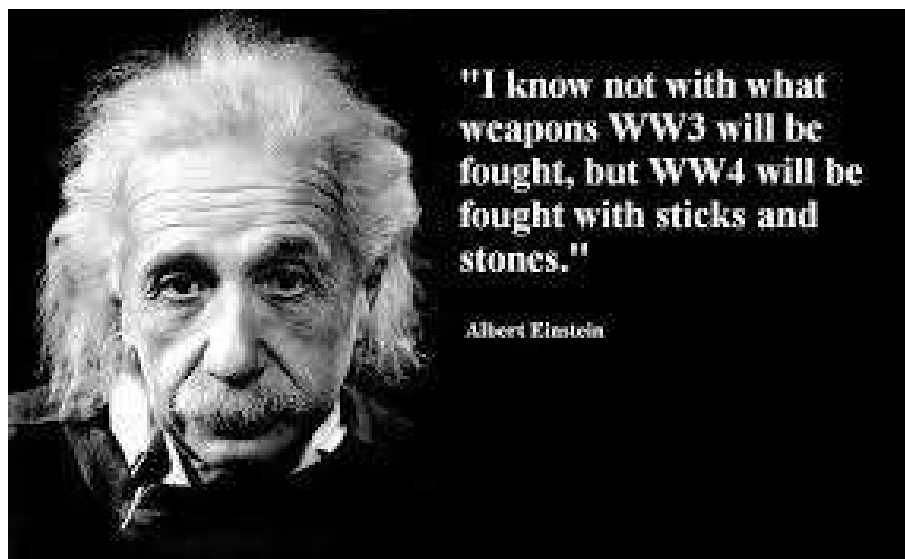


Figure 9.2:

the lead. He asked how decent and self-respecting people can wage war, knowing how many innocent people will be killed.

In 1931, the International Institute for Intellectual Cooperation invited Albert Einstein to enter correspondence with a prominent person of his own choosing on a subject of importance to society. The Institute planned to publish a collection of such dialogues. Einstein accepted at once, and decided to write to Sigmund Freud to ask his opinion about how humanity could free itself from the curse of war. A translation from German of part of the long letter that he wrote to Freud is as follows:

“Dear Professor Freud, The proposal of the League of Nations and its International Institute of Intellectual Cooperation at Paris that I should invite a person to be chosen by myself to a frank exchange of views on any problem that I might select affords me a very welcome opportunity of conferring with you upon a question which, as things are now, seems the most important and insistent of all problems civilization has to face. This is the problem: Is there any way of delivering mankind from the menace of war? It is common knowledge that, with the advance of modern science, this issue has come to mean a matter of life or death to civilization as we know it; nevertheless, for all the zeal displayed, every attempt at its solution has ended in a lamentable breakdown.”

“I believe, moreover, that those whose duty it is to tackle the problem professionally and practically are growing only too aware of their impotence to deal with it, and have now a very lively desire to learn the views of men who, absorbed in the pursuit of science, can see world-problems in the perspective distance lends. As for me, the normal objective of my thoughts affords no insight into the dark places of human will and feeling. Thus in the enquiry now proposed, I can do little more than seek to clarify the question at issue and, clearing the ground of the more obvious solutions, enable you to bring the light of your far-reaching knowledge of man’s instinctive life upon the problem..”

“As one immune from nationalist bias, I personally see a simple way of dealing with the superficial (i.e. administrative) aspect of the problem: the setting up, by international consent, of a legislative and judicial body to settle every conflict arising between nations... But here, at the outset, I come up against a difficulty; a tribunal is a human institution which, in proportion as the power at its disposal is... prone to suffer these to be deflected by extrajudicial pressure...”

Freud replied with a long and thoughtful letter in which he said that a tendency towards conflict is an intrinsic part of human emotional nature, but that emotions can be overridden by rationality, and that rational behavior is the only hope for humankind.

### **A few more things that Einstein said about peace:**

**We cannot solve our problems with the same thinking that we used when we created them.**

**It has become appallingly obvious that our technology has exceeded our humanity.**

**Peace cannot be kept by force; it can only be achieved by understanding.**

**The world is a dangerous place to live; not because of the people who are evil, but because of the people who don't do anything about it.**

**Insanity: doing the same thing over and over again and expecting to get different results.**

**Nothing will end war unless the people themselves refuse to go to war.**

**Past thinking and methods did not prevent world wars. Future thinking must prevent war.**

**You cannot simultaneously prevent and prepare for war.**

**Never do anything against conscience, even if the state demands it.**

**Taken as a whole, I would believe that Gandhi's views were the most enlightened of all political men of our time.**

**Without ethical culture, there is no salvation for humanity.**

**War seems to me to be a mean, contemptible thing: I would rather be hacked in pieces than take part in such an abominable business. And yet so high, in spite of everything, is my opinion of the human race that I believe this bogey**

would have disappeared long ago, had the sound sense of the nations not been systematically corrupted by commercial and political interests acting through the schools and the Press.

## 9.3 The ethics of Saint Francis

### The life of Saint Francis

Saint Francis of Assisi was born in 1181 in the Italian hilltop town of Assisi. His father, Pietro di Bernardone, was a prosperous silk merchant, and his mother Pica de Bourlemont, was a noblewoman from Provence. Saint Francis was originally called Giovanni, but his father later renamed him Francesco because of his successful business dealings in France and his admiration for all things French.

After leading the ordinary (somewhat dissolute) life of a wealthy young man of that period, Saint Francis underwent a religious conversion, following which he renounced his inheritance and embraced a life of poverty. Although not ordained as a priest, he began teaching what he believed to be the true Christian message. He soon acquired a small group of followers, and he traveled with them to Rome to ask Pope Innocent III for permission to found a new religious order. During his life, Saint Francis founded three religious orders.

Saint Francis continued to preach, and is even said to have preached to birds and animals, whom he regarded as his sisters and brothers. His attitude towards nature can be seen in his “Canticle of the Sun”:

### *Canticle of the Sun*

*Most High, all powerful, good Lord,  
Yours are the praises, the glory, the honor,  
and all blessing.*

*To You alone, Most High, do they belong,  
and no man is worthy to mention Your name.*

*Be praised, my Lord, through all your creatures,  
especially through my lord Brother Sun,  
who brings the day; and you give light through him.  
And he is beautiful and radiant in all his splendor!  
Of you, Most High, he bears the likeness.*

*Praise be You, my Lord, through Sister Moon  
and the stars, in heaven you formed them*



Figure 9.3: **Saint Francis**

*clear and precious and beautiful.*

*Praised be You, my Lord, through Brother Wind,  
and through the air, cloudy and serene,  
and every kind of weather through which  
You give sustenance to Your creatures.*

*Praised be You, my Lord, through Sister Water,  
which is very useful and humble and precious and chaste.*

*Praised be You, my Lord, through Brother Fire,  
through whom you light the night and he is beautiful  
and playful and robust and strong.*

*Praised be You, my Lord, through Sister Mother Earth,  
who sustains us and governs us and who produces  
varied fruits with colored flowers and herbs.*

*Praised be You, my Lord,  
through those who give pardon for Your love,  
and bear infirmity and tribulation.*

*Blessed are those who endure in peace  
for by You, Most High, they shall be crowned.*

*Praised be You, my Lord,  
through our Sister Bodily Death,  
from whom no living man can escape.*

*Woe to those who die in mortal sin.  
Blessed are those whom death will  
find in Your most holy will,  
for the second death shall do them no harm.*

*Praise and bless my Lord,  
and give Him thanks  
and serve Him with great humility.*

## Canonization

Pope Gregory IX canonized Francis on 16 July 1228. Along with Saint Catherine of Sienna, he was designated Patron Saint of Italy. He later became associated with patronage of



animals and the natural environment, and it became customary for Catholic and Anglican churches to hold ceremonies blessing animals on his feast day of 4 October.

### ***A prayer of Saint Francis***

*Blessed is he who loves and does not therefore desire to be loved;  
Blessed is he who fears and does not therefore desire to be feared;  
Blessed is he who serves and does not therefore desire to be served;  
Blessed is he who behaves well toward others and does not desire that others behave well toward him;*

## **9.4 The ethics of Pope Francis**

Despite the worrying nature of the threats that we are facing, there are reasons for hope. One of the greatest of these is the beautiful, profound and powerful encyclical that has just been released by Pope Francis.

When he accepted the responsibility for leading the world's 1.2-billion-strong Catholic Church, Cardinal Bergoglio of Argentina adopted the name Francis, after the universally loved Saint Francis of Assisi, whose life of simplicity, love for the poor, and love of nature he chose as the model for his Papacy. The Pope's inspiring encyclical letter "Laudato Si'" takes its name from a canticle of Saint Francis, that begins with the words "Praise be to you, my Lord, through our sister, mother Earth, who sustains and governs us..."

We can remember that Saint Francis regarded birds and animals as his brothers and sisters. He even thought of the sun, moon, clouds, rain and water as brothers and sisters. Like his chosen namesake, Pope Francis stresses the unity of all of nature, and our kinship with all of creation. Francis appeals to love. We can be saved through love.

His encyclical is addressed not only to Catholics, but also to all men and women of good will, and almost all of its 102 pages appeal to moral sensibilities and rational arguments that can be shared by all of us. Pope Francis stresses that the natural world that sustains us is in grave danger from our ruthless exploitation and greed-driven destruction of all the beauty and life that it contains: animals, forests, soil, and air.

Pope Francis tells us that the dictates of today's economists are not sacred: In the future, if we are to survive, economics must be given both a social conscience and an ecological conscience. Nor are private property and profits sacred. They must be subordinated to the common good, and the preservation of our global commons.

Less focus on material goods need not make us less happy. The quality of our lives can be increased, not decreased, if we give up our restless chase after power and wealth, and derive more of our pleasures from art, music and literature, and from conversations with our families and friends. Please read this great encyclical in its entirety. It can give us hope and courage as we strive to make the changes that are needed to avert an ecological mega-catastrophe.



**Figure 9.4: Pope Francis reminds us that Christian ethics require both respect and care for the earth and elimination of the institution of war.**

Don Joao Mamede Filho is the Bishop of the Diocese of Umuarama, commented: “ ‘Laudato Si’, considered by environmentalists all around the world as the Green Encyclical, has become a work read by Christians and non-Christians alike in all corners of the world. In it, Pope Francis calls on us all to take care of our ‘Common Home’ and all that exists in it.

“In his call, the Pope reaffirms that the planet is a common good that must be preserved and guarded. Therefore, it is our duty to refrain from any human activity that may degrade, pollute or pose any kind of threat or risk to our planet and those who inhabit it.

“ ‘Laudato Si’ also presents a strong and persisting plea for a shift towards a new energy and development model, leaving fossil fuels behind. Since these energy sources are responsible for the highest emissions of greenhouse gases, they pollute, render climate changes more intense, bring on diseases, and kill.

“It is important to remember that, at the beginning of Creation, an organic relationship between all living beings was established. All that exists is connected and coexists in a sustainable and wholesome manner. However, by choosing dirty energy sources such as fossil fuels, which leave trails of destruction behind them, we disconnect ourselves from our surroundings and ignore the harm they may cause us and to our fellow creatures.”



Figure 9.5: The message of Beethoven's Choral 9th: All humans are brothers and sisters! Not just some - All!

## 9.5 All humans are brothers and sisters!

Besides a humane, democratic and just framework of international law and governance, we urgently need a new global ethic, - an ethic where loyalty to family, community and nation will be supplemented by a strong sense of the brotherhood of all humans, regardless of race, religion or nationality. Schiller expressed this feeling in his "Ode to Joy", a part of which is the text of Beethoven's Ninth Symphony. Hearing Beethoven's music and Schiller's words, most of us experience an emotion of resonance and unity with the message: All humans are brothers and sisters - not just some - all! It is almost a national anthem of humanity. The feelings that the music and words provoke are similar to patriotism, but broader. It is this sense of a universal human family that we need to cultivate in education, in the mass media, and in religion. We already appreciate music, art and literature from the entire world, and scientific achievements are shared by all, regardless of their country of origin. We need to develop this principle of universal humanism so that it will become the cornerstone of a new ethic.

## 9.6 The ethics of Henry David Thoreau

In the distant future (and perhaps even in the not-so-distant future) industrial civilization will need to abandon its relentless pursuit of unnecessary material goods and economic growth. Modern society will need to re-establish a balanced and harmonious relationship with nature. In preindustrial societies harmony with nature is usually a part of the cultural tradition. In our own time, the same principle has become central to the ecological counter-culture while the main-stream culture thunders blindly ahead, addicted to wealth, power

and growth.

In the 19th century the American writer, Henry David Thoreau (1817-1862), pioneered the concept of a simple life, in harmony with nature. Today, his classic book, *Walden*, has become a symbol for the principles of ecology, simplicity, and respect for nature.

Thoreau was born in Concord Massachusetts, and he attended Harvard from 1833 to 1837. After graduation, he returned home, worked in his family's pencil factory, did odd jobs, and for three years taught in a progressive school founded by himself and his older brother, John. When John died of lockjaw in 1842, Henry David was so saddened that he felt unable to continue the school alone.

## Nonviolent civil disobedience

Thoreau refused to pay his poll tax because of his opposition to the Mexican War and to the institution of slavery. Because of his refusal to pay the tax (which was in fact a very small amount) he spent a night in prison. To Thoreau's irritation, his family paid the poll tax for him and he was released. He then wrote down his ideas on the subject in an essay entitled *The Duty of Civil Disobedience*, where he maintains that each person has a duty to follow his own individual conscience even when it conflicts with the orders of his government.

In his essay, Thoreau said: "A common and natural result of an undue respect for law is that you may see a file of soldiers, colonel, captain, corporal, privates, powder-monkeys, and all marching in admirable order over hill and dale to the wars, against their wills, ay, against their common sense and consciences, which makes it very steep marching indeed, and produces a palpitation of the heart. They have no doubt that it is a damnable business in which they are concerned; they are all peaceably inclined. Now, what are they? Men at all? or small movable forts and magazines, at the service of some unscrupulous man in power?"

"Under a government that which imprisons any unjustly", Thoreau wrote, "the true place for a just man is in prison." Civil Disobedience influenced Tolstoy, Gandhi and Martin Luther King, and it anticipated the Nuremberg Principles.

## Harmony with nature

Thoreau became the friend and companion of the transcendentalist writer Ralph Waldo Emerson (1803-1882), who introduced him to a circle of New England writers and thinkers that included Ellery Channing, Margaret Fuller and Nathaniel Hawthorne.

Nathaniel Hawthorne described Thoreau in the following words: "Mr. Thorow [sic] is a keen and delicate observer of nature, a genuine observer, which, I suspect, is almost as rare a character as even an original poet; and Nature, in return for his love, seems to adopt him as her especial child, and shows him secrets which few others are allowed to witness. He is familiar with beast, fish, fowl, and reptile, and has strange stories to tell of adventures, and friendly passages with these lower brethren of mortality. Herb and flower, likewise, wherever they grow, whether in garden, or wild wood, are his familiar friends. He is also



Figure 9.6: Thoreau, with his cabin at Walden Pond in the background.

on intimate terms with the clouds and can tell the portents of storms. It is a characteristic trait, that he has a great regard for the memory of the Indian tribes, whose wild life would have suited him so well; and strange to say, he seldom walks over a plowed field without picking up an arrow-point, a spear-head, or other relic of the red men, as if their spirits willed him to be the inheritor of their simple wealth.”

### Walden, an experiment in simple living

At Emerson’s suggestion, Thoreau opened a journal, in which he recorded his observations concerning nature and his other thoughts. Ultimately the journal contained more than 2 million words. Thoreau drew on his journal when writing his books and essays, and in recent years, many previously unpublished parts of his journal have been printed.

From 1845 until 1847, Thoreau lived in a tiny cabin that he built with his own hands. The cabin was in a second-growth forest beside Walden Pond in Concord, on land that belonged to Emerson. Thoreau regarded his life there as an experiment in simple living. He described his life in the forest and his reasons for being there in his book *Walden*,

“Most of the luxuries”, Thoreau wrote, “and many of the so-called comforts of life, are not only not indispensable, but positive hindrances to the elevation of mankind. With respect to luxuries, the wisest have ever lived a more simple and meager life than the poor. The ancient philosophers, Chinese, Hindoo, Persian, and Greek, were a class than which none has been poorer in outward riches, none so rich in inward.”

Elsewhere in “Walden”, Thoreau remarks, “It is never too late to give up your prejudices”, and he also says, “Why should we be in such desperate haste to succeed, and in such desperate enterprises? If a man does not keep pace with his companions, perhaps it is because he hears a different drummer.” Other favorite quotations from Thoreau include “Rather than love, than money, than fame, give me truth”, “Beware of all enterprises that require new clothes”, “Most men lead lives of quiet desperation” and “Men have become tools of their tools.”

Thoreau’s closeness to nature can be seen from the following passage, written by his friend Frederick Willis, who visited him at Walden Pond in 1847, together with the Alcott family: “He was talking to Mr. Alcott of the wild flowers in Walden woods when, suddenly stopping, he said: ‘Keep very still and I will show you my family.’ Stepping quickly outside

the cabin door, he gave a low and curious whistle; immediately a woodchuck came running towards him from a nearby burrow. With varying note, yet still low and strange, a pair of gray squirrels were summoned and approached him fearlessly. With still another note several birds, including two crows flew towards him, one of the crows nestling upon his shoulder. I remember that it was the crow resting close to his head that made the most vivid impression on me, knowing how fearful of man this bird is. He fed them all from his hand, taking food from his pocket, and petted them gently before our delighted gaze; and then dismissed them by different whistling, always strange and low and short, each wild thing departing instantly at hearing his special signal."

### **Thoreau's views on religion**

Towards the end of his life, when he was very ill, someone asked Thoreau whether he had made his peace with God. "We never quarreled", he answered.

In an essay published by the Atlantic Monthly in 1853, Thoreau described a pine tree in Maine with the words: "It is as immortal as I am, and perchance will go to as high a heaven, there to tower above me still." However, the editor (James Russell Lowell) considered the sentence to be blasphemous, and removed it from Thoreau's essay.

In one of his essays, Thoreau wrote: "If a man walk in the woods for love of them half of each day, he is in danger of being regarded as a loafer; but if he spends his whole day as a speculator, shearing off those woods and making the earth bald before her time, he is esteemed an industrious and enterprising citizen."

### **A few more things that Thoreau said**

**It is the beauty within us that makes it possible for us to recognize the beauty around us. The question is not what you look at, but what you see.**

**Simplify your life. Don't waste the years struggling for things that are unimportant. Don't burden yourself with possessions. Keep your needs and wants simple and enjoy what you have. Don't destroy your peace of mind by looking back, worrying about the past. Live in the present. Simplify!**

**Go confidently in the direction of your dreams. Live the life you've imagined.**

**Happiness is like a butterfly; the more you chase it, the more it will elude you, but if you turn your attention to other things, it will come and sit softly on your shoulder.**

**Rather than love, than money, than fame, give me truth.**

The mass of men lead lives of quiet desperation.

You must live in the present, launch yourself on every wave, find your eternity in each moment. Fools stand on their island of opportunities and look toward another land. There is no other land; there is no other life but this

Be not simply good, be good for something,

Books are the treasured wealth of the world and the fit inheritance of generations and nations.

If you have built castles in the air, your work need not be lost; that is where they should be. Now put the foundations under them.

If a man does not keep pace with his companions, perhaps it is because he hears a different drummer. Let him step to the music he hears, however measured or far away.

The greatest compliment that was ever paid me was when one asked me what I thought, and attended to my answer.

We need the tonic of wildness...At the same time that we are earnest to explore and learn all things, we require that all things be mysterious and unexplorable, that land and sea be indefinitely wild, unsurveyed and unfathomed by us because unfathomable. We can never have enough of nature.

## 9.7 Education for world citizenship

Besides a humane, democratic and just framework of international law and governance, we urgently need a new global ethic, - an ethic where loyalty to family, community and nation will be supplemented by a strong sense of the brotherhood of all humans, regardless of race, religion or nationality. Schiller expressed this feeling in his "Ode to Joy", a part of which is the text of Beethoven's Ninth Symphony. Hearing Beethoven's music and Schiller's words, most of us experience an emotion of resonance and unity with the message: All humans are brothers and sisters - not just some - all! It is almost a national anthem of humanity. The feelings that the music and words provoke are similar to patriotism, but broader. It is this higher loyalty to humanity as a whole, this sense of a universal human family, that we need to cultivate in education, in the mass media, and in religion.

Educational reforms are urgently needed, particularly in the teaching of history. As it is taught today, history is a chronicle of power struggles and war, told from a biased national standpoint. Our own race or religion is superior; our own country is always heroic

and in the right.

We urgently need to replace this indoctrination in chauvinism by a reformed view of history, where the slow development of human culture is described, giving adequate credit to all who have contributed. Our modern civilization is built on the achievements of many ancient cultures. China, Japan, India, Mesopotamia, Egypt, Greece, the Islamic world, Christian Europe, and the Jewish intellectual traditions all have contributed. Potatoes, corn, squash, vanilla, chocolate, chili peppers, pineapples, quinine, etc. are gifts from the American Indians. Human culture, gradually built up over thousands of years by the patient work of millions of hands and minds, should be presented as a precious heritage - far too precious to be risked in a thermonuclear war.

Reform is also urgently needed in the teaching of economics and business. The economics of growth must be replaced by equilibrium economics, where considerations of ecology, carrying capacity, and sustainability are given their proper weight, and where the quality of life of future generations has as much importance as present profits.

Secondly, the education of economists and businessmen needs to face the problems of global poverty - the painful contrast between the affluence and wastefulness of the industrial North and the malnutrition, disease and illiteracy endemic in the South. Students of economics and business must look for the roots of poverty not only in population growth and war, but also in the history of colonialism and neocolonialism, and in defects in global financial institutions and trade agreements. They must be encouraged to formulate proposals for the correction of North-South economic inequality.

The economic impact of war and preparation for war should be included in the training of economists. Both the direct and indirect costs of war should be studied, for example the effect of unimaginably enormous military budgets in reducing the money available to solve pressing problems posed by the resurgence of infectious disease (e.g. AIDS, and drug-resistant forms of malaria and tuberculosis); the problem of population stabilization; food problems; loss of arable land; future energy problems; the problem of finding substitutes for vanishing nonrenewable resources, and so on.

Finally, economics curricula should include the problems of converting war-related industries to peaceful ones - the problem of beating swords into plowshares. It is often said that our economies are dependent on arms industries. If this is so, it is an unhealthy dependence, analogous to drug addiction, since arms industries do not contribute to future-oriented infrastructure. The problem of conversion is an important one. It is the economic analog of the problem of ending a narcotics addiction, and it ought to be given proper weight in the education of economists.

Law students should be made aware of the importance of international law. They should be familiar with its history, starting with Grotius and the Law of the Sea. They should know the histories of the International Court of Justice and the Nuremberg Principles. They should study the United Nations Charter (especially the articles making war illegal) and the Universal Declaration of Human Rights, as well as the Rome Treaty and the foundation of the International Criminal Court. They should be made aware of a deficiency in the present United Nations - the lack of a legislature with the power to make laws that are binding on individuals.



Students of law should be familiar with all of the details of the World Court's historic Advisory Opinion on Nuclear Weapons, a decision that make the use or threat of use of nuclear weapons illegal. They should also study the Hague and Geneva Conventions, and the various international treaties related to nuclear, chemical and biological weapons. The relationship between the laws of the European Union and those of its member states should be given high importance. The decision by the British Parliament that the laws of the EU take precedence over British law should be a part of the curriculum.

In teaching science too, reforms are needed. Graduates in science and engineering should be conscious of their responsibilities. They must resolve never to use their education in the service of war, nor for the production of weapons, nor in any way that might be harmful to society or to the environment.

Science and engineering students ought to have some knowledge of the history and social impact of science. They could be given a course on the history of scientific ideas, and in connection with modern historical developments such as the industrial revolution, the global population explosion, the development of nuclear weapons, genetic engineering, and information technology, some discussion of social impact could be introduced. One might hope to build up in science and engineering students an understanding of the way in which their own work is related to the general welfare of humankind, and a sense of individual social and ethical responsibility. These elements are needed in science education if rapid technological progress is to be beneficial to society rather than harmful.

## 9.8 The role of the mass media

In the mid-1950's, television became cheap enough so that ordinary people in the industrialized countries could afford to own sets. During the infancy of television, its power was underestimated. The great power of television is due to the fact that it grips two senses simultaneously, both vision and hearing. The viewer becomes an almost-hypnotized captive of the broadcast. In the 1950's, this enormous power, which can be used both for good and for ill, was not yet fully apparent. Thus insufficient attention was given to the role of television in education, in setting norms, and in establishing values. Television was not seen as an integral part of the total educational system.

Although the intergenerational transmission of values, norms, and culture is much less important in industrial societies than it is in traditional ones, modern young people of the west and north are by no means at a loss over where to find their values, fashions and role models. With every breath they inhale the values and norms of the mass media. Totally surrounded by a world of television and film images, they accept this world as their own. Unfortunately the culture of television, films and computer games is more often a culture of violence than a culture of peace.

Computer games designed for young boys often give the strongest imaginable support to our present culture of violence. For example, a game entitled "Full Spectrum Warrior" was recently reviewed in a Danish newspaper. According to the reviewer, "...An almost perfect combination of graphics, sound, band design, and gameplay makes it seem exactly

like the film *Black Hawk Down* - with the player as the main character. This is not just a coincidence, because the game is based on an army training program. ... Full Spectrum Warrior is an extremely intense experience, and despite the advanced possibilities, the controls are simple enough so that young children can play it. ... The player is completely drawn into the screen, and remains there until the end of the mission." The reviewer gave the game six stars (the maximum).

If entertainment is evaluated only on the basis of popularity, what might be called "the pornography of violence" gets high marks. However, there is another way of looking at entertainment. It is a part, and a very important part, of our total educational system. In modern industrial societies, this important educational function has been given by default to commercial interests. We would not want Coca Cola to run our schools, but entertainment is just as important as the school or home environment in forming values and norms, and entertainment is in the hands of commerce.

Today we are faced with the task of creating a new global ethic in which loyalty to family, religion and nation will be supplemented by a higher loyalty to humanity as a whole. In addition, our present culture of violence must be replaced by a culture of peace. To achieve these essential goals, we urgently need the cooperation of the mass media.

One is faced with a dilemma, because on the one hand artistic freedom is desirable and censorship undesirable, but on the other hand some degree of responsibility ought to be exercised by the mass media because of their enormous influence in creating norms and values.

Of course we cannot say to the entertainment industry, "From now on you must not show anything but David Attenborough and the life of Gandhi". However, it would be enormously helpful if every film or broadcast or computer game could be evaluated not only for its popularity and artistic merit, but also in terms of the good or harm that it does in the task of building a peaceful world.

Why doesn't the United Nations have its own global television and radio network? Such a network could produce an unbiased version of the news. It could broadcast documentary programs on global problems. It could produce programs showing viewers the music, art and literature of other cultures than their own. It could broadcast programs on the history of ideas, in which the contributions of many societies were adequately recognized. At New Year, when people are in the mood to think of the past and the future, the Secretary General of the United Nations could broadcast a "State of the World" message, summarizing the events of the past year and looking forward to the new year, with its problems, and with his recommendations for their solution. A United Nations television and radio network would at least give viewers and listeners a choice between programs supporting militarism, and programs supporting a global culture of peace. At present they have little choice.

## 9.9 The role of religion

Finally, let us turn to religion, with its enormous influence on human thought and behavior.

In the 6th century B.C., Prince Gautama Buddha founded a new religion in India, with

a universal (non-tribal) code of ethics. Among the sayings of the Buddha are as follows:

“Hatred does not cease by hatred at any time; hatred ceases by love.”

“Let a man overcome anger by love; let him overcome evil by good.”

“All men tremble at punishment. All men love life. Remember that you are like them, and do not cause slaughter.”

Similarly, Christianity offers a strongly-stated ethic, which, if practiced, would make war impossible. In Mathew, the following passage occurs:

“Ye have heard it said: Thou shalt love thy neighbor and hate thy enemy. But I say unto you: Love your enemies, bless them that curse you, do good to them that hate you, and pray for them that spitefully use you and persecute you.”

This seemingly impractical advice - that we should love our enemies - is in fact of the greatest practicality, since acts of unilateral kindness and generosity can stop escalatory cycles of revenge and counter-revenge such as those that characterize the present conflicts in the Middle East and the recent troubles in Northern Ireland. However, Christian nations, while claiming to adhere to the ethic of love and forgiveness, have adopted a policy of “massive retaliation”. involving systems of thermonuclear missiles whose purpose is to destroy as much as possible of the country at which the retaliation is aimed. It is planned that whole populations should be killed in a “massive retaliation”, innocent children along with guilty politicians.

The startling contradiction between what Christian nations profess and what they do was obvious even before the advent of nuclear weapons, at the time when Leo Tolstoy, during his last years, was exchanging letters with a young Indian lawyer in South Africa. In one of his letters to Gandhi, Tolstoy wrote:

“...The longer I live, and especially now, when I vividly feel the nearness of death, the more I want to tell others what I feel so particularly clearly and what to my mind is of great importance - namely that which is called passive resistance, but which is in reality nothing else but the teaching of love, uncorrupted by false interpretations. That love - i.e. the striving for the union of human souls and the activity derived from that striving - is the highest and only law of human life, and in the depth of his soul every human being knows this (as we most clearly see in children); he knows this until he is entangled in the false teachings of the world. This law was proclaimed by all - by the Indian as by the Chinese, Hebrew, Greek and Roman sages of the world. I think that this law was most clearly expressed by Christ, who plainly said that ‘in this alone is all the law and the prophets.’ ...”

“...The peoples of the Christian world have solemnly accepted this law, while at the same time they have permitted violence and built their lives on violence; and that is why the whole life of the Christian peoples is a continuous contradiction between what they profess, and the principles on which they order their lives - a contradiction between love accepted as the law of life, and violence which is recognized and praised, acknowledged even as a necessity...”

As everyone knows, Gandhi successfully applied the principle of non-violence to the civil rights struggle in South Africa, and later to the political movement which gave India its freedom and independence. Later, non-violence was successfully applied by Martin



Figure 9.7: Sir Joseph Rotblat (1908-2005).

Luther King, and by Nelson Mandela. Gandhi was firm in pointing out that the ends do not justify the means, since violent methods inevitably contaminate the result achieved. The same theme can be seen in the following quotation from Martin Luther King.

“Why should we love our enemies?”, Dr. King wrote, “Returning hate for hate multiplies hate, adding deeper darkness to a night already devoid of stars. Darkness cannot drive out darkness; only light can do that. Hate cannot drive out hate. Only love can do that. ... Love is the only force capable of transforming an enemy into a friend. We never get rid of an enemy by meeting hate with hate; we get rid of an enemy by getting rid of enmity. ... It is this attitude that made it possible for Lincoln to speak a kind word about the South during the Civil War, when feeling was most bitter. Asked by a shocked bystander how he could do this, Lincoln said, ‘Madam, do I not destroy my enemies when I make them my friends?’ This is the power of redemptive love.”

In 1967, a year before his assassination, Dr. King forcefully condemned the Viet Nam war in an address at a massive peace rally in New York City. He felt that opposition to war followed naturally from his advocacy of non-violence. Regarding nuclear weapons, Dr. King wrote, “Wisdom born of experience should tell us that war is obsolete. There may have been a time when war served a negative good by preventing the spread of an evil force, but the power of modern weapons eliminates even the possibility that war may serve as a negative good. If we assume that life is worth living, and that man has a right to survival, then we must find an alternative to war. ... I am convinced that the Church cannot be silent while mankind faces the threat of nuclear annihilation. If the church is true to her mission, she must call for an end to the nuclear arms race.”

## 9.10 Reformed teaching of history

**“We have to extend our loyalty to the whole of the human race.... A war-free world will be seen by many as Utopian. It is not Utopian. There already exist in the world large regions, for example the European Union, within which war is inconceivable. What is needed is to extend these...”** , Sir Joseph Rotblat, Nobel Peace Prize Acceptance Speech, 1995.

Since modern war has become prohibitively dangerous, there is an urgent need for peace education. Why do we pay colossal sums for war, which we know is the source of so much human suffering, and which threatens to destroy human civilization? Why not instead support peace and peace education?

## The growth of global consciousness

Besides a humane, democratic and just framework of international law and governance, we urgently need a new global ethic, - an ethic where loyalty to family, community and nation will be supplemented by a strong sense of the brotherhood of all humans, regardless of race, religion or nationality. Schiller expressed this feeling in his "Ode to Joy", a part of which is the text of Beethoven's Ninth Symphony. Hearing Beethoven's music and Schiller's words, most of us experience an emotion of resonance and unity with the message: All humans are brothers and sisters - not just some - all! It is almost a national anthem of humanity. The feelings that the music and words provoke are similar to patriotism, but broader. It is this sense of a universal human family that we need to cultivate in education, in the mass media, and in religion. We already appreciate music, art and literature from the entire world, and scientific achievements are shared by all, regardless of their country of origin. We need to develop this principle of universal humanism so that it will become the cornerstone of a new ethic.

Educational reforms are urgently needed, particularly in the teaching of history. As it is taught today, history is a chronicle of power struggles and war, told from a biased national standpoint. Our own race or religion is superior; our own country is always heroic and in the right.

We urgently need to replace this indoctrination in chauvinism by a reformed view of history, where the slow development of human culture is described, giving adequate credit to all who have contributed. Our modern civilization is built on the achievements of many ancient cultures. China, Japan, India, Mesopotamia, Egypt, Greece, the Islamic world, Christian Europe, and the Jewish intellectual traditions all have contributed. Potatoes, corn, squash, vanilla, chocolate, chili peppers, pineapples, quinine, etc. are gifts from the American Indians. Human culture, gradually built up over thousands of years by the patient work of millions of hands and minds, should be presented as a precious heritage - far too precious to be risked in a thermonuclear war.

The teaching of history should also focus on the times and places where good government and internal peace have been achieved, and the methods by which this has been accomplished. Students should be encouraged to think about what is needed if we are to apply the same methods to the world as a whole. In particular, the histories of successful federations should be studied, for example the Hanseatic League, the Universal Postal Union, the federal governments of Australia, Brazil, Germany, Switzerland, the United States, Canada, and so on. The recent history of the European Union provides another extremely important example. Not only the successes, but also the problems of federations

should be studied in the light of the principle of subsidiarity<sup>1</sup>. The essential features of federations should be clarified<sup>2</sup>, as well as the reasons why weaker forms of union have proved to be unsuccessful.

## 9.11 Reformed education of economists and businessmen

The education of economists and businessmen needs to face the problems of global poverty - the painful contrast between the affluence and wastefulness of the industrial North and the malnutrition, disease and illiteracy endemic in the South. Students of economics and business must look for the roots of poverty not only in population growth and war, but also in the history of colonialism and neocolonialism, and in defects in global financial institutions and trade agreements. They must be encouraged to formulate proposals for the correction of North-South economic inequality.

The economic impact of war and preparation for war should be included in the training of economists. Both direct and indirect costs should be studied. An example of an indirect cost of war is the effect of unimaginably enormous military budgets in reducing the amount of money available for solving the serious problems facing the world today.

## 9.12 Law for a united world

Law students should be made aware of the importance of international law. They should be familiar with its history, starting with Grotius and the Law of the Sea. They should know the histories of the International Court of Justice and the Nuremberg Principles. They should study the United Nations Charter (especially the articles making war illegal) and the Universal Declaration of Human Rights, as well as the Rome Treaty and the foundation of the International Criminal Court. They should be made aware of a deficiency in the present United Nations - the lack of a legislature with the power to make laws that are binding on individuals.

Students of law should be familiar with all of the details of the World Court's historic Advisory Opinion on Nuclear Weapons, a decision that make the use or threat of use of nuclear weapons illegal. They should also study the Hague and Geneva Conventions, and the various international treaties related to nuclear, chemical and biological weapons. The relationship between the laws of the European Union and those of its member states should

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<sup>1</sup>The principle of subsidiarity states that within a federation, decisions should be taken at the lowest level at which there are no important externalities. Thus, for example, decisions affecting air quality within Europe should be taken in Bruxelles because winds blow freely across national boundaries, but decisions affecting only the local environment should be taken locally.

<sup>2</sup>One of the most important of these features is that federations have the power to make and enforce laws that are binding on individuals, rather than trying to coerce their member states.

be given high importance. The decision by the British Parliament that the laws of the EU take precedence over British law should be a part of the curriculum.

### **9.13 Teaching global ethics**

Professors of theology should emphasize three absolutely central components of religious ethics: the duty to love and forgive one's enemies, the prohibition against killing, and the concept of universal human brotherhood. They should make their students conscious of a responsibility to give sermons that are relevant to the major political problems of the modern world, and especially to relate the three ethical principles just mentioned to the problem of war. Students of theology should be made conscious of their responsibility to soften the boundaries between ethnic groups, to contribute to interreligious understanding, and to make marriage across racial and religious boundaries more easy and frequent.

### **9.14 The social responsibility of scientists**

In teaching science too, reforms are needed. Graduates in science and engineering should be conscious of their responsibilities. They must resolve never to use their education in the service of war, nor for the production of weapons, nor in any way that might be harmful to society or to the environment.

Science and engineering students ought to have some knowledge of the history and social impact of science. They could be given a course on the history of scientific ideas; but in connection with modern historical developments such as the industrial revolution, the global population explosion, the development of nuclear weapons, genetic engineering, and information technology, some discussion of social impact of science could be introduced. One might hope to build up in science and engineering students an understanding of the way in which their own work is related to the general welfare of humankind, and a sense of individual social and ethical responsibility. These elements are needed in science education if rapid technological progress is to be beneficial to society rather than harmful.

The changes just mentioned in the specialized lawyers, theologians, scientists and engineers should have a counterpart in elementary education. The basic facts about peace and war should be communicated to children in simple language, and related to the everyday experiences of children. Teachers' training colleges ought to discuss with their student-teachers the methods that can be used to make peace education a part of the curriculum at various levels, and how it can be related to familiar concepts. They should also discuss the degree to which the painful realities of war can be explained to children of various ages without creating an undesirable amount of anxiety.

Peace education can be made a part of the curriculum of elementary schools through (for example) theme days or theme weeks in which the whole school participates. This method has been used successfully in many European schools. During the theme days the children have been encouraged to produce essays, poems and drawings illustrating

the difference between peace and war, and between negative peace and positive peace<sup>3</sup>. Another activity has been to list words inspired by the concept “peace”, rapidly and by free association, and to do the same for the concept “war”. Drama has also been used successfully in elementary school peace education, and films have proved to be another useful teaching aid.

The problems of reducing global inequalities, of protecting human rights, and of achieving a war-free world can be introduced into grade school courses in history, geography, religion and civics. The curriculum of these courses is frequently revised, and advocates of peace education can take curriculum revisions as opportunities to introduce much-needed reforms that will make the students more international in their outlook. The argument (a true one) should be that changes in the direction of peace education will make students better prepared for a future in which peace will be a central issue and in which they will interact with people of other nations to a much greater extent than was the case in previous generations. The same can be said for curriculum revisions at the university level.

## 9.15 Large nations compared with global government

The problem of achieving internal peace over a large geographical area is not insoluble. It has already been solved. There exist today many nations or regions within each of which there is internal peace, and some of these are so large that they are almost worlds in themselves. One thinks of China, India, Brazil, Australia, the Russian Federation, the United States, and the European Union. Many of these enormous societies contain a variety of ethnic groups, a variety of religions and a variety of languages, as well as striking contrasts between wealth and poverty. If these great land areas have been forged into peaceful and cooperative societies, cannot the same methods of government be applied globally?

But what are the methods that nations use to achieve internal peace? Firstly, every true government needs to have the power to make and enforce laws that are binding on individual citizens. Secondly the power of taxation is a necessity. These two requirements of every true government have already been mentioned; but there is a third point that still remains to be discussed:

Within their own territories, almost all nations have more military power than any of their subunits. For example, the US Army is more powerful than the State Militia of Illinois. This unbalance of power contributes to the stability of the Federal Government of the United States. When the FBI wanted to arrest Al Capone, it did not have to bomb Chicago. Agents just went into the city and arrested the gangster. Even if Capone had been enormously popular in Illinois, the government of the state would have realized in advance that it had no chance of resisting the US Federal Government, and it still would have allowed the “Feds” to make their arrest. Similar considerations hold for almost all

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<sup>3</sup>Negative peace is merely the absence of war. In positive peace, neighboring nations are actively engaged in common projects of mutual benefit, in cultural exchanges, in trade, in exchanges of students and so on.



nations within which there is internal peace. It is true that there are some nations within which subnational groups have more power than the national government, but these are frequently characterized by civil wars.

Of the large land areas within which internal peace has been achieved, the European Union differs from the others because its member states still maintain powerful armies. The EU forms a realistic model for what can be achieved globally in the near future by reforming and strengthening the United Nations. In the distant future, however, we can imagine a time when a world federal authority will have much more power than any of its member states, and when national armies will have only the size needed to maintain local order.

Today there is a pressing need to enlarge the size of the political unit from the nation-state to the entire world. The need to do so results from the terrible dangers of modern weapons and from global economic interdependence. The progress of science has created this need, but science has also given us the means to enlarge the political unit: Our almost miraculous modern communications media, if properly used, have the power to weld all of humankind into a single supportive and cooperative society.

## 9.16 Culture, education and human solidarity

Cultural and educational activities have a small ecological footprint, and therefore are more sustainable than pollution-producing, fossil-fuel-using jobs in industry. Furthermore, since culture and knowledge are shared among all nations, work in culture and education leads societies naturally towards internationalism and peace.

Economies based on a high level of consumption of material goods are unsustainable and will have to be abandoned by a future world that renounces the use of fossil fuels in order to avoid catastrophic climate change, a world where non-renewable resources such as metals will become increasingly rare and expensive. How then can full employment be maintained?

The creation of renewable energy infrastructure will provide work for a large number of people; but in addition, sustainable economies of the future will need to shift many workers from jobs in industry to jobs in the service sector. Within the service sector, jobs in culture and education are particularly valuable because they will help to avoid the disastrous wars that are currently producing enormous human suffering and millions of refugees, wars that threaten to escalate into an all-destroying global thermonuclear war.<sup>4</sup>

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<sup>4</sup><http://www.fredsakademiet.dk/library/need.pdf>  
<http://eruditio.worldacademy.org/issue-5/article/urgent-need-renewable-energy>



Figure 9.8: Malala Yousefzai, winner of the 2014 Nobel Peace Prize, says: “One child, one teacher, one book and one pen can change the world!”

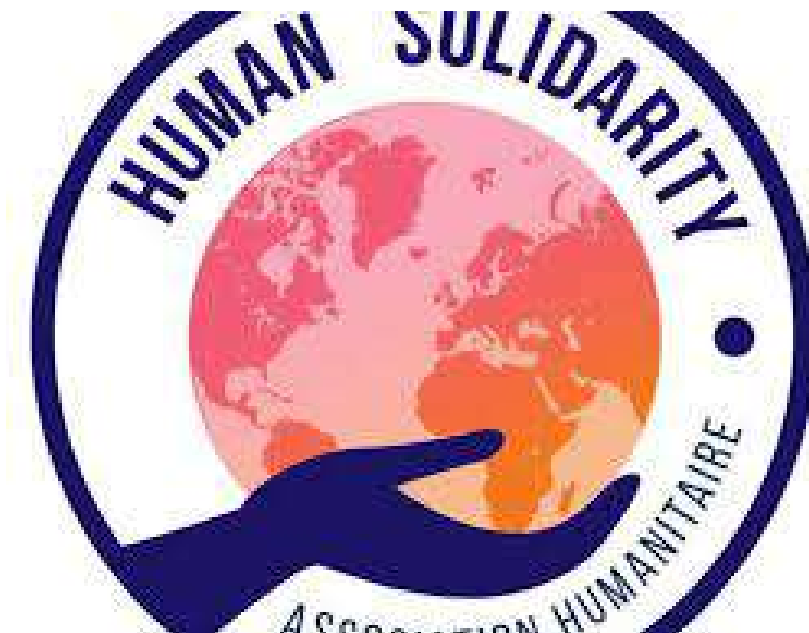


Figure 9.9: Cultural exchanges lead to human solidarity (Public domain)

## UNESCO and peace education

Advocates of education for peace can obtain important guidance and encouragement from UNESCO - the United Nations Educational, Scientific and Cultural Organization<sup>5</sup>. The Constitution of UNESCO, was written immediately after the end of the Second World War, during which education had been misused (especially in Hitler's Germany) to indoctrinate students in such a way that they became uncritical and fanatical supporters of military dictatorships. The founders of the United Nations were anxious to correct this misuse, and to make education instead one of the foundations of a peaceful world. One can see this hope in the following paragraph from UNESCO's Constitution:

"The purpose of the Organization is to contribute to peace and security by promoting collaboration among nations through education, science and culture in order to further universal respect for justice, for the rule of law and for the human rights and fundamental freedoms which are affirmed for the peoples of the world, without distinction of race, sex, language or religion, by the Charter of the United Nations."

In other words, UNESCO was given the task of promoting education for peace, and of promoting peace through international cooperation in education.

In 1946 the General Conference of UNESCO adopted a nine-point resolution concerning the improvement of textbooks in such a way as to make them support international understanding, paying particular attention to history teaching and civic education. During the next decade, UNESCO produced publications and hosted seminars to promote improvements in the teaching of history, geography and modern languages, so that these subjects could be more instrumental in developing mutual understanding between nations and between cultures. A meeting of French, German, British and American teachers was organized in 1952, with the goal of removing national prejudices from textbooks. Every two years after this date bilateral and multilateral consultations of history teachers have taken place under the auspices of UNESCO.

Here are a few voices that express the aims and ideals of UNESCO over the years:

- Ellen Wilkinson (United Kingdom) (Former UK Minister of Education, Chairwoman of the conference establishing UNESCO in 1945): *What can this organization do? Can we replace nationalist teaching by a conception of humanity that trains children to have a sense of mankind as well as of national citizenship? That means working for international understanding*
- Maria Montessori (Italy), pioneer of modern education and education for peace, Fourth Session of the General Conference of UNESCO, Florence 1950: *If one day UNESCO resolved to involve children in the reconstruction of the world and building peace, if it chose to call on them, to discuss with them, and recognize the value of all the revelations they have for us, it would find them of immense help in infusing new life into this society which must be founded on the cooperation of all.*

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<sup>5</sup><http://www.unicef.org/education/files/PeaceEducation.pdf>

- Jamie Torres Bodet (Mexico), Director-General of UNESCO, 1948-1952, (The UNESCO Courier, 1951): *Knowledge and understanding of the principles of the Universal Declaration of Human Rights and their practical application must begin during childhood. Efforts to make known the rights and duties they imply will never be fully effective unless schools in all countries make teaching about the declaration a regular part of their curriculum...*
- Lionel Elvin (United Kingdom), Director of the Department of Education of UNESCO, 1950-1956 (UNESCO Courier, 1953): *If UNESCO were only an office in Paris, its task would be impossible. It is more than that: it is an association of some sixty-five countries which have pledged themselves to do all they can, not only internationally but within their own boundaries, to advance the common aim of educating for peace. The international side comes in because we shall obviously do this faster and better and with more mutual trust if we do it together.*
- Jawaharlal Nehru (India) Prime Minister, 1947-1964 (Address on a visit to UNESCO, 1962): *It is then the minds and hearts of men that have to be approached for mutual understanding, knowledge and appreciation of each other and through the proper kind of education... But we have seen that education by itself does not lead to a conversion of minds towards peaceful purposes. Something more is necessary, new standards, new values and perhaps a kind of spiritual background and a feeling of commonness of mankind.*
- James P. Grant (United States). Executive Director of UNICEF, 1980-1995, (International Conference on Education, Geneva, 1994): *Education for peace must be global, for as the communications revolution transforms the world into a single community, everyone must come to understand that they are affected by what happens elsewhere, and that their lives, too, have an impact. Solidarity is a survival strategy in the global village.*

During the time when he was Secretary-General of UNESCO, Federico Mayor Zaragoza of Spain introduced the concept of a *Culture of Peace*. He felt, as many did, that civilization was entering a period of crisis. Federico Mayor believed this crisis to be as much spiritual as it was economic and political. It was necessary, he felt, to counteract our present power-worshipping culture of violence with a Culture of Peace, a set of ethical and aesthetic values, habits and customs, attitudes towards others, forms of behavior and ways of life that express

- Respect for life and for the dignity and human rights of individuals.
- Rejection of violence.
- Recognition of equal rights for men and women.
- Upholding the principles of democracy, freedom, justice, solidarity, tolerance and the acceptance of differences.

- Understanding between nations and countries and between ethnic, religious, cultural and social groups.

Mayor and UNESCO implemented this idea by designating the year 2000 as the International Year of the Culture of Peace. In preparation for this year, a meeting of Nobel Peace Prize Laureates launched *Manifesto 2000*, a campaign in which the following pledge of the Culture of Peace was widely circulated and signed:

*Recognizing my share of responsibility for the future of humanity, especially for today's children and those of future generations, I pledge - in my daily life, in my family, my work, my community, my country and my region - to:*

1. *respect the life and dignity of every person without discrimination or prejudice;*
2. *practice active non-violence, rejecting violence in all its forms: physical, sexual, psychological, economical and social, in particular towards the most deprived and vulnerable such as children and adolescents;*
3. *share my time and material resources in a spirit of generosity to put an end to exclusion, injustice and political and economic oppression;*
4. *defend freedom of expression and cultural diversity, giving preference always to dialogue and listening without engaging in fanaticism, defamation and the rejection of others;*
5. *promote consumer behavior that is responsible and development practices that respect all forms of life and preserve the balance of nature on the planet;*
6. *contribute to the development of my community, with the full participation of women and respect for democratic principles, in order to create together new forms of solidarity.*

In addition, Federico Mayor and UNESCO initiated a Campaign for the Children of the World, and this eventually developed into the International Decade for a Culture of Peace and Non-Violence for the Children of the World (2001-2010). In support of this work, the UN General Assembly drafted a Program of Action on a Culture of Peace (53rd Session, 2000). The Program of Action obliges its signatories to “ensure that children, from an early age, benefit from education on the values, attitudes, modes of behavior and ways of life to enable them to resolve any dispute peacefully and in a spirit of respect for human dignity and of tolerance and non-discrimination”, and to “encourage the revision of educational curricula, including textbooks...”

Just as this program was starting, the September 11 terrorist attacks gave an enormous present to the culture of violence and war, and almost silenced the voices speaking for a Culture of Peace. However, military solutions have never provided true security, even for the strongest countries. Expensive and technologically advanced weapons systems may enrich arms manufacturers and military lobbies, but they do not provide security - only an unbelievably expensive case of the jitters. By contrast, the Culture of Peace can give us hope for the future.

## 9.17 We stand on each other's shoulders

Cultural evolution depends on the non-genetic storage, transmission, diffusion and utilization of information. The development of human speech, the invention of writing, the development of paper and printing, and finally, in modern times, mass media, computers and the Internet: all these have been crucial steps in society's explosive accumulation of information and knowledge. Human cultural evolution proceeds at a constantly-accelerating speed, so great in fact that it threatens to shake society to pieces.

In many respects, our cultural evolution can be regarded as an enormous success. However, at the start of the 21st century, most thoughtful observers agree that civilization is entering a period of crisis. As all curves move exponentially upward, population, production, consumption, rates of scientific discovery, and so on, one can observe signs of increasing environmental stress, while the continued existence and spread of nuclear weapons threaten civilization with destruction. Thus, while the explosive growth of knowledge has brought many benefits, the problem of achieving a stable, peaceful and sustainable world remains serious, challenging and unsolved.

Our modern civilization has been built up by means of a worldwide exchange of ideas and inventions. It is built on the achievements of many ancient cultures. China, Japan, India, Mesopotamia, Egypt, Greece, the Islamic world, Christian Europe, and the Jewish intellectual traditions, all have contributed. Potatoes, corn, squash, vanilla, chocolate, chili peppers, and quinine are gifts from the American Indians.

The sharing of scientific and technological knowledge is essential to modern civilization. The great power of science is derived from an enormous concentration of attention and resources on the understanding of a tiny fragment of nature. It would make no sense to proceed in this way if knowledge were not permanent, and if it were not shared by the entire world.

Science is not competitive. It is cooperative. It is a great monument built by many thousands of hands, each adding a stone to the cairn. This is true not only of scientific knowledge but also of every aspect of our culture, history, art and literature, as well as the skills that produce everyday objects upon which our lives depend. Civilization is cooperative. It is not competitive.

Our cultural heritage is not only immensely valuable; it is also so great that no individual comprehends all of it. We are all specialists, who understand only a tiny fragment of the enormous edifice. No scientist understands all of science. Perhaps Leonardo da Vinci could come close in his day, but today it is impossible. Nor do the vast majority people who use cell phones, personal computers and television sets every day understand in detail how they work. Our health is preserved by medicines, which are made by processes that most of us do not understand, and we travel to work in automobiles and buses that we would be completely unable to construct.

## 9.18 The fragility of modern society

As our civilization has become more and more complex, it has become increasingly vulnerable to disasters. We see this whenever there are power cuts or transportation failures due to severe storms. If electricity should fail for a very long period of time, our complex society would cease to function. The population of the world is now so large that it is completely dependent on the high efficiency of modern agriculture. We are also very dependent on the stability of our economic system.

The fragility of modern society is particularly worrying, because, with a little thought, we can predict several future threats which will stress our civilization very severely. We will need much wisdom and solidarity to get safely through the difficulties that now loom ahead of us.

We can already see the the problem of famine in vulnerable parts of the world. Climate change will make this problem more severe by bringing aridity to parts of the world that are now large producers of grain, for example the Middle West of the United States. Climate change has caused the melting of glaciers in the Himalayas and the Andes. When these glaciers are completely melted, China, India and several countries in South America will be deprived of their summer water supply. Water for irrigation will also become increasingly problematic because of falling water tables. Rising sea levels will drown many rice-growing areas in South-East Asia. Finally, modern agriculture is very dependent on fossil fuels for the production of fertilizer and for driving farm machinery. In the future, high-yield agriculture will be dealt a severe blow by the rising price of fossil fuels.

Economic collapse is another threat that we will have to face in the future. Our present fractional reserve banking system is dependent on economic growth. But perpetual growth of industry on a finite planet is a logical impossibility. Thus we are faced with a period of stress, where reform of our growth-based economic system and great changes of lifestyle will both become necessary.

How will we get through the difficult period ahead? I believe that solutions to the difficult problems of the future are possible, but only if we face the problems honestly and make the adjustments which they demand. Above all, we must maintain our human solidarity.

The great and complex edifice of human civilization is far too precious to be risked in a thermonuclear war. It has been built by all humans, working together. And by working together, we must now ensure that it is handed on intact to our children and grandchildren.

## 9.19 The collective human consciousness

*No man is an island entire of itself; every man is a piece of the continent, a part of the main,* John Donne (1572-1631)

*If I have seen further it is by standing on ye shoulders of Giants,* Isaac Newton (1643-1727)

*One needs an exceptional stupidity even to question the urgency we are under to establish some effective World Pax, before gathering disaster overwhelms us. The problem of reshaping human affairs on a world-scale, this World problem, is drawing together an ever-increasing multitude of minds.* H.G. Wells (1866-1946)

*The Open Access Movement has fought valiantly to ensure that scientists do not sign their copyrights away but instead ensure their work is published on the Internet, under terms that allow anyone to access it.,* Aaron Schwartz (1986-2013)

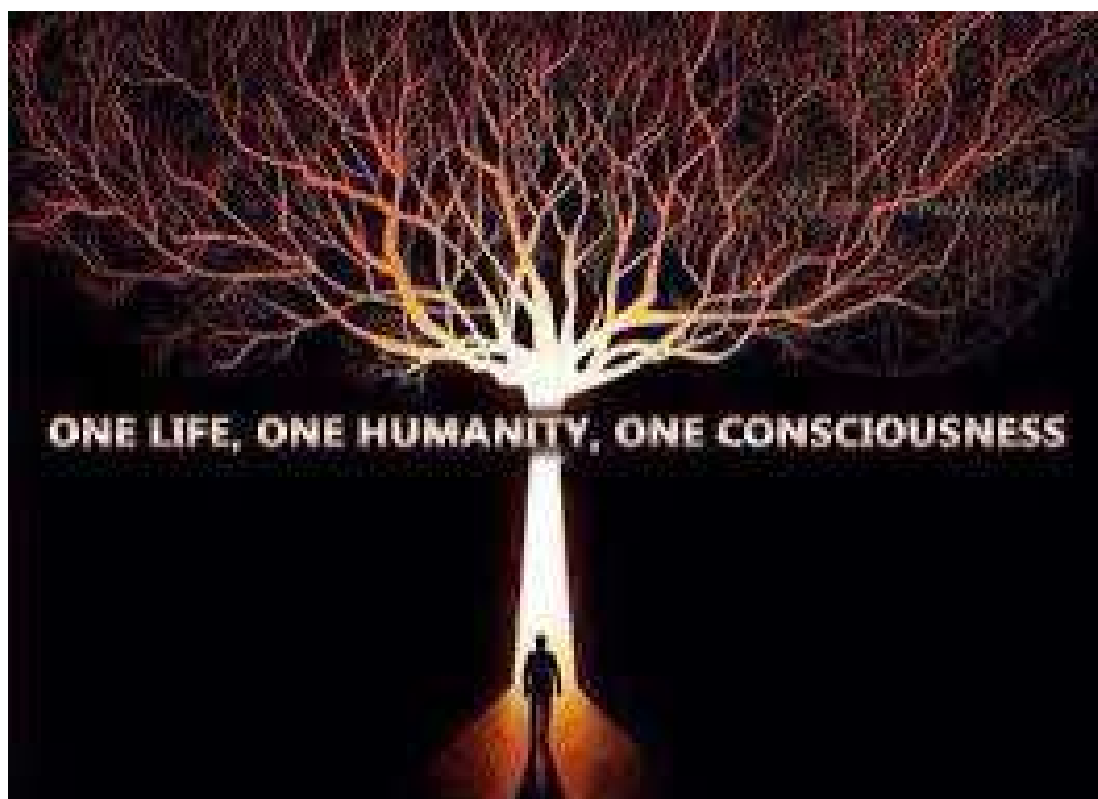
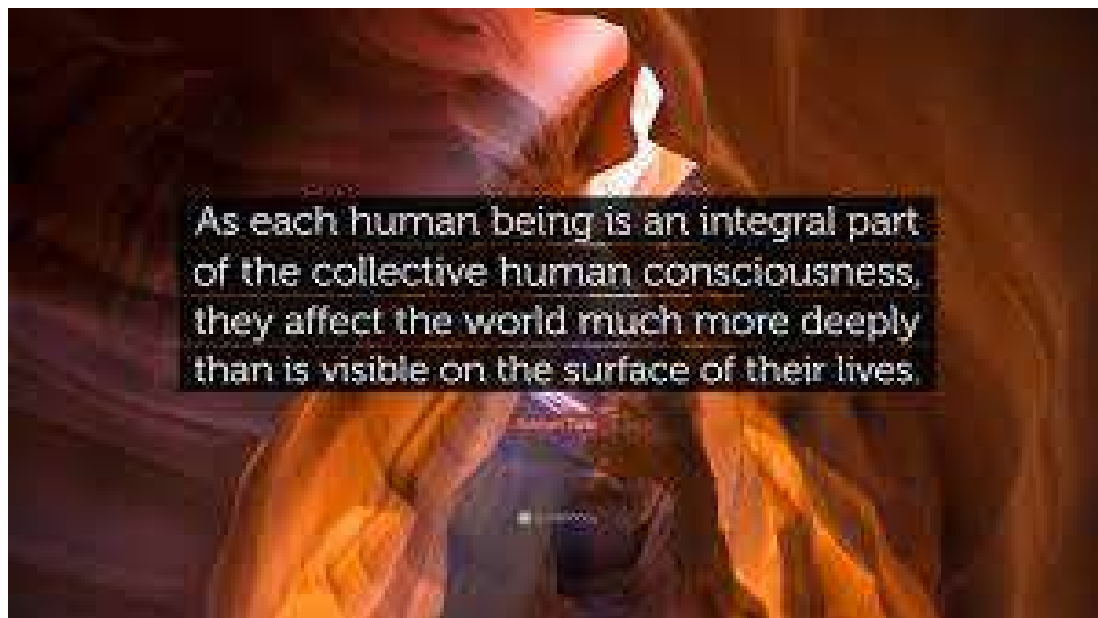
Sharp qualitative discontinuities have occurred several times before during the earth's 4-billion year evolutionary history: A dramatic change occurred when autocatalytic systems first became surrounded by a cell membrane. Another sharp transition occurred when photosynthesis evolved, and a third when the enormously more complex eukaryotic cells developed from the prokaryotes. The evolution of multicellular organisms also represents a sharp qualitative change. Undoubtedly the change from molecular information transfer to cultural information transfer is an even more dramatic shift to a higher mode of evolution than the four sudden evolutionary gear-shifts just mentioned. Human cultural evolution began only an instant ago on the time-scale of genetic evolution. Already it has completely changed the planet. We have no idea where it will lead.

The whole is greater than the sum of its parts. Human society is a superorganism, far greater than any individual in history or in the present. The human superorganism has a supermind, a collective consciousness far greater than the consciousness of individuals. Each individual contributes a stone to the cairn of civilization, but our astonishing understanding of the universe is a collective achievement.

Science derives its great power from the concentration of enormous resources on a tiny fragment of reality. It would make no sense to proceed in this way if knowledge were not permanent and if information were not shared globally. But scientists of all nations pool their knowledge at international conferences and through international publications. Scientists stand on each other's shoulders. Their shared knowledge is far greater than the fragments that each contributes.

Other aspects of culture are also cooperative and global. For example, Japanese woodblock printers influenced the French Impressionists. The nonviolent tradition of Shelly, Thoreau, Tolstoy, Gandhi, Martin Luther King and Nelson Mandela is international. Culture is cooperative. It is not competitive. Global cultural cooperation can lead us to a sustainable and peaceful society. Our almost miraculous modern communications media, if properly used, can give us a stable, prosperous and cooperative future society.









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# Index

- A billion deaths from famine, 252
- Abandonment of individual conscience, 311
- Abe, Shinzo, 254
- Abolition of child labor, 20
- Abolition of nuclear weapons, 240, 246
- Abolition of war, 246, 323, 327
- Absolute poverty, 19
- Absolutely sovereignty obsolete, 323
- Accident waiting to happen, 252, 266, 273
- Accidental nuclear war, 240, 246, 264, 269, 273, 325
- Acid rain, 17
- Adam Smith's invisible hand, 180
- Adams, John, 91
- Advantages of equality, 81
- Advertisers on mass media, 100
- Advertising agencies, 20
- African Union, 205
- African voting rights, 79
- Agent Orange, 244
- Aggressive war against Russia is madness, 318
- Aging storage tanks, 265
- Agony of Iraq, 143
- Agricultural land, 41
- Agricultural yields, 31
- Agriculture, 17, 29, 247, 276
- AIDS, 352
- Al Gore, 101
- Albert Einstein Institution, 126
- Alexandria, 69
- Alfred Lotka, 23
- Algeria, 139
- Alimentary canal, 23
- All nations would suffer, 252
- All-destroying nuclear war, 266
- Alliance for Climate Protection, 101
- Alma-Ata Declaration, 177
- Already-defeated Japan, 50, 60, 92
- Alternative media, 100
- Amazon deforestation causes, 201
- Amazon rainforest, 198
- America's top-heavy wealth distribution, 91
- American Enterprise Institute, 132
- American fleet, 69
- Amherst, Lord Jeffrey, 67
- An Inconvenient Truth, 101
- Anarchy at the global level, 324
- Angela Merkel's telephone, 54
- Anglo-Saxon master race, 79
- Angola, 139
- Annan, Kofi, 264, 277
- Anne H. Ehrlich, 207
- Annihilation of civilization, 339
- Anthropology, 20
- Antihuman weapons, 50, 92
- Antimalarial program, 241
- Anxiety about the future, 242
- Apartheid system, 79
- Aquifers overdrawn, 19, 30, 32, 37, 38
- Arable land, 201, 352
- Archives of Terror, 134
- Area of cropland, 32
- Area of irrigated land, 40
- Arid grasslands, 32
- Aridity, 30, 36
- Armaments (\$1.7 trillion spent on), 240
- Armies, 355
- Armistice Day, 250
- Arms industries, 324, 352

- Arms manufacturers, 67
- Arms Trade Treaty, 305
- Art, 15
- Article VI, 272
- Articles of Confederation, 290
- Artistic freedom, 354
- Asphalt melting, 152
- Assange, Julian, 51, 92
- Assassinations, 49, 93, 356
- Assumptions of classical economics, 24
- Asteroids, 273
- Astonishing deceit, 106
- Astonishing unrealism, 252
- Asylum, 242
- Atmosphere of Venus, 113
- Atoms for peace?, 253
- Atrocities, 68, 73
- Attack on the Amazon rainforest, 198
- Attempted coups, 53
- Attenborough, Sir David, 102, 104, 354
- Augusto Pinochet, 132, 134
- Aurelio Peccei, 15
- Australia, 358
- Autocatalytic systems, 368
- Automation, 17
- Availability of water, 34
- Average crop yields, 35
  
- B-52 bomber, 266
- Babies torn from mothers, 237
- Baby Tooth Survey, 215
- Baby-producing machines, 175
- Bailouts of banks, 13
- Balance of nature, 365
- Balance of power, 70
- Ban Ki-moon, 110
- Banking and government, 13
- Barack Obama, 212
- Barak, Ehud, 252
- Baring, Anne, 80
- Barnaby, Frank, 264
- Barry Commoner, 215
- BBC, 104
  
- Beaten on the ears until deaf, 133
- Bedjaoui, Muhammad, 272
- Bee populations declining, 191
- Bee-keeping, 205
- Beef and methane, 201
- Beef Industry in South America, 198
- Beef killing the rainforest, 198
- Before the Flood, 110
- Belgium, 70
- Belloc, Hilaire, 69
- Belt of Tar, 156
- Benefits of equality, 88
- Berlin destroyed, 237
- Bernard Lowen, 246
- Bernie Sanders, 112, 120
- Betrayal of Science, 208
- Big Brother, 54
- Big event needed, 51
- Bikini explosion, 240
- Bilateral agreements, 140, 245
- Bill of Rights, 291
- Billion people undernourished, 182
- Billionaire wealth reaches \$10.2 trillion, 87
- Biocultural Rights, 307
- Biological weapons, 67, 352, 359
- Biological Weapons Convention, 303
- Biology, 17
- Biology and Society, 208
- Biology of Natural Systems, 215
- Biomass, 24
- Biosphere, 129
- Birth anomalies, 244
- Birth control, 186, 204
- Birth control programs, 182, 186
- Birth defects, 240
- Birth defects in Marshall Islands, 230
- Birth rates, 18, 19
- Bitterness of conflicts, 53
- Black comedy, 266
- Black Hawk Down, 353
- Blackmail, 318
- Blair, Bruce G., 273
- Blood for oil, 139



- Bloodbath at Cajamarca, 68  
Bodet, Jamie Torres, 364  
Boer War, 71  
Bohr, Niels, 259  
Bohr-Wheeler theory, 259  
Bolsonaro, Jair, 198  
Bombardment of Copenhagen, 232  
Bombardments, 69  
Borel's Statistical Mechanics, 26  
Bottom half of humanity, 91  
Boycotting British goods, 338  
Boys from Chicago, 132  
Brazil, 358  
Brazil subsidizes beef industry, 201  
Brazil's economy, 156  
Brazil's offshore oil, 156  
Brazil's presalt oil, 160  
Bread and circuses, 96, 119  
Breakdown of human society, 252  
Britain, 70  
Britain's welfare state, 131  
British colonial India, 74  
British imperialism, 79  
British North Sea oil, 158  
British used poison gas in Iraq, 144  
British warships, 69  
Broken or amputated limbs, 133  
Brunch With Bernie, 112  
Brundtland Report, 35, 36  
Buffer zones, 323  
Buffet, Warren, 89  
Bulgaria bans fracking, 154  
Bulldozers, 80  
Burned at the stake, 51, 92  
Burning of peatlands, 198  
Burning the Koran, 228  
Bush administration, 57  
Bush was obsessed with Iraq, 146  
Bush, George W., 305  
Business as usual, 160  
  
Cairo population conference, 187  
Calogero, Francesco, 277  
  
Canada, 358  
Canadian government, 154  
Canadian oil sands, 154  
Cancer caused by radioactivity, 244  
Cancer risk from Hanford, 265  
Canticle of the Sun, 342  
Canton, 69  
Canton civilian bombing, 236  
Capital, 17  
Capone, Al, 361  
Carbon dioxide, 13, 17  
Carbon tax, 326  
Carbon-rich soils, 39  
Care of the elderly, 175  
Carefully chosen powers, 326  
Carrying capacity, 15, 17, 29, 30, 352  
Catastrophic accident, 240  
Catastrophic climate change, 13, 22, 35, 99, 116, 151, 159  
Catastrophic future famine, 19  
Catastrophic global famine, 175  
Catastrophic mistake, 273  
Catastrophic nuclear war, 246, 247, 252, 267, 269  
Cattle ranching in Amazonia, 201  
Causes of Amazon deforestation, 201  
Cell membrane, 368  
Censorship, 354  
Censorship of the news, 58  
Central banks, 79  
Centre for Policy Studies, 132  
Chain of causes, 122  
Chain-reacting pile, 259  
Chamberlain, Neville, 236  
Changes of diet, 203  
Chauvinism, 352, 357  
Cheating ring, 266  
Checks to population growth, 204  
Chemical pesticides, 193  
Chemical warfare, 244  
Chemical weapons, 352, 359  
Chemical Weapons Convention, 304  
Chernobyl, 231, 253, 254

- Chicago Boys, 133
- Child labor, 20
- Child labor laws, 175, 180
- Child soldiers, 242
- Children killed by wars, 241, 271
- Children scavaging garbage dumps, 89
- Children's rights, 176
- China, 69, 135, 186
- China's coal, 160
- China's dollar holdings, 267
- China's falling water table, 37
- China's Great Green Wall, 207
- China's palm oil demand, 198
- China's population policy, 37
- China's use of coal, 151
- China, rapid industrial expansion, 151
- Chinese-Russian support, 252
- Cholula Massacre, 68
- Chomsky, Noam, 120, 129, 301
- Choshu, 69
- Christian ethical principles, 356
- Christian ethics, 342
- Christianity, 69
- Chuckman, John, 53
- Church, 356
- CIA, 49, 50, 92, 93, 134
- CIA insider Susan Lindauer, 51
- CIA torture report, 59
- Citizens Party, 215
- Civics, 360
- Civil Disobedience, 98
- Civil rights, 336
- Civil society, 277, 333
- Civil War, 356
- Civil wars, 241, 361
- Civilian casualties, 324
- Civilian victims of war, 271
- Civilians as hostages, 240
- Civilians as targets, 277
- Civilians killed in war, 241
- Civilization and Christianity, 74
- Civilization's crisis, 240
- Class warfare, 89
- Classical economics, 352
- Classical economists, 17
- Clean water near homes, 175, 179
- Climate change, 13, 22, 29, 39
- Climate change and agriculture, 36
- Climate change denial, 97, 116
- Climate Change Obligation, 306
- Climate Change: The Facts, 104
- Climate emergency, 160
- Clinton, Bill, 110
- Closed system, 23
- Closed world economics, 352
- Club of Rome, 15
- Cluster bombs, 244
- Coal must be phased out by 2030, 82
- Coal per capita, 159
- Coal produced in Germany, 158
- Coal produced in Poland, 158
- Coal producers, 159
- Coal production in India, 151
- Coal reserves in China, 151
- Coercion of states, 318, 319
- Cold War, 51, 59, 70, 93, 240, 245, 264, 273
- Cold War replaced, 228
- Cold War tensions, 323
- Collapse of Building 7, 228
- Collapse of ecosystems, 130
- Collapse of education, 130
- Collapse of environment, 17
- Collapse of population, 17
- Collapse of public health, 130
- Collective punishment, 301
- Colombia, 139
- Colombia University, Climate Science, 113
- Colonial era, 245
- Colonial expansion, 67, 69
- Colonial Roots of Nazism, 78
- Colonial system, 338
- Colonialism, 67, 69, 70, 73, 88, 306, 352, 358
- Come together and save ourselves, 99
- Commercial interests, 354
- Common good, 345
- Commoner's US presidential campaign, 215

- Commoner, Barry, 215
- Communications media, 361
- Communications of millions, 57
- Communications revolution, 364
- Competition, 70
- Competition defines society?, 131
- Compulsory military service, 339
- Computer games, 353, 354
- Computer models, 15
- Computer networks, 23
- Computer software, 15
- Conditioning of soldiers, 311
- Condor: 400,000 imprisoned, 134
- Condor: At least 60,000 deaths, 134
- Conference on Disarmament, 249
- Conflict-related deaths, 204
- Congo, 73
- Congress Party, 338
- Conquistadors, 68
- Conscience of humanity, 236
- Conspicuous consumption, 20, 337
- Constitutional convention at Corowa, 329
- Consume more, 100
- Consumed radioactive food, 265
- Consumer behavior, 365
- Consumption, 337
- Consumption lacking upper bound, 20
- Consumption of fossil fuels, 24
- Consumption of meat, 36
- Consumption of plant energy, 36
- Consumption per capita, 17
- Consumption-oriented values, 21
- Container ships, 264
- Continued extraction of fossil fuels, 151
- Contracting economy, 14
- Control government policy, 49, 93
- Control of military forces, 125
- Control of police forces, 124
- Conversion, 352
- Cooperation, 29
- Cooperative banks, 25
- Cooperative future, 240
- Core aspirations, 61
- Corowa Plan, 329
- Corporate oligarchs, 49, 93
- Corporate oligarchs control governments, 116
- Corporate oligarchy, 232
- Corporate oligarchy controls media, 116
- Corporate rule, 129
- Corporations, 59
- Corpses left unburied, 237
- Corrupt governments, 41, 139, 198
- Corrupt local officials, 245
- Cortez, Hernan, 68
- Cosmetics and palm oil, 198
- Cotton cloth, 69
- Council on Foreign Relations, 79
- Count Leo Tolstoy, 125, 335
- Counterfeit money, 14
- Coups, 58
- Coups d'état, 125
- Court of world opinion, 336
- COVID-19 pandemic, 87
- Creative Class, 15
- Crime, 122
- Crime of aggression, 305
- Crimes against humanity, 305, 313, 316
- Crimes against peace, 312
- Critical mass, 259
- Cropland, 17
- Cropland per capita, 186
- Cropland per person, 18
- Crusades, 69
- Crushed the prisoner's bones, 133
- Cultural activities, 15
- Cultural diversity, 365
- Cultural evolution, 368
- Cultural history, 352, 357
- Culture, 13, 363
- Culture of peace, 353, 354, 363–365
- Culture of violence, 245, 353, 354, 364, 365
- Currency reform, 25
- Current annual emissions, 152
- Curriculum revisions, 360
- Cyclical components of phenomena, 26
- Czech Republic bans fracking, 154

- Dakar, 205
- Dakota Access Pipeline, 80
- Damage to infrastructure, 243
- Dangerous proliferation, 253
- Dangerous radioisotopes, 255
- Danish fleet, 232
- Danish social and political system, 81
- Danish system today, 81
- Dark government, 53
- Dasgupta, Sir Partha, 175
- David Pimental, 35, 40
- Day care centers in Denmark, 81
- Day-care centers, 83
- DDT, 191, 193
- Deaths from heat, 204
- Deaths from starvation, 182
- Deaths, 62-78 million, 251
- Debt at compound interest, 25
- Debt crisis, 24
- Decay of real wealth, 25
- Decaying public infrastructure, 135
- Declaration of Human Rights, 242
- Decreased rainfall and agriculture, 37
- Deep state, 49, 93
- Deepwater Horizon, 156
- Defamation, 365
- Deforestation, 40
- Deforestation in Amazonia, 201
- Degradation of free energy, 24
- Degradation of grasslands, 17
- Degradation of topsoil, 40, 191
- Degraded form, 23
- Democracy Now, 80
- Democracy requires knowledge, 50, 92
- Demographic trap, 175, 182, 186
- Denmark, 81
- Density of population, 21, 29
- Dependable source of income, 60
- Depleted uranium, 145
- Depleted uranium shells, 244
- Depletion of topsoil, 32
- Depositors, 14
- Desertification, 17, 32, 204
- Desire for sons, 179
- Destroying the earth, 14
- Destruction of forests, 40, 102
- Destruction of rainforests, 32, 59
- Deterrence, flaws in concept, 271
- Developed countries, 35
- Developing countries, 18, 60, 139, 244
- Development, 186, 241
- Development programs, 19
- Devil's dynamo, 67
- Dialogue, 365
- DiCaprio, Leonardo, 110, 113
- Dictatorships, 50, 92, 139
- Dietary changes can help, 203
- Dignity, respect for, 365
- Diminishing resources, 337
- Direct costs of war, 240
- Dirty business of ISIS, 53
- Dirty wars, 49, 93
- Disarmament, 271
- Disaster avoided by a hair's breadth, 231
- Disaster Capitalism Complex, 135
- Disasters might wake public, 102
- Discrimination, 365
- Disease, 251, 352, 358
- Disease-resistant varieties, 31
- Diseases related to poverty, 241
- Disempowered TV viewers, 96, 119
- Disorder, 23
- Dispersal of minerals, 24
- Disposal of radioactive waste, 255
- Diversity is valuable, 329
- Djibouti, 205
- Dog bites, 80
- Domination of oil-rich regions, 317
- Donald Trump, 129, 130
- Doomsday Machine, 266, 267
- Dr. Strangelove, 266
- Drama, 360
- Drank radioactive milk, 265
- Dresden destroyed, 237
- Drone air force, 53
- Droughts, 18, 32

- Droves of vicious rats, 237
- Drug addiction, 266
- Drug-resistant tuberculosis, 244
- Drugs, 269
- Dulce et Decorum Est, 250
- Durable goods, 27
- Dysentery, 186
  
- Early marriage, 182
- Earth's atmosphere, 113
- Earth's entire land surface, 201
- Earthquakes, 154
- Ecological catastrophe, 41, 230, 335
- Ecological catastrophes, 96, 119
- Ecological conscience, 60, 129, 180, 345
- Ecological constraints, 13
- Ecological counter-culture, 348
- Ecological damage, 243
- Ecological destructiveness of corporations, 129
- Ecological footprint, 15, 30
- Ecology, 352
- Economic activity, 15
- Economic collapse, 29
- Economic development, 20
- Economic equality, 81
- Economic growth, 13, 40
- Economic hegemony, 245
- Economic inequality, 182, 245
- Economic infrastructure, 325
- Economic interdependence, 287, 361
- Economic justice, 205
- Economic oppression, 365
- Economic progress, 175, 182
- Economic reform, 22
- Economic stability, 22
- Economic tipping point, 102
- Economic waste, 277
- Economics, 352
- Economists, 13
- Economy as a digestive system, 23
- Economy of Brazil, 156
- Economy's circulatory system, 28
- Economy's digestive tract, 28
  
- Ecosphere, 28
- Education, 15, 122, 240
- Education and mass media, 353, 354
- Education for peace, 351, 357, 363
- Education for women, 187
- Education of women, 19
- Educational Curricula, 365
- Edward Snowden, 49, 93
- Effects of war on children, 242
- Ehrlich, Anne H., 207
- Ehrlich, Paul R., 207
- Einstein, Albert, 119
- Eisenhower's farewell address, 226
- Eisenhower, Dwight D., 253
- ElBaradei, Mohamed, 275
- Electrical generating plants, 243
- Electrical networks, 23
- Elementary education, 19
- Elementary peace education, 359
- Eletist goal, 79
- Eliminating democracy, 49, 93
- Ellery Channing, 348
- Ellsberg, Daniel, 50, 92
- Elvin, Lionel, 364
- Embrace of spying, 57
- Emergency-scale transition, 100
- Emissions reduction curve, 100
- Empty-world picture, 17
- Encyclical of Pope Francis, 345
- End of fossil fuel era, 24
- Endosomatic parts, 23
- Ends and means, 125, 335
- Enemies, 356
- Energy, 212
- Energy problems, 352
- Energy used for cooking, 35
- Energy-dependence of agriculture, 34
- Energy-intensive agriculture, 35
- Engineering students, 353, 359
- Engineers, responsibility of, 353, 359
- English Bill of Rights, 290
- Enlightened environmental laws, 329
- Enormous dark branches, 61

- Enormous human suffering, 245
- Enrichment, 275
- Entertainment industry, 354
- Entropic transformation, 27
- Entropy, 24
- Entropy and economics, 22, 26
- Environment, 122
- Environmental catastrophe, 98
- Environmental crisis accelerates, 98
- Environmental disaster, 100
- Environmental ethics, 21
- Environmental holocaust, 244
- Environmental protection laws, 180
- Environmental reforms, 59
- Environmental responsibility, 80
- Environmental review, 81
- Epidemic of loneliness, 130
- Epidemics, 241
- Epidemics of plant diseases, 34
- Equal rights for women, 19, 364
- Equality under law, 70
- Equilibrium economics, 352
- Equilibrium with the environment, 21
- Era beyond fossil fuels, 30
- Eradication of smallpox, 241
- Erosion, 17, 18
- Erosion of soldier's self-respect, 311
- Erosion of topsoil, 40
- Escalation of conflicts, 335
- Escalatory cycles of violence, 271
- Ethical principles, 271, 359
- Ethical responsibility, 353, 359
- Ethical systems, 287
- Ethical values, 21
- Ethics, 287, 355
- Ethics for the future, 345
- Ethiopia, 182
- Ethnic differences, 336
- Ethnic groups, 359, 360
- Eugenics movement, 79
- Eukaryotes, 368
- Europe, 70
- Europe must be independent, 317
- European armaments, 67
- European Coal and Steel Community, 329
- European dependence on natural gas, 152
- European diseases, 68, 69
- European rule, 69
- European Union, 329, 352, 358, 359, 361
- Exceptionalism, 73, 74, 306
- Existential crisis, 110
- Exosomatic parts, 23
- Expansion of North Sea oil, 110
- Expansion of the money supply, 14, 24
- Exploitation, 73, 74, 338
- Exponential growth, 13, 17
- Exponential increase, 25
- Exponential index for resources, 15
- Export of renewable energy technology, 82
- Exporters of small arms, 245
- Exposure, 251
- Exposure of mistakes, 54
- Extinction Rebellion, 106
- Extracting local resources, 245
- Extrajudicial killing, 53, 59
- Extravagant gadgetry, 27
- Extreme inequality today, 91, 115
- Extreme violence, 135
- Extremely long half-lives, 255
- Fabians, 70
- Factories, 23
- Factory civilization, 338
- Failure of water supplies, 32
- Falklands War, 135
- Falling water tables, 30
- Fallout, 272
- Family planning, 186, 204
- Family planning information, 175
- Family planning materials, 175
- Famine, 18, 19, 29, 31, 34, 37, 41, 175, 187, 204, 241, 276
- Famine relief, 240
- Fanaticism, 365
- FAO, 201
- Fascism and corporations, 129

- Fast breeder reactors, 260
- Fatal accident, 275
- Favelas, 186
- FBI, 361
- FDR's New Deal, 131
- Federal Constitution of the United States, 290, 319, 328
- Federal government of Australia, 329
- Federal Reserve, 14
- Federalist Papers, 291
- Federations, 358
- Feed for livestock, 201
- Feedback loops, 22, 40
- Feelings of panic, 239
- Fermi, Enrico, 259
- Fertility in Denmark, 82
- Fertilizers, 18, 34
- Fighting in the War Room, 267
- Films, evaluation of, 354
- Finance and distribution, 34
- Financial institutions, 352, 358
- Financial meltdown of 2007-8, 130
- Finite earth, 13, 15
- Finland's school system, 83
- Fire storms, 247
- Firebombing of Dresden, 271
- Firebombing of Hamburg, 236
- Firestorms, 237
- Firmness in the truth, 338
- Fission reaction, 246
- Fleeing refugees targeted, 236
- Fly more, 100
- Food and Agricultural Organization, 32, 40, 201, 295, 321
- Food calories per capita, 35
- Food processing, 205
- Food security, 29
- Food-deficit countries, 18
- Food-exporting nations, 18
- Forced labor, 59
- Forced marriage, 182
- Foreign domination, 338
- Foreign women, 267
- Forest drying and wildfires, 205
- Forest drying feedback loop, 205
- Forest fires, 40
- Forest loss, 39
- Forest loss and population, 203
- Forest resources, 204
- Forestry, 205
- Forests, 17
- Fossil fuel corporations, 97, 116
- Fossil fuel industry, 154
- Fossil fuel producers, 158
- Fossil fuels, 13, 18, 22, 24, 29, 30, 34, 41
- Fossil fuels, continued extraction, 151
- Four Asian Tigers, 135
- Fourth Amendment trashed, 49, 93
- Fourth Estate, 57
- Fracking, 154
- Fracking banned by 9 countries, 154
- Fractional reserve banking, 13, 24
- Fragile ecological systems, 22
- France, 70
- France bans fracking, 154
- Frederick Soddy, 14, 24
- Free association, 360
- Free energy, 23
- Free energy and wealth, 24
- Free health care, 83
- Free market not sacred, 338
- Free university tuition, 83
- Freedom from fear, 61
- Freedom of expression, 365
- Friedman, Milton, 132-134
- Friedrich Hayack, 131
- Frisch, Otto, 259
- Frontline's documentary, 57
- Fuelwood, 18
- Fukushima, 231, 253, 254
- Full Spectrum Warrior, 353
- Full-world economics, 17, 28
- Future collapse, 17
- Future dangers, 160
- Future food-production, 31
- Future generations, 21, 240, 352, 365

- Future of human civilization, 160
- Future of our civilization, 110
- Gabrial, Dalia, 79
- Galespie, April, 145
- Galileo, 51, 92
- Gandhi, 122, 125, 335, 348, 354
- Gandhian economics, 337
- Gas production, 160
- Gas warfare, 250
- Gates, Bill and Melinda, 178
- GATT, 59
- Gaza, 301
- Gender equality, 176
- Gene Sharp, 126
- General Groves, 50, 92
- General Rosas' genocide, 67
- General strike for climate action?, 110
- Genetic engineering, 353, 359
- Genetic pool, 246
- Geneva Conventions, 301, 352, 359
- Genocidal war, 230
- Genocide, 73, 271, 301, 305, 316
- Genocide of Amerinds, 74
- Genocides in the Americas, 67
- Geography, 360, 363
- Geological extinction events, 13
- George Monbiot, 98, 130
- George Washington, 226
- Geothermal energy, 24
- German Luftwaffe, 236
- German production of coal, 158
- Germany, 70, 358
- Germany and Japan: economic miracles, 325
- Germany bans fracking, 154
- Germany's African empire, 78
- Get rid of fashion, 27
- Ginsberg, Ruth Bader, 122
- Glacier melting, 19, 38
- Glaring contradiction, 49, 93
- Global Climate Disruption, 212
- Global cooperation, 15
- Global economic interdependence, 60
- Global environment, 15, 17
- Global ethic, 118, 351, 354, 357
- Global food crisis, 29
- Global governance, 245
- Global inequalities, 360
- Global Inequality organization, 91
- Global production of coal, 159
- Global warming, 18, 34, 197
- Globalization, negative aspects, 180
- Gobi desert, 204
- Goddard Institute, Space Studies, 113
- Gold standard, 25
- Goodman, Amy, 80
- Goods, 15
- Gordiano Bruno, 51, 92
- Gore, Al, 101
- Government spying, 58
- Governmental secrecy, 53
- Governmental terrorism, 232
- Governments left to wither, 99
- Gradual decrease in population, 27
- Grain belt, 18
- Grameen bank, 25
- Grant, James P., 364
- Great Depression, 134, 267
- Great famine of 1876-1878, 74
- Great Green Wall, 205
- Greatest failure of humankind, 110
- Greece, 14
- Greed, 67, 73, 80, 336
- Greed-driven destruction of nature, 345
- Green Belt Movement, 205
- Green New Deal, 116
- Green Revolution, 31, 34, 35
- Greta Thunberg meets Pope Francis, 106
- Greta Thunberg speaks at Marble Arch, 108
- Grey, Colin S., 273
- Griffin, G. Edward, 79
- Gross National Product, 13, 17
- Gross violations of human rights, 326
- Gross, wholesale spying, 49, 93
- Grotius, 352, 358
- Groundwater levels, 37



- Growing populations, 40
- Growth, 13, 348, 352
- Growth of culture, 13
- Growth of knowledge, 13
- Growth-worship, 14
- Guatamalan genocide, 68
- Guernica, 236
- Guilt, 271
- Gulf War, 145
- Gulf War of 1990, 243, 244
- Guterres, Antonio, 249
  
- Habias Corpus trashed, 49, 93
- Hague Conventions, 352, 359
- Hague invasion clause, 305
- Hague, Netherlands, 316
- Hair-trigger alert, 240, 252, 273
- Half of Congo's people killed, 73
- Hamilton, Alexander, 291, 318, 319
- Hammurabi's Code, 287
- Hanauer, Nick, 88
- Hanford experiments on humans, 266
- Hanseatic League, 358
- Hansen's testimony to Congress, 114
- Hansen, James, 113, 154
- Harmony with nature, 348
- Hartmann, Thom, 112
- Harvard Economic Barometer, 26
- Harvard University, 211, 348
- Hate, 356
- Health and social problems, 88
- Health care, 175
- Health care free, 81
- Health services, 20
- Heat deaths in India, 152
- Henderson, Bill, 99
- Henry David Thoreau, 125, 348
- Hepatitis, 186
- Herbicides, 244
- Heritage Foundation, 132
- Herman E. Daly, 28
- High taxes in Denmark, 81
- High-yield varieties, 31
  
- Higher education for women, 175, 176
- Higher status for women, 20, 175, 176
- Highly enriched uranium, 275
- Highly-enriched uranium, 253
- Highway development, 40
- Hindu and Muslim communities, 336
- Hiroshima, 60, 119, 231, 237, 246, 251, 254, 259
- History, 360, 363
- History of Racism, 73
- History of science, 353, 359
- History teaching, 358
- History, teaching, 351, 357
- Hitler invades Poland, 236
- Hitler's bombing of Warsaw, 236
- Hitler, Adolf, 118, 363
- HIV/AIDS, 244
- Hobson, John Atkinson, 70, 88, 115
- Hoffer, Eric, 311
- Holdren, John P., 211
- Holocaust Museum in Huston, 68
- Hong Kong, 186
- Hoodbhoy, Pervez, 263
- Horton, Scott, 54
- Hospitality, 21
- Hospitals targeted, 236
- House of Representatives, 328
- Household items, 25
- Hubbert Peak model, 15
- Hubris, 317
- Human civilization threatened, 240
- Human dignity, 364
- Human ego, 20
- Human emotional nature, 341
- Human error and nuclear war, 246
- Human failings, 273
- Human hands as currency, 73
- Human rights, 326, 352, 358, 360, 363, 364
- Human rights abuses, 198, 245
- Human rights trashed, 49, 93
- Human sacrifice, 251
- Human society, 129
- Human society a superorganism, 23

- Humanitarian law, 271, 272, 278
- Humanitarian reforms, 59
- Humanity betrayed by the mass media, 119
- Hunger, 122
- Hunter-gatherers, 21
- Hurricane Katrina, 135
- Hussein, Saddam, 144
- Hydrological cycle, 248, 252
- Hyperbolic trajectory, 184
  
- I was acting under orders, 313
- ICAN, 308
- ICBM's Carey drank heavily, 267
- ICC, 305, 316
- Ignorance, 122
- Illegal assassinations using drones, 228
- Illegal burning of forests, 197
- Illegal killings, 58
- Illegal we do at once, 49, 93
- Illegality of NATO, 297, 316
- Illegality of nuclear weapons, 271, 297
- Illegality of war, 70
- Illiteracy, 241, 352, 358
- Immersed into vats of excrement, 133
- Impartiality, 327
- Impartiality and neutrality, 324
- Imperialism, 69, 70, 79
- Imperialism: A Study, 70, 88, 115
- Inappropriate agriculture, 204
- Inballanced diet, 191
- Incendiary bombings, 247
- Incendiary rockets, 232
- Income Inequality, by Nick Hanauer, 115
- Incompetent person, 266
- Independent of fossil fuels by 2050, 83
- Index standard, 25
- India, 179, 277
- India's coal, 160
- India's Energy Crisis, 151
- India's nuclear weapons, 263
- India's palm oil demand, 198
- India's Prime Minister Modi, 151
- India-Pakistan war danger, 263
  
- Indian home rule, 337, 338
- Indian independence movement, 338
- Indian Minister of Power, 152
- Indian textile industry, 69
- Indigenous peoples, 67, 110
- Indirect costs of war, 240, 358
- Indirect effects of war, 324
- Indiscriminate mass slaughter, 271
- Individual citizens, 360
- Individual conscience, 348
- Indo-China conflicts, 241
- Indonesia, 139, 186, 197
- Indonesia's forest loss, 198
- Industrial growth, 13, 17
- Industrial powers, 70
- Industrial Revolution, 13, 69, 70, 88, 156, 184, 353, 359
- Industrial societies, 354
- Industrial workers, 15
- Industrialism, 67
- Industrialization, 21
- Industrialized countries, 18, 139
- Industrialized nations, 69, 88, 245
- Inequality, 89, 352, 358
- Inequality in rich countries, 89
- Information and free energy, 23
- Information-related work, 15
- Infrastructure, 19, 186, 240, 352
- Insane person, 266
- Insect apocalypse, 191
- Institution of war, 240, 241, 244, 277
- Intensive farming practices, 191
- Internal peace, 360, 361
- Internally displaced persons, 242
- International borders, 242
- International cooperation, 363
- International Court of Justice, 278, 296, 352, 358
- International Criminal Court, 305, 316, 352, 358
- International Energy Agency, 82
- International law, 70, 140, 245, 287, 312, 323, 324, 352, 359

- International understanding, 363
- Internationalism, 15
- Internet corporations, 54
- Internment of 80,000 people, 132
- Interreligious understanding, 359
- Intolerable economic inequality, 87, 245
- Invasion of Iraq, 135
- Invention of agriculture, 287
- Iodine 131, 265
- IPCC, 34, 101
- Iran, 139, 277
- Iran, attack by Israel, 267
- Iraq, 139
- Iraq's war with Iran, 144
- Irish Potato Famine, 34
- Irrational belief in growth, 14
- Irresponsible decisions, 264
- Irreversible damage to civilization, 246
- Irrigation, 34
- Irrigation of arid lands, 32
- Israel, 267
- Israel and oil motivated Iraq war, 147
- Israel's Apartheid-style policies, 135
- Israel's nuclear weapons, 263
- It's not too late, 105
- Italy, 70
- Jack D. Ripper, 266
- Jair Bolsonaro, 198
- James Hansen, 113, 154
- James Hansen's TED talk, 114
- James Russell Lowell, 350
- James van Allen, 113
- Japan, 69, 70, 186
- Japanese terror bombing, 236
- Jaws of power, 50, 92
- Jefferson, Thomas, 50, 91, 92
- Jobs outside the home, 176
- John Atkinson Hobson, 115
- John P. Holdren, 211
- John Stuart Mill, 29
- Joseph Schumpeter, 26
- Judenebt at Nuremberg, 313
- Justice, 176
- Kaiser Wilhelm II, 252
- Kaiser's genocide, 78
- Kassel destroyed, 237
- Kavanaugh, Brett, 122
- Kellogg-Briand Pact, 294
- KGB, 50, 92
- Khan, Dr. A.Q., 263
- Killing civilians, 232
- Kindness, 287
- King, Martin Luther, 125
- Kissinger, Henry, 49, 93
- Klare, Michael, 245, 332
- Klein, Naomi, 134
- Kobe firebombed, 237
- Kubrick, Stanley, 266
- Kuwait, 139
- Labor, 17
- Labor-intensive methods, 338
- Laissez-faire capitalism, 134
- Land surface used for cattle, 201
- Landscape fires kill 100,000/y, 198
- Lapham, Robert J., 186
- Large families, 179
- Large nations, 360
- Last Hours (YouTube), 113
- Last Hours of Ancient Sunlight, 112
- Laterization, 40
- Launch officers cheating, 266
- Law of human life, 355
- Law of the Sea, 352, 358
- Laws acting on individuals, 291, 318, 319, 328
- Laws binding on individuals, 60, 325, 360
- Least developed countries, 182
- Lebanese civil war, 241
- Legal systems, 287
- Leisure Class, 20
- LeMay, General Curtis E., 273
- Leonardo DiCaprio, 110, 113
- Leonardo DiCaprio Foundation, 22

- Leopold II, King of Belgium, 73
- Leopold's private army, 73
- Less developed countries, 245
- Lester Brown, 37
- Letter to Santa Claus, 300
- Libya, 139
- Licences to burn forests, 198
- Life on earth threatened, 240
- Life-oriented vision, 176
- Life.styles from mass media, 96
- Lightning strikes, 40
- Limited reserves of uranium, 260
- Limiting factors, 17
- Limiting fossil fuel production, 99
- Limits of sustainability, 21
- Limits to Growth, 13, 15
- Lincoln, Abraham, 356
- Literature, 15
- Living standards, 160
- Long-term future, 13, 29
- Lord Cranborne, 236
- Los Alamos, 50, 92
- Loss of 175 million lives, 243
- Loss of cropland, 32
- Loss of flying insects, 191
- Loss of life, 241
- Loss of profits, 59
- Love, 355, 356
- Love for the poor, 336
- Loyalty to humanity, 118, 354
- Lucky Dragon, 240
- Ludwig von Mises, 131
- Luxembourg bans fracking, 154
- Luxuries, 349
- M.S. Swaminathan, 31
- M5, 50, 92
- Maathai, Wangari, 205
- Machine gun, 69
- Magna Carta, 289
- Magna Carta trashed, 49, 93
- Mahatma Gandhi, 122, 125, 335, 337
- Mahler, Halfdan, 186
- Main grain types, 36
- Mainstream media, 49, 93, 116
- Mainz destroyed, 237
- Major coal producers, 159
- Major fossil fuel producers, 158
- Major oil producers, 158
- Making excuses, 98
- Making Peace with the Planet, 215
- Malaria, 191, 244, 352
- Malnutrition, 191, 241, 352, 358
- Man and the Ecosphere, 208
- Man-made capital, 17
- Manchester Guardian, 71
- Manifesto 2000, 365
- Manufactured goods, 70
- Manufacturing Consent, 120
- Margaret Thatcher, 135
- Marginal land, 18, 40
- Mario Giampietro, 35
- Markets, 69, 70
- Markets solve all problems?, 99
- Marshall Islands, 240
- Martin Luther King, 125, 335, 348
- Martyr to the truth, 51, 92
- Mason, George, 291, 319
- Mass illegal spying, 61
- Mass media, 21, 94, 351, 354, 357
- Mass media and education, 354
- Mass media and norms, 353
- Mass media and war, 354
- Mass media have betrayed us, 118
- Massive nuclear retaliation, 271
- Massive spying, 51, 93
- Masters of the Universe, 132
- Material goods, 339
- Material structures, 23
- Mature forests, 39
- Maudlin, W. Parker, 186
- Maxim gun, 69
- Maxim, Hiram S., 69
- Maximizing human happiness, 338
- Maximizing production, 338
- Mayor, Federico, 364

- Meat consumption, 36
- Media are a battleground, 118
- Media as a battleground, 94
- Media neglect of climate change, 96, 119
- Media withhold information, 58
- Medical consequences of war, 241
- Medical degrees for women, 176
- Melted asphalt, 152
- Melting of glaciers, 30
- Metabolic throughput, 28
- Metals, 13, 17
- Methane and beef, 201
- Methane hydrate feedback loop, 22
- Mexican War, 348
- Mexico, 139
- Microscopic fixes for vast problems, 99
- Middle East, 151
- Might makes right, 245
- Migration to cities, 186
- Militarism, 339, 354
- Militarism's hostages, 225, 230, 232
- Militaristic government, 254
- Militarization of governments, 139
- Military budgets, 244, 352, 358
- Military lobbies, 365
- Military might, 245
- Military spending 2 trillion per year, 332
- Military strength, 70
- Military use of oil, 139
- Military-industrial complex, 67, 116, 135, 226, 228, 230, 244, 318
- Milton Friedman, 132–134
- Mine Ban Treaty, 305
- Mineral resources, 41
- Mines, 71
- Mining ancient groundwater, 37, 38
- Miscalculation, 273
- Misplaced power, 226
- Missile defense system, 277
- Mistaken for a missile strike, 273
- MIT Technology Review, 151
- Modern agriculture, 35
- Modern feudal society, 79
- Modern languages, 363
- Modern machines, 338
- Modern medicine, 18
- Modern powerholders, 94
- Modern societies, 96
- Modern warfare and oil, 139
- Modern weapons, 69, 356, 361
- Modernism, 277
- Monbiot, George, 98, 130
- Monetary reform, 14
- Monetizing underground “assets”, 97
- Money and wealth, 24
- Money driving decisions, 154
- Money-controlled media, 118
- Mono-cropping, 191
- Monocultures, 34
- Montessori, Maria, 176, 363
- Moral force, 336
- Moratorium on exploration and drilling, 83
- Mossad, 50, 92
- Muhammad Yunus, 25
- Multicellular organisms, 368
- Multigenerational families, 94
- Multinational corporations, 245
- Murder, 73
- Murder is always murder, 309
- Murdering indigenous peoples, 80
- Murderous night-time raids, 228
- Music, 15
- Mussolini, 129
- Mustard gas and nerve gas, 145
- Mutually Assured Destruction, 230
- N. Georgescu-Roegen, 26
- Nuremberg Principles, 352
- Nagasaki, 60, 119, 231, 237, 251, 254, 259, 264
- Naked and freezing, 81
- Nanjing Massacre, 236
- Naomi Klein, 22, 134
- Napoleon, 232
- NASA, 113
- Nash, Vernon, 319

- Nathaniel Hawthorne, 348
- Nation-states, 361
- National armies, 361
- National Geographic Chanel, 94
- National pride, 277
- National Security Agency, 58
- Nationalism, 351, 357
- Nationalist teaching, 363
- Nationalization of banks, 25
- Native Americans, 69, 80
- Native graves, 80
- NATO against Russia, 53
- NATO's violation of the NPT, 317
- Natural environment, 102
- Natural fibers, 18
- Natural gas, 13, 35
- Natural gas production, 160
- Natural laws, 122
- Natural resources, 17
- Nature, Man and Technology, 215
- Naval arms race, 70
- Naval bombardments, 69
- Nazi party, 78
- Nazism, 78
- Negative entropy, 23
- Negative peace, 360
- Nehru, Jawaharlal, 364
- Nelson Mandela, 125, 335
- Neoclassical economists, 17
- Neocolonialism, 73, 352, 358
- Neoliberalism, 99, 130
- Netanyahu, Benjamin, 252, 267, 269
- Network Knowledge, 57
- Neutral countries, 252, 271
- New economic system, 21
- New Agenda Resolution, 272
- New leaders, 240
- New technology, 17
- New York Times, 51, 57, 92
- Newton's solar system, 122
- Nick Hanauer's TED talk, 88
- Nigeria, 204
- Nineteen Eighty-Four, 49, 51, 93
- Njal's Saga, 287, 316
- No one can win a tsunami, 252
- No President can resist, 53
- Noam Chomsky, 129
- Nobel Peace Prize, 101, 212, 308
- Non-discrimination, 365
- Non-discrimination principle, 59
- Non-renewable resources, 24, 352
- Non-violence, 338, 365
- Nonrenewable resources, 352
- Nonviolent civil disobedience, 348
- Nonviolent resistance to tyranny, 126
- Norman Borlaug, 31
- Norms, 353, 354
- North America, 69
- North Korea, 277
- North Sea oil, 158
- Northern Ireland bans fracking, 154
- Norway, 81
- Norwegian North Sea oil, 158
- Not what we intended, 252
- NPT, 302
- NSA Headquarters, 54
- NSA Power Points, 54
- NSA spying, 318
- Nuclear annihilation, 356
- Nuclear arms race, 239, 356
- Nuclear Ban Treaty, 308
- Nuclear black market, 275
- Nuclear blackmail or terrorism, 325
- Nuclear catastrophe, 246, 335
- Nuclear criminals, 263
- Nuclear darkness, 276
- Nuclear deterrence, flaws, 275
- Nuclear disarmament, 61, 278
- Nuclear environmental catastrophe, 247
- Nuclear families, 96
- Nuclear Mafia?, 264
- Nuclear nationalism, 263
- Nuclear Non-Proliferation Treaty, 302
- Nuclear power plant accidents, 246, 325
- Nuclear proliferation, 240, 325
- Nuclear terrorism, 263, 275, 277

- Nuclear tests, 244  
Nuclear threat greater today, 240  
Nuclear wasteland, 266  
Nuclear weapons, 215, 352, 353, 359  
Nuclear weapons and terrorism, 240  
Nuclear weapons are genocidal, 301  
Nuclear winter, 247  
Nuclear winter and nuclear famine, 231  
Nuremberg Principles, 50, 92, 277, 297, 348, 358  
Nuremberg Principles adopted by UN, 312  
  
Obama's decision to continue, 57  
Obama, Barack, 110, 212  
Obesity, 182  
Obsession with secrecy, 54  
Odd nucleon numbers, 259  
Offshoring of wealth, 130  
Ogallala aquifer, 32, 38  
Oil, 35  
Oil and war in Iraq, 144  
Oil producers, 158  
Oil reserves in OPEC countries, 151  
Oil sands in Canada, 154  
Oil spills, 244  
Oil-rich regions, 51, 93  
Older people marginalized, 96  
Oligarchies, 50, 92  
Oligarchs own the government, 49, 93  
Oligarchy replaces democracy, 91  
Omnicidal nuclear weapons, 278  
Omnicidal war, 230  
OPEC countries, 151  
Open diplomacy, 50, 92  
Open world economics, 352  
Operation Condor, 132, 134  
Optimum population, 29  
Organic agriculture, 27  
Orgy of external cruelty, 74  
Orinoco River, 156  
Orwell's dystopian prophesy, 50, 93  
Orwell, George, 49, 51, 93  
Orwellian name, 51  
  
Oslo Principles, 306  
Ottawa Treaty, 305  
Over-fishing, 17  
Overdrawn aquifers, 30  
Overgrazing, 32, 204  
Overgrown Military Establishments, 226  
Overuse of pesticides, 193  
Ozone layer, 248, 252, 276  
  
Pacific ecosystems contaminated, 254  
Package of broadcasts, 96, 119  
Pakistan, 277  
Pakistan's nuclear weapons, 240, 252, 263, 267  
Palestinians, 242  
Palm oil and biodiversity, 198  
Palm oil cultivation, 197  
Palm oil plantations, 197  
Palm oil production, 102  
Pan-Slavic ambitions, 252  
Paraguay, 186  
Paralyzed by vetos, 323  
Paranoia, 240  
Paris goals, 100  
Partha Dasgupta, 20  
Participation of women, 365  
Passive resistance, 355  
Patriot Act, 51  
Paul Ehrlich, 207, 248  
Pawns in the power game, 230  
Peace education, 351, 357  
Peace, culture of, 353  
Peacebuilding, 324  
Peaceful resolution of conflicts, 60  
Peacekeeping, 323  
Peanut butter and palm oil, 198  
Peat fires, 198  
Peatlands, 197  
Peierls, Rudolf, 259  
Pentagon Papers, 50, 92  
People themselves, 50, 92  
Pepper spray, 80  
Percy Bysshe Shelley, 125

- Permanently uninhabitable, 253
- Perpetual growth, 337
- Perpetual war, 228
- Persistent organic pollutants, 191
- Personal merit, 337
- Peru, 68
- Pesticides, 34
- Petrobras, 156
- Petroleum, 13, 17
- Petroleum and war, 143
- Petroleum production in Russia, 152
- Petroleum-based agriculture, 35
- Petroleum-derived fertilizers, 18, 191
- Petrov, Stanislav, 231
- Pforzheim destroyed, 237
- Phoenix Farm, 337
- Photosynthesis, 36, 368
- Pinochet's terror, 132
- Pinochet's U.S.-backed coup, 132
- Pipeline protests, 80
- Pipeline wars, 146
- Pizarro, Francisco, 68
- Planned attack on Iran, 252
- Planned lifetimes exceeded, 265
- Planning a war of aggression, 312
- Plantations, 71
- Plasma physics, 211
- Ploesti oil fields, 27
- Plutonium, 255, 275
- Poison gas, 250
- Poison gas used in Iran war, 144
- Poisoning of water supplies, 154
- Poland, 135
- Police brutality, 124
- Polish production of coal, 158
- Politeness, 287
- Political chaos, 245
- Political oppression, 365
- Political representation of women, 176
- Political repression and state terror, 134
- Politicians, next election, 160
- Politics of global warming, 97
- Politics of greed, 110
- Pollination of corn, 36
- Pollination of rice, 37
- Poor rural communities, 204
- Pope Francis I, 14, 106, 110, 345
- Pope Gregory IX, 345
- Pope Innocent III, 342
- Population, 17, 352
- Population Action International, 204
- Population and food supply, 18
- Population and forest loss, 203
- Population crash, 29, 175
- Population explosion, 353, 359
- Population growth, 13, 17, 31, 40, 352, 358
- Population growth and poverty, 186
- Population of 9 billion, 41
- Population of Norway, 53
- Population stabilization, 175, 182, 186
- Population, Resources, Environments, 207
- Populations in the tropics, 204
- Pornography of violence, 354
- Positive peace, 360
- Post-fossil-fuel era, 35
- Potentially illegal spying, 57
- Poverty, 17, 30, 122, 324, 333, 338, 352, 358
- Poverty and war, 244, 333
- Poverty-generating war, 243, 245
- Power, 348
- Power of rulers, 355
- Power struggles, 240
- Power unbalance, 361
- Power-drunk thinking, 232
- Power-worshiping culture, 364
- Power-worshiping values, 21
- Powerholders, 58
- PR offensives, 106
- Prayer of Saint Francis, 345
- Precious bodily fluids, 266
- Predatory delay, 99, 100
- Preemptive war, 147
- Preindustrial societies, 348
- Prejudice, 365
- Presalt oil, 156
- President claims right to kill, 49, 93



- President Truman, 239  
Preventable diseases, 175, 241  
Preventing an ecological apocalypse, 98  
Primary health care, 175, 177, 245  
Principles of Political Economy, 29  
PRISM, 54  
Private army, 79  
Private banks, 14, 24  
Privileged position, 245  
Production of goods, 15  
Production of natural gas, 160  
Progress, 69  
Progress of science, 361  
Prohibition of weapons production, 27  
Prohibitively dangerous reactors, 260  
Project for a New American Century, 232  
Prokaryotes, 368  
Proliferation risks, 253  
Promoting peace, 363  
Propaganda, 94, 118  
Propaganda and entertainment, 96, 119  
Property in growing cities, 14  
Property rights for women, 176  
Protecting indigenous peoples, 67  
Protecting whistleblowers, 61  
Provision of services, 15  
Psychological effects of war, 241  
Psychology, 20  
Pu-239 generated in reactors, 259  
Public education, 94  
Public health, 186, 240  
Public opinion, 94  
Pugwash Conferences, 209, 211  
Pyush Goyal, 152  
  
Qualified immunity of police, 125  
Quasi-automatic reaction, 269  
Queens College, 215  
  
Racism, 73, 306  
Racism of Cecil Rhodes, 79  
Racist theories and atrocities, 74  
Radar, 273  
  
Radiation sickness, 237, 246  
Radioactive cloud, 254  
Radioactive contamination, 215, 253  
Radioactive fallout, 240, 244  
Radioactive grass, 254  
Radioactive leaks at Hanford, 264  
Radioactive release kept secret, 265  
Radioactive wasteland, 264  
Ralph Waldo Emerson, 348  
Rapid population growth, 32  
Ratio of population to cropland, 18  
Rational arguments, 345  
Rationality, 341  
Rats feeding on corpses, 237  
Raw materials, 69  
Re-balance use of time, 27  
Real needs, 20  
Reckless irresponsibility, 317  
Recovery of the U.S., 79  
Red button, 266  
Red Cross targeted, 236  
Reforestation initiatives, 207  
Reform movement, 180  
Reformed economic system, 22, 180  
Reformed UN voting system, 326  
Refugees, 242  
Regime change, 317  
Reinvestment, 70  
Rejection of violence, 364  
Religion, 69, 354, 360  
Religious ethics, 359  
Religious leaders, 19  
Religious tolerance, 336  
Renewable energy, 18, 22, 24, 41, 245  
Renewable energy in Denmark, 82, 117  
Renewable substitutes, 41  
Replanting forests, 205  
Reporting climate change, 94  
Reprocessing, 275  
Reprocessing fuel rods, 259  
Republican voter suppression, 122  
Research, 15  
Resource curse, 139, 245, 333

- Resource wars, 245, 332
- Resource-extracting firms, 140, 245
- Resources, 23, 352
- Resources per capita, 30
- Respect for life, 364, 365
- Respect for nature, 21, 348
- Respect for the environment, 29
- Resurgent child poverty, 130
- Revelations of misconduct, 266
- Revenge and counter-revenge, 271, 277
- Reverence for Life, 342
- Revolution in nuclear nations, 263
- Rhodes' secret society, 79
- Rhodes, Cecil, 79
- Richard Florida, 15
- Richard Wilkinson's TED talk, 88
- Richard Wilkinson: Benefits of equality, 115
- Rid the world of corporate rule, 129
- Right to life, 301
- Rights of children, 176
- Rights of individuals, 364
- Rights of Mother Earth, 307
- Rights of Women, 176
- Rise like lions, 53, 94
- Rising death rates, 204
- Rising ocean levels, 30
- Robock, A., 276
- Role of the media, 94
- Romanian National Peasant Party, 26
- Rome Statute, 316
- Rome Treaty, 352, 358
- Roosevelt, Franklin D., 236
- Rotblat, Sir Joseph, 61, 212, 356
- Rothschild, Nathan, 79
- Rotterdam devastated, 236
- Roumania bans fracking, 154
- Rule of law, 363
- Rules that govern corporations, 129
- Ruling oligarchy, 318
- Rumsfeld, Donald, 145
- Run-off of water, 205
- Ruskin, 337
- Russell-Einstein Manifesto, 211
- Russia, 70, 135, 275
- Russia's reserves of oil and gas, 152
- Russian Arctic oil production, 152
- Russian petroleum industry, 152
- Saddam invaded Kuwait, 145
- Safe drinking water, 245
- Safe water, 19, 241
- Safety rules, 266
- Sahara desert, 204
- Sahel, 32, 204, 205
- Saint Francis, 342, 345
- Sakharov, Andrei, 54
- Salination, 17, 18, 32
- San Francisco Conference, 323
- Sanctions led to 500,000 deaths of children, 146
- Sanctions unjust and ineffective, 325
- Sand dunes near Beijing, 204
- Sanders, Bernie, 82, 83, 112, 116
- Sanitary water supplies, 324
- Sanitary water supply, 241
- Sanitation, 19, 175, 179
- Satyagraha, 336
- Saudi Arabia, 139
- Saving threatened species, 102
- Scarce resources, 15
- Science, 363
- Science and Survival, 215
- Science education, 353, 359
- Science of Ecology, 208
- Science-based industries, 69
- Scientific revolution, 184
- Scientists, responsibility of, 353, 359
- Sea of fire, 237
- Second law of thermodynamics, 24
- Secrecy and nuclear weapons, 61
- Secrecy versus democracy, 49, 50, 92, 93
- Secret diplomacy, 50, 53, 92
- Secret land purchases, 41
- Secret society, 79
- Secret trade deals, 59
- Secret treaties, 50, 92

- Secret weapons development, 50, 92  
Secretive Shadow Government, 54  
Secure jobs, 60  
Security Council, 296  
Security for old people, 20  
Seizing land from local people, 198  
Self-congratulatory mood, 74  
Self-defined losers, 131  
Self-reliance of villages, 338  
Sellers, Peter, 266  
Senate, 328  
Senseless rituals, 311  
September 11 attacks, 228, 365  
Sequestered carbon, 39  
Services, 15  
Several hundred million deaths, 271  
Severe droughts, 248  
Sharing time and resources, 365  
Sharp, Gene, 126  
Shelley, 53, 94, 125  
Shi'ites abandoned and slaughtered, 146  
Shock and awe, 135  
Shock therapy, 134  
Shocking statistics on inequality, 87  
Shrouded in secrecy, 59  
Siegfried Sassoon, 250  
Sierra Club, 207  
Silicon Valley, 58  
Simplicity, 348  
Singapore, 186  
Single mothers in Denmark, 82  
Sinister double meaning, 259  
Sir David Attenborough, 102  
Sir Joseph Rotblat, 212  
Size of the human economy, 17  
Slashing and burning, 198  
Slaughter of civilians, 236  
Slavery, 175, 180  
Slums, 186  
Small agricultural communities, 337  
Small hydro, 24  
Smallpox, 67, 69, 303  
Smith, Martin, 58  
Snowden's revelations, 49, 51, 93  
Snowden, Edward, 49, 53, 57, 58, 93  
Soap and palm oil, 198  
Social competition, 20, 339  
Social conscience, 60, 129, 180, 345  
Social customs, 18  
Social Darwinism, 79  
Social democracy, 131  
Social destructiveness of corporations, 129  
Social disruption by war, 241  
Social ethics, 21  
Social impact of science, 353, 359  
Social inequality, 34  
Social insects, 23  
Social reforms, 19  
Social services, 14  
Social services in Denmark, 81  
Social status of consumers, 20  
Social systems in Scandinavia, 81, 83, 116  
Social values and consumption, 20  
Socialism, 82  
Societal verification, 61  
Sociology, 20  
Soil erosion, 32, 40, 204, 205  
Solar energy, 24  
Solidarity, 364, 365  
Sources and sinks, 28  
South Africa, 135, 335  
South Africa's nuclear weapons, 263  
South America, 49, 69, 93  
Southeast Asia, 197  
Sovereign states, 243  
Soviet atomic bomb, 239  
Spain bans fracking, 154  
Spinning wheel, 338  
Sri Lanka Tsunami, 135  
Stable future, 240  
Staggering ignorance of Trump, 106  
Standing Rock, 81  
Stanford University, 207, 211  
Stanislav Petrov, 231  
Stanley, Henry Morton, 69  
Starvation, 34, 73, 241, 242, 251

- Starvation and disease, 324
- Starvation of children, 19
- State Militia, 361
- State Secrets Act, 254
- State-provided elderly care, 175, 179
- State-sponsored terror, 232
- Statistical probability, 23
- Stauning, Thorvald, 83
- Steady-state economics, 28
- Steel, 70
- Stern Report, 37, 40
- Stockbrokers, 17
- Stockholm Convention, 191
- Stop procrastinating, 110
- Stop the expansion of extraction, 100
- Stop Violence Against Women, 182
- Storms of My Grandchildren, 113
- Straits of Hormuz, 267
- Strength to Love, 356
- Strip-searched, 81
- Stronger bargaining power, 245
- Strontium 90, 215
- Structural unemployment, 131
- Submarginal land, 32
- Subnational organizations, 263
- Subprime mortgage crisis, 13
- Subsidiarity, 329
- Subsidized nuclear power, 255
- Success of federations, 327
- Suffering caused by poverty, 245
- Suffering caused by war, 245
- Suicide of soldiers, 311
- Summer water supplies, 30, 38
- Superbombs, 239
- Superorganisms, 23
- Surrendering moral responsibility, 311
- Sustainability, 13, 352
- Sustainable global society, 17
- Sustainable green society, 82
- Sustainable limits, 17, 29
- Swadeshi movement, 338, 339
- Swiss federation, 327
- Switzerland, 358
- Switzerland bans fracking, 154
- Syatematic murder, 79
- Sykes-Picot Agreement, 53
- Symbols of power, 94
- Synthetic fibers, 18
- System of despotism, 79
- Taxation, power of, 360
- Teacher's training colleges, 359
- Technical defects, 273
- Technology, 17, 21, 69
- Technology, transfer of, 186
- TED Talks, 88
- Television part of education, 94
- Television underestimated, 94
- Temperature and agriculture, 36
- Temperature inversion, 248
- Temple Massacre, 68
- Terrorism, 236
- Terrorism risks, 253
- Terrorism, nuclear, 275
- Textbooks, 363, 365
- Thatcher, Margaret, 135
- The 11th Hour, 110
- The Big Picture, 112
- The Case for Optimism (TED), 102
- The Cassandra Conference, 208
- The Closing Circle, 215
- The Guardian, 94, 98, 102, 108, 130
- The jaws of power, 91
- The Last Hours of Humanity, 112
- The Population Bomb, 207
- The power of truth, 125, 335
- The Road to Serfdom, 131
- The Shock Doctrine, 134
- The Silent Spring, 193
- The Telegraph, 79
- The world's 10 richest billionaires, 91
- Theme days, 360
- Theology studies, 359
- Thermonuclear reactions, 239
- Thermonuclear war, 18, 116, 230
- Thermonuclear weapons, 246, 287

- Thom Hartmann, 22, 112
- Thoreau's Journal, 349
- Thoreau, Henry David, 125
- Thorkil Kristensen, 15
- Thorstein Veblen, 20
- Threat of nuclear war, 246
- Threats and costs of war, 240
- Thunberg, Greta, 106
- Thyroid cancer, 254
- Tidal energy, 24
- Tim Jackson, 22
- Time Magazine, 216
- Tipping point, 22
- To control Soviet Union, 50, 92
- Tobin tax, 296, 321, 327
- Tobin, James, 296, 321
- Tokyo firebombed, 237
- Tokyo, firebombing, 271
- Tolerance, 364, 365
- Tolstoy, 125, 335, 337, 348
- Tolstoy Farm, 337
- Tolstoy, Count Leo, 122, 125
- Tools of their tools, 349
- Toon, O., 276
- Top Gear, 100
- Torture, 58, 73, 79, 134
- Torture methods used by Pinochet, 133
- Torture of tens of thousands, 132
- Total destruction of Hamburg, 236
- Traces of thermite in 9/11 ruins, 228
- Tractors, 18
- Tradition of nonviolent resistance, 125
- Tradition of sharing, 21
- Traditional agricultural society, 21
- Traditional agriculture, 35
- Traditional constraints, 21
- Traditional societies, 94
- Traditional way of life, 21
- Tragically self-contradictory, 253
- Training of soldiers, 309
- Trans Pacific Partnership, 59
- Transportation links, 23
- Transportation of grain, 34
- Tree-killing spree, 198
- Tree-cutting for firewood, 204
- Trench warfare, 250
- Tribal consultation, 81
- Tribalism, 311
- Triggered by a madman, 267
- Triggered by error, 269
- Triumphant denialism, 100
- Trump has told more than 20,000 lies, 120
- Trump, Donald, 81, 129, 130
- Truth, 125, 335
- TTAPS Study, 247
- TTIP, 59
- Tuberculosis, 352
- Turco, R., 276
- Two trillion dollars yearly for arms, 225
- Typhoid fever, 186
- U-235, 255
- Ukraine intervention, 318
- Ultracentrifuges, 259
- UN Development Programme, 321
- UN General Assembly, 271, 272, 365
- UN television network?, 354
- Unauthorized act, 275
- Undemocratic government, 139
- Undercover operations, 50, 92
- Undernourished children, 19
- Understanding between cultures, 365
- Understanding between religions, 365
- Unearned profits, 14
- Unemployment, 17, 19, 186, 338
- Unenriched uranium, 246
- UNEP, 40
- Unequal distribution of incomes, 70, 88
- UNESCO, 295, 321, 363–365
- UNESCO Courier, 364
- Unfair agreements, 245
- Unfair competition, 180
- UNICEF, 182, 364
- Unidirectional transformation, 27
- Unilateral acts of kindness, 335
- Union of Concerned Scientists, 197

- United Nations, 60, 70
- United Nations Charter, 243, 277, 294, 352, 358, 363
- United Nations Charter reform, 316
- United Nations reform, 329
- United States, 69, 70, 275, 358
- United States Constitution, 290, 319
- United States of Secrets, 57
- Universal Declaration of Human Rights, 299
- Universal human brotherhood, 359
- Universal primary health care, 204
- University education free in Denmark, 81
- University of Chicago, 134
- Unknowing human guinea pigs, 266
- Unlimited industrial growth, 15
- Unnecessary material goods, 348
- Unspeakable working conditions, 180
- Unsustainable lifestyles in media, 100
- Unsustainable use of groundwater, 37
- Unto This Last, 337
- Uranium-235, 246
- Urban growth, 40
- Urbanization, 32, 186
- Urinating on Afghan corpses, 228
- US Department of Energy, 154
- US Federal Government, 361
- US interventions in other nations, 318
- User-owned banks, 25
- USSR's civilian deaths, 251
- Vaccination, 175
- Values, 354
- Values for the future, 21
- Values from the mass media, 96
- Values, transmission of, 353
- Van Allen, James, 113
- Vanishing resources, 17
- Variety, 57
- Venezuela, 139
- Venezuela's Belt of Tar, 156
- Veto power, 296
- Vice, 122
- Viceroy Lord Lytton, 74
- Victims of war, 324
- Video games, 353
- Vietnam, 244
- Vietnam War, 50, 92, 356
- Village life, 338
- Violation of democracy, 59
- Violation of democratic principles, 59
- Violence, 339, 355, 365
- Violence in mass media, 354
- Violence, culture of, 353
- Violence, pornography of, 354
- Violence, rejection of, 364
- Violent death, 242
- Voluntary poverty and humility, 338
- Von Sponeck, Hans Christof, 316
- Votes for women, 176
- Voting system of the UN, 321
- Voyage of the Beagle, 67
- Walden, 348
- Wall Street, 60
- War, 301, 352, 358
- War and mass media, 354
- War as an economic institution, 225
- War crimes, 305, 313, 316
- War is madness, 225
- War on Terror, 120, 228
- War-free world, 360
- War-related industries, 325
- Warm human contacts, 337
- Warren Buffet, 115
- Wars block development, 245
- Washington, George, 226
- Wassely Leontief, 26
- Wasserman, Harvey, 254
- Waste products, 23
- Wastefulness, 352, 358
- Water purification facilities, 243
- Water supplies, 20, 23
- Water tables, 32
- Water, rapid run-off, 205
- Waterborne diseases, 179, 244
- Wave energy, 24

- We are many, 53, 94  
We want to protect you, 51, 61, 93  
We will never stop fighting, 108  
Wealth, 348  
Wealth, Virtual Wealth and Debt, 25  
Wealthy countries, 245  
Weaponry, 70  
Weapons destabilize regions, 245  
Weapons-usable plutonium, 264  
Weaving machines, 69  
Western hegemony, 51, 93  
Western society, 21  
Wheeler, John A., 259  
Whistleblowers, 49, 93  
Wholesale electronic spying, 49, 93  
Widespread general war, 267  
Wild vegetation, 40  
Wilfred Owen, 250  
Wilkinson, Ellen, 363  
Wilkinson, Richard, 88  
Wilkinson, Richard: Benefits of equality, 115  
Wind energy, 24  
Wind turbines, 82  
Winners and losers, 135  
Winning slowly means losing, 100  
Winter heating of homes, 152  
Wisdom of older societies, 21  
Without knowledge or consent, 54  
Wolfowitz Doctrine, 232  
Women and children, 236, 237  
Women happy to have careers, 82  
Women held as hostages, 73  
Women in medicine, 176  
Women targets of sexual abuse, 134  
Women's right to vote, 176  
Women, education for, 187  
Women, higher status, 19  
Women, higher status for, 187  
Women, participation of, 365  
Women, political equality, 19  
Workaholic habits, 27  
Worked to death, 78  
Workers' rights, 329  
Working mothers in Denmark, 81  
World arms spending, 241  
World Association of World Federalists, 321  
World citizenship, 351, 357  
World Constitutional Convention, 319  
World domination, 79  
World federal authority, 361  
World Federalism, 318  
World food supply, 40  
World government, 360  
World Happiness Report, 81  
World Health Organization, 178, 179, 241, 295, 321  
World trade, 69  
World Trade Center, 51, 264, 277  
World under British rule, 79  
World War I, 50, 53, 92, 236, 251, 253  
World War II, 236, 243, 247, 251, 319, 323  
World War III, 267  
World wealth levels, 89  
World's oil reserves, 156  
World-destroying war, 252, 253  
Worldwatch Institute, 37  
Worse than wasted, 245  
WSEC/PBS Springfield, 57  
Yokohama firebombed, 237  
Young population, 186  
YouTube, 100  
Zanzibar, 69  
Zaragoza, Federico Mayor, 364