

# FASCISM, THEN AND NOW

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# INTRODUCTION<sup>1</sup>

## **Parallels between fascism then and now**

There are many extremely worrying similarities between fascism in Europe in the 1930's and the neo-fascism that we can see around us today. For example Donald Trump, according to his first wife, kept a book of Hitler's speeches beside his bedside, and studied it thoroughly. Today, he imitates Hitler's rhetoric, as is discussed in Appendix A of this book. The white supremacist supporters of Trump have revived Nazi ideology, language and symbols. Neo-fascism and Neo-Nazism are not confined to the United States, but exist in many countries.

## **Why was Germany allowed to rearm during the period before World War II?**

Chapters 1 and 2 of this book review the history of Hitler's rise to power, and discuss the question of why Germany was allowed to rearm during the period prior to the Second World War. The answer that emerges is the elites and decision-makers in Britain regarded Hitler as a "bulwark against communism". A revolution had occurred in Russia, and they feared that it might spread elsewhere. What members of the the upper class feared most was the loss of their own privileged positions.

Are there parallels today? In the United States, members of the Republican Party are often relatively wealthy people who fear that socialism would endanger their privileged financial position. Like Hitler and Mussolini, Donald Trump uses rhetoric addressed to the mob to guarantee the privileges of the elite. In return, he is supported by wealthy patrons and corporate oligarchs. Like Hitler, Trump appeals to racism and ultranationalism to gain support.

## **The climate emergency**

Today human civilization and the biosphere are faced with two existential dangers. The first of these is the danger that the activities of the constantly-

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<sup>1</sup>This book makes use of articles and book chapters that I have previously written on subjects related to the history of fascism, but a great deal of new material has been added.

increasing global population will lead to uncontrollable and catastrophic climate change. The Intergovernmental Panel on Climate Change has warned that greenhouse gas emissions must be cut in half within 12 years and reduced to net zero by 2050 if we are to avoid the most disastrous effects of climate change. However, measurements at the Mount Loa Observatory in Hawaii show that atmospheric CO<sub>2</sub> concentrations are continuing to increase, unaffected by the warnings of the scientific community.

One of the major problems in mobilizing political will to take action is a contrast between two time scales: Rapid and resolute action is needed immediately, but the worst effects of rising global temperatures and sea levels lie in the long-term future. Hopefully the wildfires burning in northern Russia, which have produced a blanket of smoke the size of the European Union, will be enough to wake us up. As 16-year-old climate activist Greta Thunberg says, “Our house is on fire!”.

In the United States, Donald Trump maintains that climate change is a hoax. He has withdrawn the US from the Paris Agreement, sabotaged the Environmental Protection Agency, fired and insulted scientists, and enacted numerous measures supporting the fossil fuel giants. The greed of these enormous corporations weighs present profits so highly as to disregard the threatened collapse of civilization in a future burning world. Trump is their agent.

The Green New Deal concept takes its inspiration from the measures that Franklin D. Roosevelt used to bring the United States out of the Great Depression in the 1930’s. In Roosevelt’s New Deal, the Federal government initiated massive programs to provide the US with much-needed infrastructure, and these programs simultaneously addressed unemployment by creating jobs. Similarly, the Green New Deal would support the creation of the infrastructure needed for a complete transition to renewable energy. This large-scale project would simultaneously provide jobs.

The newly-elected congresswoman, Alexandria Ocasio-Cortez, has been one of the most active and eloquent leaders promoting the Green New Deal. She was one of the four non-white congresswomen recently demonized by Donald Trump, who tweeted, “Why don’t they go back and help fix the totally broken and crime infested places from which they came?” It was another example of the racism that Trump’s supporters love. In fact, three of the four, including Ocasio-Cortez, were born in the United States.

The fact that leaders of the US Republican Party have adopted a stance of climate change denial and support for the fossil fuel industries is the reason

that Professor Noam Chomsky has called the party “the most dangerous organization in history”.

## **The threat of an all-destroying thermonuclear war**

The second existential threat facing human civilization and the biosphere is the threat of a thermonuclear war. Such a war might produce wide-spread famine because of the nuclear winter effect, and it could make large regions of the world permanently uninhabitable through radioactive contamination.

Despite the Treaty on the Prohibition of Nuclear Weapons which was passed by a large majority vote at the UN General Assembly on 7 July, 2017, the nuclear weapon states have not changed their world-threatening policies. They continue to consecrate trillions of dollars to the modernization and maintenance of nuclear weapons. They continue to rely on the doctrine of nuclear deterrence, or “mutually assured destruction”, whose very appropriate acronym is MAD.

The concepts of nuclear deterrence and “massive retaliation” have several flaws. First of all, the obliteration of entire populations, including old people, young adults, children and babies, is genocide, and is forbidden not only by international law, but also by the ethics of all major religions. Secondly, a thermonuclear war could occur through accident, through mechanical failure or human error, or through the uncontrollable escalation of a conflict. There are very many instances when this type of disaster has been narrowly avoided. We cannot continue to be lucky forever. Thirdly, existing nuclear weapons could fall into the hands of terrorists or organized criminals.

Finally, we must remember that even if the danger that a catastrophic nuclear war will occur in any given year is small, over a long period of time the danger builds up into a certainty. If the dangers for any given year are 1%, 2% or 3%, the probabilities of survival until 2100 are respectively 43%, 18% and 8%. If the period for which we must survive is extended to the year 2200, the chances of survival in the three cases are respectively .16%, .025%, and .0039%.

Donald Trump’s withdrawal from the INF Treaty, and his nuclear threats against Iran and North Korea, have increased the danger of a world-destroying nuclear war.

## **Betrayal by the mainstream media**

Humanity is being betrayed by the mainstream media (with a few notable exceptions such as *The Guardian*). Our predicament 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.

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.

## **The importance of alternative media**

The failure of the mass media to mobilize us to action against neo-fascism, decay of democracy, and the existential threats of uncontrollable climate change and thermonuclear war, increases the importance of the alternative media. We owe a debt of gratitude to the editors of independent on-line news websites, who give us news that has not been distorted by corporate greed. We owe them not only thanks, but also financial support.



# Chapter 1

## GERMAN NATIONALISM

### 1.1 From tribalism to nationalism

70,000 years ago, our hunter-gatherer ancestors lived in tribes. Loyalty to the tribe was natural for our ancestors, as was collective work on tribal projects. Today, at the start of the 21st century, we live in nation-states to which we feel emotions of loyalty very similar to the tribal emotions of our ancestors.

The enlargement of the fundamental political and social unit has been made necessary and possible by improved transportation and communication, and by changes in the techniques of warfare. In Europe, for example, the introduction of canons in warfare made it possible to destroy castles, and thus the power of central monarchs was increased at the expense of feudal barons. At the same time, improved roads made merchants wish to trade freely over larger areas. Printing allowed larger groups of people to read the same books and newspapers, and thus to experience the same emotions. Therefore the size of the geographical unit over which it was possible to establish social and political cohesion became enlarged.

The tragedy of our present situation is that the same forces that made the nation-state replace the tribe as the fundamental political and social unit have continued to operate with constantly-increasing intensity. For this reason, the totally sovereign nation-state has become a dangerous anachronism. Although the world now functions as a single unit because of modern technology, its political structure is based on fragments, on absolutely-sovereign nation states - large compared to tribes, but too small for present-day technology, since they do not include all of mankind. Gross injustices mar today's global economic interdependence, and because of the development of thermonuclear weapons, the continued existence of civilization is threatened by the anarchy that exists today at the international level.

In this chapter, we will discuss nationalism in Europe, and especially the conflicts between absolutely sovereign nation-states that led to the two World Wars. However, it is important to remember that parallel to this story, run others, equally tragic - conflicts in the Middle East, the Vietnam War, the Cuban Missile Crisis, conflicts between India and

Pakistan, the Korean War, the two Gulf Wars, and so on. In all of these tragedies, the root the trouble is that international interdependence exists in practice because of modern technology, but our political institutions, emotions and outlook are at the stunted level of the absolutely sovereign nation-state. Although we focus here on German nationalism as an example, and although historically it had terrible consequences, it is not a danger today. Germany is now one of the world's most peaceful and responsible countries, and the threats to world peace now come from nationalism outside Europe.

## 1.2 Nationalism in Europe

There is no doubt that the founders of nationalism in Europe were idealists; but the movement that they created has already killed more than sixty million people in two world wars, and today it contributes to the threat of a catastrophic third world war.

Nationalism in Europe is an outgrowth of the Enlightenment, the French Revolution, and the Romantic Movement. According to the philosophy of the Enlightenment and the ideas of the French Revolution, no government is legitimate unless it derives its power from the will of the people. Speaking to the Convention of 1792, Danton proclaimed that “by sending us here as deputies, the French Nation has brought into being a grand committee for the general insurrection of peoples.”

Since all political power was now believed to be vested in the “nation”, the question of national identity suddenly became acutely important. France itself was a conglomeration of peoples - Normans, Bretons, Provencaux, Burgundians, Flemings, Germans, Basques, and Catalans - but these peoples had been united under a strong central government since the middle ages, and by the time of the French Revolution it was easy for them to think of themselves as a “nation”. However, what we now call Germany did not exist. There was only a collection of small feudal principalities, in some of which the most common language was German.

The early political unity of France enabled French culture to dominate Europe during the 17th and 18th centuries. Frederick the Great of Prussia and his court spoke and wrote in French. Frederick himself regarded German as a language of ignorant peasants, and on the rare occasions when he tried to speak or write in German, the result was almost incomprehensible. The same was true in the courts of Brandenburg, Saxony, Pomerania, etc. Each of them was a small-scale Versailles. Below the French-speaking aristocracy was a German-speaking middle class and a German or Slavic-speaking peasantry.

The creators of the nationalist movement in Germany were young middle-class German-speaking students and theologians who felt frustrated and stifled by the narrow *kleinstädtisch* provincial atmosphere of the small principalities in which they lived. They also felt frustrated because their talents were completely ignored by the French-speaking aristocracy. This was the situation when the armies of Napoleon marched across Europe, easily defeating and humiliating both Prussia and Austria. The young German-speaking students asked themselves what it was that the French had that they did not have.

The answer was not hard to find. What the French had was a sense of national identity.

In fact, the French Revolution had unleashed long-dormant tribal instincts in the common people of France. It was the fanatical support of the Marseillaise-singing masses that made the French armies invincible. The founders of the German nationalist movement concluded that if they were ever to have a chance of defeating France, they would have to inspire the same fanaticism in their own peoples. They would have to touch the same almost-forgotten cord of human nature that the French Revolution had touched.

The common soldiers who fought in the wars of Europe in the first part of the 18th century were not emotionally involved. They were recruited from the lowest ranks of society, and they joined the army of a king or prince for the sake of money. All this was changed by the French Revolution. In June, 1792, the French Legislative Assembly decreed that a Fatherland Alter be erected in each commune with the inscription, "The citizen is born, lives and dies for *la patrie*." The idea of a "Fatherland Alter" clearly demonstrates the quasi-religious nature of French nationalism.

The soldiers in Napoleon's army were not fighting for the sake of money, but for an ideal that they felt to be larger and more important than themselves - Republicanism and the glory of France. The masses, who for so long had been outside of the politics of a larger world, and who had been emotionally involved only in the affairs of their own village, were now fully aroused to large-scale political action. The surge of nationalist feeling in France was tribalism on an enormous scale - tribalism amplified and orchestrated by new means of mass communication.

This was the phenomenon with which the German nationalists felt they had to contend.

One of the founders of the German nationalist movement was Johan Gottlieb Fichte (1762-1814), a follower of the philosopher Immanuel Kant (1724-1804). Besides rejecting objective criteria for morality, Fichte denied the value of the individual. According to him, the individual is nothing and the state is everything. Denying the value of the individual, Fichte compared the state to an organism of which the individual is a part:

"In a product of nature", Fichte wrote, "no part is what it is but through its relation to the whole, and it would absolutely not be what it is apart from this relation; more, if it had no organic relation at all, it would be absolutely nothing, since without reciprocity in action between organic forces maintaining one another in equilibrium, no form would subsist... Similarly, man obtains a determinate position in the scheme of things and a fixity in nature only through his civil association... Between the isolated man and the citizen there is the same relation as between raw and organized matter... In an organized body, each part continuously maintains the whole, and in maintaining it, maintains itself also. Similarly the citizen with regard to the State."

Another post-Kantian, Adam Müller (1779-1829) wrote that "the state is the intimate association of all physical and spiritual needs of the whole nation into one great, energetic, infinitely active and living whole... the totality of human affairs... If we exclude for ever from this association even the most unimportant part of a human being, if we separate private life from public life even at one point, then we no longer perceive the State as a phenomenon of life and as an idea."

The doctrine that Adam Müller sets forth in this passage is what we now call Totalitarianism, i.e. the belief that the state ought to encompass "the totality of human affairs".

This doctrine is the opposite of the Liberal belief that the individual is all-important and that the role of the state ought to be as small as possible.

Fichte maintains that “a State which constantly seeks to increase its internal strength is forced to desire the gradual abolition of all favoritisms, and the establishment of equal rights for all citizens, in order that it, the State itself, may enter upon its own true right - to apply the whole surplus power of all its citizens without exception to the furtherance of its own purposes... Internal peace, and the condition of affairs in which everyone may by diligence earn his daily bread... is only a means, a condition and framework for what love of Fatherland really wants to bring about, namely that the Eternal and the Divine may blossom in the world and never cease to become more pure, perfect and excellent.”

Fichte proposed a new system of education which would abolish the individual will and teach individuals to become subservient to the will of the state. “The new education must consist essentially in this”, Fichte wrote, “that it completely destroys the will in the soil that it undertakes to cultivate... If you want to influence a man at all, you must do more than merely talk to him; you must fashion him, and fashion him, and fashion him in such a way that he simply cannot will otherwise than you wish him to will.”

The German nation did not exist except in the minds of the nationalists. Groups of people speaking various dialects of German were scattered throughout central and eastern Europe. In many places, the German-speaking population was a minority. To bring together these scattered German-speaking groups would require, in many cases, the conquest and subjugation of Slavic majorities; but the quasi-religious fervor of the nationalists was such that aggression took on the appearance of a “holy war”. Fichte believed that war between states introduces “a living and progressive principle into history”. By war he did not mean a decorous limited war of the type fought in the 18th century, but “...a true and proper war - *a war of subjugation!*”

The German nationalist movement was not only quasi-religious in its tone; it also borrowed psychological techniques from religion. It aroused the emotions of the masses to large-scale political activity by the use of semi-religious political liturgy, involving myth, symbolism, and festivals. In his book “German Society” (1814), Arndt advocated the celebration of “holy festivals”. For example, he thought that the celebration of the pagan festival of the summer solstice could be combined with a celebration of the victory over Napoleon at the Battle of Leipzig.

Arndt believed that special attention should be given to commemoration of the “noble dead” of Germany’s wars for, as he said, “...here history enters life, and life becomes part of history”. Arndt advocated a combination of Christian and pagan symbolism. The festivals should begin with prayers and a church service; but in addition, the Oak leaves and the sacred flame of ancient pagan tradition were to play a part.

In 1815, many of Arndt’s suggestions were followed in the celebration of the anniversary of the Battle of Leipzig. This festival clearly exhibited a mixing of secular and Christian elements to form a national cult. Men and women decorated with oak leaves made pilgrimages to the tops of mountains, where they were addressed by priests speaking in front of alters on which burned “the sacred flame of Germany’s salvation”. This borrowing of psychological techniques from religion was deliberate, and it was retained by the Nazi Party



Figure 1.1: Celebration of the “German May” at Hambrach Castle

when the latter adopted the methods of the early German nationalists. The Nazi mass rallies retained the order and form of Protestant liturgy, including hymns, confessions of faith, and responses between the leader and the congregation.<sup>1</sup>

In 1832, the first mass meeting in German history took place, when 32,000 men and women gathered to celebrate the “German May”. Singing songs, wearing black, red, and gold emblems, and carrying flags, they marched to Hambrach Castle, where they were addressed by their leaders.

By the 1860’s the festivals celebrating the cult of nationalism had acquired a definite form. Processions through a town, involving elaborate national symbolism, were followed by unison singing by men’s choirs, patriotic plays, displays by gymnasts and sharpshooters, and sporting events. The male choirs, gymnasts and sharpshooters were required to wear uniforms; and the others attending the festivals wore oak leaves in their caps. The cohesion of the crowd was achieved not only by uniformity of dress, but also by the space in which the crowd was contained. Arndt advocated the use of a “sacred space” for mass meetings. The idea of the “sacred space” was taken from Stonehenge, which was seen by the nationalists as a typical ancient Germanic meeting place. The Nazi art historian Hubert Schrade wrote: “The space which urges us to join the community of the *Volk* is of greater importance than the figure which is meant to represent the Fatherland.”

Dramas were also used to promote a feeling of cohesion and national identity. An example of this type of propagandist drama is Kleist’s play, “Hermann’s Battle”, (1808). The play deals with a Germanic chieftain who, in order to rally the tribes against the

<sup>1</sup> The Nazi sacred symbols and the concept of the swastika or “gamma cross”, the eagle, the red/black/white color scheme, the ancient Nordic runes (one of which became the symbol of the SS), were all adopted from esoteric traditions going back centuries, shared by Brahmins, Scottish Masons, Rosicrucians, the Knights Templars and other esoteric societies.

Romans, sends his own men, disguised as Roman soldiers, to commit atrocities in the neighboring German villages. At one point in the play, Hermann is told of a Roman soldier who risked his own life to save a German child in a burning house. Hearing this report, Hermann exclaims, "May he be cursed if he has done this! He has for a moment made my heart disloyal; he has made me for a moment betray the august cause of Germany!... I was counting, by all the gods of revenge, on fire, loot, violence, murder, and all the horrors of unbridled war! What need have I of Latins who use me well?"

At another point in the play, Hermann's wife, Thusnelda, tempts a Roman Legate into a romantic meeting in a garden. Instead of finding Thusnelda, the Legate finds himself locked in the garden with a starved and savage she-bear. Standing outside the gate, Thusnelda urges the Legate to make love to the she-bear, and, as the bear tears him to pieces, she faints with pleasure.

We have primarily been discussing the growth of German nationalism, but very similar movements developed in other countries throughout Europe and throughout the world. Characteristic for all these movements was the growth of state power, and the development of a reverential, quasi-religious, attitude towards the state. Patriotism became "a sacred duty." According to Georg Wilhelm Fredrich Hegel, "The existence of the State is the movement of God in the world. It is the ultimate power on earth; it is its own end and object. It is an ultimate end that has absolute rights against the individual."

Nationalism in England (as in Germany) was to a large extent a defensive response against French nationalism. At the end of the 18th century, the liberal ideas of the Enlightenment were widespread in England. There was much sympathy in England with the aims of the French Revolution, and a similar revolution almost took place in England. However, when Napoleon landed an army in Ireland and threatened to invade England, there was a strong reaction towards national self-defense. The war against France gave impetus to nationalism in England, and military heroes like Wellington and Nelson became objects of quasi-religious worship. British nationalism later found an outlet in colonialism.

Italy, like Germany, had been a collection of small principalities, but as a reaction to the other nationalist movements sweeping across Europe, a movement for a united Italy developed. The conflicts between the various nationalist movements of Europe produced the frightful world wars of the 20th century. Indeed, the shot that signaled the outbreak of World War I was fired by a Serbian nationalist.

War did not seem especially evil to the 18th and 19th century nationalists because technology had not yet given humanity the terrible weapons of the 20th century. In the 19th century, the fatal combination of space-age science and stone-age politics still lay in the future. However, even in 1834, the German writer Heinrich Heine was perceptive enough to see the threat:

"There will be", Heine wrote, "Kantians forthcoming who, in the world to come, will know nothing of reverence for aught, and who will ravage without mercy, and riot with sword and axe through the soil of all European life to dig out the last root of the past. There will be well-weaponed Fichtians upon the ground, who in the fanaticism of the Will are not restrained by fear or self-advantage, for they live in the Spirit."



Figure 1.2: Otto von Bismarck

### 1.3 The two world wars

In 1870, the fiercely nationalistic Prussian Chancellor, Otto von Bismarck, won revenge for the humiliations which his country had suffered under Napoleon Bonaparte. In a lightning campaign, Prussia's modern army overran France and took Emperor Napoleon III prisoner. The victorious Prussians demanded from France not only the payment of a huge sum of money - five billion francs - but also the annexation of the French provinces of Alsace and Lorraine. In 1871, Kaiser Wilhelm I was proclaimed Emperor of all Germany in the Hall of Mirrors at Versailles. The dreams of the German nationalists had been realized! The small German-speaking states of central Europe were now united into a powerful nation dominated by Prussia.

Bismarck had provoked a number of wars in order to achieve his aim - the unification of Germany under Prussia; but after 1871 he strove for peace, fearing that war would harm his new creation. "I am bored", Bismarck remarked to his friends, "The great things are done. The German Reich is made."

In order to preserve the status quo in Europe, Bismarck now made alliances not only with Austria-Hungary and Italy, but also with Russia. To make alliances with both Austria-Hungary and Russia required considerable diplomatic skill, since the two empires were enemies - rivals for influence in the Balkan Peninsula. Several small Balkan states had broken away from the decaying Turkish Empire. Both the Hapsburg Emperors and the Romanoff Czars were anxious to dominate these small states. However, nationalist emotions were

even more frenzied in the Balkans than they were elsewhere in Europe. Nationalism was a cause for which 19th century Europeans were willing to kill each other, just as three centuries earlier they had been willing to kill each other over their religious differences.

Serbia was an independent state, but the fanatical Serbian nationalists were far from satisfied. Their real aim was to create an independent Pan-Serbia (or Yugoslavia) which would include all the Slavic parts of Austria-Hungary. Thus, at the turn of the century, the Balkans were a trouble spot, much as the Middle East is a trouble spot today.

Kaiser Wilhelm I was a stable monarch, but in 1888 he died and the German throne passed to his son, Frederick III, who was incurably ill with cancer of the throat. After reigning only 90 days, Frederick also died, and his 29 year old son became the new German Emperor - Kaiser Wilhelm II. Wilhelm II had been born with a withered arm, and as a boy he had been constantly told that he must become a great warrior. His adult behavior sometimes showed tendencies towards both paranoia and megalomania.

In 1890, Wilhelm dismissed Otto von Bismark ("dropping the pilot"). Bismark was now on the side of peace, and he might have guided Germany safely through the troubled waters of European politics if he had been allowed to continue; but Wilhelm wanted to play Bismark himself.

Wilhelm's first act was to break off Germany's alliance with Russia. Czar Alexander III, against his principles, then formed an alliance with republican France. Realizing that he had blundered, Wilhelm tried to patch up relations with the Czar, but it was too late. Europe was now divided into two armed camps - Germany, Austria-Hungary and Italy, opposed by Russia and France.

Wilhelm's government then began to build a huge modern navy, much to the consternation of the English. The government of England felt that it was necessary for their country to have control of the sea, since England was a densely-populated island, dependent on imports of food. It was not only with respect to naval power that England felt threatened: After being united in 1871, Germany had undergone an industrial revolution; and German industries were pouring out steel and high-quality manufactured goods that threatened England's dominance of world trade. Commercial and naval competition with the rising German Empire drove England into an informal alliance with Russia and France - the Triple Entente.

Meanwhile the situation in the Balkans became increasingly troubled, and at the end of July, 1914, the Austrian Foreign Minister, Count Brechtold, used the assassination of Archduke Francis Ferdinand and his wife as a pretext for crushing the Serbian Pan-Slavic movement. Russia mobilized against Austria in defense of the Serbs, and the Austrian government interpreted the mobilization as a declaration of war. Germany was linked to Austria by an alliance, while France was linked to Russia. In this way, both France and Russia were drawn into the conflict.

On August 2, Wilhelm demanded free passage of German troops through Belgium. The Belgians refused. They gave warning that an invasion would be resisted, and they appealed to England for support of their country's neutrality. On August 4, Britain sent an ultimatum to the Kaiser: Unless he halted the invasion of Belgium, Britain would enter the war. The invasion of Belgium rolled on. It was now too late to stop the great death-





machine, and as it gained momentum, Sir Edward Grey spoke the sad and prophetic words. “The lamps are going out all over Europe; we shall not see them lit again in our lifetime.”

None of the people who started the First World War had the slightest idea what it would be like. The armies of Europe were dominated by the old feudal landowning class, whose warlike traditions were rooted in the Middle Ages. The counts and barons who still ruled Europe’s diplomatic and military establishments knew how to drink champaign, dance elegantly, ride horses, and seduce women. They pranced off to war in high spirits, the gold on their colorful uniforms glittering in the sunshine, full of expectations of romantic cavalry charges, kisses stolen from pretty girls in captured villages, decorations, glory and promotion, like characters in “The Chocolate Soldier” or “Die Fledermaus”. The romantic dreams of glory of every small boy who ever played with toy soldiers were about to become a thrilling reality!

But the war, when it came, was not like that. Technology had taken over. The railroads, the telegraph, high explosives and the machine gun had changed everything. The opposing armies, called up by means of the telegraph and massed by means of the railroads, were the largest ever assembled up to that time in the history of the world. In France alone, between August 2 and August 18, 1914, the railway system transported 3,781,000 people under military orders. Across Europe, the railways hurled more than six million highly armed men into collision with each other. Nothing on that scale had ever happened before, and no one had any idea of what it would be like.

At first the Schlieffen Plan seemed to be working perfectly. When Kaiser Wilhelm had sent his troops into battle, he had told them: “You will be home before the leaves are off the trees”, and at first it seemed that his prediction would be fulfilled. However, the machine gun had changed the character of war. Attacking infantry could be cut down in heaps by defending machine gunners. The war came to a stalemate, since defense had an



Figure 1.3: World War I casualties.

advantage over attack.

On the western front, the opposing armies dug lines of trenches stretching from the Atlantic to the Swiss border. The two lines of trenches were separated by a tangled mass of barbed wire. Periodically the generals on one side or the other would order their armies to break through the opposing line. They would bring forward several thousand artillery pieces, fire a million or so high explosive shells to cut the barbed wire and to kill as many as possible of the defenders, and then order their men to attack. The soldiers had to climb out of the trenches and struggle forward into the smoke. There was nothing else for them to do. If they disobeyed orders, they would be court-martialed and shot as deserters. They were driven forward and slaughtered in futile attacks, none of which gained anything. Their leaders had failed them. Civilization had failed them. There was nothing for them to do but to die, to be driven forward into the poison gas and barbed wire and to be scythed down by machine gun fire, for nothing, for the ambition, vanity and stupidity of their rulers.

When the war ended four years later, ten million young men had been killed and twenty million wounded, of whom six million were crippled for life. The war had cost 350,000,000,000 1919 dollars. This was a calculable cost; but the cost in human suffering and brutalization of values was incalculable. It hardly mattered whose fault the catastrophe had been. Perhaps the Austrian government had been more to blame than any other. But blame for the war certainly did not rest with the Austrian people nor with the young Austrians who had been forced to fight. However, the tragedy of the First World War was that it created long-lasting hatred between the nations involved; and in this way it led, only twenty years later, to an even more catastrophic global war.

The First World War brought about the downfall of four emperors: the Russian Czar, the Turkish Sultan, the Austro-Hungarian Emperor and the German Kaiser. The decaying

and unjust Czarist government had for several years been threatened by revolution; and the horrors of the war into which the Czar had led his people were enough to turn them decisively against his government. During 1915 alone, Russia lost more than two million men, either killed or captured. Finally the Russian soldiers refused to be driven into battle and began to shoot their officers. In February, 1917, the Czar abdicated; and on December 5, 1917, the new communist government of Russia signed an armistice with Germany.

The German Chief of Staff, General Ludendorff, then shifted all his troops to the west in an all-out offensive. In March, 1918, he threw his entire army into a gigantic offensive which he called "the Emperor's Battle". The German army drove forward, and by June they were again on the Marne, only 50 miles from Paris. However, the Allies counterattacked, strengthened by the first American troops, and using, for the first time, large numbers of tanks. The Germans fell back, and by September they had lost more than a million men in six months. Morale in the retreating German army was falling rapidly, and fresh American troops were landing in France at the rate of 250,000 per month. Ludendorff realized that the German cause was hopeless and that if peace were not made quickly, a communist revolution would take place in Germany just as it had in Russia.

The old feudal Prussian military caste, having led Germany into disaster, now unloaded responsibility onto the liberals. Ludendorff advised the Kaiser to abdicate, and a liberal leader, Prince Max of Baden, was found to head the new government. On November 9, 1918, Germany was proclaimed a republic. Two days later, an armistice was signed and the fighting stopped.

During the last years of the war the world, weary of the politics of power and nationalist greed, had looked with hope towards the idealism of the American President, Woodrow Wilson. He had proposed a "peace without victory" based on his famous Fourteen Points". Wilson himself considered that the most important of his Fourteen Points was the last one, which specified that "A general association of nations must be formed... for the purpose of affording mutual guaranties of political independence and territorial integrity of great and small states alike."

When Wilson arrived in Europe to attend the peace conference in Paris, he was wildly cheered by crowds of ordinary people, who saw in his idealism new hope for the world. Unfortunately, the hatred produced by four years of horrible warfare was now too great to be overcome. At the peace conference, the aged nationalist Georges Clemenceau was unswerving in his deep hatred of Germany. France had suffered greatly during the war. Half of all French males who had been between the ages of 20 and 32 in 1914 had been killed; much of the French countryside had been devastated; and the retreating German armies had destroyed the French coal mines. Clemenceau was determined to extract both revenge and financial compensation from the Germans.

In the end, the peace treaty was a compromise. Wilson was given his dream, the League of Nations; and Clemenceau was given the extremely harsh terms which he insisted should be imposed on Germany. By signing the treaty, Germany would be forced to acknowledge sole responsibility for having caused the war; it would be forced to hand over the Kaiser and other leaders to be tried as war criminals; to pay for all civilian damage during the war; to agree to internationalization of all German rivers and the Kiel Canal; to give France,

Belgium and Italy 25 million tons of coal annually as part of the reparations payments; to surrender the coal mines in Alsace-Lorraine to France; to give up all foreign colonies; to lose all property owned by Germans abroad; and to agree to Allied occupation of the Rhineland for fifteen years.

The loss of coal, in particular, was a death-blow aimed at German industry. Reading the terms of the treaty, the German Chancellor cried: "May the hand wither that signs such a peace!" The German Foreign Minister, Count Ulrich von Brockendorff-Rantzau, refused to sign, and the German government made public the terms of the treaty which it had been offered.

French newspapers picked up the information, and at 4 a.m. one morning, a messenger knocked at the door of the Paris hotel room where Herbert Hoover (the American war relief administrator) was staying, and handed him a copy of the terms. Hoover was so upset that he could sleep no more that night. He dressed and went out into the almost deserted Paris streets, pacing up and down, trying to calm himself. "It seemed to me", Hoover wrote later, "that the economic consequences alone would pull down all Europe and thus injure the United States." By chance, Hoover met the British economist, John Maynard Keynes, who was walking with General Jan Smuts in the pre-dawn Paris streets. Both of them had received transcripts of the terms offered to Germany, and both were similarly upset. "We agreed that it was terrible", Hoover wrote later, "and we agreed that we would do what we could... to make the dangers clear."

In the end, continuation of the blockade forced the Germans to sign the treaty; but they did so with deeply-felt bitterness. Describing the signing of the Versailles treaty on June 28, 1919, a member of the American delegation wrote: "It was not unlike when in olden times the conqueror dragged the conquered at his chariot wheel."

While he participated in the peace negotiations, Wilson had been absent from the United States for six months. During that time, Wilson's Democratic Party had been without its leader, and his Republican opponents made the most of the opportunity. Republican majorities had been returned in both the House of Representatives and the Senate. When Wilson placed the peace treaty before the Senate, the Senate refused to ratify it. Wilson desperately wanted America to join the League of Nations, and he took his case to the American people. He traveled 8,000 miles and delivered 36 major speeches, together with scores of informal talks urging support for the League. Suddenly, in the middle of this campaign, he was struck with a cerebral thrombosis from which he never recovered.

Without Wilson's leadership, the campaign collapsed. The American Senate for a second time rejected the peace treaty, and with it the League of Nations. Without American participation, the League was greatly handicapped. It had many successes, especially in cultural and humanitarian projects and in settling disputes between small nations; but it soon became clear that the League of Nations was not able to settle disputes between major powers.

Postwar Germany was in a state of chaos - its economy in ruins. The nation was now a republic, with its capital in Weimar, but this first experiment in German democracy was not running smoothly. Many parts of the country, especially Bavaria, were swarming with secret societies led by former officers of the German army. They blamed the republican



Figure 1.4: **Hitler addresses a rally at Dortmund in 1932**

government for the economic chaos and for signing a disgraceful peace treaty. The “war guilt” clause of the treaty especially offended the German sense of honor.

In 1920 a group of nationalist and monarchist army officers led by General Ludendorff staged an army revolt or “Putsch”. They forcibly replaced the elected officials of the Weimar Republic by a puppet head of state named Dr. Kapp. However, the republic was saved by the workers of Berlin, who turned off the public utilities.

After the failure of the “Kapp Putsch”, Ludendorff went to Bavaria, where he met Adolf Hitler, a member of a small secret society called the National Socialist German Workers Party. (The name was abbreviated as “Nazi” after the German pronunciation of the first two syllables of “National”). Together, Ludendorff and Hitler began to plot another “Putsch”.

In 1921, the Reparations Commission fixed the amount that Germany would have to pay at 135,000,000,000 gold marks. Various western economists realized that this amount was far more than Germany would be able to pay; and in fact, French efforts to collect it proved futile. Therefore France sent army units to occupy industrial areas of the Ruhr in order to extract payment in kind. The German workers responded by sitting down at their jobs. Their salaries were paid by the Weimar government, which printed more and more paper money. The printing presses ran day and night, flooding Germany with worthless currency. By 1923, inflation had reached such ruinous proportions that baskets full of money were required to buy a loaf of bread. At one point, four trillion paper marks were equal to one dollar. This catastrophic inflation reduced the German middle class to poverty and destroyed its faith in the orderly working of society.

The Nazi Party had only seven members when Adolf Hitler joined it in 1919. By 1923, because of the desperation caused by economic chaos, it had grown to 70,000 members. On November 8, 1923, there was a meeting of nationalists and monarchists at the Bürgerbräu beer hall in Munich. The Bavarian State Commissioner, Dr. Gustav von Kahr, gave a



Figure 1.5: A portrait of Adolf Hitler

speech denouncing the Weimar Republic. He added, however, that the time was not yet ripe for armed revolt.

In the middle of Kahr's speech, Adolf Hitler leaped to the podium. Firing two revolver bullets into the ceiling Hitler screamed that the revolution was on - it would begin immediately! He ordered his armed troopers to bar the exits, and he went from one Bavarian leader to the other, weeping with excitement, a beer stein in one hand and a revolver in the other, pleading with them to support the revolution. At this point, the figure of General Ludendorff suddenly appeared. In full uniform, and wearing all his medals, he added his pleading to that of Hitler. The Bavarian leaders appeared to yield to Hitler and Ludendorff; and that night the Nazis went into action. Wild disorder reigned in Munich. Republican newspapers and trade union offices were smashed, Jewish homes were raided, and an attempt was made to seize the railway station and the post office. However, units of policemen and soldiers were forming to resist the Nazis. Hitler realized that the Bavarian

government officials under Kahr had only pretended to go along with the revolution in order to escape from the armed troopers in the beer hall.

At dawn, Hitler grouped his followers together for a parade to show their strength and to intimidate opposition. With swastika flags flying, the Nazis marched to the main square of Munich. There they met troops of Bavarian government soldiers and policemen massed in force. A volley of shots rang out, and 18 Nazis fell dead. Many other Nazis were wounded, and the remainder scattered. Hitler broke his shoulder diving for the pavement. Only General Ludendorff remained standing where he was. The half-demented old soldier, who had exercised almost dictatorial power over Germany during the last years of the war, marched straight for the Bavarian government troops. They stepped aside and let him pass.

Adolf Hitler was arrested and sentenced to five years in prison. After serving less than a year of his sentence, he was released. He had used the time in prison to write a book, *Mein Kampf*.

## 1.4 Hitler's occultism: The influence of Dietrich Eckart

The composer Richard Wagner was obsessed with German nationalism and folklore, and Hitler was hugely inspired by him. Hitler once said, "In order to understand the Nazi Party, you must understand Wagner." Hitler also believed that the new humanity would be free of "the dirty and degrading chimera called conscience and morality", as well as "the burden of free will" and "personal responsibility", which should be borne only by the few with the fortitude to make the awful decisions necessary for the good of humanity. All the world's problems would be put right by the new order of subservient masses ruled by the Supermen.

Besides Richard Wagner, one of the most important influences on Hitler was Dietrich Eckart, an occultist and member of the esoteric Thule Society. Eckart was the wealthy publisher of an anti-Semitic journal, and in 1919, alerted by other Thule Society members who had been impressed by Hitler's beer-hall speeches, he arranged a meeting with the young nationalist. Eckart indoctrinated Hitler with anti-Semitism and occultism, and helped him to develop a self-confident, highly emotional, almost hypnotic style of public speaking. Influenced by Eckart, Hitler began to think of himself as the Messiah who was destined to save Germany, magically invincible and invulnerable. Eckart's wealth financed the Deutsche Arbeiterpartei, which later evolved into the Nazi Party.

Wikipedia states that "The Thule Society originally the Studiengruppe für germanisches Altertum ("Study Group for Germanic Antiquity"), was a German occultist and völkisch group founded in Munich right after World War I, named after a mythical northern country in Greek legend. The society is notable chiefly as the organization that sponsored the Deutsche Arbeiterpartei (DAP; German Workers' Party), which was later reorganized by Adolf Hitler into the National Socialist German Workers' Party (NSDAP or Nazi Party). According to Hitler biographer Ian Kershaw, the organization's "membership list ... reads like a Who's Who of early Nazi sympathizers and leading figures in Munich".



Figure 1.6: Wagner's dramas were part of the quasi-religious cult of German nationalism. They were designed to create "an unending dream of sacred *völkisch* revelation". No applause was permitted, since this would disturb the reverential atmosphere of the cult. A new type of choral theater was developed which "...no longer represented the fate of the individual to the audience, but that which concerns the community, the *Volk*... Thus, in contrast to the bourgeois theater, private persons are no longer represented, but only types."





Figure 1.7: Dietrich Eckart was a key influence on Adolf Hitler.

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## Chapter 2

# A BULWARK AGAINST COMMUNISM

### 2.1 Krupp, Thyssen and Germany's steel industry

The Krupp family business, known as Friedrich Krupp AG, was the largest company in Europe at the beginning of the 20th century. It was important to weapons development and production in both world wars. One of the most powerful dynasties in European history, for 400 years Krupp flourished as the premier weapons manufacturer for Germany. From the Thirty Years' War until the end of the Second World War, they produced everything from battleships, U-boats, tanks, howitzers, guns, utilities, and hundreds of other commodities.

The Thyssen family similarly profited from the arms races prior to World War I and World War II. August Thyssen (1842-1925) founded a large iron and steel company in the Ruhr district of Germany, and was succeeded by his son Fritz Thyssen, who greatly aided Hitler's rise to power.

### 2.2 Colonialism and the outbreak of the First World War

The First World War broke out approximately 100 years ago, and much thought has been given to the causes of this tragic event, whose consequences continue to cast a dark shadow over the human future. When the war ended four years later, ten million young men had been killed and twenty million wounded, of whom six million were crippled for life. The war had cost 350,000,000,000 1919 dollars. This was a calculable cost; but the cost in human suffering and brutalization of values was incalculable.

It hardly mattered whose fault the catastrophe had been. Perhaps the Austrian government had been more to blame than any other. But blame for the war certainly did not rest with the Austrian people nor with the young Austrians who had been forced to



Figure 2.1: Map of European colonies in Africa in 1914, just before the First World War. Source: [www.createdebate.com](http://www.createdebate.com)

fight. However, the tragedy of the First World War was that it created long-lasting hatred between the nations involved; and in this way it led, only twenty years later, to an even more catastrophic global war, during the course of which nuclear weapons were developed.

Most scholars believe that competing colonial ambitions played an important role in setting the stage for the First World War. A second factor was an armaments race between European countries, and the huge profits gained by arms manufacturers. Even at that time, the Military-industrial complex was firmly established; and today it continues to be the greatest source of war, together with neocolonialism.<sup>1</sup>

## 2.3 Prescott Bush and Hitler

Prescott Sheldon Bush (1895-1972), the father of George H.W. Bush and grandfather of George W. Bush, actively supported the revival of Germany's armaments industry in the 1930's, as well as supplying large amounts of money to Adolf Hitler's Nazi Party.<sup>2</sup>

An article in *The Guardian*<sup>3</sup>, Ben Aris and Dubcab Campbell write that "George

<sup>1</sup><http://alphahistory.com/worldwar1/imperialism/>  
<http://www.flowofhistory.com/units/etc/19/26>  
<http://alphahistory.com/worldwar1/militarism/>

<sup>2</sup><https://www.youtube.com/watch?v=TnHnjmCYjy4>  
<https://www.youtube.com/watch?v=7BZCfbrXKs4>  
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<http://www.georgewalkerbush.net/bushfamilyfundedhitler.htm>  
<http://www.theguardian.com/world/2004/sep/25/usa.secondworldwar>

<sup>3</sup>September 25, 2004



Figure 2.2: **Prescott Bush, the father of George H.W. Bush and grandfather of George W. Bush, supported Hitler’s rise to power with large financial contributions to the Nazi Party. The photo shows them together. Source: topinfo-post.com**

Bush’s grandfather, the late US senator Prescott Bush, was a director and shareholder of companies that profited from their involvement with the financial backers of Nazi Germany.

“The Guardian has obtained confirmation from newly discovered files in the US National Archives that a firm of which Prescott Bush was a director was involved with the financial architects of Nazism.

“His business dealings, which continued until his company’s assets were seized in 1942 under the Trading with the Enemy Act, has led more than 60 years later to a civil action for damages being brought in Germany against the Bush family by two former slave laborers at Auschwitz and to a hum of pre-election controversy.

“The debate over Prescott Bush’s behavior has been bubbling under the surface for some time. There has been a steady Internet chatter about the “Bush/Nazi” connection, much of it inaccurate and unfair. But the new documents, many of which were only declassified last year, show that even after America had entered the war and when there was already significant information about the Nazis’ plans and policies, he worked for and profited from companies closely involved with the very German businesses that financed Hitler’s rise to power. It has also been suggested that the money he made from these dealings helped to establish the Bush family fortune and set up its political dynasty.

“Bush was also on the board of at least one of the companies that formed part of a multinational network of front companies to allow [Fritz] Thyssen to move assets around the world.

“Thyssen owned the largest steel and coal company in Germany and grew rich from Hitler’s efforts to re-arm between the two world wars. One of the pillars in Thyssen’s international corporate web, UBC, worked exclusively for, and was owned by, a Thyssen-

controlled bank in the Netherlands. More tantalizing are Bush's links to the Consolidated Silesian Steel Company (CSSC), based in mineral rich Silesia on the German-Polish border. During the war, the company made use of Nazi slave labor from the concentration camps, including Auschwitz. The ownership of CSSC changed hands several times in the 1930s, but documents from the US National Archive declassified last year link Bush to CSSC, although it is not clear if he and UBC were still involved in the company when Thyssen's American assets were seized in 1942."

## 2.4 Fritz Thyssen supports Hitler's rise to power

"In 1923, Thyssen met former General Erich Ludendorff, who advised him to attend a speech given by Adolf Hitler, leader of the Nazi Party. Thyssen was impressed by Hitler and his bitter opposition to the Treaty of Versailles, and began to make large donations to the party, including 100,000 gold marks in 1923 to Ludendorff. In this he was unusual among German business leaders, as most were traditional conservatives who regarded the Nazis with suspicion. Thyssen's principal motive in supporting the National Socialists was his great fear of communism; he had little confidence that the various German anticommunist factions would prevent a Soviet-style revolution in Germany unless the popular appeal of communism among the lower classes was co-opted by an anticommunist alternative. Postwar investigators found that he had donated 650,000 Reichsmarks to right-wing parties, mostly to the Nazis, although Thyssen himself claimed to have donated 1 million marks to the Nazi Party. Thyssen remained a member of the German National People's Party until 1932, and did not join the Nazi Party (National Socialist German Workers' Party) until 1933.

"In November, 1932, Thyssen and Hjalmar Schacht were the main organizers of a letter to President Paul von Hindenburg urging him to appoint Hitler as Chancellor. Thyssen also persuaded the Association of German Industrialists to donate 3 million Reichsmarks to the Nazi Party (National Socialist German Workers' Party) for the March, 1933 Reichstag election. As a reward, he was elected a Nazi member of the Reichstag and appointed to the Council of State of Prussia, the largest German state (both purely honorary positions).

"Thyssen welcomed the suppression of the Communist Party, the Social Democrats and the trade unions. In 1934 he was one of the business leaders who persuaded Hitler to suppress the SA, leading to the "Night of the Long Knives". Thyssen accepted the exclusion of Jews from German business and professional life by the Nazis, and dismissed his own Jewish employees. But as a Catholic, he objected to the increasing repression of the Roman Catholic Church, which gathered pace after 1935: in 1937 he sent a letter to Hitler, protesting the persecution of Christians in Germany.[4] The breaking point for Thyssen was the violent pogrom against the Jews in November 1938, known as Kristallnacht, which caused him to resign from the Council of State. By 1939 he was also bitterly criticizing the regime's economic policies, which were subordinating everything to rearmament in preparation for war."

## 2.5 Unity Mitford and Hitler

Unity Valkyrie Freeman-Mitford (1914-1948) was one of the two Mitford sisters who became notorious for their advocacy of fascism and anti-semitism. Unity's sister Diana left her husband to have an affair with Sir Oswald Mosley, leader of the British Union of Fascists, whom she later married.

Mosley's son, Nicholas, stated that: "Unity became a very extrovert member of the party, which was her way ... She joined my father's party and she used to turn up, she used to go around in a black shirt uniform, and she used to turn up at communist meetings and she used to do the fascist salute and heckle the speaker. That was the sort of person she was". He adds that although his father admired Unity's commitment, Mosley felt "She wasn't doing him any good, because she was making an exhibition of herself."

The two sisters, Unity and Diana, travelled to Germany to attend the Nuremberg Rally as part of a delegation from the British Union of Fascists. Unity said later "The first time I saw him I knew there was no one I would rather meet." According to her biographer, Anne de Courcy, "The Nuremberg rally had a profound effect on both Diana and Unity [...] Unity was already, as it were, convinced about Hitler, but this turned conviction into worship. From then on she wanted to be near Hitler as much as possible"

In 1934, Unity returned to Germany, where she enrolled in a language school in Munich, near to the Nazi headquarters. A biographer, Pryce Jones commented that "She set her mind on getting Hitler, and she discovered that Hitler's movements could be ascertained. It's one of the extraordinary things about Hitler's daily life that he was so available to the public. You knew which café he'd be in, you knew which restaurant he'd be in, which hotel, and he would just go and meet people over sticky buns and cakes, and it was possible to meet him like that. And he was in the habit of eating in the Osteria Bavaria in Munich and she started sitting in the Osteria Bavaria every day. So he would have to come into the front part of the restaurant where there was this English girl."

After ten months of this stalking, Hitler finally invited Unity over to his table. They talked for 30 minutes, and Hitler paid her bill. In a letter to her father, Unity wrote, "It was the most wonderful and beautiful [day] of my life. I am so happy that I wouldn't mind a bit, dying. I'd suppose I am the luckiest girl in the world. For me he is the greatest man of all time".

For his part, Hitler was fascinated with this young blond English girl whose middle name was Valkyrie, and who seemed to be curiously connected to German culture. In fact, Unity's grandfather, Algernon Freeman-Mitford, had been a friend of Hitler's idol, Richard Wagner. Unity and Hitler became close. She became part of his inner circle, and he used their friendship to make Eva Braun jealous.



Figure 2.3: David Bertram Ogilvy Freeman-Mitford, 2nd Baron Redesdale (1878-1958), with his family in 1928. He was a fascist and anti-semite, like his daughters, Unity and Diana.



Figure 2.4: Unity Mitford and Hitler. When Britain declared war on Germany in September 1939, a distraught Unity went to the Englischer Garten park in Munich (the English Garden) and shot herself in the head.

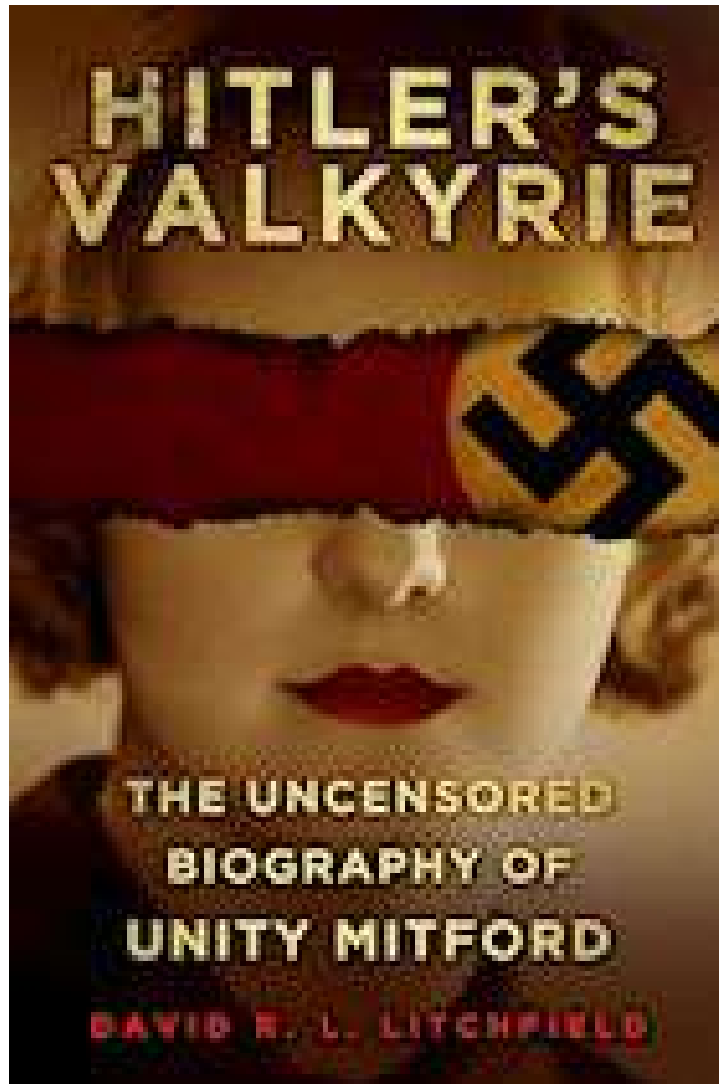


Figure 2.5: A book about the relationship between Unity and Hitler. Upon her return to Britain - with a bullet remaining lodged in her brain - Unity was vilified as an enemy of the state and the Home Office faced calls to have her interned.



Figure 2.6: Unity's sister Diana married Sir Oswald Mosley, leader of the British Union of Fascists.



Figure 2.7: Unity "was right in the inner circle of Nazi leadership" according to her biographer, David Pryce-Jones.



## 2.6 The British Union of Fascists

### Some prominent members and supporters of the British Union of Fascists

- William Edward David Allen MP was the Unionist Member of Parliament for Belfast West.
- John Beckett MP was the Labour Member of Parliament for Peckham.
- Frank Bossard was a British Spy
- Patrick Boyle, 8th Earl of Glasgow was a member of the House of Lords
- Sir Malcolm Campbell was a racing motorist and motoring journalist.
- A. K. Chesterton was a journalist
- Lady Cynthia Curzon (known as 'Cimmie') was the second daughter of George Curzon, Lord Curzon of Kedleston, and the wife of Sir Oswald Mosley until her death in 1933.
- Robert Forgan MP was the Labour Member of Parliament for West Renfrewshire.
- Major General John Frederick Charles Fuller was a military historian and strategist.
- Billy Fullerton, leader of the Billy Boys gang from Glasgow.
- Arthur Gilligan was the Captain of the England cricket team
- Sir Reginald Goodall was a noted English conductor.
- Group Captain Sir Louis Leisler Greig was a British naval surgeon, courtier and intimate of King George VI.
- Harold Sidney Harmsworth, 1st Viscount Rothermere was the owner of the Daily Mail and a member of the House of Lords.
- Josslyn Hay, 22nd Earl of Erroll was a member of the House of Lords
- William Joyce, later nicknamed Lord Haw-Haw
- David Freeman-Mitford, 2nd Baron Redesdale, in addition to his wife, Lady Redesdale, and two of his daughters:
  - Diana Mitford (Lady Mosley, after marriage to Sir Oswald Mosley in 1936)
  - The Hon. Unity Mitford
- St John Philby was an explorer, and father of Kim Philby.
- Sir Alliot Verdon Roe was a pilot and businessman
- Edward Frederick Langley Russell, 2nd Baron Russell of Liverpool was a member of the House of Lords
- Lady Russell
- Edward Russell, 26th Baron de Clifford was a member of the House of Lords
- Hastings Russell, 12th Duke of Bedford was a member of the House of Lords
- Frank Cyril Tiarks was the Director of the Bank of England.
- Sir Frederick Toone was the manager of the England Cricket team



Figure 2.8: Sir Oswald Mosley, leader of the British Union of Fascists.



Figure 2.9: Italy's *Duce* Benito Mussolini (left) with Leader Oswald Mosley (right) during Mosley's visit to Italy in 1936.

## 2.7 Hitler and the Duke and Duchess of Windsor

### The Windsors visit Germany in 1937

After marrying the twice-divorced American, Wally Simpson, Edward VIII had abdicated from his position as King of England. He and his new wife were afterwards known as the Duke and Duchess of Windsor. Edward's new wife was never accepted by British society, and Edward was anxious that she should experience the deference shown to the wife of royalty on an official visit. He therefore accepted an invitation to visit Germany, ostensibly to visit factories and examine the conditions of the workers.

According to Deborah Cadbury, "Adolf Hitler and his foreign minister, Joachim von Ribbentrop, savoured the prospect of a tour of Nazi Germany by Britain's ex-king. Of all the pieces moving swiftly across the chessboard of European diplomacy, the former king turning up in the heart of Berlin was an unexpected bonus."

According to Wikipedia, "The couple were chaperoned in Germany by Robert Ley, and they visited many factories - some producing materiel as part of the arms race - being greeted by the British national anthem and Nazi salutes, which were often returned by the Duke. They also dined regularly with high ranking Nazis such as Goebbels, Göring, von Ribbentrop, Speer, and, the highlight of their tour, Hitler in Berchtesgaden. There, he and the Duke had a long discussion, although it is uncertain precisely what they talked about as the minutes to their meeting were later lost. At the same time, the Duchess took

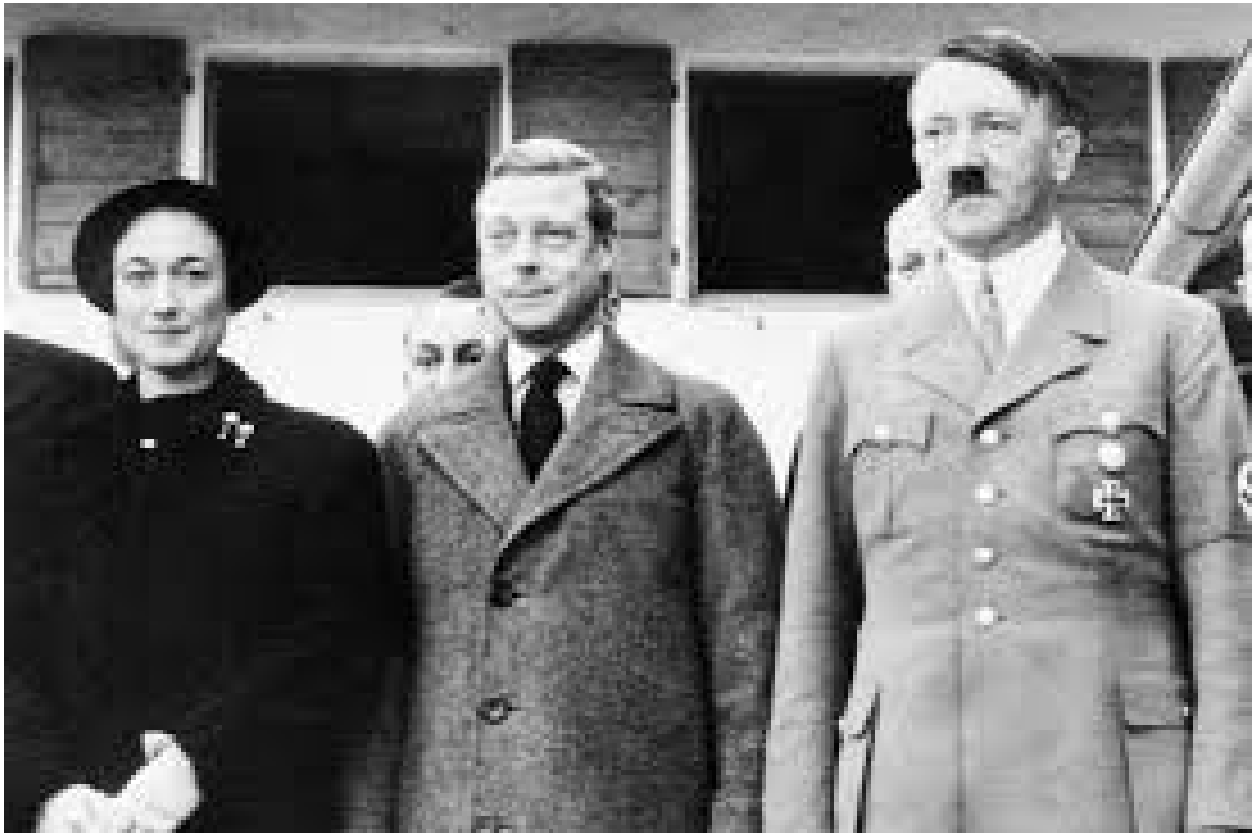


Figure 2.10: Hitler received the Duke and Duchess of Windsor with all the ceremony that would have been due to royalty.

high tea with Hitler's deputy, Rudolf Hess. Hitler was openly sympathetic to the Windsors while the British Government, for its part, was helpless to affect the course of events, particularly as it had forbidden its diplomatic staff in Germany to have any high-level interaction with the couple. Popular opinion of the couple soon declined, and the second leg of the Windsors' tour to America was cancelled."

### Meeting with Hitler

The high point of the Windsor's tour was a meeting with Adolf Hitler in his Bavarian retreat, which was known as the Berghof. According to a contemporary witness, "The Duchess was visibly impressed with the Führer's personality, and he apparently indicated that they had become fast friends by giving her an affectionate farewell. [Hitler] took both their hands in his saying a long goodbye, after which he stiffened to a rigid Nazi salute that the Duke returned."



Figure 2.11: In fact, Hitler hoped to make the Windsors into a pro-Nazi King and Queen of England.

## 2.8 Hitler: A bulwark for the Establishment

Here are some quotations from an essay by Ian Kenneth Buckley entitled *Australia's Foreign Wars, Origins, Costs, Future? 8. Supporting Germany's Rearmament & the Steady Slide to WWII*. Reading these quotations from the carefully researched essay, we can see clearly why so many prominent figures in England's "Establishment" made the fatal mistake of supporting German rearmament, despite the provisions of the Treaty of Versailles, and despite Winston Churchill's many warnings.

Hitler and a rearmed Germany were seen as bulwarks against the real threat: a more equal distribution of wealth. A communist revolution had taken place in Russia. It was feared that this revolution might spread to Germany or even to England. Hitler was known to be a fervent opponent of communism. He was known to use strong measures to suppress and ban the Communist Party, and he was known to have plans to increase German "lebensraum" by attacking Russia. Therefore, since communism was seen to be the great enemy, it was logical for the British Establishment to support the rearmament of Germany.

### Understanding Appeasement: What drove British Policy?

To better understand the motivation behind the British governments' policy of so-called 'appeasement', in fact their 'accommodation' to and often frank encouragement of Germany's rearmament and foreign policy aims under Hitler, we need to go back to the early post-WWI scene. In Russia, long decades of domestic oppression capped by the terrible sufferings endured during the Great War, had culminated in the revolution of 1917 and, as related above, capitulation to Germany. Fighting on the Eastern front stopped, allowing Germany to transfer many divisions to the Western Front and for a while the possibility of a German victory seemed all too real. With all combatants close to exhaustion, it was a close call, but when the United States took sides in 1917 and entered the battle lines in force in mid 1918, the balance tipped in favour of the Allies. Only then was it possible for the European 'victors' finally to proudly proclaim not only that Germany had 'started the war' but that it, with its allies, had 'lost' it.

However, as we have seen, since all sides (other than the USA and Japan) had suffered such extreme human carnage, vast material wastage and debt, the greater reality was that all had lost, - millions of families bereaved, millions maimed in body and mind, all survivors exhausted, all prime combatant countries' economies ruined. Understandably, then, there was a very widespread dissatisfaction with the old ways of doing things which led most people not only to seek, but to *expect* genuine reforms. That brought great fear in high places - fear of any disturbance to the old ways, the 'old order', fear that revolution (which had already occurred in Russia and was all too close in Germany) might,

like a virus, infect other Western Powers - even France and Britain. This fear, already very strong at the war's end, was further aggravated by the failure to deal with the old social and economic inequalities, especially when these led to total collapse of the market economies, to the Great Depression with its massive unemployment and hardship in the midst of plenty. And the societal response to these greatly worsened conditions simply heightened the fears of the overly privileged to the point of obsession.

In the early days after World War I and Russia's revolution, the most urgent concern was for the German situation. Might not the defeated, suffering, demoralised Germans opt for a more egalitarian, a 'socialist' solution to their predicament? For Lloyd George, who had been Britain's Prime Minister for most of the war and was its chief representative at the 1919 Paris Peace Conference, that concern overshadowed all others. We see this in his *'Fontainebleu Memorandum'* presented to Peace Conference delegates. In this he seemed at first to recognise that the defeated nations must not be saddled with inequalities and injustices which would only make for a further World War - perhaps 'a mere 30 years on'. All sounded pure wisdom, the sort of common sense that could guarantee the security of one's own country along with that of others. However, the motivation behind Lloyd George's Conference message was anything but pure. For soon we learn "*But there is a consideration in favour of long-sighted peace which influences me even more than the desire to leave no causes justifying a fresh outbreak 30 years hence. ....There is a deep sense not only of discontent, but of anger and revolt amongst the workmen against pre-war conditions. The whole existing order ..... is questioned by the mass of the population from one end of Europe to the other.*"

In particular he was concerned that such conditions in the defeated Germany could, following the Russian example, make it 'go Bolshevik'. And even more alarming, that Britain and France could go the same way. So his prime worry, his overriding concern (which persisted throughout the 1920s and '30s) was not the avoidance of conditions certain to lead to a 'fresh outbreak', a future European war, but the threat to his concept of the 'long-sighted peace', the long-revered 'traditional arrangements' for the creation and (mal)distribution of wealth, both nationally and internationally.

Thus, while in his *Memorandum*, Lloyd George wrote that "...we will open to her (i.e., Germany) the raw materials and markets of the world on equal terms with ourselves, and will do everything possible to enable the German peoples to get upon their legs again. We cannot both cripple her and expect her to pay." he at the same time had no plans to carry out the moves essential for that pacific future. Obviously these would have included: (i) the sharing of responsibility for the war's origin, (ii) limiting German reparations

to invasion-caused material damage, (iii) accepting German exports as Reparations payments, (iv) implementing universal arms limitation; (v) honouring the pledges for the self-determination of peoples; and (vi) instituting fair dealing in economic affairs both at home and abroad. But in the event, these were either absent or severely constrained by the over-riding urge to maintain the 'Old Order' as it was before the war.

That of course meant upholding the 'normal' divide between rich and poor, both nationally and internationally (including the application of the Versailles' Treaty's 'guilt', 'economic' and 'Reparations' Clauses on Germany), maintaining and extending Britain's colonial possessions, and thwarting moves towards overcoming its entrenched poverty at home, what Churchill referred to as "the social problem" - let alone instituting any degree of 'communism', 'socialism' or 'egalitarianism'. Indeed, it was to mean perpetuating all sorts of inequalities and injustices which all too soon were to lead to the Great Depression and then a Second World War, not 30 but a mere 20 years after the First. And since the principal concern of the powerful voices within Britain was the avoidance of risk to any significant redistribution of wealth, that concern was translated into policies designed to block such trends, including their absurd support of German rearmament under Hitler - one known to be a fervent anti-communist and, moreover, one known to have territorial designs on Eastern Europe and Soviet Russia, the communist USSR...

### Churchill's summing up

Commenting on [Chamberlain's] extraordinary about-face, Churchill wrote "*Look back and see what we had successively accepted and thrown away: a Germany rearmed in violation of a solemn treaty; air superiority or even air parity cast away; the Rhineland forcibly occupied and the Siegfried Line built or building; the Berlin-Rome Axis established; Austria devoured and digested by the Reich; Czechoslovakia deserted and ruined by the Munich Pact, its fortress line in German hands, its mighty arsenal of Skoda henceforward making munitions for the German armies; President Roosevelt's effort to tabilise or bring to a head the European situation by the intervention of the United States waved aside with one hand and Soviet Russia's undoubted willingness to join the Western Powers and go all lengths to save Czechoslovakia ignored on the other; the services of thirty five Czech divisions against the still unripened German army cast away, when great Britain could herself supply only two to strengthen the front in France; all gone with the wind. ....History may be scoured and ransacked to find a parallel to this sudden and complete reversal of five or six years' policy of easy-going placatory appeasement, and its transformation almost overnight into a readiness to accept an obviously imminent war on far worse conditions and on the greatest scale. ....which*



*must surely lead to the slaughter of tens of millions of people.”*

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# Chapter 3

## GUERNICA

### 3.1 The Spanish Civil War

Many of the illustrations in this chapter are taken from the Wikipedia article on the Spanish Civil War, and the reader is referred to this article for a more complete description of the events.

The Second Spanish Republic was the democratic government that existed in Spain from 1931 until 1939. This left-leaning government opposed monarchy and the Catholic Church. On 17-18 July 1936, a coup d'état fractured the Spanish Republican Armed Forces and partially failed, marking the beginning of the Spanish Civil War.

Wikipedia states that “Republicans loyal to the elected, left-leaning Second Spanish Republic, in alliance with anarchists and communists, fought against a revolt by the Nationalists, an alliance of Falangists, monarchists, carlists, conservatives and Catholics, led by a military group among whom General Francisco Franco soon achieved a preponderant role. Due to the international political climate at the time, the war had many facets, and was variously viewed as class struggle, a war of religion, a struggle between dictatorship and republican democracy, between revolution and counterrevolution, between fascism and communism. It has been frequently called the ‘dress rehearsal’ for World War II.”

Franco was aided by Nazi Germany and fascist Italy, and with this aid, the Nationalists under Franco won the war in 1939. Franco ruled the country as a dictator until his death in 1975.

The Republican side was supported by many idealistic volunteers from other countries who formed the famous International Brigade. George Orwell, who fought on the Republican side, recorded his experiences in his book, *Homage to Catalonia*.

The war was particularly bitter and costly. Estimates of the number of civilians killed vary between 500,000 and 1,000,000. Many of these deaths were due to executions carried out systematically by the Nationalists, and sometimes also by the Republicans. Many deaths were due to hunger and disease brought about by the war. After the fall of Catalonia in January, 1937, about 400,000 people fled to France. Franco’s postwar dictatorial rule was a repressive one, and even today, Spanish opinion about him remains divided.



Figure 3.1: On 2 April 1931, the Republicans won the elections and the Spanish Second Republic was proclaimed. King Alfonso XIII resigned and went into exile.



Figure 3.2: They shall not pass! Republican banner in Madrid reading “Fascism wants to conquer Madrid. Madrid shall be fascism’s grave.” during the siege of 1936-39.



Figure 3.3: Republican forces during the battle of Irún in 1936.



Figure 3.4: Manuel Azana was the intellectual leader of the Second Republic and headman of the Republican side during most of the Civil War.



Figure 3.5: Italian troops manning a 10 cm howitzer at Guadalajara, 1937.



Figure 3.6: Members of the Condor Legion, a unit composed of volunteers from the German Air Force (Luftwaffe) and from the German Army (Heer).



Figure 3.7: General Moscardó showing Heinrich Himmler the ruins of the Alcázar.



Figure 3.8: Polish volunteers in the International Brigades.



Figure 3.9: Women pleading with Nationalists for the lives of prisoners, Constantina, 1936.





Figure 3.10: Children take refuge during the Francoist bombing over Madrid (1936-1937). In spite of that Republicans managed to repulse this siege.



Figure 3.11: Map showing Spain in September 1936: Pink (left) = Area under Nationalist control. Blue (right) = Area under Republican control.



Figure 3.12: Map showing Spain in February 1939.



Figure 3.13: Franco declares the end of the war, though small pockets of Republicans fought on.

## 3.2 For Whom the Bell Tolls

Ernest Hemingway (1899-1961) was awarded the 1954 Nobel Prize in Literature for revolutionizing modern literary style. His understated and economic literary style became the standard for writers in the second half of the 20th century, and replaced the much more complicated and florid style of such writers as Henry James or Marcel Proust.

Hemingway's novel, *For Whom the Bell Tolls*, is considered to be one of his best. It is based on his experiences as a reporter for the North American Newspaper Alliance during the Spanish Civil War. He arrived in Spain in 1937, reporting on the Republican side of the conflict, and he was soon joined by his future wife, the journalist and writer Martha Gellhorn.

Later, in 1939, Martha Gellhorn inspired Hemingway to write *For Whom the Bell Tolls*. The book includes fictional characters, fictionalized real people, and real historical people and events. When it was published in 1940, the book was nominated for a Pulitzer Prize, and it quickly sold half a million copies.

Conversations in Hemingway's book discuss the possibility of a fascist coup in America, similar to Franco's coup against the elected Republican government of Spain. In one passage, the protagonist Robert Jordan explains the threat of fascism in his own country. "Robert Jordan, wiping out the stew bowl with bread, explained how the income tax and inheritance tax worked. 'But the big estates remain. Also, there are taxes on the land,' he said. 'But surely the big proprietors and the rich will make a revolution against such taxes. Such taxes appear to me to be revolutionary. They will revolt against the government when they see that they are threatened, exactly as the fascists have done here,' Primitivo said.

'It is possible.'

'Then you will have to fight in your country as we fight here.'

'Yes, we will have to fight.'

'But are there not many fascists in your country?'

'There are many who do not know they are fascists but will find it out when the time comes.'"

A film version of *For Whom the Bell Tolls*, released in 1943, was equally successful. It was directed and produced by Sam Wood, and starred Gary Cooper and Ingrid Bergman, whom Hemingway had hand-picked for the starring roles. It was Ingrid Bergman's first Technicolor film. It was among the biggest film successes of the year, both financially and critically, and it was nominated for 9 Academy Awards.

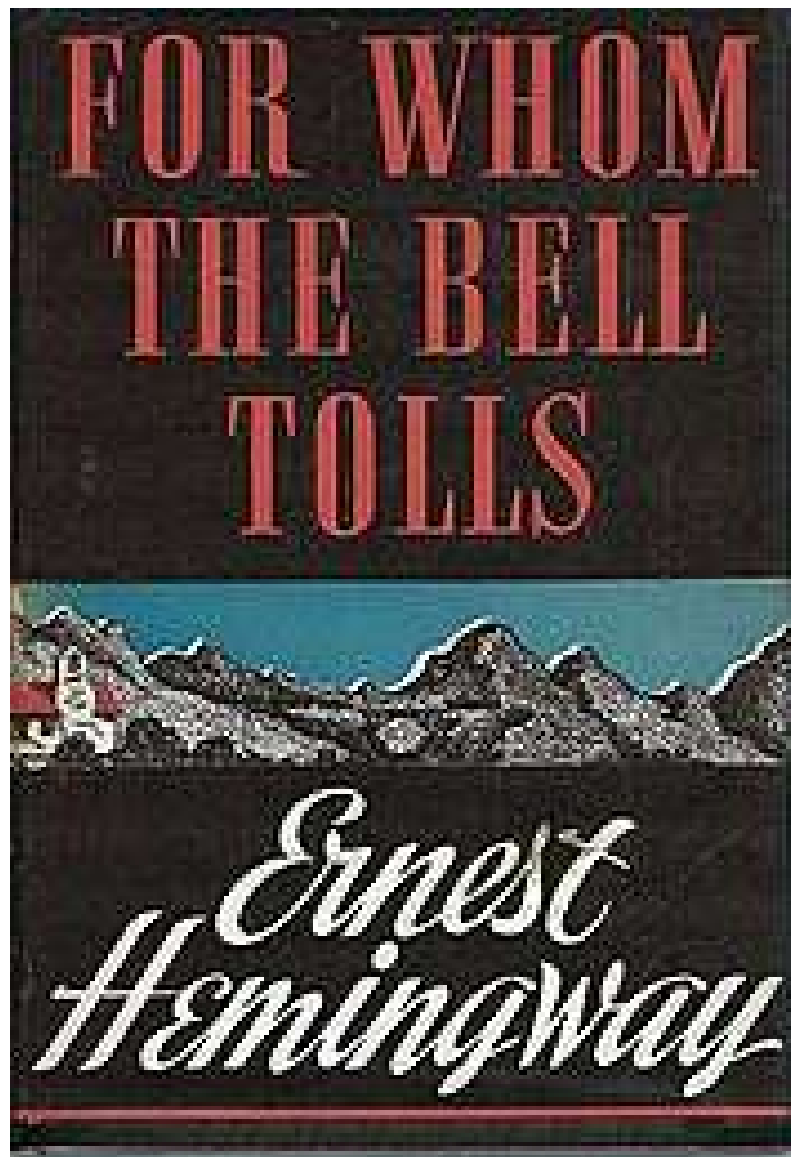


Figure 3.14: The cover of the first edition of Hemingway's famous book describing the Spanish Civil War. The title is taken from John Donne, who wrote: "No man is an island entire of itself; every man is a piece of the continent, a part of the main; if a clod be washed away by the sea, Europe is the less, as well as if a promontory were, as well as any manner of thy friends or of thine own were; any man's death diminishes me, because I am involved in mankind. And therefore never send to know for whom the bell tolls; it tolls for thee." By choosing this title, Hemingway tells us that Spain's change from democracy to fascist dictatorship, the outcome of the Spanish Civil War of 1936-1939, is important to and affects everyone in the world.



Figure 3.15: Poster for the 1943 film adaptation of Hemingway’s novel. It was nominated for nine Academy Awards. Hemingway personally chose Ingrid Bergman and Gary Cooper for the starring roles.

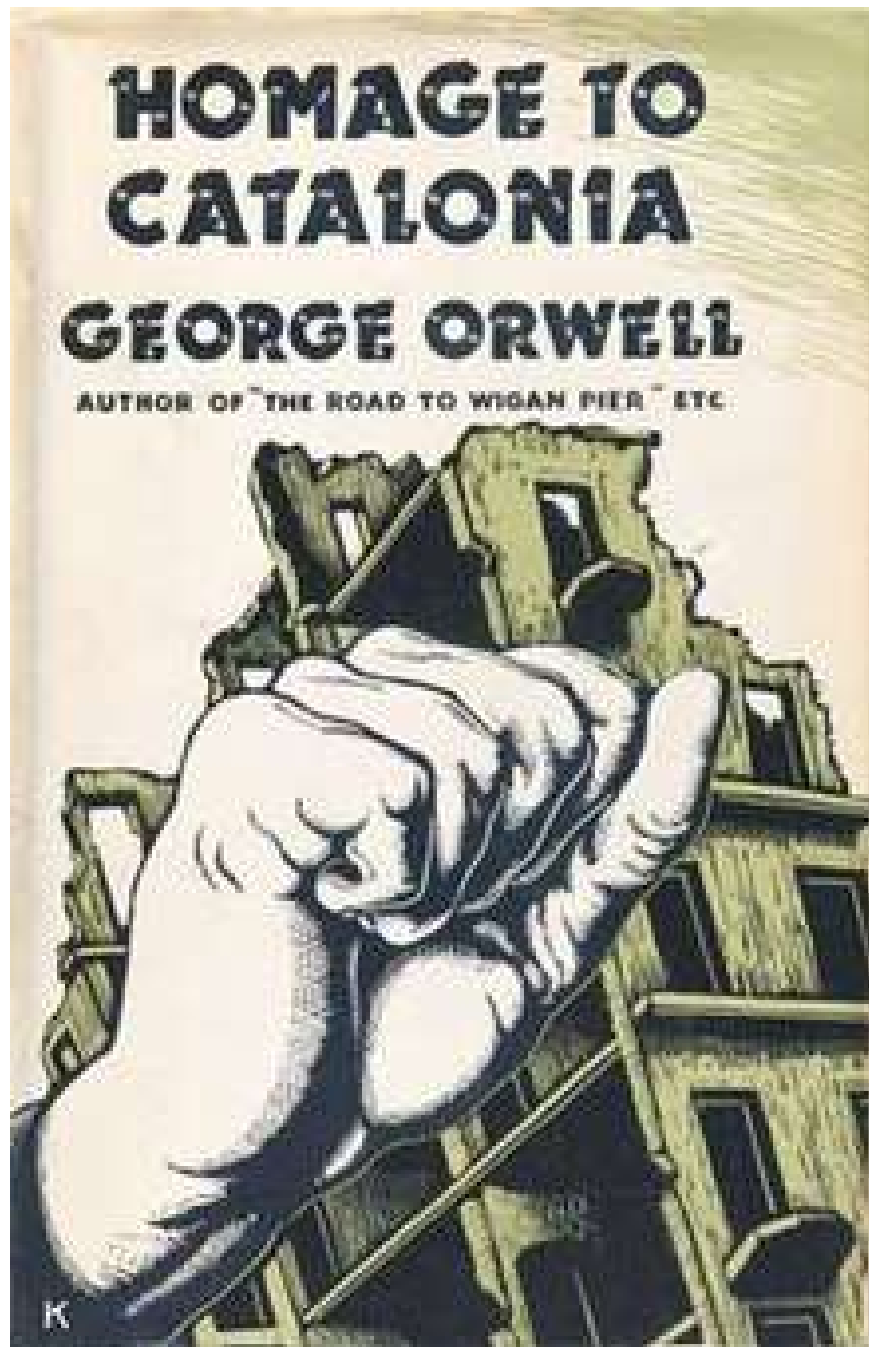


Figure 3.16: George Orwell fought on the Republican side in the Spanish Civil War, and his book, *Homage to Catalonia* describes his experiences, which affected all of his future work as a writer. Regarding the effect of the war on his political outlook, he wrote: “Every line of serious work that I have written since 1936 has been written, directly or indirectly, against totalitarianism and for Democratic Socialism, as I understand it.”

### 3.3 Targeting civilians

In Protocol I of the Geneva Conventions, Articles 51 and 54 outlaw indiscriminate attacks on civilian populations, and destruction of food, water, and other materials needed for survival. Indiscriminate attacks include directly attacking civilian (non-military) targets, but also using technology such as biological weapons, nuclear weapons and land mines, whose scope of destruction cannot be limited. A total war that does not distinguish between civilian and military targets is considered a war crime.

Throughout history, military forces have frequently committed the crime of deliberately targeting civilian populations. An early example of this was the bombardment of neutral Copenhagen by British forces, which took place, without a declaration of war, from 2-5 September, 1807. The object of the bombardment was to terrorize the citizens of the city, so that they would persuade their government to surrender the Danish-Norwegian fleet to the British. Besides exploding shells, incendiary rockets were used, and about a third of the city was destroyed. In England, news of the bombardment was greeted with mixed reactions. Canning wrote that “Nothing ever was more brilliant, more salutary or more effectual than the success [at Copenhagen]”, but Lord Erskine condemned it by saying “if hell did not exist before, Providence would create it now to punish the ministers for that damnable measure.”

Another instance of targeting of civilians was the 1937 Fascist and Nazi destruction of Guernica, made famous by Picasso’s painting. A report described the event as follows: “Guernica, the most ancient town of the Basques and the centre of their cultural tradition, was completely destroyed yesterday afternoon by insurgent air raiders. The bombardment of this open town far behind the lines occupied precisely three hours and a quarter, during which a powerful fleet of aeroplanes consisting of three types [of] Junkers and Heinkel bombers, did not cease unloading on the town bombs weighing from 1,000 lbs. downwards and, it is calculated, more than 3,000 two-pounder aluminium incendiary projectiles. The fighters, meanwhile, plunged low from above the centre of the town to machine-gun those of the civilian population who had taken refuge in the fields”

The Nanking Massacre was an episode of mass murder, mass rape and looting committed by Japanese troops against civilians and unarmed prisoners of war in Nanking (Nanjing), during the Second Sino-Japanese War. The massacre occurred during a six-week period starting on December 13, 1937, the day that the city surrendered to the Japanese. The International Tribunal of the Far East estimated in 1948 that over 200,000 people were killed in this incident. Neither pregnant women, babies, young girls, nor old people were spared.

On the 25th of September, 1939, Hitler’s air force began a series of intense attacks on Warsaw. Civilian areas of the city, hospitals and fleeing refugees all were targeted. On the 14th of May, 1940, Rotterdam was also devastated. The German Luftwaffe also carried out massive air attacks on targets in Britain.

Although they were not the first to start it, by the end of the war, the United States and Britain were bombing civilian populations on a far greater scale than Japan and Germany had ever done. We can think of the terrible fire bombings of Hamburg, Kassel, Pforzheim,

Mainz, Dresden and Berlin, as well as Tokyo, Kobe, Yokohama, and the nuclear destruction of Hiroshima and Nagasaki. General Curtis LeMay, under whose command many of the attacks on Japanese civilians were carried out, said later: "I suppose that if [we] had lost the war, I would have been tried as a war criminal."

Among the most savage recent attacks on civilians were those that occurred during the Vietnam War. Besides conventional high explosives, chemical weapons were used, including the notorious Agent Orange. This was a defoliant which not only lastingly damaged the ecology of Vietnam, but also had terrible effects on the health of the civilian population.

According to Wikipedia, "The government of Vietnam says that 4 million of its citizens were exposed to Agent Orange, and as many as 3 million have suffered illnesses because of it; these figures include the children of people who were exposed....Children in the areas where Agent Orange was used have been affected, and have multiple health problems, including cleft palate, mental disabilities, hernias and extra fingers and toes. In the 1970's high levels of dioxin were found in the breast milk of South-Vietnamese women, and in the blood of US military personnel who had served in Vietnam."

During the Vietnam war, the effect of conventional high-explosive bombs was also enormous. According to a study by Edward Miguel and Gérard Roland of the University of California, "The United States Air Force dropped in Indochina, from 1964 to August 15, 1973, a total of 6,162,000 tons of bombs [in Indochina]...This tonnage far exceeded that expended in World War II."

Of this enormous quantity, more than million tons of bombs were dropped on the tiny country of Laos, making it, per capita, the most heavily bombed nation in history. The bombings were part of the U.S. Secret War in Laos to support the Royal Lao Government against the Pathet Lao and to interdict traffic along the Ho Chi Minh Trail. The bombings destroyed many villages and displaced hundreds of thousands of Lao civilians during the nine-year period. Up to a third of the bombs did not explode, leaving Laos contaminated with vast quantities of unexploded ordnance.

Genocides must also be included if we are to have a complete picture of the way in which governments attack civilian populations. These include the mass murder of Jews, Poles and Gypsies by the Nazis during World War II, Armenian Genocide, the genocides in Rwanda and Darfur, the genocidal treatment of Palestinians by Israel, and many many other cases.

## **Do our "Defense Departments" really defend us?**

What is the point of this long and gruesome list of crimes committed by military forces against civilians? What I am trying to show, is that the very name, "Department of Defense" is a fraud. The military-industrial complex sells itself by claiming to defend civilians. It justifies vast and crippling budgets by the same claim. But it is a fraud. Soldiers do not "guard us while we sleep" as Kipling believed. They do not defend us. They do not care about civilian lives. What the generals, arms manufacturers and politicians are really defending is their own power, and their own profits. Civilians are just hostages. They are expendable.





Figure 3.17: Pablo Picasso’s famous painting, *Guernica*. Nazi bombers completely destroyed the culturally important Basque town, killing large numbers of civilians.

We can see this most clearly if we think of nuclear war. Nations 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.

If a thermonuclear war occurs it will be the end of human civilization and much of the biosphere. This will definitely happen in the future unless the world rids itself of nuclear weapons since, in the long run, the finite chance of accidental nuclear war happening due to a technical or human failure during a given year will gradually build up into a certainty of disaster. Nevertheless, our leaders stubbornly hold onto their nuclear toys, which seem to give them a sense of god-like power.

Civilians must stop being passive hostages. Civil society must make its will felt. Where democracy has decayed, it must be restored. If our leaders continue to enthusiastically support the institution of war, if they continue to cling to nuclear weapons, then let us have new leaders!

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# Chapter 4

## MAKING ITALY GREAT AGAIN

Many of the illustrations in this chapter are taken from the Wikipedia article on Mussolini, where the reader can find a more detailed description of his rise and fall.

### 4.1 The rise and fall of Benito Mussolini

#### Recreating the Roman Empire

Benito Mussolini (1883-1945) appealed to Italian nationalism in much the same way that Donald Trump appeals to the nationalism of Americans today. Mussolini told Italians that he would make Italy great again. He told the citizens of Italy that he would recreate the glories of the Roman Empire. They believed him. People like to be told that they are exceptional, and better than everyone else. Hitler's enthusiastic followers liked being told that they were the Master Race. Trump's predominantly white followers gain self-esteem from his racism. They like being told that white people are better than everyone else.

#### Mussolini's early career as a journalist and politician

In 1902, Mussolini emigrated to Switzerland to avoid conscription into the Italian army. While there he began to study the writings of Friedrich Nietzsche and the syndicalist Georges Sorel, who believed that it was necessary to overthrow decadent liberal democracy and capitalism by the use of violence. While in Switzerland, Mussolini was active both in journalism and in politics. In 1903 he was arrested by the Bernese police for advocating a violent general strike.

#### Rejection of egalitarianism

Mussolini was well-read and he considered himself to be an intellectual. While in Switzerland he had attended the University of Lausanne. He later published several books, including a novel and a biography of the dissenting Czech theologian Jan Hus. Although initially a socialist, Mussolini later rejected egalitarianism. Wikipedia states that "While associated

with socialism, Mussolini's writings eventually indicated that he had abandoned Marxism and egalitarianism in favor of Nietzsche's übermensch concept and anti-egalitarianism."

## **Formation of the Fascist Party**

On 23 March 1919 Mussolini founded the Fasci Italiani di Combattimento (Italian Combat Squad), consisting of 200 members. Wikipedia states that "The ideological basis for fascism came from a number of sources. Mussolini utilized works of Plato, Georges Sorel, Nietzsche, and the economic ideas of Vilfredo Pareto, to develop fascism. Mussolini admired Plato's *The Republic*, which he often read for inspiration. *The Republic* expounded a number of ideas that fascism promoted, such as rule by an elite promoting the state as the ultimate end, opposition to democracy, protecting the class system and promoting class collaboration, rejection of egalitarianism, promoting the militarization of a nation by creating a class of warriors, demanding that citizens perform civic duties in the interest of the state, and utilizing state intervention in education to promote the development of warriors and future rulers of the state. Plato was an idealist, focused on achieving justice and morality, while Mussolini and fascism were realist, focused on achieving political goals."

## **The march on Rome**

During the night between 27 and 28 October 1922, about 30,000 Fascist blackshirts gathered in Rome to demand the resignation of liberal Prime Minister Luigi Facta and the appointment of a new Fascist government. The following morning King Victor Emmanuel III refused the government request to declare martial law. This led to Facta's resignation, and the King then handed over power to Mussolini, asking him to form a new government. The King and the conservative establishment were afraid of a possible civil war and ultimately thought they could use Mussolini to restore law and order in the country. However, they failed to foresee the danger of a totalitarian government.

## **Italy becomes a police state**

After becoming Italy's Prime Minister in 1922, Mussolini removed all political opposition through his secret police and outlawed labor strikes. Mussolini's government enacted a series of laws that transformed the nation into a one-party dictatorship. Within five years, Mussolini had established dictatorial authority by both legal and illegal means, creating a totalitarian state.

## **Mussolini's death in 1945**

Italy entered World War II on the Axis side, but was defeated. Mussolini and his mistress Clara Petacci attempted to flee to Switzerland, but both were captured by Italian communist partisans and summarily executed by firing squad on 28 April 1945. A photograph shows their bodies hanging upside-down.



Figure 4.1: Mussolini's booking file following his arrest by the police on 19 June 1903, Bern, Switzerland.



Figure 4.2: A portrait of Mussolini in the early 1900s.



Figure 4.3: Mussolini as director of *Avanti!*



Figure 4.4: Members of Italy's Arditi corps in 1918 holding daggers, a symbol of their group. The Arditi's black uniform and use of the fez were adopted by Mussolini in the creation of his Fascist movement.



Figure 4.5: Mussolini as an Italian soldier, 1917.





Figure 4.6: Italia Irredenta: regions considered Italian for ethnic, geographic or historical reasons, and claimed by the Fascists in the 1930s: green: Nice, Ticino, and Dalmatia; red: Malta; violet: later claims extended to Corsica, Savoy and Corfu.



Figure 4.7: Mussolini, circa 1920.



Figure 4.8: Mussolini and the Quadrumviri during the March on Rome in 1922: from left to right: Michele Bianchi, Emilio De Bono, Italo Balbo, and Cesare Maria De Vecchi.



Figure 4.9: Mussolini and the fascist blackshirts during the march on Rome.



Figure 4.10: From 1925, Mussolini styled himself *Il Duce* (the leader).



Figure 4.11: **Portrait of Mussolini in 1930.**



Figure 4.12: Colorized photograph of Mussolini wearing the commander-in-chief uniform.



Figure 4.13: Mussolini inspecting troops during the Italo-Ethiopian War.



Figure 4.14: From left to right: Chamberlain, Daladier, Hitler, Mussolini, and Italian Foreign Minister Count Ciano, as they prepare to sign the Munich Agreement.



Figure 4.15: On 25 October 1936, an alliance was declared between Italy and Germany, which came to be known as the Rome-Berlin Axis.





Figure 4.16: From left to right, the dead bodies of Nicola Bombacci, Mussolini, Petacci, Pavolini and Starace in Piazzale Loreto, 1945.

## 4.2 The definition of fascism

### The dictionary definition

The Merriam-Webster Dictionary gives the following definition of fascism: “often capitalized: a political philosophy, movement, or regime (such as that of the Fascisti) that exalts nation and often race above the individual and that stands for a centralized autocratic government headed by a dictatorial leader, severe economic and social regimentation, and forcible suppression of opposition.”

“The English words *fascism* and *fascist* are borrowings from Italian *fascismo* and *fascista*, derivatives of *fascio* (plural *fasci*), “bundle, fasces, group.” *Fascista* was first used in 1914 to refer to members of a *fascio*, or political group. In 1919, *fascista* was applied to the black-shirted members of Benito Mussolini’s organization, the *Fasci di combattimento* (“combat groups”), who seized power in Italy in 1922. Playing on the word *fascista*, Mussolini’s party adopted the *fasces*, a bundle of rods with an ax among them, as a symbol of the Italian people united and obedient to the single authority of the state. The English word *fascist* was first used for members of Mussolini’s *fascisti*, but it has since been generalized to those of similar beliefs.”

### Some quotations from Mussolini’s essay defining fascism

**The Fascist conception of the State is all-embracing; outside of it no human or spiritual values can exist, much less have value. Thus understood, Fascism is totalitarian, and the Fascist State - a synthesis and a unit inclusive of all values - interprets, develops, and potentiates the whole life of a people.**

After Socialism, Fascism attacks the whole complex of democratic ideologies and rejects them both in their theoretical premises and in their applications or practical manifestations. Fascism denies that the majority, through the mere fact of being a majority, can rule human societies; it denies that this majority can govern by means of a periodical consultation; it affirms the irremediable, fruitful and beneficent inequality of men, who cannot be levelled by such a mechanical and extrinsic fact as universal suffrage.

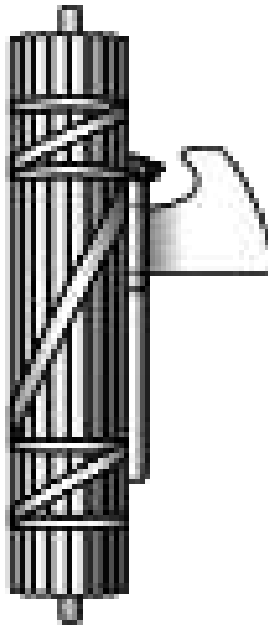


Figure 4.17: The symbol of fascism used by Mussolini. The rods in the bundle were used by ancient Romans for punishment.



Figure 4.18: Juan Perón, President of Argentina from 1946 to 1955 and 1973 to 1974, admired Italian Fascism and modelled his economic policies on those pursued by Fascist Italy.

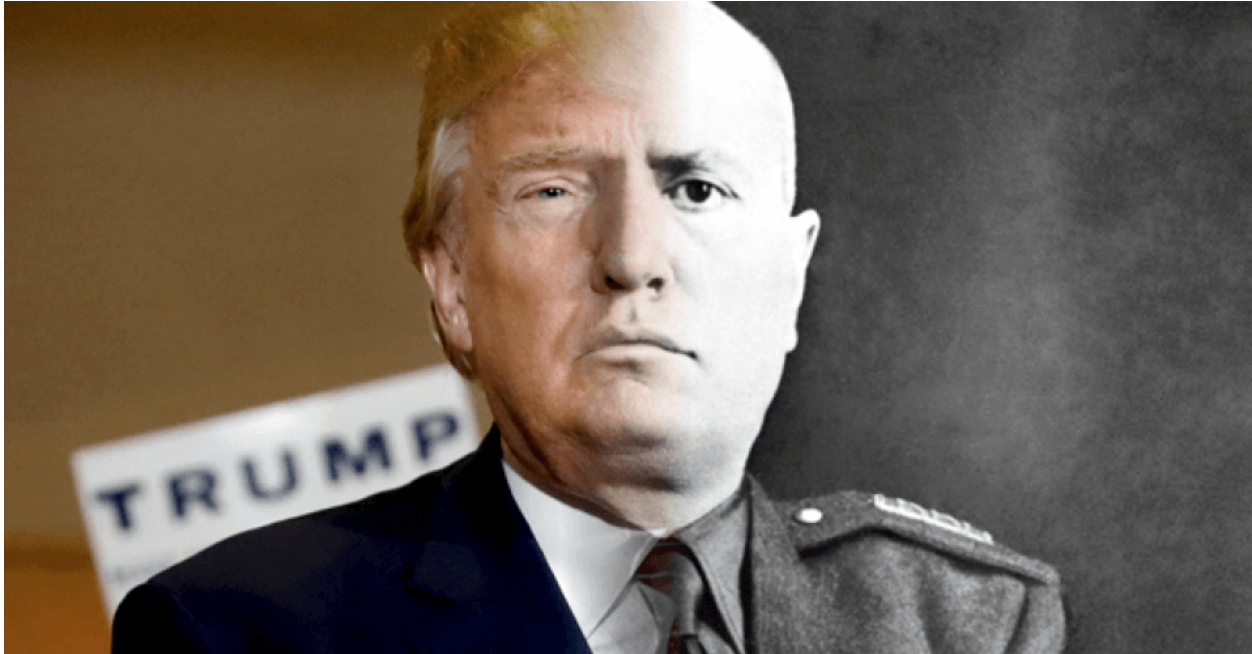


Figure 4.19: Mussolini defined fascism as “corporatism”. It unites the corporate state and the mob.

### 4.3 Imperialism, racism and exceptionalism

#### 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 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.

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# Chapter 5

## THE WAR MACHINE

### 5.1 Eisenhower's farewell address

In his famous farewell address, US President Dwight Eisenhower eloquently described the terrible effects of an overgrown Military-industrial complex. Here are his words:

“We have been compelled to create a permanent armaments industry of vast proportions.... This conjunction of an immense military establishment and a large arms industry is new in the American experience. The total influence, economic, political, even spiritual, is felt in every city, every State house, every office of the Federal government...[and] 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.

“In the councils of government, we must 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.”

In another speech, he said: “Every gun that is made, every warship launched, every rocket fired signifies, in the final sense, a theft from those who hunger and are not fed, those who are cold and are not clothed. This world in arms is not spending money alone. It is spending the sweat of its laborers, the genius of its scientists, the hopes of its children.”

Today the world spends more than 1.7 trillion dollars ( \$ 1,700,000,000,000) every year on armaments. This vast river of money, almost too large to be imagined, is the “devil's dynamo” driving the institution of war. Politicians notoriously can be bought with a tiny fraction of this enormous amount; hence the decay of democracy. It is also plain that if the almost unbelievable sums now wasted on armaments were used constructively, most of the pressing problems now facing humanity could be solved.

Because the world spends almost two thousand billion 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 an institution, and why it persists, although we know that it is the cause of much of the suffering that inflicts humanity.

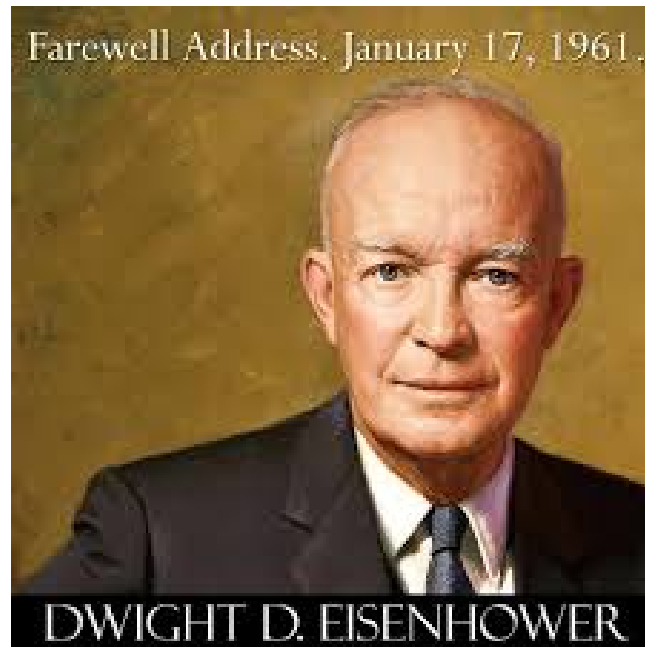


Figure 5.1: “In the councils of government, we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the Military-industrial complex. The potential for the disastrous rise of misplaced power exists and will persist.”





## 5.2 The threats and costs of war

In the long run, because of the enormously destructive weapons, which have been produced through the misuse of science, the survival of civilization can only be insured if we are able to abolish the institution of war.

Modern warfare has become prohibitively dangerous and destructive because of the enormously powerful weapons that scientists and engineers have developed. The institution of war could not continue without their cooperation. Thus, scientists and engineers throughout the world have a special responsibility.

Wars are driven by the collective paranoia of voters, who are willing to allow colossal sums to be spent by ‘Defense Departments’. But are civilians really defended? Absolutely not!

We can see this most clearly if we think of nuclear war. Nations 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. Those leaders’ goal is not protection of ordinary people, but rather protection of the gargantuan profits of the military-industrial complex. As the Indian writer Arundhati Roy put it, “Once weapons were manufactured to fight wars. Now wars are manufactured to sell weapons.”

If a thermonuclear war occurs, it will be the end of human civilization and much of the biosphere. This will definitely happen in the future unless the world rids itself of nuclear weapons, since, in the long run, the finite chance of accidental nuclear war happening due to a technical or human failure during a given year will gradually build up into a certainty of disaster. Scientists and engineers must not sell their knowledge and talents to this march towards the precipice.

### 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



Figure 5.2: **Children born with birth defects due to the US use of Agent Orange during the Vietnam War. Source: stopwarcoalition.org**

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.

### **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,



Figure 5.3: A little girl cries as medics attend to her injuries at al-Shifa hospital in Gaza in 2014, during the conflict. Photo: UNICEF/Eyad El Baba

normal supplies of food, safe water and medicine are interrupted, so that populations become vulnerable to famine and epidemics.<sup>1</sup>

### 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>

<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/>



Figure 5.4: **Asylum-seekers in a holding centre on Greece’s Samos Island.**

## 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 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>

## 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>

## 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 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

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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>



Figure 5.5: **Image source: Greenpeace**

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>

### 5.3 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

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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>



Figure 5.6: **The 15 megaton explosion detonated by the United States at Bikini Atoll in 1954 produced lasting biological damage to humans and animals living on the distant Marshall Islands. Today, half a century later, the islanders still experience radiation sickness in the form of leukemia and birth defects. Source: [www.theguardian.com](http://www.theguardian.com)**

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

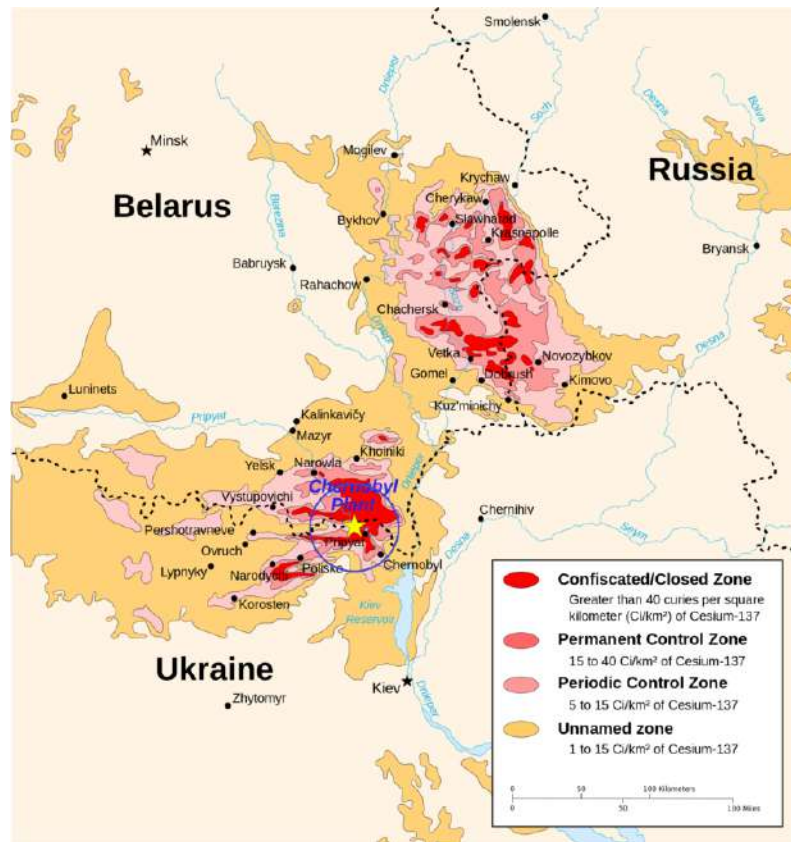


Figure 5.7: A nuclear war would be an ecological disaster, making large portions of the world permanently uninhabitable because of long-lasting radioactivity. Chernobyl radiation map 1996 30km zone by CIA Factbook. Licensed under CC BY-SA 2.5 via Wikimedia Commons.



Figure 5.8: Sculpture depicting Saint George slaying the dragon. The dragon is created from fragments of Soviet SS-20 and United States Pershing nuclear missiles. UN Photo/Milton Grant



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-deterrance>  
<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->

## 5.4 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 clar-

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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/>

<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-deterrance>

<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/>

ifying 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> 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.

More recently, on 7 July, 2017, the Treaty on the Prohibition of Nuclear Weapons was passed by a massive majority in the General Assembly of the United Nations, It was opposed only by the nuclear weapons states and a few of their allies. The Nuclear Ban Treaty makes it very clear that nuclear weapons are illegal under international law. Although the nuclear weapons states still cling to their world-destroying weapons, it is to be hoped that the force of global public opinion will eventually force them to comply with the law.

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

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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 acceptance.

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 earth's 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.

One important defect in the concept of deterrence is the fact that nuclear war may occur through accident or miscalculation, through technical defects or human failings, or by terrorism. 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 "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. 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. "The computer showed that the Americans had launched a strike against us", Petrov remembered later. His 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 coolheaded decision and 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

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<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

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.

### **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.

Can we not rid ourselves of both nuclear weapons and the institution of war itself? We must act quickly and resolutely before everything that we love in our beautiful world is reduced to radioactive ashes.

## **5.5 Dangers of nuclear power generation**

### **The Chernobyl disaster**

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.

Public opinion turned against nuclear power generation as a result of the Chernobyl disaster. Had the disaster taken place in Western Europe or North America, its effect on

public opinion would have been still greater. Nevertheless, because of the current energy crisis, and because of worries about global warming, a number of people are arguing that nuclear energy should be given a second chance. The counter-argument is that a large increase in the share of nuclear power in the total spectrum of energy production would have little effect on climate change but it would involve unacceptable dangers, not only dangers of accidents and dangers associated with radioactive waste disposal, but above all, dangers of proliferation of nuclear weapons.

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.

## Reactors and nuclear weapons

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 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<sup>11</sup>. 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.

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<sup>11</sup>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.



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 for mankind, 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<sup>12</sup> 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.

Known reserves of uranium are only sufficient for the generation of  $8 \times 10^{20}$  joules of electrical energy<sup>13</sup>, i.e., about 25 TWy. 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<sup>14</sup> 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" 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

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<sup>12</sup>i.e. production of uranium with a higher percentage of U-235 than is found in natural uranium

<sup>13</sup>Craig, J.R., Vaugn, D.J. and Skinner, B.J., *Resources of the Earth: Origin, Use and Environmental Impact, Third Edition*, page 210.

<sup>14</sup>Israel, India and Pakistan have refused to sign the Nuclear Non-Proliferation Treaty, and North Korea, after signing the NPT, withdrew from it in 2003.

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 NPT.

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<sup>15</sup> 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.

Recent assassination attempts directed at Pakistan’s President, Pervez Musharraf, emphasize the precariousness of Pakistan’s government. There a danger that it may be overthrown, and that the revolutionists would 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.

If nuclear reactors become the standard means for electricity generation as the result of a future energy crisis, the number of nations possessing nuclear weapons might ultimately be as high as 40. If this should happen, then over a long period of time the chance that one

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<sup>15</sup>1 February, 2004

or another of these nations would undergo a revolution during which the weapons would fall into the hands of a subnational group would gradually grow into a certainty.

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 organized 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.

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 programs - 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.

From the facts that we have been reviewing, we can conclude that if nuclear power generation becomes widespread during a future energy crisis, and if equally widespread proliferation of nuclear weapons is to be avoided, the powers and budget of the IAEA will have to be greatly increased. All enrichment of uranium and Reprocessing fuel rods throughout the world will have to be placed be under direct international control, as has been emphasized by Mohamed ElBaradei. Because this will need to be done with fairness, such regulations will have to hold both in countries that at present have nuclear weapons and in countries that do not. It has been proposed that there should be an international fuel rod bank, to supply new fuel rods and reprocess spent ones. In addition to this excellent proposal, one might also consider a system where all power generation reactors and all research reactors would be staffed by the IAEA.

Nuclear reactors used for "peaceful" purposes unfortunately also generate fissionable

isotopes of not only of plutonium, but also of neptunium and americium. Thus all nuclear reactors must be regarded as ambiguous in function, and all must be put under strict international control. One must ask whether globally widespread use of nuclear energy is worth the danger that it entails.

Let us now examine the question of whether nuclear power generation would appreciably help to prevent global warming. The fraction of nuclear power in the present energy generation spectrum is at present approximately 1/16. Nuclear energy is used primarily for electricity generation. Thus increasing the nuclear fraction would not affect the consumption of fossil fuels used directly in industry, transportation, in commerce, and in the residential sector. Coal is still a very inexpensive fuel, and an increase in nuclear power generation would do little to prevent it from being burned. Thus besides being prohibitively dangerous, and besides being unsustainable in the long run (because of finite stocks of uranium and thorium), the large-scale use of nuclear power cannot be considered to be a solution to the problem of anthropogenic climate change.

Optimists point to the possibility of using fusion of light elements, such as hydrogen, to generate power. However, although this can be done on a very small scale (and at great expense) in laboratory experiments, the practical generation of energy by means of thermonuclear reactions remains a mirage rather than a realistic prospect on which planners can rely. The reason for this is the enormous temperature required to produce thermonuclear reactions. This temperature is comparable to that existing in the interior of the sun, and it is sufficient to melt any ordinary container. Elaborate “magnetic bottles” have been constructed to contain thermonuclear reactions, and these have been used in successful very small scale experiments. However, despite 50 years of heavily-financed research, there has been absolutely no success in producing thermonuclear energy on a large scale, or at anything remotely approaching commercially competitive prices.

## 5.6 Military-industrial complexes today

### “We’re going to take out seven countries in five years”

In an interview with Amy Goodman<sup>16</sup>, retired 4-star General Wesley Clark said: “About ten days after 9/11, I went through the Pentagon and I saw Secretary Rumsfeld and Deputy Secretary Wolfowitz. I went downstairs just to say hello to some of the people on the Joint Staff who used to work for me, any one of the generals called me in. He said, “Sir, you’ve got to come in and talk to me a second.” I said, “Well, you’re too busy.” He said, “No, no.” He says, “We’ve made the decision we’re going to war with Iraq.” This was on or about the 20th of September. I said, “We’re going to war with Iraq? Why?” He said, “I don’t know.” He said, “I guess they don’t know what else to do.” So I said, “Well, did they find some information connecting Saddam to al-Qaeda?” He said, “No, no.” He says, “There’s nothing new that way. They just made the decision to go to war with Iraq.” He said, “I guess it’s like we don’t know what to do about terrorists, but we’ve got a good military

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<sup>16</sup><https://genius.com/General-wesley-clark-seven-countries-in-five-years-annotated>



Figure 5.9: **General Wesley Clark**

and we can take down governments.” And he said, “I guess if the only tool you have is a hammer, every problem has to look like a nail.

So I came back to see him a few weeks later, and by that time we were bombing in Afghanistan. I said, “Are we still going to war with Iraq?” And he said, “Oh, it’s worse than that.” He reached over on his desk. He picked up a piece of paper. And he said, “I just got this down from upstairs” - meaning the Secretary of Defense’s office - “today.” And he said, “This is a memo that describes how we’re going to take out seven countries in five years, starting with Iraq, and then Syria, Lebanon, Libya, Somalia, Sudan and, finishing off, Iran.” I said, “Is it classified?” He said, “Yes, sir.” I said, “Well, don’t show it to me.” And I saw him a year or so ago, and I said, “You remember that?” He said, “Sir, I didn’t show you that memo! I didn’t show it to you!”

### **The global trade in light arms**

An 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.

## Examples of endemic conflict

In several regions of Africa, long-lasting conflicts have prevented development and caused enormous human misery. These regions include Ethiopia, Eritria, Somalia (Darfur), Chad, Zimbabwe and the Democratic Republic of Congo. In the Congo, the death toll reached 5.4 million in 2008, with most of the victims dying of disease and starvation, but with war as the root cause. In view of these statistics, the international community can be seen to have a strong responsibility to stop supplying small arms and ammunition to regions of conflict. There is absolutely no excuse for the large-scale manufacture and international sale of small arms that exists today.

## The Wolfowitz Doctrine

The Wolfowitz Doctrine is the unofficial name given to the early version of the Defense Strategy for the 1990s: The Regional Defense Strategy report for the 1994-99 fiscal years. It was later released by then Secretary of Defense Dick Cheney in 1993. It brazenly advocates that America do everything in its power to retain its global hegemony and superpower status, including ensuring that Russia, China, Iran and other regional powers - but especially Russia - be prevented from attaining enough power to seriously challenge the US. In short, it's another US blueprint for total global supremacy.

There are many quotable passages from the Wolfowitz Doctrine. Here's one which sums up its aims:

“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. This is a dominant consideration underlying the new regional defense strategy and requires that we endeavor to prevent any hostile power from dominating a region whose resources would, under consolidated control, be sufficient to generate global power. These regions include Western Europe, East Asia, the territory of the former Soviet Union, and Southwest Asia.”

Similar motives guide US policy today. In February, 2018, US Secretary of Defense James Mattis said: “We will continue to prosecute the campaign against terrorists, but great-power competition - not terrorism - is now the primary focus of US national security.”

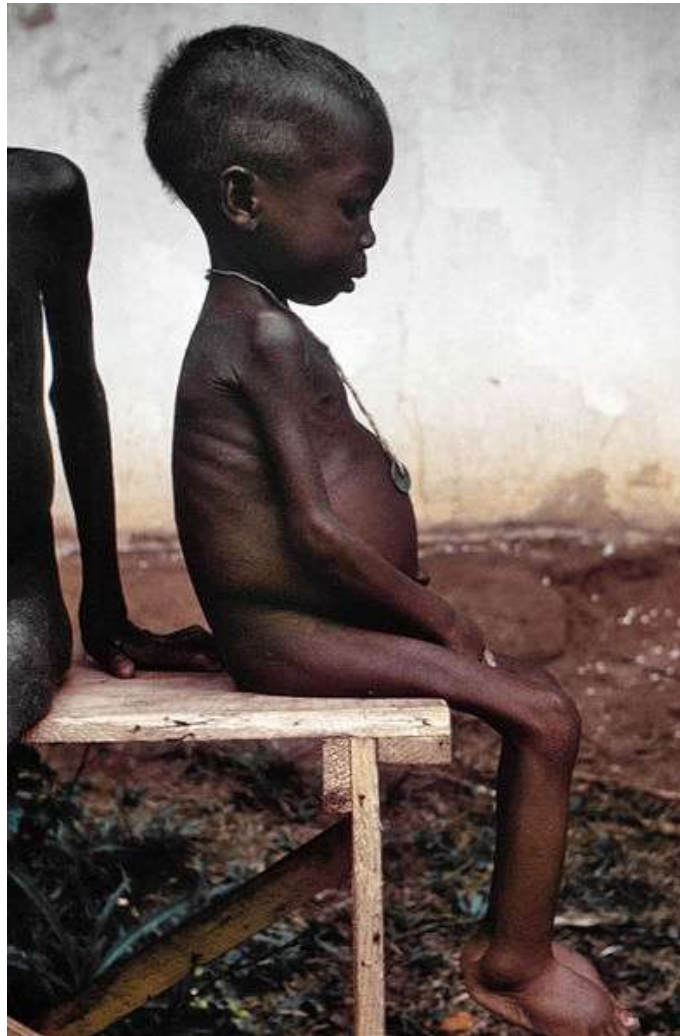


Figure 5.10: 40,000 children die each day from starvation or from poverty-related diseases. Meanwhile, the world spends more than \$1,700,000,000,000 each year on armaments.

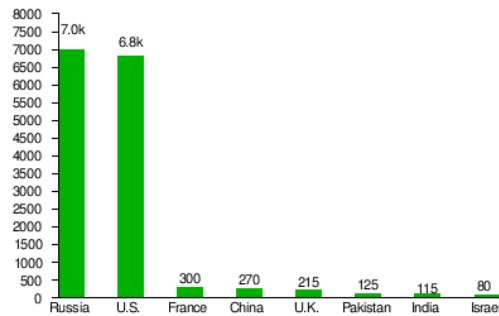


Figure 5.11: Countries by estimated nuclear warhead stockpiles according to the Federation of American scientists.

## Militarism in North Korea

The following states are now believed to currently possess nuclear weapons: The United states, Russia, The United Kingdom, France, China, India, Pakistan, North Korea and Israel. The way in which North Korea obtained its nuclear weapons is described by Wikipedia in the following paragraphs:

“The nuclear program can be traced back to about 1962, when North Korea committed itself to what it called ‘all-fortressization’, which was the beginning of the hyper-militarized North Korea of today. In 1963, North Korea asked the Soviet Union for help in developing nuclear weapons, but was refused. The Soviet Union agreed to help North Korea develop a peaceful nuclear energy program, including the training of nuclear scientists. Later, China, after its nuclear tests, similarly rejected North Korean requests for help with developing nuclear weapons.

“Soviet engineers took part in the construction of the Yongbyon Nuclear Scientific Research Center and began construction of an IRT-2000 research reactor in 1963, which became operational in 1965 and was upgraded to 8 MW in 1974. In 1979 North Korea indigenously began to build in Yongbyon a second research reactor, an ore processing plant and a fuel rod fabrication plant. Soviet engineers took part in the construction of the Yongbyon Nuclear Scientific Research Center, and began construction of an IRT-2000 research reactor in 1963, which became operational in 1965 and was upgraded to 8 MW in 1974. In 1979 North Korea indigenously began to build in Yongbyon a second research reactor, an ore processing plant and a fuel rod fabrication plant. ”

Thus like other new nuclear weapons states, North Korea obtained nuclear weapons by misuse of nuclear power generation facilities donated by other countries. In addition, North Korea spend a large fraction of its GDP on conventional armaments. Under the Songun policy, the Korean Peoples Army is the central institution of North Korean society. As of 2016, the Korean Peoples Army had 5,889,000 paramilitary personelle (25% of the population of North Korea) making it the largest paramilitary organization on earth.



Table 5.1: SIPRI Military Expenditure Database, 2016

Rank	Country	Annual Spending \$ Bn.	% of GDP
1	United State	611.2	3.3
2	China	215.7	1.9
3	Russia	69.2	5.3
4	Saudi Arabia	63.7	10
5	India	55.9	2.5
6	France	55.7	2.3
7	United Kingdom	48.3	1.9
8	Japan	46.1	1.0
9	Germany	41.1	1.2
10	South Korea	36.8	2.7
11	Italy	27.9	1.5
12	Australia	24.3	2.0

Table 5.2: SIPRI List of arms manufacturers, 2016

Rank	Company	Country	Annual Arms Sales \$ Mn.
1	Lockheed Martin	United States	40,830
2	Boeing	United States	29,510
3	Raytheon	United States	22,910
4	BAE Systems	United Kingdom	22,700
5	Northrop Grumman	United States	21,400
6	General Dynamics	United States	19,230
7	Airbus	European Union	12,520
8	L-3 Communications	United States	8,890
9	Leonardo-Finmeccanica	Italy	8,500
10	Thales Group	France	8,170
11	United Technologies Corporation	United States	6,870
12	Huntington Ingalls Industries	United States	6,720



Figure 5.12: North Korea’s dictator, Kim Jong-un. The doctrine of nuclear deterrence rests on the assumption that political leaders will always act rationally, an assumption that seems very uncertain in the case of the U.S.-North Korean conflict.

### The SIPRI Yearbook, 2017

Dan Smith of the Stockholm International Peace Research Institute (SIPRI) wrote the following Introduction to the organization’s yearbook for 2017:

“An overall perspective on 2016 finds a balance between negative developments and the continued functioning of the international system. However, the year ended with clear grounds for concern that the balance sheet seemed to be tipping towards the negative amid growing unease about the durability of key parts of the international security architecture.

“Conflicts in the Middle East continued to generate humanitarian tragedies and large-scale movement of refugees, and violent conflict continued in several other parts of the world, most notably Africa, Asia and to a lesser extent Eastern Europe. Developments in North Korea’s nuclear programme contributed to international political instability with potentially serious knock-on effects. On the positive side, the 2015 Paris Climate Agreement entered into force in November 2016, the 2015 Iran nuclear deal began implementation on time in early 2016 and the United Nations General Assembly adopted a resolution to start negotiations in 2017 on eliminating nuclear weapons. Progress was also made on work to monitor the unfolding implementation of the UN’s Agenda 2030 for international social and economic development. A major contribution to the positive side of the balance sheet in 2016 was the peace agreement in Colombia.

“Nonetheless, virtually all the major global indicators for peace and security have moved in a negative direction: more military spending, increased arms trading, more violent conflicts and the continuing forward march of military technology.

“Existing multilateral and bilateral arms control agreements and processes are also under challenge-not least due to the deteriorating relationship between Russia and the United States-raising questions of global concern and potentially epochal scope. Were the great gains in peaceful relations since the end of the cold war now being reversed? Would the return of strategic competition between the major powers have negative implications for managing increased conflict risk? These uncertainties, combined with political developments in Europe and the USA- especially the vote by the United Kingdom to leave the European Union and the election of Donald J. Trump as US President-seemed to reveal

a much decreased commitment to international institutions and a renewed emphasis in several key states on a narrowly defined national interest.

“The scale of the challenges facing humanity has been summed up in the proposal to adopt the label of ‘the Anthropocene’ for the current era, thus designating it as one in which human activity is the dominant influence on climate and the environment. It is disconcerting to note that such cooperation risks becoming more elusive than it has seemed for most of the time since the end of the cold war, at a time when it is more needed than ever. Experience has shown that international cooperation can work. But is the international cooperative urge as persistent as the problems it needs to address?”

## 5.7 A culture of violence

### Links with the entertainment industry

Here are a few films that glorify war:

- Black Hawk Down
- Top Gun
- Behind Enemy Lines
- Red Dawn (1984)
- American Sniper
- Iron Eagle
- Pearl Harbor
- Act of Valor
- We Were Soldiers
- The Green Berets

### Making a game of killing

The mass media are an important part of our educational system. Perhaps it is time to look more closely at the values that they are transmitting. In particular, we should perhaps look at computer games designed for young boys. They often give the strongest imaginable support to a 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).

Another genre of computer games has to do with building empires, ignoring the fact that imperialism is morally indefensible. For example, “Forge of Empires” is a browser-based strategy game. It is described as follows: “The game offers a single-player campaign for players to explore and conquer several provinces, gaining resources and new technology as they progress.” Conquering countries for the sake of gaining their resources is an all-too-familiar feature of the modern world. In the game “Forge of Empires”, our young people are indoctrinated with the ethos of resource wars.

During his trial, the Norwegian mass-murderer Anders Behring Breivik described how he trained for his attack on young people on the Island of Utöya using the computer game “Call of Duty: Modern Warfare”. The court also heard how he took what he called a “sabbatical” for a year between the summers of 2006 and 2007. During this year, he played a game called “World of Warcraft” full-time, in the bedroom of his mother’s Oslo flat, spending up to 16 hours a day using the game to distance himself from the human and moral significance of killing.

Is this not similar to the frame of mind of drone operators, sitting in comfort in their Nevada bunkers, distanced from the reality of killing? They are playing a computer game that kills targeted individuals and their families, in remote countries, by remote control. There is no need to look into the eyes of the victims. They are just abstract symbols in a computer game.

## 5.8 Militarism is the US national religion

Here are some quotations from an article by William Astore entitled *Military Might Is Our National Religion*<sup>17</sup>. He lists the following facts to support his thesis:

- **We believe in wars. We may no longer believe in formal declarations of war (not since December 1941 has Congress made one in our name), but that sure hasn’t stopped us from waging them. From Korea to Vietnam, Afghanistan to Iraq, the Cold War to the War on Terror, and so many military interventions in between, including Grenada, Panama, and Somalia, Americans are always fighting somewhere as if we saw great utility in thumbing our noses at the Prince of Peace. (That’s Jesus Christ, if I remember my Catholic catechism correctly.)**
- **We believe in weaponry, the more expensive the better. The underperforming F-35 stealth fighter may cost \$1.45 trillion over its lifetime. An updated nuclear triad (land-based missiles, nuclear submarines, and strategic bombers) may cost that already mentioned \$1.7 trillion. New (and malfunctioning) aircraft carriers cost us more than \$10 billion each. And all such weaponry requests get funded, with few questions asked, despite a history of their redundancy, ridiculously high price, regular cost**

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<sup>17</sup>Truthout, August 13, 2019

overruns, and mediocre performance. Meanwhile, Americans squabble bitterly over a few hundred million dollars for the arts and humanities.

- We believe in weapons of mass destruction. We believe in them so strongly that we're jealous of anyone nibbling at our near monopoly. As a result, we work overtime to ensure that "infidels" and atheists (that is, the Iranians and North Koreans, among others) don't get them. In historical terms, no country has devoted more research or money to deadly nuclear, biological, and chemical weaponry than the United States. In that sense, we've truly put our money where our mouths are (and where a devastating future might be).
- We believe with missionary zeal in our military and seek to establish our "faith" everywhere. Hence, our global network of perhaps 800 overseas military bases. We don't hesitate to deploy our elite missionaries, our equivalent to the Jesuits, the Special Operations forces to more than 130 countries annually. Similarly, the foundation for what we like to call foreign assistance is often military training and foreign military sales. Our present supreme leader, Pope Trump I, boasts of military sales across the globe, most notably to the "infidel" Saudis. Even when Congress makes what, until recently, was the rarest of attempts to rein in this deadly trade in arms, Pope Trump vetoes it. His rationale: weapons and profits should rule all.
- We believe in our college of cardinals, otherwise known as America's generals and admirals. We sometimes appoint them (or anoint them?) to the highest positions in the land. While Trump's generals - Michael Flynn, James Mattis, H.R. McMaster, and John Kelly - have fallen from grace at the White House, America's generals and admirals continue to rule globally. They inhabit proconsul-like positions in sweeping geographical commands that (at least theoretically) cover the planet and similarly lead commands aimed at dominating the digital-computer realm and special operations. One of them will head a new force meant to dominate space through time eternal. A "strategic" command (the successor to the Strategic Air Command, or SAC, so memorably satirized in Stanley Kubrick's *Dr. Strangelove*) continues to ensure that, at some future moment, the U.S. will be able to commit mass genocide by quite literally destroying the world with nuclear weapons. Indeed, Pope Trump recently boasted that he could end America's Afghan War in a week, apparently through the mass nuclear genocide of (his figure) 10 million Afghans. Even as he then blandly dismissed the idea of wiping that country "off the face of the earth," he openly reflected the more private megalomania of those military professionals funded by the rest of us to think about "the unthinkable". In sum, everything is - theoretically at least - under the

thumbs of our unelected college of cardinals. Their overblown term for it is “full-spectrum dominance,” which, in translation, means they grant themselves god-like powers over our lives and that of our planet (though the largely undefeated enemies in their various wars don’t seem to have acknowledged this reality).

- We believe that freedom comes through obedience. Those who break ranks from our militarized church and protest, like Chelsea Manning, are treated as heretics and literally tortured.
- We believe military spending brings wealth and jobs galore, even when it measurably doesn’t. Military production is both increasingly automated and increasingly outsourced, leading to far fewer good-paying American jobs compared to spending on education, infrastructure repairs of and improvements in roads, bridges, levees, and the like, or just about anything else for that matter.
- We believe, and our most senior leaders profess to believe, that our military represents the very best of us, that we have the “finest” one in human history.
- We believe in planning for a future marked by endless wars, whether against terrorism or “godless” states like China and Russia, which means our military church must be forever strengthened in the cause of winning ultimate victory.



Figure 5.13: The peoples of the world must revolt against the endless wars of their governments. All-destroying modern weapons have made the institution of war prohibitively dangerous.



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# Chapter 6

## THE POPULARITY OF RACISM

### 6.1 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>1</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.

### 6.2 Heart of Darkness

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 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

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<sup>1</sup><https://www.youtube.com/watch?v=efI6T8lovqY>  
<https://www.youtube.com/watch?v=IdBDRbjx9jo>  
<https://www.youtube.com/watch?v=oCJHJWaNL-g>



Figure 6.1: **Half of the population of Belgian Congo died during the rule of Leopold II.**

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"?

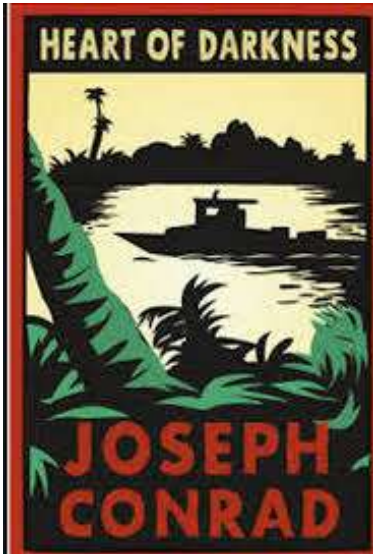


Figure 6.2: Joseph Conrad's famous book was written against the background of Leopold's atrocities.



Figure 6.3: Heart of Darkness: In Leopold's Congo, human hands became a currency.



Figure 6.4: **Heart of Darkness: Part of a palace built by Leopold II to glorify his “humanitarian” activities in the Congo.**

### 6.3 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>2</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 feudalist society controlled by themselves through the world’s central banks. In America, the Council on Foreign Relations (CFR) was an outgrowth of that group.”

## 6.4 Nazi atrocities

During the World War II Holocaust, six million Jews were systematically murdered. This amounted to two thirds of the Jewish population of Europe. A broader definition of the Holocaust includes the murder of the Roma and the “incurably sick”. as well as ethnic Poles, other Slavic groups, Soviet citizens and prisoners of war, homosexuals, Jehovah’s Witnesses, black people, and political opponents.

At least three million Soviet prisoners of war died in German custody, but this figure is small compared with the total number of lives lost in the Soviet Union during World War II. Depending on which historian you believe, the USSR lost at least 11,000,000 soldiers (killed and missing) as well as somewhere between 7,000,000 and 20,000,000 million of its civilians. The total number of people killed in World War II is approximately 60,000,000. If deaths from war-related disease and famine are included, this figure becomes an estimated 80,000,000.

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<sup>2</sup>in his book, *The Creature from Jeckyll Island*



Figure 6.5: Nazi genocides: A pile of corpses in the Buchenwald extermination camp.



Figure 6.6: The idea of the superiority of one race over another was at the root of Nazi atrocities.



Figure 6.7: Nazi racism was built on the idea that Aryans are superior to all other races. But who is to decide? Will not each ethnic group or nation always decide that they themselves are the “chosen people”, loved by God and superior to all others?



Figure 6.8: Baba Yar.



Figure 6.9: Polish farmers killed by German forces, German-occupied Poland, 1943.



Figure 6.10: Polish teachers from Bydgoszcz guarded by members of Volksdeutscher Selbstschutz before execution,





Figure 6.11: Mass murder of Soviet civilians near Minsk, 1943.



Figure 6.12: The anti-Jewish pogrom in Kaunas, in which thousands of Jews were killed in the last few days of June 1941.



Figure 6.13: German police shooting women and children from the Mizocz Ghetto, 14 October 1942.



Figure 6.14: Crowds of Germans applauding Adolf Hitler at a rally in Nuremberg.



Figure 6.15: Another photo from Nuremberg. Racism is popular!

## 6.5 Donald trump was elected on a platform of racism

Here is a list taken from an article by German Lopaz, entitled *Donald Trump's long history of racism, from the 1970s to 2019*<sup>3</sup>.

- Trump launched his campaign in 2015 by calling Mexican immigrants “rapists” who are “bringing crime” and “bringing drugs” to the US. His campaign was largely built on building a wall to keep these immigrants out of the US.
- As a candidate in 2015, Trump called for a ban on all Muslims coming into the US. His administration eventually implemented a significantly watered-down version of the policy.
- When asked at a 2016 Republican debate whether all 1.6 billion Muslims hate the US, Trump said, “I mean a lot of them. I mean a lot of them.”
- He argued in 2016 that Judge Gonzalo Curiel - who was overseeing the Trump University lawsuit - should recuse himself from the case because of his Mexican heritage and membership in a Latino lawyers association. House Speaker Paul Ryan, who endorsed Trump, later called such comments “the textbook definition of a racist comment.”
- Trump has been repeatedly slow to condemn white supremacists who endorse him, and he regularly retweeted messages from white supremacists and neo-Nazis during his presidential campaign.

<sup>3</sup><https://www.vox.com/2016/7/25/12270880/donald-trump-racist-racism-history>

- He tweeted and later deleted an image that showed Hillary Clinton in front of a pile of money and by a Jewish Star of David that said, “Most Corrupt Candidate Ever!” The tweet had some very obvious anti-Semitic imagery, but Trump insisted that the star was a sheriff’s badge, and said his campaign shouldn’t have deleted it.
- Trump has repeatedly referred to Sen. Elizabeth Warren (D-MA) as “Pocahontas,” using her controversial - and later walked-back - claims to Native American heritage as a punchline.
- At the 2016 Republican convention, Trump officially seized the mantle of the “law and order” candidate - an obvious dog whistle playing to white fears of black crime, even though crime in the US is historically low. His speeches, comments, and executive actions after he took office have continued this line of messaging.
- In a pitch to black voters in 2016, Trump said, “You’re living in poverty, your schools are no good, you have no jobs, 58 percent of your youth is unemployed. What the hell do you have to lose?”
- Trump stereotyped a black reporter at a press conference in February 2017. When April Ryan asked him if he plans to meet and work with the Congressional Black Caucus, he repeatedly asked her to set up the meeting - even as she insisted that she’s “just a reporter.”
- In the week after white supremacist protests in Charlottesville, Virginia, in August 2017, Trump repeatedly said that “many sides” and “both sides” were to blame for the violence and chaos that ensued - suggesting that the white supremacist protesters were morally equivalent to counterprotesters that stood against racism. He also said that there were “some very fine people” among the white supremacists. All of this seemed like a dog whistle to white supremacists - and many of them took it as one, with white nationalist Richard Spencer praising Trump for “defending the truth.”
- Throughout 2017, Trump repeatedly attacked NFL players who, by kneeling or otherwise silently protesting during the national anthem, demonstrated against systemic racism in America.
- Trump reportedly said in 2017 that people who came to the US from Haiti “all have AIDS,” and he lamented that people who came to the US from Nigeria would never “go back to their huts” once they saw America. The White House denied that Trump ever made these comments.
- Speaking about immigration in a bipartisan meeting in January 2018, Trump reportedly asked, in reference to Haiti and African countries, “Why are we having all these people from shithole countries come here?” He then reportedly suggested that the US should take more people from countries like Norway. The implication: Immigrants from predominantly white countries are good, while immigrants from predominantly black countries are bad.

## The disastrous 2016 US election

In the United States, campaigns for the presidential election of 2016 might have been an occasion for a realistic discussion of the enormously important challenges which we now face, not only in the America, but also throughout the world.

Most thoughtful people agree that the two most important issues facing humanity today are the threat of catastrophic and uncontrollable climate change, and the threat of nuclear war. Each of these threatened disasters has the potential to destroy human civilization and much of the biosphere. But on the whole these vitally important issues were not discussed in an honest way in the mainstream media. Instead the campaign spectacle presented to us by the media was washed down into the murky depths of stupidity by rivers of money from the fossil fuel giants and the military industrial complex.

The Republican presidential candidates were almost single-voiced in denying the reality of climate change, and they were almost unanimously behind foreign policy options that would push the world to the brink of nuclear war.

Unless rapid action is taken, the world may soon pass a tipping point after which human efforts to avoid catastrophic climate change will be useless because feedback loops will have taken over. However, our present situation is by no means hopeless, because of the extremely rapid rate of growth of renewable energy. What can governments do to help? They can stop subsidizing the fossil fuel industry! Without massive fossil fuel subsidies, renewables would be the cheaper option, and economic forces alone would drive the urgently-needed transition to 100% renewable energy.

A report by RNE21, a global renewable energy policy network, states that “Global subsidies for fossil fuels remain high despite reform efforts. Estimates range from USD 550 billion (International Energy Agency) to USD 5.6 trillion per year (International Monetary Fund), depending on how ‘subsidy’ is defined and calculated.”

“Growth in renewable energy (and energy efficiency improvements) is tempered by subsidies to fossil fuels and nuclear power, particularly in developing countries. Subsidies keep conventional energy prices artificially low, which makes it more difficult for renewable energy to compete...”

“Creating a level playing field can lead to a more efficient allocation of financial resources, helping to strengthen to advance the development of energy efficiency and renewable energy technologies. Removing fossil fuel and energy subsidies globally would reflect more accurately the true cost of energy generation.”<sup>4</sup>

There is, so to speak, an elephant in the room; but no one wants to talk about it. Everyone (with a very few exceptions) pretends not to see it. They pretend that it is not there. What is this metaphorical elephant? It is the Pentagon’s colossal budget, which is far too sacred a thing to be mentioned in an election campaign.

The size of this budget is almost beyond comprehension: 610 billion dollars per year. This does not include nuclear weapons research, maintenance, cleanup and production, which are paid for by the Department of Energy. Nor does it include payments in pensions

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<sup>4</sup><http://www.ren21.net/status-of-renewables/global-status-report/>

to military retirees and widows, nor interest on debt for past wars, nor the State Department's financing foreign arms sales and military-related development assistance, nor special emergency grants for current wars. Nor are the expenses of the Department of Homeland Security included in the Pentagon's budget, nor those of the CIA, nor the huge budget of NSA and other dark branches of the US government. One can only guess at the total figure if everything should be included, but it is probably well over a trillion dollars per year.

The hidden presence in the room is a trillion-dollar elephant. Perhaps we should include subsidies to fossil fuel giants. Then we would have a multi-trillion-dollar elephant. But it is too sacred to be mentioned. Cut Medicare! Cut pensions! Cut Social Security! Abolish food stamps! Sacrifice support for education! We are running out of money! (Meanwhile the elephant stands there, too holy to be seen.)

Against expectations, Donald Trump who, in the words of Michael Moore, is a "wretched, ignorant, dangerous part-time clown and full-time sociopath", was elected in 2016. What happened? Disillusioned by the way in which the immensely popular Senator Bernie Sanders was sabotaged by the media and by the Democratic National Committee, and despising Hillary Clinton for her involvement in US wars and Wall Street banks, many progressive voters stayed away from the polls. In their absence, Trump won narrowly. He lost the popular vote, but won the electoral vote. Today, the White House is a morass of dissension, erratic decisions and lies.



Figure 6.16: Is this the person to whom we ought to entrust the future of our planet? When elected, Donald Trump not only pulled the United States out of the Paris Agreement; he also sabotaged the Environmental Protection Agency to such an extent that the carefully collected facts on climate change that the agency had accumulated had to be secretly saved by scientists to prevent their destruction by the Trump administration. Furthermore, Donald Trump's administration not only subsidizes giant coal corporations. It also has sabotages renewable energy initiatives in the United States.



Figure 6.17: When Senator Bernie Sanders began his campaign for the Democratic presidential nomination, few people believed that he could succeed. But as his campaign gained momentum, enormous crowds were attracted to his reformist speeches, and small individual donors supported his expenses. Although the crowds at Sanders' speeches were at least four times the size of those attending the rallies of other candidates, they were not reported in the mass media. Sanders' campaign was also sabotaged by the corporate-controlled Democratic National Committee. His huge popularity remains undimmed today, despite his loss in the 2016 primary. He advocates a social system for the United States similar to these which have made the Scandinavian countries leaders in both human development and human happiness indices.





Figure 6.18: Dr. Jill Stein was the Green Party's presidential candidate in 2016. She was the only candidate who was willing to talk about the "elephant in the room" - the obscenely enormous military budget that consumed almost a trillion dollars that could otherwise have been used for social goals, health, education and infrastructure.



Figure 6.19: Disillusioned progressive voters who stayed at home were responsible for Trump's victory. Democrats must be very careful not to make the same mistake in the 2020 election. They must nominate a truly progressive candidate for President. A ticket with Elizabeth Warren for President and Bernie Sanders for Vice-President would certainly beat Trump. A ticket with Joe Biden for President would probably lose. Biden is dangerously similar to Hillary Clinton. He is tainted by corporate money and has blood from the Iraq War on his hands. With Biden as the Democrat's candidate, progressive voters would stay home in disgust in 2020, just as they did in 2016.

## 6.6 Children in cages

### Inhumane treatment at the border

Here are some excerpts from the written testimony of Clara Long Deputy Washington Director (Acting) Senior Researcher, US Program Human Rights Watch. The testimony was submitted to the U.S. House Committee on Oversight and Reform for a hearing on July 19, 2019.

Our in-depth interviews with children revealed that the US Border Patrol is holding many children, including some who are much too young to take care of themselves, in jail - like border facilities for weeks at a time without contact with family members, or regular access to showers, clean clothes, toothbrushes, or proper beds. Many were sick. Many, including children as young as 2 or 3, were separated from adult caretakers without any provisions for their care besides that provided by unrelated older children also being held in de tention. These conditions are consistent with those Human Rights Watch documented in our February 2018 report, “In the Freezer.” In contrast with the conditions as of February 2018, the harms of CBP detention for children are now compounding over weeks instead of days.

On my first day at Clint, I spoke with an 11-year-old boy who was caring for his 3-year-old brother. Both were fending for themselves in cinder-block cells with dozens of other children for three weeks. When I met them, the little one was quiet with matted hair, a hacking cough, muddy pants and eyes that fluttered closed with fatigue. As we spoke, he fell asleep on two office chairs drawn together. “I am the one who takes care of him here,” the older brother told us. “There was a teenage girl with curly hair who was helping me take care of him for a while. I don’t know her name. But she’s gone now. Now, no one helps me to take care of him.”

A 14-year-old told our team she was taking care of a 4-year-old girl who had been placed in her cell with no relatives. “I take her to the bathroom, give her my extra food if she is hungry, and tell people to leave her alone if they are bothering her”, she said. “She has been sick the whole time I have been taking care of her, and is coughing and has mucous. She doesn’t talk hardly at all, just ‘yes’ and ‘no’. She wears diapers and I change them for her.”...

We also spoke with children who had been held for some period of time in quarantine cells. A 14- year-old girl told us, “I was in the first cell for seven days, sleeping with no mattress. It is hard to sleep when you don’t have a mattress. I then came down with the flu. I then went into the flu cell for seven days. When you are in the flu cell, y ou also sleep on the floor, but you have a mattress. There were 21 other kids in that space with the flu. I had a fever in there and I was shaking. Some of the other kids were vomiting. They all had fevers. No one was taking care of the kids with the flu... We were not allowed



to leave the flu cell, ever. It was very boring. I did nothing to entertain myself, nor was anything offered. It was sad, very sad. I felt locked up and closed in.”

An 11-year-old boy held in CBP custody for 12 days, despite having parents in New Jersey, said, “About three days ago I got a fever. They moved me alone to a flu cell. There is no one to take care of you there. They just give you pills twice a day. I also am having an allergic reaction all over my skin. My skin is itchy and red and my nose is stuffed up. Two times they gave me a pill for it but not anymore”

A 7-year-old girl I attempted to interview entered the room silently but burst into tears when we asked whom she traveled with to the US. “My aunt,” she said, with a keening cry. She was so upset we decided not to attempt to interview her, a situation that happened several times during our visit. A bracelet on her wrist had the words “US parent” and a phone number written in permanent marker. We called the number on the spot and found out that no one had informed her desperate parents where she was being held. Some of the most emotional moments of our visit came witnessing children speak for the first time with their parents on an attorney’s phone.

Based on our interviews, US officials at the border seem to be making no discernible effort to release children to caregivers while children are in Customs and Border Protection custody - though many have parents in the US - rather than holding them for weeks in overcrowded cells, incommunicado from their desperate loved ones.







## The definition of genocide

Here is the UN's definition of genocide under the statutes of the International Criminal Court:

**“In the present Convention, genocide means any of the following acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such:**

- a Killing members of the group;**
- b Causing serious bodily or mental harm to members of the group;**
- c Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part;**
- d Imposing measures intended to prevent births within the group;**
- (e) Forcibly transferring children of the group to another group.”**

Does not the treatment of children at the US southern border fulfill this definition?

## 6.7 Demonizing the Squad

On Sunday, July 14, Trump Tweeted

“So interesting to see ‘Progressive’ Democrat Congresswomen, who originally came from countries whose governments are a complete and total catastrophe, the worst, most corrupt and inept anywhere in the world (if they even have a functioning government at all), now loudly and viciously telling the people of the United States, the greatest and most powerful Nation on earth, how our government is to be run,”



Figure 6.20: The “Squad”, four first-term congresswomen: Representatives Alexandria Ocasio-Cortez (D-NY), Ayanna Pressley (D-MA), Rashida Tlaib (D-MI), Alexandria Ocasio-Cortez (lower left) has made extremely important contributions to the struggle to avoid catastrophic climate change. Highly intelligent, vocal, eloquent and witty, she is a thorn in the Republican’s side.



“Why don’t they go back and help fix the totally broken and crime infested places from which they came. Then come back and show us how it is done. These places need your help badly, you can’t leave fast enough. I’m sure that Nancy Pelosi would be very happy to quickly work out free travel arrangements!”

His targets were the four first-term congresswomen known as the Squad: Representatives Alexandria Ocasio-Cortez (D-NY), Ayanna Pressley (D-MA), Rashida Tlaib (D-MI), and Ilhan Omar (D-MN). Of the four, only Omar was born outside the United States. Trump later accused the four women of hating America and not loving Israel enough. This is one more example of Trump’s racist rhetoric.

The United States is a multiethnic country, whose internal cohesion can easily be destroyed by racism. During most of its history, the US has had substantial Spanish-speaking and Italian-speaking minorities, as well as great religious diversity. During the 1960’s the civil rights movement fought against racial prejudice and gradually achieved most of its goals. Thus, over a very long period of time, the United States learned to avoid racial and religious insults in its media, and this hard-earned wisdom has allowed the very markedly multi-ethnic US society to function with a minimum of racial and religious conflicts. Trump’s racism risks destroying these hard-earned lessons.

### Suggestions for further reading

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# Chapter 7

## CLIMATE CHANGE DENIAL

### 7.1 Donald Trump's climate change denial

In a recent article, climate expert Dr. Andrew Glickson wrote: “The train has left the station and global heating is advancing toward +2 and then toward +4 degrees Celsius, as projected by the IPCC and in the words of Joachim Hans Schellnhuber, Germany’s chief climate scientist, signifies the breakdown of civilization. Largely ignored or watered down by much of the mainstream media, betrayed by most political parties, including those who used to regard climate change as “the greatest moral issue of our time”, the population continues to be distracted by bread and circuses. Nowadays even some of the Greens appear to consider plastic bags and the tampon tax as greater vote winners than the demise of the biosphere.”

Why did Professor Noam Chomsky call the US Republican Party “The most dangerous organization in the history of the world”? In the primary that preceded the 2016 presidential election, every single Republican candidate with a chance of being nominated was a climate change denier. All received amazingly generous checks from giant fossil fuel organizations. When elected, Donald Trump not only pulled the United States out of the Paris Agreement; he also sabotaged the Environmental Protection Agency to such an extent that the carefully collected facts on climate change that the agency had accumulated had to be secretly saved by scientists to prevent their destruction by the Trump administration. Furthermore, Donald Trump not only subsidizes giant coal corporations. He also has sabotages renewable energy initiatives in the United States.

Here are some quotations from an article by Coral Davenport and Mark Landler, May 27, 2019<sup>1</sup>:

**President Trump has rolled back environmental regulations, pulled the United States out of the Paris climate accord, brushed aside dire predictions about the effects of climate change, and turned the term “global warming” into a punch line rather than a prognosis.**

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<sup>1</sup><https://www.nytimes.com/2019/05/27/us/politics/trump-climate-science.html>

Now, after two years spent unraveling the policies of his predecessors, Mr. Trump and his political appointees are launching a new assault.

In the next few months, the White House will complete the rollback of the most significant federal effort to curb greenhouse-gas emissions, initiated during the Obama administration. It will expand its efforts to impose Mr. Trump's hard-line views on other nations, building on his retreat from the Paris accord and his recent refusal to sign a communiqué to protect the rapidly melting Arctic region unless it was stripped of any references to climate change.

And, in what could be Mr. Trump's most consequential action yet, his administration will seek to undermine the very science on which climate change policy rests.

Mr. Trump is less an ideologue than an armchair naysayer about climate change, according to people who know him. He came into office viewing agencies like the Environmental Protection Agency as bastions of what he calls the "deep state," and his contempt for their past work on the issue is an animating factor in trying to force them to abandon key aspects of the methodology they use to try to understand the causes and consequences of a dangerously warming planet.

As a result, parts of the federal government will no longer fulfill what scientists say is one of the most urgent jobs of climate science studies: reporting on the future effects of a rapidly warming planet and presenting a picture of what the earth could look like by the end of the century if the global economy continues to emit heat-trapping carbon dioxide pollution from burning fossil fuels...

The administration's prime target has been the National Climate Assessment, produced by an interagency task force roughly every four years since 2000. Government scientists used computer-generated models in their most recent report to project that if fossil fuel emissions continue unchecked, the earth's atmosphere could warm by as much as eight degrees Fahrenheit by the end of the century. That would lead to drastically higher sea levels, more devastating storms and droughts, crop failures, food losses and severe health consequences.



Figure 7.1: There is so much wrong with Donald Trump that one hardly knows where to start. He is a bully, braggart, narcissist, racist, mysogenist, habitual liar, and tax evader, in addition to being demonstrably ignorant. He has contempt for both domestic and international law, as well as for the US Constitution. In the words of Michael Moore, he is a “part-time clown and full-time sociopath”. However, it is Trump’s climate change denial, withdrawal from the Paris agreement, and sponsorship of fossil fuels that pose the greatest threats to the future of humans society and the biosphere. The general support of the Republican Party for the fossil fuel industry is the reason why Prof. Noam Chomsky has called the party “the most dangerous organization in history”.

## 7.2 Jair Bolsonaro, the Trump of the Tropics

The newly elected President of Brazil, Jair Bolsonaro, has praised Pinochet, expressed support for torturers and called for political opponents to be shot, earning him the label of “the most misogynistic, hateful elected official in the democratic world”. Bolsonaro speaks nostalgically about the country’s 1964-1985 military dictatorship and has promised to fill his government with current and former military leaders. Here, in his own words, are some of his ideas:

**On refugees:** “The scum of the earth is showing up in Brazil, as if we didn’t have enough problems of our own to sort out.” (September 2015)

**On gay people:** “I would be incapable of loving a homosexual son. I’m not going to be a hypocrite: I’d rather my son died in an accident than showed up with some bloke with a moustache.” (June 2011)

**On democracy and dictatorship:** “You’ll never change anything in this country through voting. Nothing. Absolutely nothing. Unfortunately, things will only change when a civil war kicks off and we do the work the [military] regime didn’t. Killing some 30,000... Killing them! If a couple of innocents die, that’s OK.” (May 1999)

**On human rights:** “I’m in favour of torture.” (May 1999)

**On women:** “I said I wouldn’t rape you because you don’t deserve it.” (December 2014, to politician Maria do Rosário, repeating a comment first made to her in 2003).

Indigenous rights activists fear Bolsonaro’s avowed plan to wring riches from the Amazon - whether from expanding agriculture into indigenous lands, building roads and other infrastructure projects, or allowing mining on public lands - will unleash a tide of violence and environmental devastation.

“All indigenous communities are afraid right now,” says Felipe Milanez, professor of humanities at the Universidade Federal de Bahia. “There is a risk of brutal, violent attack.” Milanez fears that indigenous efforts to patrol and protect their own lands from outsiders, such as the Forest Guardians recently covered in National Geographic magazine, will be banned and persecuted.

“His economic project is to destroy the Amazon, to transform the Amazon into commodities for export,” Milanez says.

Human rights activists are concerned that a surge in violent land conflicts will accompany an increase in environmentally destructive development in the Amazon. “There is no doubt that devastation will spread in the region,” says Diogo Cabral, an attorney with the Sociedade Maranhense de Direitos Humanos. “At the same time, he aims to extinguish policies that protect human rights defenders in Brazil. Under Bolsonaro, human life will have no value.”



Figure 7.2: Jair Bolsonaro visiting Donald Trump in Washington. Like Trump, he is an utterly despicable person, but (again like Trump) his worst crime is against the future of human civilization and the biosphere. Under Bolsonaro, the vitally important Amazon rainforests are being destroyed, a terrible blow to our efforts to avoid catastrophic ciliate change.



Figure 7.3: The indigenous peoples of the Amazon are the guardians of the lungs of Planet Earth. Within hours of taking office on 1 January, 2019, the Trump of the Tropics, aka the new President of Brazil, Jair Bolsonaro, launched an all-out assault against the Amazon rainforest and its indigenous communities, potentially paving the way for large scale deforestation by agricultural, mining and oil companies.



The indigenous peoples' website Mongabay <sup>2</sup> states that "The potentially resulting wholesale deforestation could be a disaster to indigenous peoples, biodiversity, and even the regional and global climate."

It adds: "Bolsonaro's proposed Amazon policies, if carried out, could ultimately help dash the world's hopes of achieving the global climate goals agreed to in Paris, a failure that could lead to climate chaos."

Leading Brazilian researchers, from the National Institute of Space Research (INPE), have calculated that Bolsonaro's policies could triple deforestation in the Amazon from present levels of 6,900 square kilometers (2,664 square miles) annually, to 25,600 square kilometers (9,884 square miles) per year by 2020.

### 7.3 The Evangelicals believe that there is no need to act

Here is an excerpt from an article by Bernard Daley Zaleha and Andrew Szasz entitled *Why conservative Christians don't believe in climate change*<sup>3</sup>:

**American Christians have become increasingly polarized on issues of climate change and environmental regulation. In recent years, mainline Protestant denominations and the Roman Catholic Church have made explicit declarations of support for global climate action. Prominent Southern Baptists and other evangelical Protestants, on the other hand, have issued statements that are strikingly similar to the talking points of secular climate skeptics, and have attempted to stamp out "green" efforts within their own ranks. An analysis of resolutions and campaigns by evangelicals over the past 40 years shows that anti-environmentalism within conservative Christianity stems from fears that "stewardship" of God's creation is drifting toward neo-pagan nature worship, and from apocalyptic beliefs about "end times" that make it pointless to worry about global warming. As the climate crisis deepens, the moral authority of Christian leaders and organizations may play a decisive role in swaying public policy toward (or away from) action to mitigate global warming.**

The highly dangerous beliefs of the Evangelicals are in strong contrast to the courageous and enlightened leadership of Pope Francis, who urges us to act resolutely to prevent catastrophic climate change.

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<sup>2</sup><https://news.mongabay.com/2019/01/bolsonaro-hands-over-indigenous-land-demarcation-to-agriculture-ministry/?fbclid=IwAR3UG-jneDheuddVEWVcCrcWkK4bnnsdE1uIBMLlnLtS6zGqMmGSPxtgEzM>

<sup>3</sup>Bulletin of the Atomic Scientists 2015, Vol. 71(5) 19-30

## 7.4 Banks give fossil fuel giants \$1.9 trillion since Paris

Banking on Climate Change 2019 - Fossil Fuel Report Card / : Alison Kirsch et al Rain-forest Action Network (RAN) et al.. For the first time, this report adds up lending and underwriting from 33 global banks to the fossil fuel industry as a whole. The findings are stark: these Canadian, Chinese, European, Japanese, and U.S. banks have financed fossil fuels with \$1.9 trillion since the Paris Agreement was adopted (2016-2018), with financing on the rise each year. This report finds that fossil fuel financing is dominated by the big U.S. banks, with JPMorgan Chase as the world's top funder of fossil fuels by a wide margin. In other regions, the top bankers of fossil fuels are Royal Bank of Canada in Canada, Barclays in Europe, MUFG in Japan, and Bank of China in China. Here are some quotations from the report:

**In October 2018, the Intergovernmental Panel on Climate Change (IPCC) released a sobering report on the devastating impacts our world will face with 1.5° Celsius of warming - let alone 2°C - while setting out the emissions trajectory the nations of the world need to take if we are to have any shot at keeping to that 1.5°C limit. This 10th edition of the annual fossil fuel finance report card, greatly expanded in scope, reveals the paths banks have taken in the past three years since the Paris Agreement was adopted, and finds that overall bank financing continues to be aligned with climate disaster.**

**For the first time, this report adds up lending and underwriting from 33 global banks to the fossil fuel industry as a whole. The findings are stark: these Canadian, Chinese, European, Japanese, and U.S. banks have financed fossil fuels with \$1.9 trillion since the Paris Agreement was adopted (2016-2018), with financing on the rise each year. This report finds that fossil fuel financing is dominated by the big U.S. banks, with JPMorgan Chase as the world's top funder of fossil fuels by a wide margin. In other regions, the top bankers of fossil fuels are Royal Bank of Canada in Canada, Barclays in Europe, MUFG in Japan, and Bank of China in China.**

**This report also puts increased scrutiny on the banks' support for 100 top companies that are expanding fossil fuels, given that there is no room for new fossil fuels in the world's carbon budget. And yet banks supported these companies with \$600 billion in the last three years. JPMorgan Chase is again on top, by an even wider margin, and North American banks emerge as the biggest bankers of expansion as well.**

**This report also grades banks' overall future-facing policies regarding fossil fuels, assessing them on restrictions on financing for fossil fuel expansion and commitments to phase out fossil fuel financing on a 1.5°C-aligned trajectory. While some banks have taken important steps, overall major global banks have simply failed to set trajectories adequate for dealing with the climate crisis.**

**As in past editions, this fossil fuel finance report card also assesses bank policy and practice around financing in certain key fossil fuel subsectors, with**





league tables and policy grades on:

- **Tar sands oil:** RBC, TD, and JPMorgan Chase are the biggest bankers of 30 top tar sands producers, plus four key tar sands pipeline companies. In particular, these banks and their peers support companies working to expand tar sands infrastructure, such as Enbridge and Teck Resources.
- **Arctic oil and gas:** JPMorgan Chase is the world's biggest banker of Arctic oil and gas by far, followed by Deutsche Bank and SMBC Group. Worryingly, financing for this subsector increased from 2017 to 2018.
- **Ultra-deepwater oil and gas:** JPMorgan Chase, Citi, and Bank of America are the top bankers here. Meanwhile, none of the 33 banks have policies to proactively restrict financing for ultra-deepwater extraction.
- **Fracked oil and gas:** For the first time, the report card looks at bank support for top fracked oil and gas producers and transporters - and finds financing is on the rise over the past three years. Wells Fargo and JPMorgan Chase are the biggest bankers of fracking overall - and, in particular, they support key companies active in the Permian Basin, the epicenter of the climate-threatening global surge of oil and gas production.
- **Liquefied natural gas (LNG):** Banks have financed top companies building LNG import and export terminals around the world with \$46 billion since the Paris Agreement, led by JPMorgan Chase, Société Générale, and SMBC Group. Banks have an opportunity to avoid further damage by not financing Anadarko's Mozambique LNG project, in particular.
- **Coal mining:** Coal mining finance is dominated by the four major Chinese banks, led by China Construction Bank and Bank of China. Though many European and U.S. banks have policies in place restricting financing for coal mining, total financing has only fallen by three to five percentage points each year.
- **Coal power:** Coal power financing is also led by the Chinese banks - Bank of China and ICBC in particular - with Citi and MUFG as the top non-Chinese bankers of coal power. Policy grades for this subsector show some positive examples of European banks restricting financing for coal power companies.

The human rights chapter of this report shows that as fossil fuel companies are increasingly held accountable for their contributions to climate change, finance for these companies also poses a growing liability risk for banks. The fossil fuel industry has been repeatedly linked to human rights abuses, including violations of the rights of Indigenous peoples and at-risk communities, and



Figure 7.4: Drilling for oil in the Arctic.

continues to face an ever-growing onslaught of lawsuits, resistance, delays, and political uncertainty.

The IPCC's 2018 report on the impacts of a 1.5°C increase in global temperature showed clearly the direction the nations of the world need to take, and the emissions trajectory we need to get there. Banks must align with that trajectory by ending financing for expansion, as well as for these particular spotlight fossil fuels - while committing overall to phase out all financing for fossil fuels on a Paris Agreement-compliant timeline.



Figure 7.5: Indigenous protests against Arctic drilling.









Figure 7.6: A coal-fired power plant.

## 7.5 Fossil fuel industry's disinformation campaign

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.

According to a recent article published in “The Daily Kos”<sup>4</sup>, companies like Shell and Exxon, knew, as early as the 1970s, how their combustible products were contributing to irreversible warming of the planet, became public knowledge over the last few years.

A series of painstakingly researched articles<sup>5</sup> published in 2015 by the Pulitzer-prize

<sup>4</sup>[www.dailykos.com/stories/2018/9/23/1797888/-The-Oil-Companies-not-only-knew-fossil-fuels-caused-climate-change-they-knew-how-bad-it-would-get?detail=emaildkre](http://www.dailykos.com/stories/2018/9/23/1797888/-The-Oil-Companies-not-only-knew-fossil-fuels-caused-climate-change-they-knew-how-bad-it-would-get?detail=emaildkre)

<sup>5</sup><https://insideclimatenews.org/news/15092015/Exxons-own-research-confirmed-fossil-fuels-role-in-global-warming>

winning Inside Climate News revealed an industry totally aware and informed for decades about the inevitable warming certain to occur as more and more carbon dioxide from the burning of fossil fuels was released into the atmosphere.

The article states that “In fact, the oil industry, and Exxon in particular, had the best climate models available, superior to those relied on by scientific community.<sup>6</sup> And armed with the foreknowledge developed through those models, Exxon and the other oil companies planned and executed an elaborate, cynical long term strategy: to invest hundreds of millions of dollars in a comprehensive propaganda effort designed to raise doubts about the existence and cause of climate change, a phenomenon they well knew was irrefutable, based on their own research. By 2016 the industry’s lobbying to discredit the science of climate change had surpassed two billion dollars.

“Meanwhile, as newly discovered documents reported in The Guardian<sup>7</sup> attest, the same companies were preparing projections of what type of world they would be leaving for the rest of humanity. In the 1980s, oil companies like Exxon and Shell carried out internal assessments of the carbon dioxide released by fossil fuels, and forecast the planetary consequences of these emissions. In 1982, for example, Exxon predicted that by about 2060, CO<sub>2</sub> levels would reach around 560 parts per million - double the preindustrial level - and that this would push the planet’s average temperatures up by about 2°C over then-current levels (and even more compared to pre-industrial levels).”<sup>8</sup>

## The Fossil Free MIT report, 2014

Here are some excerpts from a report entitled “**The Fossil Fuel Industry’s Role in Hindering Climate Change Action: Lobbying and Disinformation Against Science and Scientists**”<sup>9</sup>:

**In response to the unprecedented urgency of global climate change, Fossil Free MIT’s petition, signed by more than 2,400 MIT members, is calling on MIT to divest its \$11 billion endowment from the 200 fossil fuel companies with the world’s largest publicly traded carbon reserves.**

<sup>6</sup><https://insideclimatenews.org/news/18092015/exxon-confirmed-global-warming-consensus-in-1982-with-in-house-climate-models>

<sup>7</sup><https://www.theguardian.com/environment/climate-consensus-97-per-cent/2018/sep/19/shell-and-exxons-secret-1980s-climate-change-warnings>

<sup>8</sup>See also <https://truthout.org/articles/self-immolation-as-the-world-burns-an-earth-day-report/>  
<https://countercurrents.org/2018/04/29/the-methane-time-bomb-and-the-future-of-the-biosphere/>  
<https://countercurrents.org/2018/08/07/hothouse-earth-evidence-for-ademise-of-the-planetary-life-support-system/>

<https://www.independent.co.uk/environment/global-warming-temperature-rise-climate-change-end-century-science-a8095591.html>

<http://www.lifeworth.com/deepadaptation.pdf>

<https://www.independent.co.uk/news/business/news/bp-shell-oil-global-warming-5-degree-paris-climate-agreement-fossil-fuels-temperature-rise-a8022511.html>

<sup>9</sup><https://www.fossilfreemit.org/wp-content/uploads/2014/08/FossilFreeMIT-Lobbying-Disinformation.pdf>

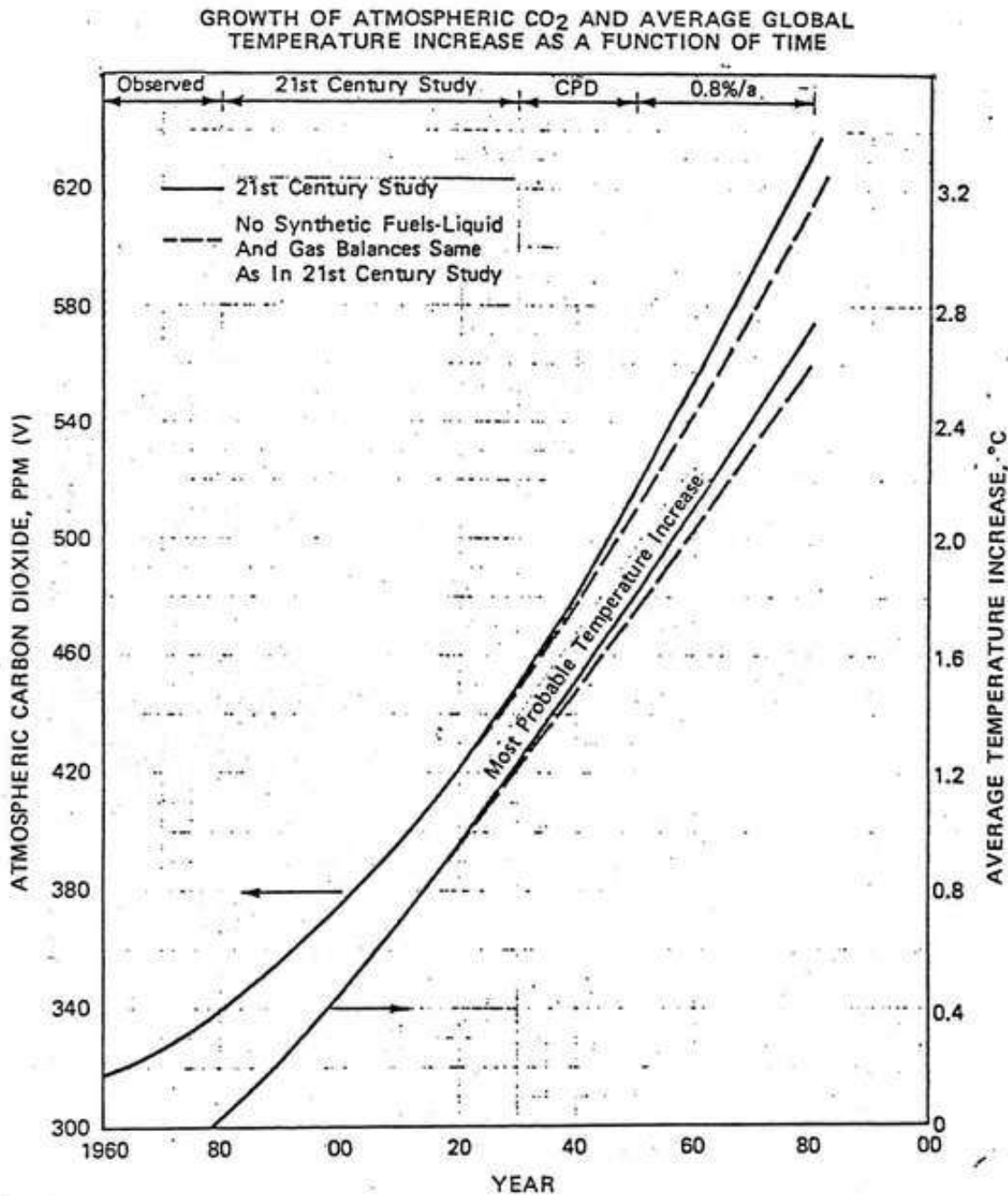


Figure 7.7: Exxon's 1982 internal projections of the future increase in carbon dioxide levels shows CO<sub>2</sub> percentages increasing to 600 ppm and temperature increases of up to 3°C.

Fossil Free MIT believes that divestment from the fossil fuel industry presents MIT with a unique opportunity to lead the global effort to combat climate change. We wholeheartedly support our Institute's cutting-edge climate science and renewable energy technology research, as well as MIT's campus sustainability initiatives, and we propose divestment as a highly complementary strategy that will bring MIT's investments in line with the goals of its research and sustainability activities. There are three central reasons why we urge MIT to divest from the fossil fuel industry:

- The fossil fuel industry's business practice is fundamentally inconsistent with the science of climate change mitigation. A 66% chance of limiting global warming to less than 2°C above pre-industrial temperatures demands that no more than 35% of proven fossil fuel reserves can be burned prior to 2100. Yet in 2012, the fossil fuel industry spent \$674 billion developing new reserves.
- The fossil fuel industry spends hundreds of millions of dollars lobbying and donating in Washington, D.C. against legislation for climate change action.
- Many fossil fuel companies are responsible for funding or orchestrating targeted anti-science disinformation campaigns that confuse the public, sabotage science, and slander scientists.

## Disinformation from fossil fuel and tobacco industries

Here are some excerpts from a February 19 2019 article by Mat Hope entitled “**Revealed: How the Tobacco and Fossil Fuel Industries Fund Disinformation Campaigns Around the World**”<sup>10</sup>:

Fossil fuel companies have a long history of adopting public relations strategies straight from the tobacco industry's playbook. But a new analysis shows the two industries' relationship goes much deeper - right down to funding the same organizations to do their dirty work.

MIT Associate Professor David Hsu analyzed organizations in DeSmog's disinformation database and the Guardian's tobacco database and found 35 thinktanks based in the US, UK, Australia, and New Zealand that promote both the tobacco and fossil fuel industries' interests.

Of these organizations, DeSmog can reveal that 32 have taken direct donations from the tobacco industry, 29 have taken donations from the fossil fuel industry, and 28 have received money from both. Two key networks, based

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<sup>10</sup><https://www.desmogblog.com/2019/02/19/how-tobacco-and-fossil-fuel-companies-fund-disinformation-campaigns-around-world>



Figure 7.8: Smoke destroys human health, regardless of whether it is from cigarettes or coal-fired power plants. Fossil fuel corporations and tobacco companies have exhibited an astonishing degree of cynicism and lack of social responsibility.

around the Koch brothers and Atlas Network, are involved in coordinating or funding many of the thinktanks.

## 7.6 The UK declares a climate emergency

Introducing the motion in the House of Commons, Labour leader Jeremy Corbyn said: **“We have no time to waste. We are living in a climate crisis that will spiral dangerously out of control unless we take rapid and dramatic action now. This is no longer about a distant future. We’re talking about nothing less than the irreversible destruction of the environment within our lifetimes of members of this house.”**

Here are some excerpts from an article by Amy Goodman and Nermeen Shaikh of Democracy now published in Truthout on May 2, 2019.<sup>11</sup>:

**On Wednesday, the House of Commons became the first parliament in the world to declare a climate emergency. The resolution came on the heels of the recent Extinction Rebellion mass uprising that shut down Central London last month in a series of direct actions. Activists closed bridges, occupied public landmarks and even superglued themselves to buildings, sidewalks and trains**

<sup>11</sup><https://truthout.org/video/george-monbiot-on-the-uk-climate-emergency/>



to demand urgent action to combat climate change. Police arrested more than 1,000 protesters. Labour Party Leader Jeremy Corbyn told Parliament, “We are witnessing an unprecedented upsurge of climate activism, with groups like Extinction Rebellion forcing the politicians in this building to listen. For all the dismissive and defensive column inches the processes have provoked, they are a massive and, I believe, very necessary wake-up call. Today we have the opportunity to say, ‘We hear you.’” We speak with George Monbiot, British journalist, author and columnist with *The Guardian*. His recent piece for *The Guardian* is headlined “Only rebellion will prevent an ecological apocalypse.” Monbiot says capitalism “is like a gun pointed at the heart of the planet. It will essentially, necessarily destroy our life-support systems. Among those characteristics is the drive for perpetual economic growth on a finite planet.”

## 7.7 The 2018 IPCC report

### Excerpts from an article summarizing the report

Here are excerpts from an article entitled **UN Experts Warn of ‘Climate Catastrophe’ by 2040** by Jessica Corbett. The article was published in *Common Dreams* on Monday, October 8, 2018.<sup>12</sup>:

<sup>12</sup><https://www.commondreams.org/news/2018/10/08/un-experts-warn-climate-catastrophe-2040-without-rapid-and-unprecedented-global>

“The climate crisis is here and already impacting the most vulnerable,” notes 350.org’s program director. “Staying under 1.5°C is now a matter of political will.”

Underscoring the need for “rapid, far-reaching, and unprecedented” changes to life as we know it to combat the global climate crisis, a new report from the Intergovernmental Panel on Climate Change (IPCC) - the United Nations’ leading body for climate science - details what the world could look like if the global temperature rises to 1.5°C versus 2°C (2.7°F versus 3.6°F) above pre-industrial levels, and outlines pathways to reducing greenhouse gas emissions in the context of sustainable development and efforts to eradicate poverty.

“Climate change represents an urgent and potentially irreversible threat to human societies and the planet,” the report reads. “Human-induced warming has already reached about 1°C (1.8°F) above pre-industrial levels at the time of writing of this Special Report... If the current warming rate continues, the world would reach human-induced global warming of 1.5°C around 2040.”

Approved by the IPCC in South Korea on Saturday ahead of COP24 in Poland in December, *Global Warming of 1.5°C* was produced by 91 authors and reviewers from 40 countries. Its release has elicited calls to action from climate campaigners and policymakers the world over.

“This is a climate emergency. The IPCC 1.5 report starkly illustrates the difference between temperature rises of 1.5°C and 2°C - for many around the world this is a matter of life and death,” declared Karin Nansen, chair of Friends of the Earth International (FOEI). “It is crucial to keep temperature rise well below 1.5 degrees ... but the evidence presented by the IPCC shows that there is a narrow and shrinking window in which to do so.”

The report was requested when the international community came together in December of 2015 for the Paris agreement, which aims to keep global warming within this century “well below” 2°C, with an ultimate target of 1.5°C. President Donald Trump’s predecessor supported the accord, but Trump has vowed to withdraw the United States, even as every other nation on the planet has pledged their support for it. In many cases, however, sworn support hasn’t led to effective policy.

“It’s a fresh reminder, if one was needed, that current emissions reduction pledges are not enough to meet the long-term goals of the Paris agreement. Indeed, they are not enough for any appropriately ambitious temperature target, given what we know about dangerous climate impacts already unfolding even at lower temperature thresholds,” Rachel Cleetus, lead economist and climate policy manager for the Union of Concerned Scientists (UCS), wrote ahead of its release.

“The policy implications of the report are obvious: We need to implement a suite of policies to sharply limit carbon emissions and build climate resilience, and we must do all this in a way that prioritizes equitable outcomes particularly for the world’s poor and marginalized communities,” Cleetus added.

**“We want a just transition to a clean energy system that benefits people not corporations,” Nansen emphasized. “Only with a radical transformation of our energy, food and economic systems, embracing environmental, social, gender and economic justice, can we prevent climate catastrophe and temperature rises exceeding 1.5°C.”**

Today we are faced with multiple interrelated crises, for example the threat of catastrophic climate change or equally catastrophic thermonuclear war, and the threat of widespread famine. These threats to human existence and to the biosphere demand a prompt and rational response; but because of institutional and cultural inertia, we are failing to take the steps that are necessary to avoid disaster.

## 7.8 Greta Thunberg

### Only immediate climate action can save the future

Immediate action to halt the extraction of fossil fuels and greatly reduce the emission of CO<sub>2</sub> and other greenhouse gasses is needed to save the long-term future of human civilization and the biosphere.

At the opening ceremony of United Nations-sponsored climate talks in Katowice, Poland, Sir David Attenborough said “Right now, we are facing a man-made disaster of global scale. Our greatest threat in thousands of years. Climate change. If we don’t take action, the collapse of our civilizations and the extinction of much of the natural world is on the horizon. The world’s people have spoken. Their message is clear. Time is running out. They want you, the decision-makers, to act now.”

Antonio Guterres, UN Secretary-General, said climate change was already “a matter of life and death” for many countries. He added that the world is “nowhere near where it needs to be” on the transition to a low-carbon economy.

Swedish student Greta Thunberg, is a 16-year-old who has launched a climate protest movement in her country. She said, in a short but very clear speech after that of UN leader Antonio Guterres: “Some people say that I should be in school instead. Some people say that I should study to become a climate scientist so that I can ‘solve the climate crisis’. But the climate crisis has already been solved. We already have all the facts and solutions.”

She added: “Why should I be studying for a future that soon may be no more, when no one is doing anything to save that future? And what is the point of learning facts when the most important facts clearly mean nothing to our society?”

Thunberg continued: “Today we use 100 million barrels of oil every single day. There are no politics to change that. There are no rules to keep that oil in the ground. So we can’t save the world by playing by the rules. Because the rules have to be changed.”

She concluded by saying that “since our leaders are behaving like children, we will have to take the responsibility they should have taken long ago.”

Appearing among billionaires, corporate CEO’s and heads of state at the Davos Economic Forum in Switzerland, like a new Joan of Arc, 16-year-old Swedish climate activist



Greta Thunberg called on decision-makers to fulfil their responsibilities towards future generations. Here are some excerpts from her speech:

### **Greta's speech at Davos**

**Our house is on fire. I am here to say, our house is on fire. According to the IPCC, we are less than 12 years away from not being able to undo our mistakes. In that time, unprecedented changes in all aspects of society need to have taken place, including a reduction of our CO<sub>2</sub> emissions by at least 50%...**

**Here in Davos - just like everywhere else - everyone is talking about money. It seems money and growth are our only main concerns.**

**And since the climate crisis has never once been treated as a crisis, people are simply not aware of the full consequences on our everyday life. People are not aware that there is such a thing as a carbon budget, and just how incredibly small that remaining carbon budget is. That needs to change today.**

**No other current challenge can match the importance of establishing a wide, public awareness and understanding of our rapidly disappearing carbon budget, that should and must become our new global currency and the very heart of our future and present economics.**

**We are at a time in history where everyone with any insight of the climate crisis that threatens our civilization - and the entire biosphere - must speak out in clear language, no matter how uncomfortable and unprofitable that may be.**

**We must change almost everything in our current societies. The bigger your carbon footprint, the bigger your moral duty. The bigger your platform, the bigger your responsibility.**



Figure 7.9: Greta Thunberg on the cover of Time Magazine, The Intergovernmental Panel on Climate Change, in their October 2018 report, used strong enough language to wake up at least part of the public: the children whose future is at stake. Here is an excerpt from a speech which 16-year-old Swedish climate activist Greta Thunberg made at the Davos Economic Forum in January, 2019: “Our house is on fire. I am here to say, our house is on fire. According to the IPCC, we are less than 12 years away from not being able to undo our mistakes. In that time, unprecedented changes in all aspects of society need to have taken place, including a reduction of our CO2 emissions by at least 50%...”

## **7.9 Worldwide school strike, 15 March, 2019**

Inspired by Greta Thunberg, over 1.4 million young students across all continents took to the streets on Friday March 15th for the first ever global climate strike. Messages in more than 40 languages were loud and clear: world leaders must act now to address the climate crisis and save our future. The school strike was the largest climate action in history. Nevertheless it went almost unmentioned in the media,

Here are some of the statements by the students explaining why they took part in the strikes:

**In India, no one talks about climate change. You don't see it on the news or in the papers or hear about it from government. We want global leaders to declare a climate emergency. If we don't act today, then we will have no tomorrow.** - Vidit Baya, 17, Udaipur, India.

**We face heartbreaking loss due to increasingly extreme weather events. We urge the Taiwanese government to implement mitigation measures and face up to the vulnerability of indigenous people, halt construction projects in the indigenous traditional realm, and recognize the legal status of Plains Indigenous People, in order to implement environmental protection as a bottom-up approach** - Kaisanan Ahuan, Puli City, Taiwan.

**We have reached a point in history when we have the technical capacities to solve poverty, malnutrition, inequality and of course global warming. The deciding factors for whether we take advantage of our potential will be our activism, our international unity and our ability to develop the art of making the impossible possible. Whether we succeed or not depends on our political will** - Eyal Weintraub, 18, and Bruno Rodriguez, 18, Argentina.

**The damage done by multinationals is enormous: the lack of transparency, dubious contracts, the weakening of the soil, the destruction of flora and fauna, the lack of respect for mining codes, the contamination of groundwater. In Mali, the state exercises insufficient control over the practices of the multinationals, and it is us, the citizens, who suffer the consequences. The climate alarm has sounded, and the time has come for us all to realize that there is still time to act locally, in our homes, our villages, our cities** - Mone Fousseny, 22, Mali.

## 7.10 forms of renewable energy

### Solar energy

Before the start of the industrial era, human society relied exclusively on renewable energy sources - but can we do so again, with our greatly increased population and greatly increased demands? Will we ultimately be forced to reduce the global population or our per capita use of energy, or both? Let us now try to examine these questions.

Biomass, wind energy, hydropower and wave power derive their energy indirectly from the sun, but in addition, various methods are available for utilizing the power of sunlight directly. These include photovoltaic panels, solar designs in architecture, solar systems for heating water and cooking, concentrating photovoltaic systems, and solar thermal power plants.

### Photovoltaic cells and concentrating photovoltaic systems

Solar power was the fastest-growing source of new energy in 2016, surpassing the net growth of all other energy sources including coal, according to a new report from the International Energy Agency (IEA).

The IEA report found new solar capacity increased by 50 percent in 2016, and IEA executive director Fatih Birol hailed solar's rapid growth. "What we are witnessing is the birth of a new era in solar photovoltaics [PV]. We expect that solar PV capacity growth will be higher than any other renewable technology up to 2022."<sup>13</sup>

The report also shows renewables as a whole accounted for two-thirds of all new energy capacity in 2016. "We see renewables growing by about 1,000 GW (gigawatts) by 2022, which equals about half of the current global capacity in coal power, which took 80 years to build," Birol said in a statement accompanying the report.<sup>14</sup>

Solar photovoltaic cells<sup>15</sup> are thin coated wafers of a semiconducting material (usually silicon). The coatings on the two sides are respectively charge donors and charge acceptors. Cells of this type are capable of trapping solar energy and converting it into direct-current electricity. The electricity generated in this way can be used directly (as it is, for example, in pocket calculators) or it can be fed into a general power grid. Alternatively it can be used to split water into hydrogen and oxygen. The gases can then be compressed and stored, or exported for later use in fuel cells. In the future, we may see solar photovoltaic arrays in sun-rich desert areas producing hydrogen as an export product. As their petroleum reserves become exhausted, the countries of the Middle East and Africa may be able to shift to this new technology and still remain energy exporters.

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<sup>13</sup><https://www.theguardian.com/environment/2017/oct/04/solar-power-renewables-international-energy-agency>

<sup>14</sup><https://www.iea.org/newsroom/news/2017/october/solar-pv-grew-faster-than-any-other-fuel-in-2016-opening-a-new-era-for-solar-pow.html>

<sup>15</sup><https://www.iea.org/renewables/>

It is interesting to notice that the primary process of photosynthesis in plants is closely similar to the mechanism by which solar cells separate charges and prevent the back-reaction. We can see why a back-reaction must be prevented if we consider the excitation of a single atom. An absorbed photon lifts an electron from a filled atomic orbital to an empty one, leaving a positively-charged hole in the orbital from which the electron came. However, a back-reaction occurs almost immediately: The excited electron falls back into the orbital from which it came, and the absorbed energy is re-emitted. One can say that the electron and hole have recombined.

In higher plants, the back reaction is prevented because the photon is absorbed in a membrane which has a sandwich-like structure. Dye molecules (usually chlorophyll molecules) are sandwiched between a layer of charge donor molecules on one side of the membrane, and a layer of charge acceptor molecule on the other side. The electron quickly migrates to the acceptors, which are molecules with low-lying unfilled orbitals. Meanwhile the hole has quickly moved to the opposite side of the membrane, where it combines with an electron from a donor molecule. A donor molecule is a molecule whose highest filled orbital is high in energy. In this process, the back-reaction is prevented. The electron and hole are on opposite sides of the membrane, and they can only recombine after they have driven the metabolism of the plant.

In a photovoltaic solar cell, the mechanism by which the back-reaction is prevented is exactly similar. It too has a sandwich-like structure, with charge donors on one side, charge-acceptors on the other, and photon absorbers in the middle. Here too, the electron and hole quickly migrate to opposite sides. They can only recombine by traveling through the external circuit, which is analogous to a plant's metabolism, and performing useful work.

The cost of manufacturing photovoltaics continues to fall rapidly. In 2017, a homeowner paid approximately \$3,360 per kilowatt to have rooftop solar panels installed. Usually photovoltaic panels are warranted for a life of 20 years, but they are commonly still operational after 30 years or more. Using the fact that there are 8760 hours in a year, and thus 175200 hours in 20 years, we can calculate that the cost of electricity to a solar-using homeowner today is about 1.92 cents per kilowatt hour. This can be compared with electricity generated from coal, which in 2011 cost 3.23 cents per kilowatt hour, while electricity generated from natural gas cost 4.51 cents per kilowatt hour. We must also remember that photovoltaics are falling rapidly in price, and that the fossil fuel costs do not include externalities, such as their contribution to climate change.

Concentrating photovoltaic systems are able to lower costs still further by combining silicon solar cells with reflectors that concentrate the sun's rays. The most inexpensive type of concentrating reflector consists of a flat piece of aluminum-covered plastic material bent into a curved shape along one of its dimensions, forming a trough-shaped surface. (Something like this shape results when we hold a piece of paper at the top and bottom with our two hands, allowing the center to sag.) The axis of the reflector can be oriented so that it points towards the North Star. A photovoltaic array placed along the focal line will then receive concentrated sunlight throughout the day.

Photovoltaic efficiency is defined as the ratio of the electrical power produced by a cell

to the solar power striking its surface. For commercially available cells today, this ratio is between 9% and 14%. If we assume 5 hours of bright sunlight per day, this means that a photo cell in a desert area near to the equator (where  $1 \text{ kW/m}^2$  of peak solar power reaches the earth's surface) can produce electrical energy at the average rate of 20-30  $\text{W}_e/\text{m}^2$ , the average being taken over an entire day and night. The potential power per unit area for photovoltaic systems is far greater than for biomass. However, the mix of renewable energy sources most suitable for a particular country depends on many factors. We will see below that biomass is a promising future source of energy for Sweden, because of Sweden's low population density and high rainfall. By contrast, despite the high initial investment required, photovoltaics are undoubtedly a more promising future energy source for southerly countries with clear skies.

In comparing photovoltaics with biomass, we should be aware of the difference between electrical energy and energy contained in the chemical bonds of a primary fuel such as wood or rapeseed oil. If Sweden (for example) were to supply all its energy needs from biomass, part of the biomass would have to be burned to generate electricity. The efficiency of energy conversion in electricity generation from fuel is 20%-35%. Of course, in dual use power plants, part of the left-over heat from electrical power generation can be used to heat homes or greenhouses. However, hydropower, wind power and photovoltaics have an advantage in generating electrical power, since they do so directly and without loss, whereas generation of electricity from biomass involves a loss from the inefficiency of the conversion from fuel energy to electrical energy. Thus a rational renewable energy program for Sweden should involve a mixture of biomass for heating and direct fuel use, with hydropower and wind power for generation of electricity. Perhaps photovoltaics will also play a role in Sweden's future electricity generation, despite the country's northerly location and frequently cloudy skies.

The global market for photovoltaics is expanding at the rate of 30% per year. This development is driven by rising energy prices, subsidies to photovoltaics by governments, and the realization of the risks associated with global warming and consequent international commitments to reduce carbon emissions. The rapidly expanding markets have resulted in lowered photovoltaic production costs, and hence further expansion, still lower costs, etc. - a virtuous feedback loop.

## Solar thermal power plants

Solar Parabolic Troughs can be used to heat a fluid, typically oil, in a pipe running along the focal axis. The heated fluid can then be used to generate electrical power. The liquid that is heated in this way need not be oil. In a solar thermal power plant in California, reflectors move in a manner that follows the sun's position and they concentrate solar energy onto a tower, where molten salt is heated to a temperature of 1050 degrees F (566 °C). The molten salt stores the heat, so that electricity can be generated even when the sun is not shining. The California plant generates 10  $\text{MW}_e$ .



Figure 7.10: A rooftop array of photovoltaic cells.



Figure 7.11: A solar thermal power plant. Arrays of heliostatic reflectors concentrate the sun's rays onto molten salt in the tower. The plant produces electricity at night because the salt remains hot..



Figure 7.12: A solar cooker.



Figure 7.13: A rooftop solar thermal array for domestic water heating.



## Solar designs in architecture

At present, the average global rate of use of primary energy is roughly  $2 \text{ kW}_t$  per person. In North America, the rate is  $12 \text{ kW}_t$  per capita, while in Europe, the figure is  $6 \text{ kW}_t$ . In Bangladesh, it is only  $0.2 \text{ kW}_t$ . This wide variation implies that considerable energy savings are possible, through changes in lifestyle, and through energy efficiency.

Important energy savings can be achieved through solar design in architecture. For example, insulation can be improved in walls, and insulating shutters can be closed at night.

In double envelope construction, a weatherproof shell surrounds the inner house. Between the outer shell and the house, sun-heated air circulates. A less extreme example of this principle is the construction of south-facing conservatories. The sun-heated air in the conservatories acts as a thermal buffer, and reduces heat loss from the house.

Solar design aims at making houses cool in the summer and warm in the winter. Awnings can be spread out in the summer to shade windows, and rolled together in the winter to allow sunshine to enter the house. Alternatively, deciduous trees can be planted in front of south-facing windows. During the summer, the leaves of the trees shade the windows, while in the winter, the leaves fall, allowing the sun to enter.

During daylight hours, houses can be illuminated by fiber optic light pipes, connected to a parabolic collector on the roof. The roof can also contain arrays of solar photovoltaic cells and solar water heaters.

Houses can be heated in the winter by heat pumps connected to a deeply buried network of pipes. Heat pumps function in much the same way as refrigerators or air conditioners. When they are used to warm houses in the winter, a volatile liquid such as ammonia is evaporated underground, where the temperature is relatively constant, not changing much between summer and winter. In the evaporation process, heat is absorbed from the ground. The gas is then compressed and re-liquefied within the house, and in this process, it releases the heat that was absorbed underground. Electricity is of course required to drive a heat pump, but far less electrical power is needed to do this than would be required to heat the house directly.

In general, solar design of houses and other buildings requires an initial investment, but over time, the investment is amply repaid through energy savings.

## Solar systems for heating water and cooking

Solar heat collectors are already in common use to supply hot water for families or to heat swimming pools. A common form of the solar heat collector consists of a flat, blackened heat-collecting plate to which tubes containing the fluid to be heated are connected. The plate is insulated from the atmosphere by a layer of air (in some cases a partial vacuum) above which there is a sheet of glass. Water flowing through the tubes is collected in a tank whenever it is hotter than the water already there. In cases where there is a danger of freezing, the heated fluid may contain antifreeze, and it may then exchange heat with water in the collection tank. Systems of this kind can function even in climates



Figure 7.14: **Rows of wind turbines.**

as unfavorable as that of Northern Europe, although during winter months they must be supplemented by conventional water-heaters.

In the developing countries, wood is often used for cooking, and the result is sometimes deforestation, soil erosion and desertification. In order to supply an alternative, many designs for solar cooking have been developed. Often the designs are very simple, and many are both easy and inexpensive to build, the starting materials being aluminum foil and cardboard boxes.

## Wind energy

Wind parks in favorable locations, using modern wind turbines, are able to generate  $10 \text{ MW}_e/\text{km}^2$  or  $10 \text{ W}_e/\text{m}^2$ . Often wind farms are placed in offshore locations. When they are on land, the area between the turbines can be utilized for other purposes, for example for pasturage. For a country like Denmark, with good wind potential but cloudy skies, wind turbines can be expected to play a more important future role than photovoltaics. Denmark is already a world leader both in manufacturing and in using wind turbines. Today, on windy days, 100% of all electricity used in Denmark is generated by wind power, and the export of wind turbines makes a major contribution to the Danish economy. The use of wind power is currently growing at the rate of 38% per year. In the United States, it is the fastest-growing form of electricity generation.

The location of wind parks is important, since the energy obtainable from wind is proportional to the cube of the wind velocity. We can understand this cubic relationship by remembering that the kinetic energy of a moving object is proportional to the square



Figure 7.15: **Vertical axis wind turbines.**

of its velocity multiplied by the mass. Since the mass of air moving past a wind turbine is proportional to the wind velocity, the result is the cubic relationship just mentioned.

Before the decision is made to locate a wind park in a particular place, the wind velocity is usually carefully measured and recorded over an entire year. For locations on land, mountain passes are often very favorable locations, since wind velocities increase with altitude, and since the wind is concentrated in the passes by the mountain barrier. Other favorable locations include shorelines and offshore locations on sand bars. This is because onshore winds result when warm air rising from land heated by the sun is replaced by cool marine air. Depending on the season, the situation may be reversed at night, and an offshore wind may be produced if the water is warmer than the land.

The cost of wind-generated electrical power is currently lower than the cost of electricity generated by burning fossil fuels.

The “energy payback ratio” of a power installation is defined as the ratio of the energy produced by the installation over its lifetime, divided by the energy required to manufacture, construct, operate and decommission the installation. For wind turbines, this ratio is 17-39, compared with 11 for coal-burning plants. The construction energy of a wind turbine is usually paid back within three months.

Besides the propeller-like design for wind turbines there are also designs where the rotors turn about a vertical shaft. One such design was patented in 1927 by the French aeronautical engineer Georges Jean Marie Darrieus. The blades of a Darrieus wind turbine are airfoils similar to the wings of an aircraft. As the rotor turns in the wind, the stream of air striking the airfoils produces a force similar to the “lift” of an airplane wing. This



Figure 7.16: **Wind turbines on the Danish island of Samsø The island was the first in the world to achieve 100% renewable energy.**

force pushes the rotor in the direction that it is already moving. The Darrieus design has some advantages over conventional wind turbine design, since the generator can be placed at the bottom of the vertical shaft, where it may be more easily serviced. Furthermore, the vertical shaft can be lighter than the shaft needed to support a conventional wind turbine.

One problem with wind power is that it comes intermittently, and demand for electrical power does not necessarily come at times when the wind is blowing most strongly. To deal with the problem of intermittency, wind power can be combined with other electrical power sources in a grid. Alternatively, the energy generated can be stored, for example by pumped hydroelectric storage or by using hydrogen technology, as will be discussed below.

Bird lovers complain that birds are sometimes killed by rotor blades. This is true, but the number killed is small. For example, in the United States, about 70,000 birds per year are killed by turbines, but this must be compared with 57 million birds killed by automobiles and 97.5 million killed by collisions with plate glass.

The aesthetic aspects of wind turbines also come into the debate. Perhaps in the future, as wind power becomes more and more a necessity and less a matter of choice, this will be seen as a “luxury argument”.

## **A Danish island reaches 100% renewable energy**

The Danish island of Samsø is only 112 square kilometers in size, and its population numbers only 4,300. Nevertheless, it has a unique distinction. Samsø was the first closed land area to declare its intention of relying entirely on renewable energy, and it has now achieved this aim, provided that one stretches the definitions slightly.



Figure 7.17: **Hydroelectric power does not suffer from the problem of intermittency, but may sometimes produce undesirable social and ecological impacts.**

In 1997, the Danish Ministry of Environment and Energy decided to sponsor a renewable-energy contest. In order to enter, communities had to submit plans for how they could make a transition from fossil fuels to renewable energy. An engineer (who didn't live there) thought he knew how Samsø could do this, and together with the island's mayor he submitted a plan which won the contest. As a result, the islanders became interested in renewable energy. They switched from furnaces to heat pumps, and formed cooperatives for the construction of windmill parks in the sea near to the island. By 2005, Samsø was producing, from renewable sources, more energy than it was using. The islanders still had gasoline-driven automobiles, but they exported from their windmill parks an amount of electrical energy that balanced the fossil fuel energy that they imported. This is a story that can give us hope for the future, although a farming community like Samsø cannot serve as a model for the world.

## Hydroelectric power

In 2015, hydroelectric power supplied 16.6% of all electrical power, and 70% of the electrical power generated from renewable energy. In the developed countries, the potential for increasing this percentage is small, because most of the suitable sites for dams are already in use. Mountainous regions of course have the greatest potential for hydroelectric power, and this correlates well with the fact that virtually all of the electricity generated in Norway comes from hydro, while in Iceland and Austria the figures are respectively 83% and 67%. Among the large hydroelectric power stations now in use are the La Grande complex in Canada (16  $\text{GW}_e$ ) and the Itapú station on the border between Brazil and Paraguay (14  $\text{GW}_e$ ). The Three Gorges Dam in China produces 18.2  $\text{GW}_e$ .

Table 7.1: Technical potential and utilization of hydropower. (Data from World Energy Council, 2003.)

Region	Technical potential	Annual output	Percent used
Asia	0.5814 $TW_e$	0.0653 $TW_e$	11%
S. America	0.3187 $TW_e$	0.0579 $TW_e$	18%
Europe	0.3089 $TW_e$	0.0832 $TW_e$	27%
Africa	0.2155 $TW_e$	0.0091 $TW_e$	4%
N. America	0.1904 $TW_e$	0.0759 $TW_e$	40%
Oceania	0.0265 $TW_e$	0.0046 $TW_e$	17%
World	1.6414 $TW_e$	0.2960 $TW_e$	18%



Figure 7.18: **Underwater turbines can make use of the energy of ocean currents.**

Even in regions where the percentage of hydro in electricity generation is not so high, it plays an important role because hydropower can be used selectively at moments of peak demand. Pumping of water into reservoirs can also be used to store energy.

The creation of lakes behind new dams in developing countries often involves problems, for example relocation of people living on land that will be covered by water, and loss of the land for other purposes<sup>16</sup>. However the energy gain per unit area of lake can be very large - over  $100 \text{ W}_e/\text{m}^2$ . Fish ladders can be used to enable fish to reach their spawning grounds above dams. In addition to generating electrical power, dams often play useful roles in flood control and irrigation.

At present, hydroelectric power is used in energy-intensive industrial processes, such as the production of aluminum. However, as the global energy crisis becomes more severe, we can expect that metals derived from electrolysis, such as aluminum and magnesium, will be very largely replaced by other materials, because the world will no longer be able to afford the energy needed to produce them.

## Energy from the ocean

### Tidal power

The twice-daily flow of the tides can be harnessed to produce electrical power. Ultimately tidal energy comes from the rotation of the earth and its interaction with the moon's gravitational field. The earth's rotation is very gradually slowing because of tidal friction, and the moon is gradually receding from the earth, but this process will take such an extremely long time that tidal energy can be thought of as renewable.

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<sup>16</sup>Over a million people were displaced by the construction of the Three Gorges Dam in China, and many sites of cultural value were lost

There are two basic methods for harnessing tidal power. One can build barriers that create level differences between two bodies of water, and derive hydroelectric power from the head of water thus created. Alternatively it is possible to place the blades of turbines in a tidal stream. The blades are then turned by the tidal current in much the same way that the blades of a wind turbine are turned by currents of air.

There are plans for using the second method on an extremely large scale in Cook Strait, near New Zealand. A company founded by David Beach and Chris Bathurst plans to anchor 7,000 turbines to the sea floor of Cook Strait in such a way that they will float 40 meters below the surface. Beach and Bathurst say that in this position, the turbines will be safe from the effects of earthquakes and storms. The tidal flow through Cook Strait is so great that the scheme could supply all of New Zealand's electricity if the project is completed on the scale visualized by its founders.

Choosing the proper location for tidal power stations is important, since the height of tides depends on the configuration of the land. For example, tides of 17 meters occur in the Bay of Fundy, at the upper end of the Gulf of Maine, between New Brunswick and Nova Scotia. Here tidal waves are funneled into the bay, creating a resonance that results in the world's greatest level difference between high and low tides. An 18 MW<sub>e</sub> dam-type tidal power generation station already exists at Annapolis River, Nova Scotia, and there are proposals to increase the use of tidal power in the Bay of Fundy. Some proposals involve turbines in the tidal stream, similar to those proposed for use in the Cook Strait.

In the future, favorable locations for tidal power may be exploited to their full potentialities, even though the output of electrical energy exceeds local needs. The excess energy can be stored in the form of hydrogen (see below) and exported to regions deficient in renewable energy resources.

## Wave energy

At present, the utilization of wave energy is in an experimental stage. In Portugal, there are plans for a wave farm using the Pelamis Wave Energy Converter. The Pelamis is a long floating tube with two or more rigid sections joined by hinges. The tube is tethered with its axis in the direction of wave propagation. The bending between sections resulting from passing waves is utilized to drive high pressure oil through hydraulic motors coupled to electrical generators. Each wave farm in the Portuguese project is planned to use three Pelamis converters, each capable of producing 750 kW<sub>e</sub>. Thus the total output of each wave farm will be 2.25 MW<sub>e</sub>.

Another experimental wave energy converter is Salter's Duck, invented in the 1970's by Prof. Stephen Salter of the University of Edinburgh, but still being developed and improved. Like the Pelamis, the Duck is also cylindrical in shape, but the axis of the cylinder is parallel to the wave front, i.e. perpendicular to the direction of wave motion. A floating cam, attached to the cylinder, rises and falls as a wave passes, driving hydraulic motors within the cylinder. Salter's Duck is capable of using as much as 65% of the wave's energy.





Figure 7.19: The Pelamis wave energy transformer floats on the ocean like a giant sea snake. It consists of several segments which move against each other and build up hydraulic pressure. This in turn drives a turbine. A new Pelamis generation is currently under construction.

The energy potentially available from waves is very large, amounting to as much as 100 kilowatts per meter of wave front in the best locations.

### Ocean thermal energy conversion

In tropical regions, the temperature of water at the ocean floor is much colder than water at the surface. In ocean thermal energy conversion, cold water is brought to the surface from depths as great as 1 km, and a heat engine is run between deep sea water at a very low temperature and surface water at a much higher temperature.

According to thermodynamics, the maximum efficiency of a heat engine operating between a cold reservoir at the absolute temperature  $T_C$  and a hot reservoir at the absolute temperature  $T_H$  is given by  $1 - T_C/T_H$ . In order to convert temperature on the centigrade scale to absolute temperature (degrees Kelvin) one must add 273 degrees. Thus the maximum efficiency of a heat engine operating between water at the temperature of 25 °C and water at 5 °C is  $1 - (5 + 273)/(25 + 273) = 0.067 = 6.7\%$ . The efficiency of heat engines is always less than the theoretical maximum because of various losses, such as the loss due to friction. The actual overall efficiencies of existing ocean thermal energy conversion (OTEC) stations are typically 1-3%. On the other hand, the amount of energy potentially available from differences between surface and bottom ocean temperatures is extremely large.

Since 1974, OTEC research has been conducted by the United States at the Natural Energy Laboratory of Hawaii. The Japanese government also supports OTEC research,

and India has established a 1 MW<sub>e</sub> OTEC power station floating in the ocean near to Tamil Nadu.

## Renewable energy from evaporation

A September 26, 2017 article by Ahmet-Hamdi Cavusoglu et al. in *Nature Communications* points to evaporation as a future source of renewable energy. Here are some excerpts from the article:

“About 50% of the solar energy absorbed at the Earth’s surface drives evaporation, fueling the water cycle that affects various renewable energy resources, such as wind and hydropower. Recent advances demonstrate our nascent ability to convert evaporation energy into work, yet there is little understanding about the potential of this resource.

“Here we study the energy available from natural evaporation to predict the potential of this ubiquitous resource. We find that natural evaporation from open water surfaces could provide power densities comparable to current wind and solar technologies while cutting evaporative water losses by nearly half. We estimate up to 325 GW of power is potentially available in the United States. Strikingly, water’s large heat capacity is sufficient to control power output by storing excess energy when demand is low, thus reducing intermittency and improving reliability. Our findings motivate the improvement of materials and devices that convert energy from evaporation...

“Recent advances in water responsive materials and devices demonstrate the ability to convert energy from evaporation into work. These materials perform work through a cycle of absorbing and rejecting water via evaporation. These water-responsive materials can be incorporated into evaporation-driven engines that harness energy when placed above a body of evaporating water. With improvements in energy conversion efficiency, such devices could become an avenue to harvest energy via natural evaporation from water reservoirs.”

Ozgur Sahin, a biophysicist at Columbia, has developed technology that uses spores from the harmless soil-dwelling bacterium *B. subtilis* to absorb and release water when the relative humidity of the surrounding air changes. At high humidity, the spores take in water and expand, and at low humidity they release water and contract, acting like a muscle.

## Biomass

Biomass is defined as any energy source based on biological materials produced by photosynthesis - for example wood, sugar beets, rapeseed oil, crop wastes, dung, urban organic wastes, processed sewage, etc. Using biomass for energy does not result in the net emission of CO<sub>2</sub>, since the CO<sub>2</sub> released by burning the material had previously been absorbed from the atmosphere during photosynthesis. If the biological material had decayed instead of being burned, it would released the same amount of CO<sub>2</sub> as in the burning process.

The solar constant has the value 1.4 kilowatts/m<sup>2</sup>. It represents the amount of solar



Figure 7.20: **Rapeseed is grown in several countries, including Denmark and the UK. Experimental Danish buses are already running on rapeseed oil.**

energy per unit area<sup>17</sup> that reaches the earth, before the sunlight has entered the atmosphere. Because the atmosphere reflects 6% and absorbs 16%, the peak power at sea level is reduced to  $1.0 \text{ kW/m}^2$ . Clouds also absorb and reflect sunlight. Average cloud cover reduces the energy of sunlight a further 36%. Also, we must take into account the fact that the sun's rays do not fall perpendicularly onto the earth's surface. The angle that they make with the surface depends on the time of day, the season and the latitude.

In Sweden, which lies at a northerly latitude, the solar energy per unit of horizontal area is less than for countries nearer the equator. Nevertheless, Göran Persson, during his term as Prime Minister of Sweden, announced that his government intends to make the country independent of imported oil by 2020 through a program that includes energy from biomass.

In his thesis, *Biomass in a Sustainable Energy System*, the Swedish researcher Pål Börjesson states that of various crops grown as biomass, the largest energy yields come from short-rotation forests (*Salix viminalis*, a species of willow) and sugar beet plantations. These have an energy yield of from 160 to 170  $\text{GJ}_t$  per hectare-year. (The subscript  $t$  means "thermal". Energy in the form of electricity is denoted by the subscript  $e$ ). One can calculate that this is equivalent to about  $0.5 \text{ MW}_t/\text{km}^2$ , or  $0.5 \text{ W}_t/\text{m}^2$ . Thus, although  $1.0 \text{ kW/m}^2$  of solar energy reaches the earth at noon at the equator, the trees growing in northerly Sweden can harvest a day-and-night and seasonal average of only 0.5 Watts of thermal energy per horizontal square meter<sup>18</sup>. Since Sweden's present primary energy use is approximately  $0.04 \text{ TW}_t$ , it follows that if no other sources of energy were used, a square area of *Salix* forest 290 kilometers on each side would supply Sweden's present energy needs. This corresponds to an area of  $84,000 \text{ km}^2$ , about 19% of Sweden's total area<sup>19</sup>.


<sup>17</sup>The area is assumed to be perpendicular to the sun's rays.

<sup>18</sup>In tropical regions, the rate of biomass production can be more than double this amount.

<sup>19</sup>Additional land area would be needed to supply the energy required for planting, harvesting, trans-

## Jatropha Benefits

- Oil provides energy for light, transportation, and cooking.
- Jatropha is a natural fence (leaves are poisonous to animals).
- The Jatropha plant improves the soil and prevents erosion.
- Jatropha biomass starts a year after first planting, and is at a maximum after 5 years.
- Glycerin, a by product of Jatropha oil, can be used to produce soap.



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Figure 7.21: In some countries, Jatropha is a promising source of biomass..

Of course, Sweden's renewable energy program will not rely exclusively on energy crops, but on a mixture of sources, including biomass from municipal and agricultural wastes, hydropower, wind energy and solar energy.

At present, both Sweden and Finland derive about 30% of their electricity from biomass, which is largely in the form of waste from the forestry and paper industries of these two countries.

Despite their northerly location, the countries of Scandinavia have good potentialities for developing biomass as an energy source, since they have small population densities and adequate rainfall. In Denmark, biodiesel oil derived from rapeseed has been used as fuel for experimental buses. Rapeseed fields produce oil at the rate of between 1,000 and 1,300 liters per hectare-crop. The energy yield is 3.2 units of fuel product energy for every unit of fuel energy used to plant the rapeseed, and to harvest and process the oil. After the oil has been pressed from rapeseed, two-thirds of the seed remains as a protein-rich residue which can be fed to cattle.

Miscanthus is a grassy plant found in Asia and Africa. Some forms will also grow in Northern Europe, and it is being considered as an energy crop in the United Kingdom. Miscanthus can produce up to 18 dry tonnes per hectare-year, and it has the great advantage that it can be cultivated using ordinary farm machinery. The woody stems are very suitable for burning, since their water content is low (20-30%).

For some southerly countries, honge oil, derived from the plant *Pongamia pinnata* may prove to be a promising source of biomass energy. Studies conducted by Dr. Udishi Shrinivasa at the Indian Institute of Sciences in Bangalore indicate that honge oil can be

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portation and utilization of the wood.

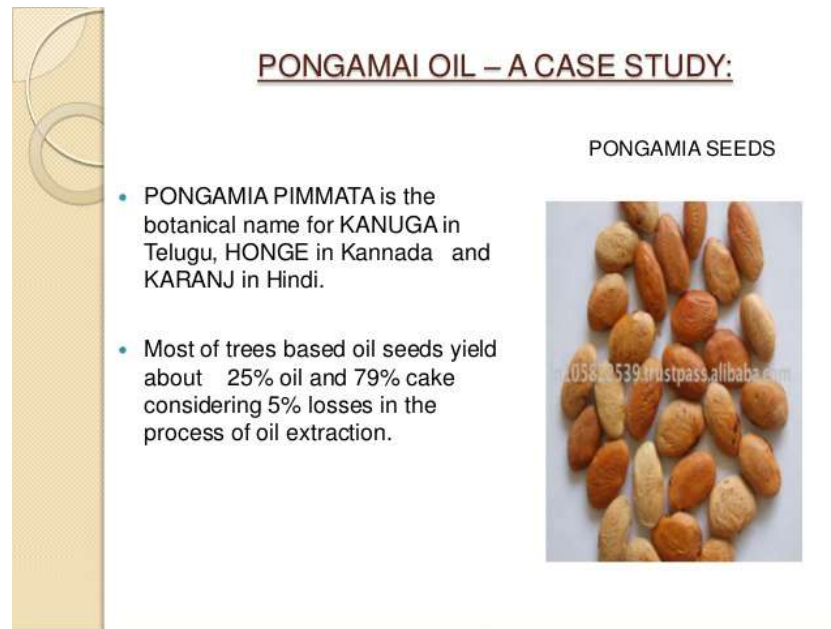


Figure 7.22: **The price of honge oil is quite competitive with other forms of oil.**

produced at the cost of \$150 per ton. This price is quite competitive when compared with other potential fuel oils.

Recent studies have also focused on a species of algae that has an oil content of up to 50%. Algae can be grown in desert areas, where cloud cover is minimal. Farm waste and excess CO<sub>2</sub> from factories can be used to speed the growth of the algae.

It is possible that in the future, scientists will be able to create new species of algae that use the sun's energy to generate hydrogen gas. If this proves to be possible, the hydrogen gas may then be used to generate electricity in fuel cells, as will be discussed below in the section on hydrogen technology. Promising research along this line is already in progress at the University of California, Berkeley.

Biogas is defined as the mixture of gases produced by the anaerobic digestion of organic matter. This gas, which is rich in methane (CH<sub>4</sub>), is produced in swamps and landfills, and in the treatment of organic wastes from farms and cities. The use of biogas as a fuel is important not only because it is a valuable energy source, but also because methane is a potent greenhouse gas, which should not be allowed to reach the atmosphere. Biogas produced from farm wastes can be used locally on the farm, for cooking and heating, etc. When biogas has been sufficiently cleaned so that it can be distributed in a pipeline, it is known as "renewable natural gas". It may then be distributed in the natural gas grid, or it can be compressed and used in internal combustion engines. Renewable natural gas can also be used in fuel cells, as will be discussed below in the section on Hydrogen Technology.

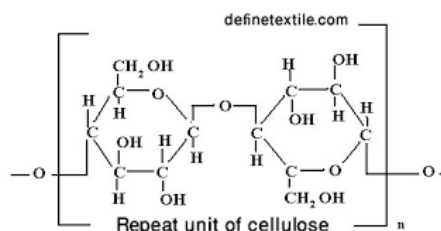


Figure 7.23: Cellulose is a polysaccharide. In other words, it is a long polymer whose subunits are sugars. The links between the sugar subunits in the chain can be broken, for example by the action of enzymes or acids. After this has been done, the resulting sugars can be fermented into alcohols, and these can be used to fuel motor vehicles or aircraft.

## Cellulostic ethanol

The fact that alcohols such as ethanol can be produced from cellulose has long been known.<sup>20</sup> In 1819, the French chemist Henri Braconnot demonstrated that cellulose could be broken down into sugars by treating it with sulfuric acid. The sugars thus produced could then be fermented into alcohols which could be used as liquid fuels.

In 1898, Germany built factories to commercialize this process, and shortly afterwards the same was done in the United States using a slightly different technique. These plants producing cellulostic ethanol operated during World War I, but the plants closed after the end of the war because of the cheapness and easy availability of fossil fuels. The production of cellulostic ethanol was revived during World War II.

During the last two decades, development of enzymatic techniques has supplied a better method of breaking the long cellulose polymer chain into sugars. In fact, it has recently become possible to use microbial enzymes both for this step and for the fermentation step.

In a September 9, 2008 article in the *MIT Technology Review*. Prachi Patal wrote: “New genetically modified bacteria could slash the costs of producing ethanol from cellulostic biomass, such as corn cobs and leaves, switchgrass, and paper pulp. The microbes produce ethanol at higher temperatures than are possible using yeast, which is currently employed to ferment sugar into the biofuel. The higher temperature more than halves the quantity of the costly enzymes needed to split cellulose into the sugars that the microbes can ferment. What’s more, while yeast can only ferment glucose, ‘this microorganism is good at using all the different sugars in biomass and can use them simultaneously and rapidly,’ says Lee Lynd, an engineering professor at Dartmouth College, who led the microbe’s development...

“Lynd wants to create microbes that would do it all: efficiently break down the cellulose and hemicellulose, and then ferment all the resulting sugars. Lynd, a cofounder of Mascoma, is working with colleagues at the startup, based in Cambridge, MA, to develop a simple one-step process for making cellulostic ethanol. In the combined process, a mixture of biomass and the microbes would go into a tank, and ethanol would come out.”

Cellulostic ethanol has several advantages over alcohol derived from grain;

<sup>20</sup>See the Wikipedia article on *Cellulostic Ethanol*

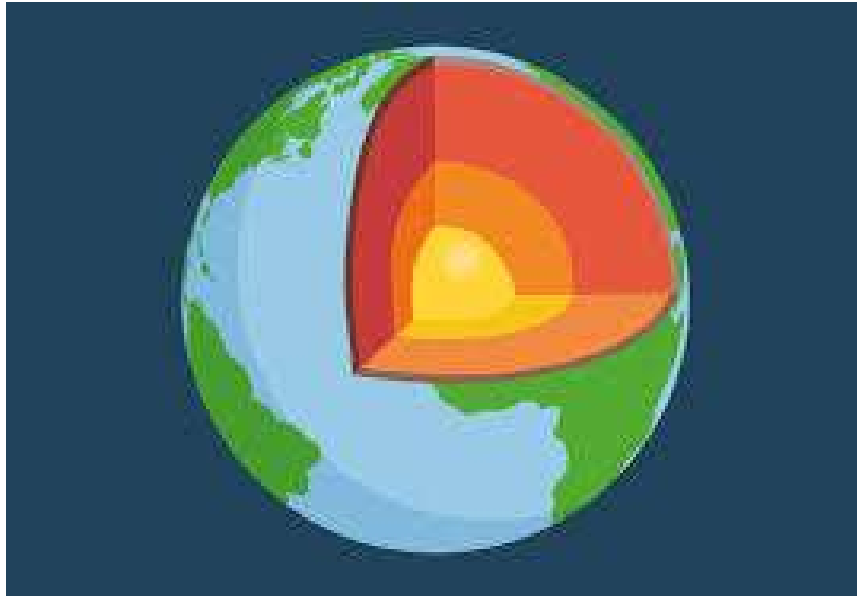


Figure 7.24: **The source of geothermal energy is the radioactive decay of elements deep within the earth.**

- Cellulostic ethanol avoids the food-fuel competition.
- The net greenhouse-gas-reducing effect of ethanol derived from grain is questionable.
- Cellulostic ethanol can use cardboard and paper waste as starting substances, thus reducing the quantity of trash in waste dumps.

## Geothermal energy

The ultimate source of geothermal energy is the decay of radioactive nuclei in the interior of the earth. Because of the heat produced by this radioactive decay, the temperature of the earth's core is 4300 °C. The inner core is composed of solid iron, while the outer core consists of molten iron and sulfur compounds. Above the core is the mantle, which consists of a viscous liquid containing compounds of magnesium, iron, aluminum, silicon and oxygen. The temperature of the mantle gradually decreases from 3700 °C near the core to 1000 °C near the crust. The crust of the earth consists of relatively light solid rocks and it varies in thickness from 5 to 70 km.

The outward flow of heat from radioactive decay produces convection currents in the interior of the earth. These convection currents, interacting with the earth's rotation, produce patterns of flow similar to the trade winds of the atmosphere. One result of the currents of molten conducting material in the interior of the earth is the earth's magnetic field. The crust is divided into large sections called "tectonic plates", and the currents of molten material in the interior of the earth also drag the plates into collision with each other. At the boundaries, where the plates collide or split apart, volcanic activity



Figure 7.25: The “ring of fire” is especially favorable for geothermal energy installations. The ring follows the western coasts of South America and North America to Alaska, After crossing the Bering Sea, it runs southward past Japan and Indonesia to New Zealand. Earthquakes and volcanic activity along this ring are produced by the collision of tectonic plates. Another strip-like region very favorable for geothermal installations follows Africa’s Rift Valley northward through Turkey and Greece to Italy, while a third pass through Iceland.

occurs. Volcanic regions near the tectonic plate boundaries are the best sites for collection of geothermal energy.

The entire Pacific Ocean is ringed by regions of volcanic and earthquake activity, the so-called Ring of Fire. This ring extends from Tierra del Fuego at the southernmost tip of South America, northward along the western coasts of both South America and North America to Alaska. The ring then crosses the Pacific at the line formed by the Aleutian Islands, and it reaches the Kamchatka Peninsula in Russia. From there it extends southward along the Kurile Island chain and across Japan to the Philippine Islands, Indonesia and New Zealand. Many of the islands of the Pacific are volcanic in nature. Another important region of volcanic activity extends northward along the Rift Valley of Africa to Turkey, Greece and Italy. In the Central Atlantic region, two tectonic plates are splitting apart, thus producing the volcanic activity of Iceland. All of these regions are very favorable for the collection of geothermal power.

The average rate at which the energy created by radioactive decay in the interior of the earth is transported to the surface is  $0.06 \text{ W}_t/\text{m}^2$ . However, in volcanic regions near the boundaries of tectonic plates, the rate at which the energy is conducted to the surface is much higher - typically  $0.3 \text{ W}_t/\text{m}^2$ . If we insert these figures into the thermal conductivity law

$$q = K_T \frac{\Delta T}{z}$$

we can obtain an understanding of the types of geothermal resources available throughout



the world. In the thermal conductivity equation,  $q$  is the power conducted per unit area, while  $K_T$  is the thermal conductivity of the material through the energy is passing. For sandstones, limestones and most crystalline rocks, thermal conductivities are in the range 2.5-3.5  $W_t/(m \text{ } ^\circ C)$ . Inserting these values into the thermal conductivity equation, we find that in regions near tectonic plate boundaries we can reach temperatures of 200  $^\circ C$  by drilling only 2 kilometers into rocks of the types named above. If the strata at that depth contain water, it will be in the form of highly-compressed steam. Such a geothermal resource is called a *high-enthalpy* resource<sup>21</sup>.

In addition to high-enthalpy geothermal resources there are *low-enthalpy* resources in nonvolcanic regions of the world, especially in basins covered by sedimentary rocks. Clays and shales have a low thermal conductivity, typically 1-2  $W_t/(m \text{ } ^\circ C)$ . When we combine these figures with the global average geothermal power transmission,  $q = 0.06 W_t/m^2$ , the thermal conduction equation tells us that  $\Delta T/z = 0.04 \text{ } ^\circ C/m$ . In such a region the geothermal resources may not be suitable for the generation of electrical power, but nevertheless adequate for heating buildings. The Creil district heating scheme north of Paris is an example of a project where geothermal energy from a low enthalpy resource is used for heating buildings.

The total quantity of geothermal electrical power produced in the world today is 8  $GW_e$ , with an additional 16  $GW_t$  used for heating houses and buildings. In the United States alone, 2.7  $GW_e$  are derived from geothermal sources. In some countries, for example Iceland and Canada, geothermal energy is used both for electrical power generation and for heating houses.

There are three methods for obtaining geothermal power in common use today: Deep wells may yield dry steam, which can be used directly to drive turbines. Alternatively water so hot that it boils when brought to the surface may be pumped from deep wells in volcanic regions. The steam is then used to drive turbines. Finally, if the water from geothermal wells is less hot, it may be used in binary plants, where its heat is exchanged with an organic fluid which then boils. In this last method, the organic vapor drives the turbines. In all three methods, water is pumped back into the wells to be reheated. The largest dry steam field in the world is The Geysers, 145 kilometers north of San Francisco, which produces 1,000  $MW_e$ .

There is a fourth method of obtaining geothermal energy, in which water is pumped down from the surface and is heated by hot dry rocks. In order to obtain a sufficiently large area for heat exchange the fissure systems in the rocks must be augmented, for example by pumping water down at high pressures several hundred meters away from the collection well. The European Union has established an experimental station at Soultz-sous-Forets in the Upper Rhine to explore this technique. The experiments performed at Soultz will determine whether the "hot dry rock" method can be made economically viable. If so, it can potentially offer the world a very important source of renewable energy.

The molten lava of volcanoes also offers a potential source of geothermal energy that

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<sup>21</sup>Enthalpy  $\equiv H \equiv U + PV$  is a thermodynamic quantity that takes into account not only the internal energy  $U$  of a gas, but also energy  $PV$  that may be obtained by allowing it to expand.

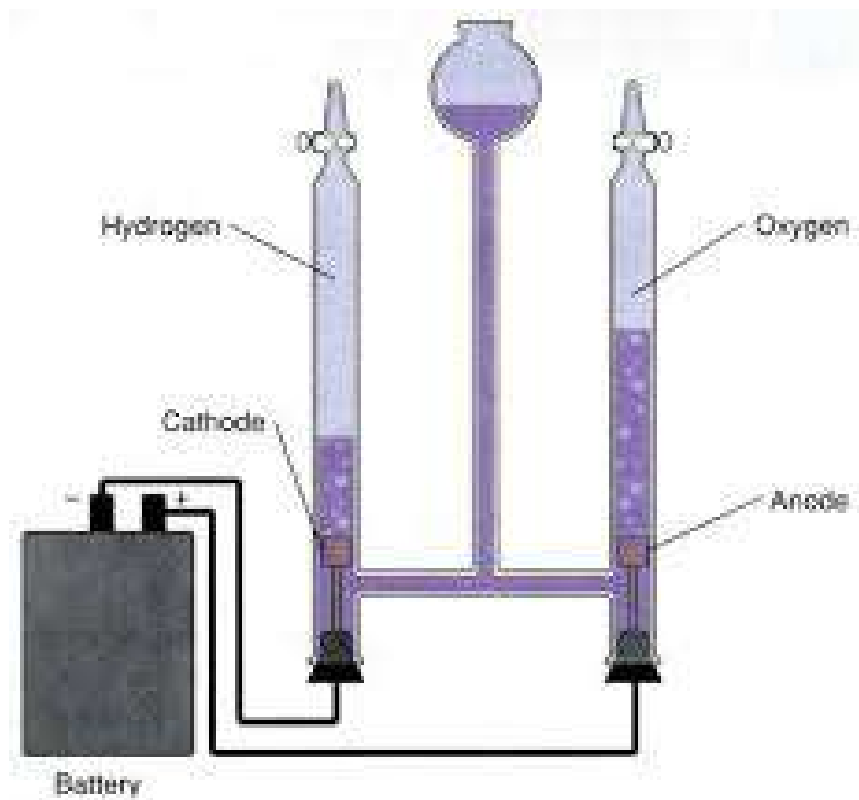


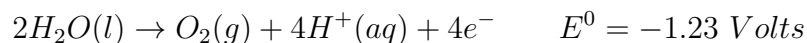
Figure 7.26: **Electrolysis of water.**

may become available in the future, but at present, no technology has been developed that is capable of using it.

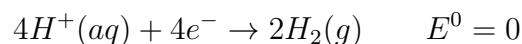
## Hydrogen technologies

### Electrolysis of water

When water containing a little acid is placed in a container with two electrodes and subjected to an external direct current voltage greater than 1.23 Volts, bubbles of hydrogen gas form at one electrode (the cathode), while bubbles of oxygen gas form at the other electrode (the anode). At the cathode, the half-reaction



takes place, while at the anode, the half-reaction



occurs.

Half-reactions differ from ordinary chemical reactions in containing electrons either as reactants or as products. In electrochemical reactions, such as the electrolysis of water,

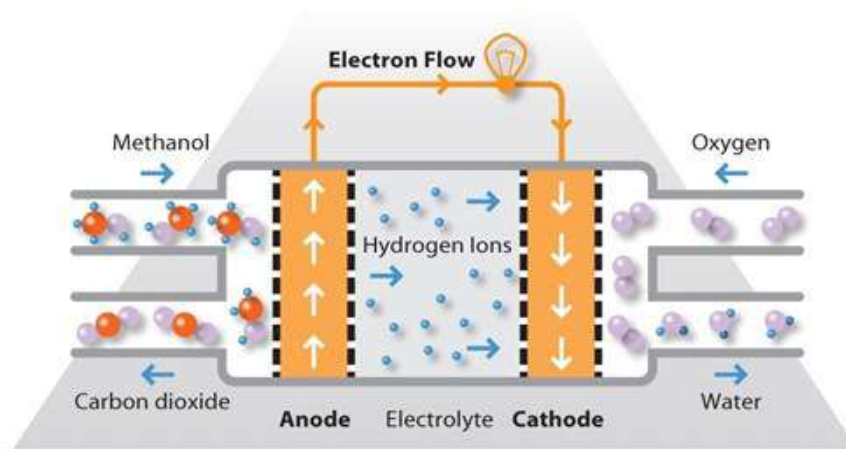
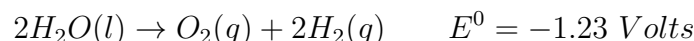


Figure 7.27: A methanol fuel cell.

these electrons are either supplied or removed by the external circuit. When the two half-reactions are added together, we obtain the total reaction:



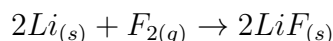
Notice that  $4H^+$  and  $4e^-$  cancel out when the two half-reactions are added. The total reaction does not occur spontaneously, but it can be driven by an external potential  $E$ , provided that the magnitude of  $E$  is greater than 1.23 volts.

When this experiment is performed in the laboratory, platinum is often used for the electrodes, but electrolysis of water can also be performed using electrodes made of graphite.

Electrolysis of water to produce hydrogen gas has been proposed as a method for energy storage in a future renewable energy system. For example, it might be used to store energy generated by photovoltaics in desert areas of the world. Compressed hydrogen gas could then be transported to other regions and used in fuel cells. Electrolysis of water and storage of hydrogen could also be used to solve the problem of intermittency associated with wind energy or solar energy.

### Half reactions

Chemical reactions in which one or more electrons are transferred are called *oxidation-reduction reactions*. Any reaction of this type can be used in a fuel cell. As an example, we can consider the oxidation-reduction reaction in which solid lithium metal reacts with fluorine gas;



This reaction can be split into two half-reactions,



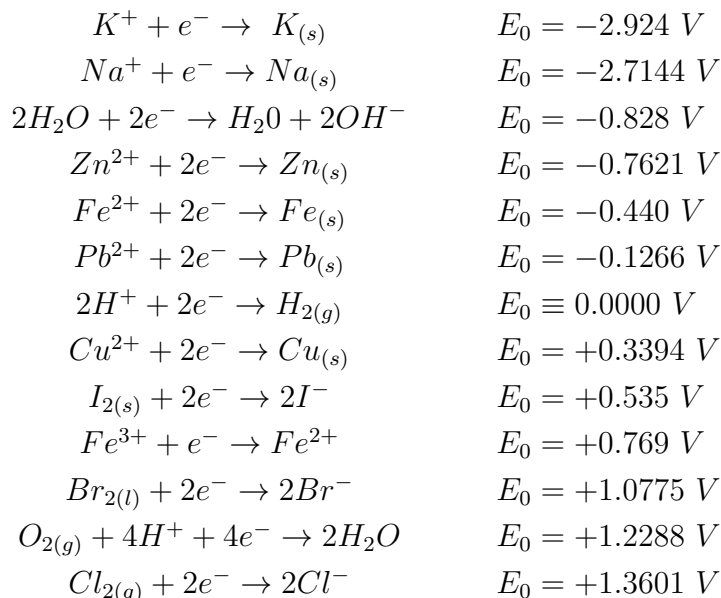
and



The quantity  $E_0$  which characterizes these half-reactions is called *standard potential* of the half-reaction, and it is measured in Volts. If the oxidation-reduction reaction is used as the basis of a fuel cell, the voltage of the cell is the difference between the two standard potentials. In the lithium fluoride example, it is

$$2.87 \text{ V} - (-3.040 \text{ V}) = 5.91 \text{ V}$$

Here are a few more half-reactions and their standard potentials:



Fuel cells are closely related to storage batteries. Essentially, when we recharge a storage battery we are just running a fuel cell backwards, applying an electrical potential which is sufficient to make a chemical reaction run in a direction opposite to the way that it would run spontaneously. When the charged battery is afterwards used to drive a vehicle or to power an electronic device, the reaction runs in the spontaneous direction, but the energy of the reaction, instead of being dissipated as heat, drives electrons through an external circuit and performs useful work.

## 7.11 Renewables are now much cheaper than fossil fuels!

According to an article written by Megan Darby and published in *The Guardian* on 26 January, 2016, “Solar power costs are tumbling so fast the technology is likely to fast outstrip mainstream energy forecasts.

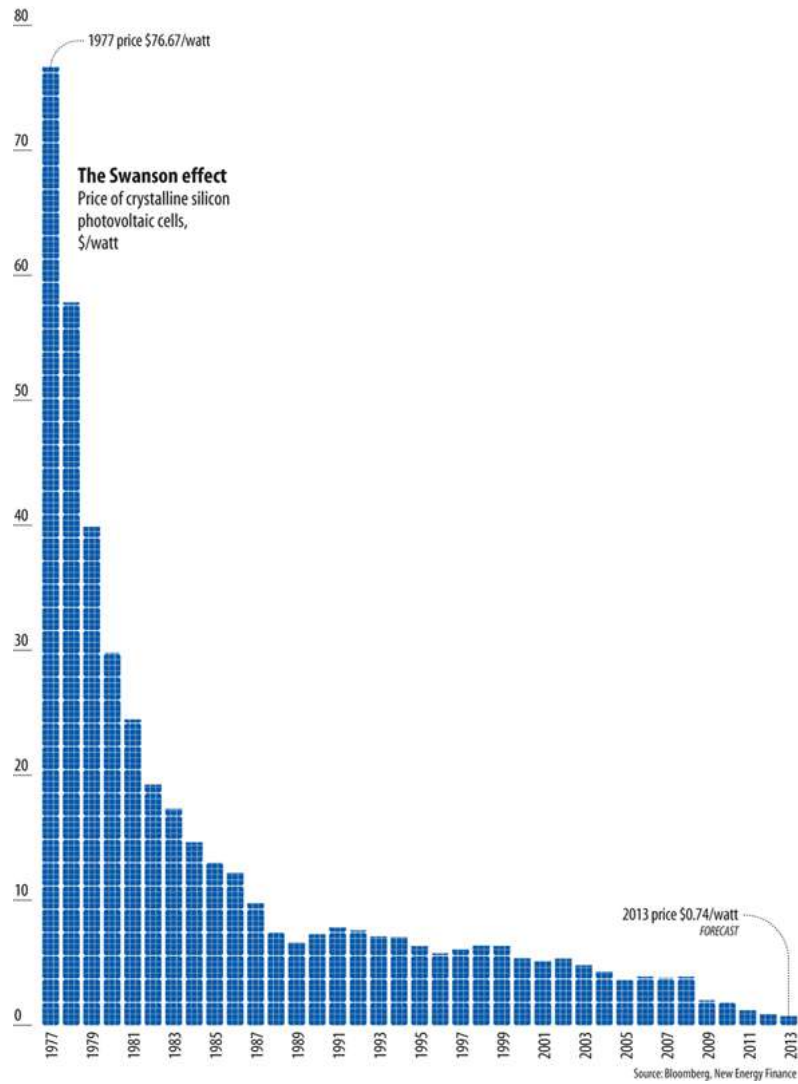


Figure 7.28: The cost of photovoltaic cell panels is falling rapidly

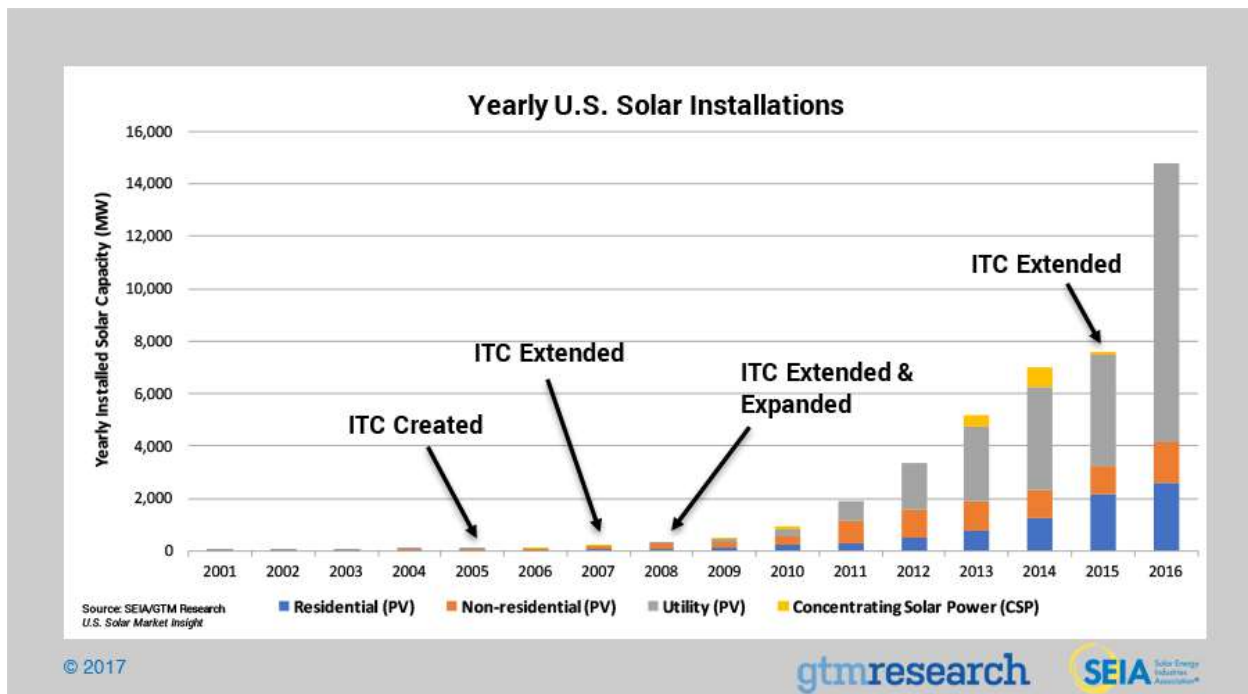


Figure 7.29: Driven by falling prices, new solar installations in the United States are increasing rapidly. The acronym ITC stands for Solar Investment Tax Credit. Commercial prices have fallen by 58% since 2012 and by 16% in the last year

“That is the conclusion of Oxford University researchers, based on a new forecasting model published in Research Policy<sup>22</sup>.

“Commercial prices have fallen by 58% since 2012 and by 16

“Since the 1980s, panels to generate electricity from sunshine have got 10% cheaper each year. That is likely to continue, the study said, putting solar on course to meet 20% of global energy needs by 2027.’ ’

## 7.12 Lester R. Brown

In December 2008, Lester R. Brown called attention to the following facts:

- The renewable energy industry - wind, solar, geothermal - are expanding by over 30 percent yearly;
- There are now, in the U.S., 24,000 megawatts of wind generating capacity online, but there is a staggering 225,000 megawatts of planned wind farms;

<sup>22</sup><http://www.sciencedirect.com/science/article/pii/S0048733315001699>

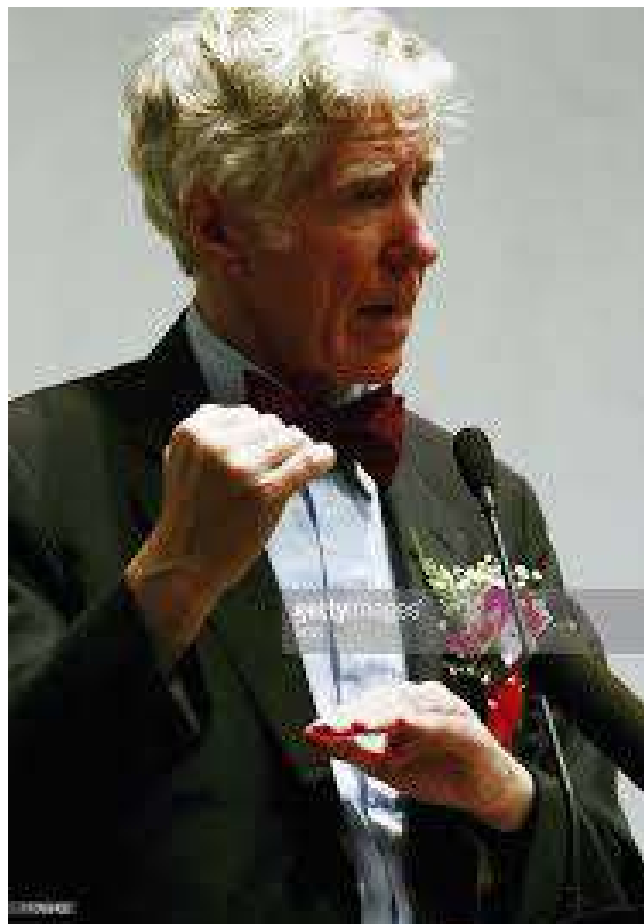


Figure 7.30: Lester R. Brown, born in 1934, is the author of more than 50 books, and he has been called “...one of the world’s most influential thinkers” (Washington Post). He is the founder of the Worldwatch Institute and the Earth Policy Institute. Books produced by Brown and his coworkers at the EPI can be freely downloaded and circulated. The 2015 book *The Great Transition: Shifting From Fossil Fuels to Solar and Wind Energy* can be freely downloaded from the following link: <http://www.earth-policy.org/books/tgt>

- What is needed is a World War II-type mobilization to produce electric-powered cars that will operate at an equivalent gas cost of \$1 per gallon (Replacing each SUV with a plug-in hybrid could save \$20,000 of oil imports over its lifetime);

## 7.13 Reforming our food and agricultural systems

The medical journal *The Lancet* recently published a report which aimed at changing the diets of people throughout the world. The commission which produced the report brought together 37 experts in agriculture, environmental sustainability, human health, and political science from 16 countries. Over three years, they developed the “planetary health diet,” which aims to address the global food system’s devastating environmental impact as well as mass malnutrition.

“The food we eat and how we produce it determines the health of people and the planet, and we are currently getting this seriously wrong,” declared Tim Lang, a co-author of the EAT-Lancet Commission and professor at City, University of London. “We need a significant overhaul, changing the global food system on a scale not seen before in ways appropriate to each country’s circumstances.”

“To be healthy,” he explained, “diets must have an appropriate calorie intake and consist of a variety of plant-based foods, low amounts of animal-based foods, unsaturated rather than saturated fats, and few refined grains, highly processed foods, and added sugars.”

“Humanity now poses a threat to the stability of the planet,” co-lead commissioner Johan Rockström of the Stockholm Resilience Center told the *Guardian*. “[This requires] nothing less than a new global agricultural revolution.”

Here are some of the commission’s recommendations:

1. Seek international and national commitment to shift toward healthy diets that feature more plant-based foods - including fruits, vegetables, nuts, seeds, and whole grains - and less animal products.
2. Reorient agricultural priorities from producing high quantities of food to producing healthy food that nurtures human health and supports environmental sustainability.
3. Sustainably intensify food production to increase high-quality output with a series of reforms that include becoming a net carbon sink from 2040 forward to align with the goals of the Paris climate agreement.
4. Strong and coordinated governance of land and oceans, including by implementing a “Half Earth” strategy for biodiversity conservation.
5. At least halve food losses and waste, in line with the U.N. Sustainable Development Goals (SDGs), on both the production side and the consumption side.





Figure 7.31: We should eat more vegetables, fruits, whole grains and nuts, while consuming much less meat and dairy products. Beef is especially damaging to the global environment.



Here are some excerpts from a 16 January 2019 article in The Guardian by Damian Cammeron:

*Globally, the diet requires red meat and sugar consumption to be cut by half, while vegetables, fruit, pulses and nuts must double. But in specific places the changes are stark. North Americans need to eat 84% less red meat but six times more beans and lentils. For Europeans, eating 77% less red meat and 15 times more nuts and seeds meets the guidelines.*

*The diet is a “win-win”, according to the scientists, as it would save at least 11 million people a year from deaths caused by unhealthy food, while preventing the collapse of the natural world that humanity depends upon. With 10 billion people expected to live on Earth by 2050, a continuation of today’s unsustainable diets would inevitably mean even greater health problems and severe global warming.*

*Unhealthy diets are the leading cause of ill health worldwide, with 800 million people currently hungry, 2 billion malnourished and further 2 billion people overweight or obese. The world’s science academies recently concluded that the food system is broken. Industrial agriculture is also devastating the environment, as forests are razed and billions of cattle emit climate-warming methane.*

## **Future agriculture**

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.

## **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.

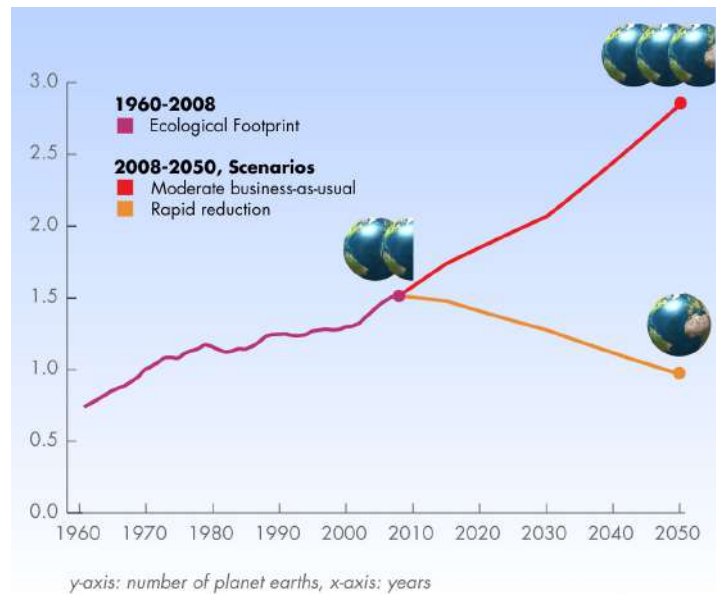


Figure 7.32: **Our present trajectory is completely unsustainable. If we follow it, then by 2050 it would take almost three earths to regenerate our demands on resources. Source: footprintnetwork.org**

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 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



Figure 7.33: **Forests are the lungs of our planet. They convert CO<sub>2</sub> into organic material and thus remove it from the atmosphere. It is therefore vitally important to protect existing forests and to plant new ones.**

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 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>23</sup>

### **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. 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 main-

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<sup>23</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>

tenance 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 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>24</sup>

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<sup>24</sup><http://www.truth-out.org/news/item/32354-environmentalists-sue-epa-over-dead-zone-in-gulf-of-mexico>

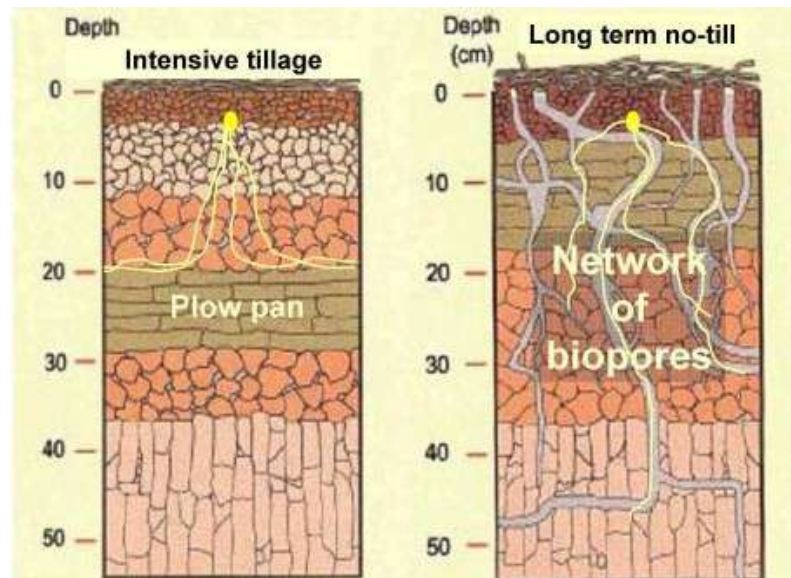


Figure 7.34: Recent research on No-Till Agriculture points to many benefits that could result from this practice, especially higher CO<sub>2</sub> content in the topsoil.

## Effects of climate change on agriculture

### a) The effect of temperature increase

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>25</sup>

### b) The effect of decreased rainfall

According to the Stern Report, some of the major grain-producing areas of the world

<sup>25</sup><http://ecowatch.com/2015/08/03/heat-wave-iran/>

might lose 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".

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 pop-



ulations 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 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>26</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 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.

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<sup>26</sup><http://www.commondreams.org/news/2015/08/04/global-glaciers-melting-three-times-rate-20th-century>

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 be 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.

## 7.14 Alexandria Ocasio-Cortez and the Green New Deal

Alexandra Ocasio-Cortez (born in 1989) won a stunning victory in the Democratic Party primary election of June 26, 2018. Although outspent by a factor of 18 to 1 by her opponent (Democratic Caucus Chair, Joseph Crowley), she won the primary by 57% to 42%. Her campaign contributions came from small individual donors, while his came in large blocks, from corporations. Ocasio-Cortez calls for the United States to transition by 2035 to an electrical grid running on 100% renewable-energy production and end the use of fossil fuels. She calls healthcare “a human right”, and says: “Almost every other developed nation in the world has universal healthcare. It’s time the United States catch up to the rest of the world in ensuring all people have real healthcare coverage that doesn’t break the bank”.

The Guardian called her victory “one of the biggest upsets in recent American political

history”, and Senator Bernie Sanders commented “She took on the entire local Democratic establishment in her district and won a very strong victory. She demonstrated once again what progressive grassroots politics can do”. The lesson that the US Democratic Party must learn from this is that in order to overthrow Donald Trump’s openly racist and climate-change-denying Republican Party, they must free themselves from the domination of corporate oligarchs, and instead stand for honest government and progressive values.

Even before taking her place in the US House of Representatives, with its newly-won Democratic majority, Alexandria Ocasio-Cortez became the leader of a campaign for a Green New Deal. This program takes its inspiration from the massive Federal government program by which Franklin Delano Roosevelt ended the depression of the 1930’s. FDR’s New Deal built dams, planted forests, and in general to create much needed infrastructure, while at the same time addressing the problem of unemployment by providing jobs. Wikipedia describes FDR’s New Deal as follows:

“The New Deal was a series of programs, public work projects, financial reforms and regulations enacted by President Franklin D. Roosevelt in the United States between 1933 and 1936. It responded to needs for relief, reform and recovery from the Great Depression. Major federal programs included the Civilian Conservation Corps (CCC), the Civil Works Administration (CWA), the Farm Security Administration (FSA), the National Industrial Recovery Act of 1933 (NIRA) and the Social Security Administration (SSA). They provided support for farmers, the unemployed, youth and the elderly. The New Deal included new constraints and safeguards on the banking industry and efforts to re-inflate the economy after prices had fallen sharply. New Deal programs included both laws passed by Congress as well as presidential executive orders during the first term of the presidency of Franklin D. Roosevelt. The programs focused on what historians refer to as the ‘3 Rs’: relief for the unemployed and poor, recovery of the economy back to normal levels and reform of the financial system to prevent a repeat depression.”

Alexandria Ocasio-Cortez believes that the climate emergency that the world now faces is a much more severe emergency than the great depression. Indeed, if quick action is not taken immediately, the long-term effects of catastrophic climate change pose existential threats to human civilization and the biosphere. Therefore she advocates a massive governmental program to create renewable energy infrastructure. Such a program, like FDR’s New Deal, would simultaneously solve the problem of unemployment. Money for the program could be taken from the Pentagon’s obscenely bloated budget. Ocasio-Cortez has also proposed a 70% income tax for the ultra-wealthy.

According to a January 24 2019 article by Robert R. Raymond, “When polled, 92 percent of registered Democratic voters say they support the Green New Deal. But perhaps more importantly, a full 81 percent of all registered voters support it - a number that includes both Republicans and Democrats.”<sup>27</sup>

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<sup>27</sup><https://truthout.org/articles/the-democratic-party-is-further-to-the-right-than-most-voters/>



Figure 7.35: Alexandria Ocasio-Cortez. At 29 she is the youngest woman ever to be elected to the US House of Representatives.



Figure 7.36: The Green New Deal advocated by Ocasio-Cortez proposes to use jobs creating renewable energy infrastructure to ensure full employment, in a manner analogous to Roosevelt's New Deal.



Figure 7.37: Members of the Sunrise movement in the office of House Majority Leader Nancy Pelosi, protesting against her lack of support for the Green New Deal.





Figure 7.38: Award-winning author Naomi Klein, speaking at the Sanders Institute in January, 2019.

### Naomi Klein on the urgency of the Green New Deal

A recent article by journalist Naomi LaChance describes a meeting at the Sanders Institute (founded by Senator Bernie Sanders and his wife Jane) at which the famous author and activist Naomi Klein and others spoke about the scope and urgency of the Green New Deal. Here are some excerpts from the article:

*Progressive journalist and activist Naomi Klein urged sweeping change that tackles the climate crisis, capitalism, racism and economic inequality in tandem on Friday in Burlington, Vt. If that seems challenging, add the fact that the clock is ticking<sup>28</sup> and there might not be another chance.*

**“We need to have started yesterday”**, Klein said at the three-day Sanders Institute Gathering on a panel moderated by environmental activist Bill McKibben. **“What all of us who follow the science know is that we just can’t lose these four years”**, she said, referring to the presidency of climate change denier Donald Trump. The conference, organized by the think tank founded by Vermont Sen. Bernie Sanders’ wife, Jane, is aimed

<sup>28</sup><https://www.theguardian.com/environment/2018/oct/08/global-warming-must-not-exceed-15c-warns-landmark-un-report>

at forming bold progressive agendas for the future.

Progressives are looking to incoming Democratic New York Rep. Alexandria Ocasio-Cortez for leadership as she galvanizes a grassroots effort by the youth-led climate change group Sunrise Movement<sup>29</sup> to reduce fossil fuel dependence. Eighteen members of Congress support the idea of creating a House select committee to look at making a realistic plan by January 2020.

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<sup>29</sup><https://www.truthdig.com/articles/will-democrats-back-a-green-new-deal/>

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# Chapter 8

## NEO-NAZISM

### 8.1 Revival of Nazi ideology after World War II

According to Wikipedia, “Neo-Nazism consists of post-World War II militant social or political movements seeking to revive and implement the ideology of Nazism. Neo-Nazis seek to employ their ideology to promote hatred and attack minorities, or in some cases to create a fascist political state. It is a global phenomenon, with organized representation in many countries and international networks. It borrows elements from Nazi doctrine, including ultranationalism, racism, xenophobia, ableism, homophobia, anti-Romanyism, antisemitism, anti-communism and initiating the Fourth Reich. Holocaust denial is a common feature, as is the incorporation of Nazi symbols and admiration of Adolf Hitler.

“In some European and Latin American countries, laws prohibit the expression of pro-Nazi, racist, anti-Semitic, or homophobic views. Many Nazi-related symbols are banned in many European countries - in particular Germany and Austria - in an effort to curtail neo-Nazism.

“Following the defeat of Nazi Germany, the political ideology of the ruling party, Nazism, was in complete disarray. However, conspiracy theories emerged about Hitler himself, that he had secretly survived the war and fled to South America or elsewhere.

“The Allied Control Council officially dissolved the NSDAP on 10 October 1945, marking the end of “Old” National Socialism. A process of denazification began, and the Nuremberg trials took place, where many major leaders and ideologues were condemned to death by October 1946, others committed suicide. Otto Ernst Remer, leader of the postwar Socialist Reich Party.

“In both the East and West, surviving ex-party members and military veterans assimilated to the new reality and had no interest in constructing a “neo-Nazism.” However, during the 1949 elections a number of National Socialist advocates such as Fritz Rössler had infiltrated the national conservative Deutsche Rechtspartei, which had 5 members elected. Rössler and others left to found the more radical Socialist Reich Party under Otto Ernst Remer. At the onset of the Cold War, the SRP favoured the Soviet Union over the

United States.”



Figure 8.1: Otto Ernst Remer, leader of the postwar Socialist Reich Party.



Figure 8.2: Otto Strasser, leader of the German Social Union, returned from exile to Germany in the mid-1950s.





Figure 8.3: George Lincoln Rockwell, founder of the American Nazi Party and progenitor of subsequent uniformed neo-Nazi groups.



Figure 8.4: The Italian group Ordine Nuovo, banned in 1974, drew influence from the Waffen-SS and Guénonian Traditionalism via Julius Evola.



Figure 8.5: The radicalisation of Flemish activist group the Vlaamse Militanten Orde in the 1970s, energized international neo-Nazism.

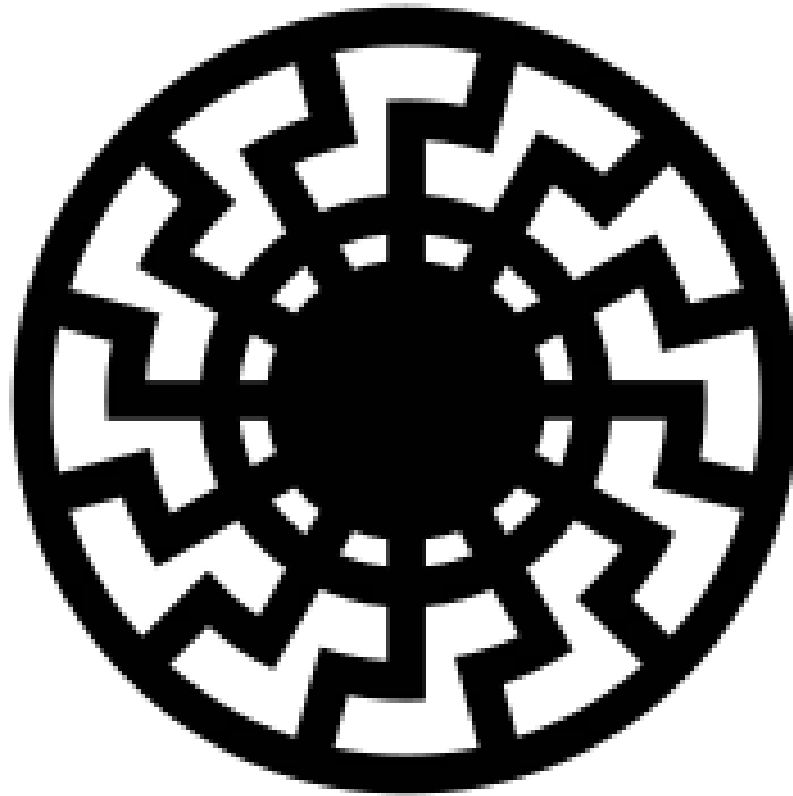


Figure 8.6: Serrano identified Aryan-Hyperborean blood as the “light of the Black Sun”, a symbol found at SS-cult site Wewelsburg Castle.



Figure 8.7: Members of the National Bolshevik Party. “Nazbols” tailor ultra-nationalist themes to a native Russian environment while still employing National Socialist aesthetics.



Figure 8.8: The nearest Italy came to returning to fascism was the 1970 Golpe Borghese of commando veteran Junio Valerio Borghese.

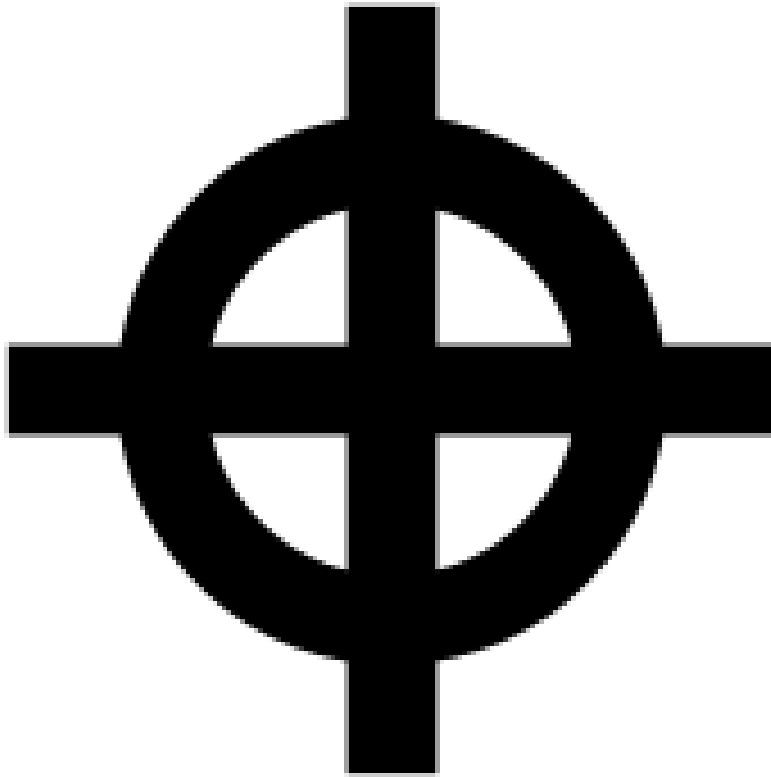


Figure 8.9: French neo-fascist groups adopted the Celtic cross as an ambiguous “Christian and pagan” symbol since the 1940s.



Figure 8.10: Young boy wearing a shirt with a Black Legion sign at a Thompson concert in Croatia.



Figure 8.11: “Hungaria Skins” with a flag evoking the Arrow Cross in 1997.



Figure 8.12: Protesters with neo-Nazi symbols - SS-Volunteer Division “Galicia” and Patriot of Ukraine flags.



Figure 8.13: Ukrainian volunteer battalion members with neo-Nazi Wolfsangel symbol, 24 July 2014.



Figure 8.14: Neo-Nazi skinheads in Spain.



Figure 8.15: Neo-Nazi demonstration in Leipzig, Germany in October 2009.

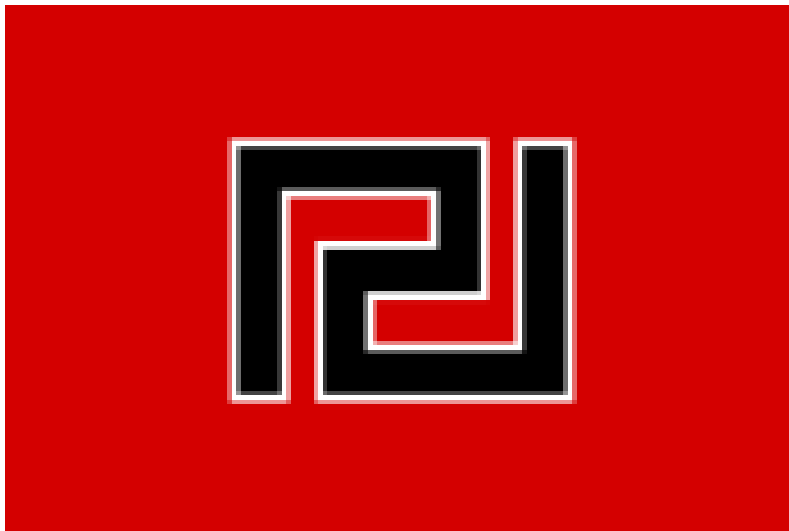


Figure 8.16: Flag of the Golden Dawn (Greece).





Figure 8.17: ONR march in Poznań in November 2015.



Figure 8.18: Neo-Nazism in Russia: The photograph was taken at an anti-gay demonstration in Moscow in October 2010.

## 8.2 Apartheid

### Nelson Mandela leads South Africa from Apartheid to equality

Mandela's great-grandfather was the ruler of the Thembu peoples in the Eastern Cape Province of South Africa. When Mandela's father died, his mother brought the young boy to the palace of the Thembu people's Regent, Chief Jogintaba Dalindyebo, who became the boy's guardian. He treated Mandela as a son and gave him an outstanding education.

Mandela's realization of the power of truth came during the Rivonia Trial (1963-1964), where he was accused of plotting to overthrow the government of South Africa by violence, and his life was at stake. Remembering this event, Mandela wrote: "In a way I had never quite comprehended before, I realized the role I could play in court and the possibilities before me as a defendant. I was the symbol of justice in the court of the oppressor, the representative of the great ideals of freedom, fairness and democracy in a society that dishonored those virtues. I realized then and there that I could carry on the fight even in the fortress of the enemy"

During his defense statement, Mandela said: "I have fought against white domination and I have fought against black domination. I have cherished the ideal of a democratic and free society in which all persons will live together with equal opportunities. It is an ideal which I hope to live for and see realized. But my Lord, if it needs to be, it is an ideal for which I am prepared to die."

Although the prosecutor demanded the death penalty, Mandela was sentenced to life-long imprisonment. His defense statement became widely known throughout the world, and he became the era's most famous prisoner of conscience. The South African apartheid regime was universally condemned by the international community, and while still in prison, Mandela was given numerous honors, including an honorary doctorate in Lesotho, the Jawaharlal Nehru Award for International Understanding and Freedom of the City of Glasgow. "Free Mandela" concerts were held in England and the UN Security Council demanded his release.

Finally, as it became increasingly clear that the South African apartheid regime was untenable, Mandela was released in February 1990. He spoke to an enormous and wild cheering crowd of supporters, who had waited four hours to hear him. Four years later, he was elected President of South Africa. He was awarded 250 major honors, including the Nobel Peace Prize, which he shared with de Klerk.

Mandela is also remembered as a great champion of reconciliation. Wikipedia describes his period as President of South Africa in the following words:

"Presiding over the transition from apartheid minority rule to a multicultural democracy, Mandela saw national reconciliation as the primary task of his presidency. Having seen other post-colonial African economies damaged by the departure of white elites, Mandela worked to reassure South Africa's white population that they were protected and represented in 'The Rainbow Nation'."



Figure 8.19: Cape Coloured children in Bonteheuwel.

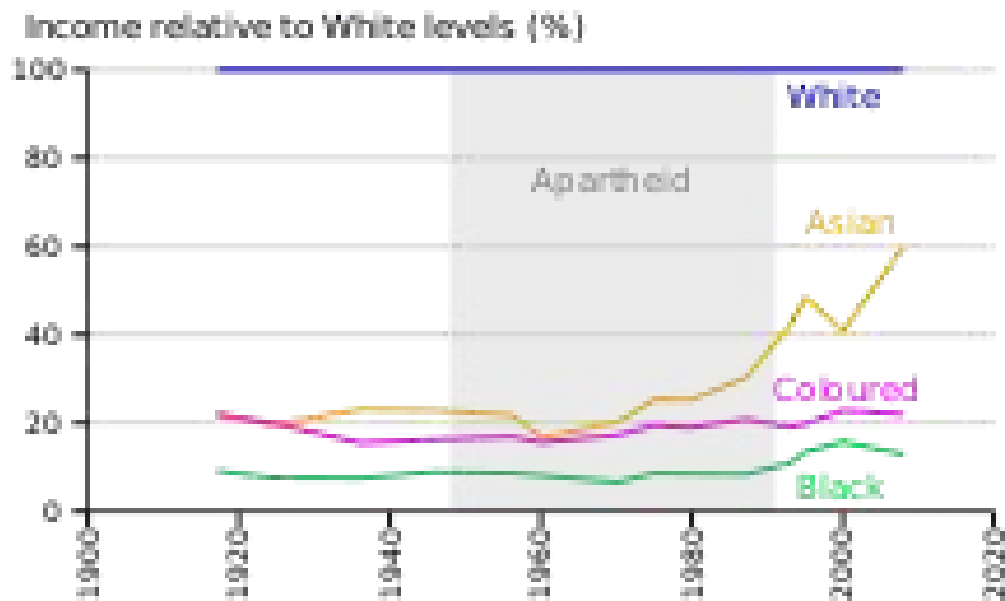


Figure 8.20: Annual per capita personal income by race group in South Africa relative to white levels.



Figure 8.21: Sign designating a public space as “for use by white persons”.



Figure 8.22: Painting of the Sharpeville Massacre of March 1960.



Figure 8.23: De Klerk and Mandela in Davos, 1992.



Figure 8.24: The new multicoloured flag of South Africa adopted in 1994 to mark the end of Apartheid.

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# Chapter 9

## THE FAR RIGHT

### 9.1 Alt-right

The Associated Press gives the following definition of the alt-right movement:

“The ‘alt-right’ or ‘alternative right’ is a name currently embraced by some white supremacists and white nationalists to refer to themselves and their ideology, which emphasizes preserving and protecting the white race in the United States in addition to, or over, other traditional conservative positions such as limited government, low taxes and strict law-and-order. The movement has been described as a mix of racism, white nationalism and populism ... criticizes ‘multiculturalism’ and more rights for non-whites, women, Jews, Muslims, gays, immigrants and other minorities. Its members reject the American democratic ideal that all should have equality under the law regardless of creed, gender, ethnic origin or race.”

Wikipedia states that “The alt-right, an abbreviation of alternative right, is a loosely connected far-right, white supremacist, white nationalist, white separatist, anti-immigration and sometimes antisemitic movement based in the United States. A largely online phenomenon, the alt-right originated in the U.S. during the 2010s although it has since established a presence in various other countries. The term is ill-defined, having been used in different ways by various self-described ‘alt-rightists’, media commentators, and academics.

“In 2010, the American white nationalist Richard B. Spencer launched The Alternative Right webzine to disseminate his ideas. Spencer’s ‘alternative right’ was influenced by earlier forms of American white nationalism, as well as paleoconservatism, the Dark Enlightenment, and the Nouvelle Droite. Critics charged it with being a rebranding of white supremacism. His term was shortened to “alt-right” and popularised by far-right participants of /pol/, the politics board of web forum 4chan. It came to be associated with other white nationalist websites and groups, including Andrew Anglin’s Daily Stormer, Brad Griffin’s Occidental Dissent, and Matthew Heimbach’s Traditionalist Worker Party...

“The alt-right is a white nationalist, biologically racist movement. Part of its membership supports anti-immigrationist policies to ensure a continued white majority in the



Figure 9.1: Prominent alt-rightists were instrumental in organizing the "Unite the Right" rally in Charlottesville, Virginia in August 2017. Here, rally participants carry Confederate battle flags, Gadsden flags and a Nazi flag.

United States. Others call for the breakup of the country to form a white separatist ethno-state in North America. Some alt-rightists seek to make white nationalism socially respectable in the U.S., while others - known as the '1488' scene - adopt openly white supremacist and neo-Nazi stances. Some alt-rightists are anti-semitic, promoting a conspiracy theory that there is a Jewish plot to bring about white genocide; other alt-rightists view most Jews as members of the white race. The alt-right is anti-feminist, advocates for a more patriarchal society, and intersects with the men's rights movement and other sectors of the online manosphere...

"Membership was overwhelmingly white and male, with academic and anti-fascist observers linking its growth to deteriorating living standards and prospects, anxieties about the place of white masculinity, and anger at increasingly visible left-wing forms of identity politics like the Black Lives Matter movement. Constituent groups using the "alt-right" label have been characterized as hate groups,[2][3] while alt-right material has been a contributing factor in the radicalization of young white men responsible for a range of far-right murders and terrorist attacks in the U.S. since 2014."

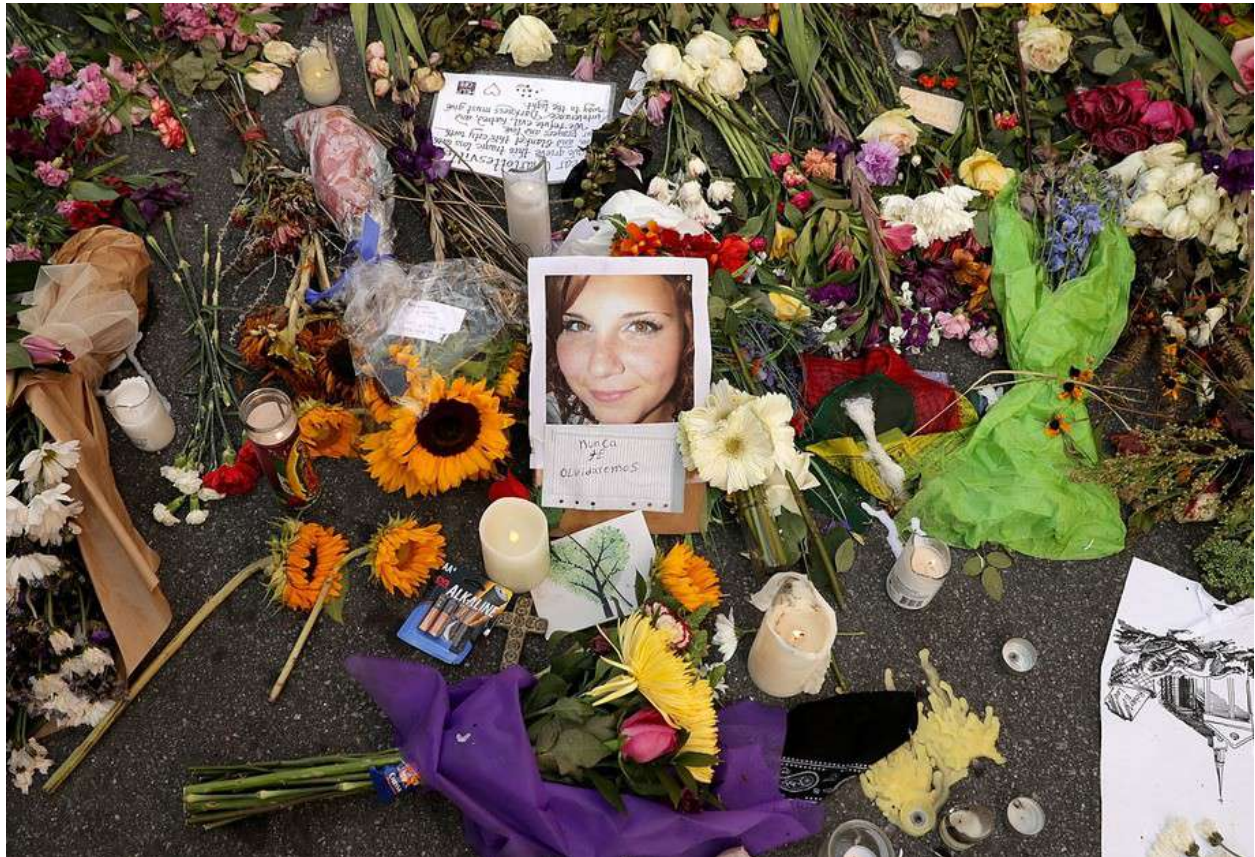


Figure 9.2: Heather Heyer was murdered in 2017 by a white nationalist rally participant in Charlottesville. Since then, mass shootings in Poway, Gilroy, and El Paso and elsewhere have been each linked to white nationalist beliefs.



Figure 9.3: Breitbart News amplified and popularised alt-right ideas under the editorship of “alt-lite” figure Steve Bannon.



Figure 9.4: The alt-right largely rallied behind the presidential candidacy of Donald Trump, although he later distanced himself from the movement.



Figure 9.5: A participant at the Unite the Right rally giving a Nazi salute in front of counter-protesters.



Figure 9.6: The alt-rightist was then punched in an altercation with counter-protesters.



Figure 9.7: Protestors at the 2017 Unite the Right rally, which was promoted by the alt-right. One man carries the logo of Vanguard America, and another has a t-shirt praising German Nazi leader Adolf Hitler.



Figure 9.8: An attendee at the Unite the Right rally carrying a firearm and wearing a Confederate Battle Flag T-shirt.



Figure 9.9: “Trump is Alt-Right with Us.” Anti-Trump protesters highlight what they regard as his links to the alt-right and to historical fascism by dressing as Hitler and Mussolini.

## 9.2 The Klu Klux Klan

Following the defeat of the Confederate states in the US Civil War, the original Klu Klux Klan was established in the south to overthrow northern rule, and to terrorize freed slaves who were thought to be a threat to white womanhood. Large numbers of black people and their sympathizers were lynched and murdered by the original KKK. The organization was outlawed in 1871.

The Klu Klux Klan was revived in 1915, inspired by D.W. Griffith’s influential but controversial film *The Birth of a Nation*, which depicted the original Klan in a positive light. In this second incarnation which lasted until until the mid-1920’s, the KKK sought to maintain Protestant white supremacy, and opposed both Roman Catholicism and the influence of Jews.

The third incarnation of the Klu Klux Klan came in the 1950’s. Local groups have opposed civil rights activists, and murdered many of them. The KKK is classified as a hate group by the Anti-Defamation League.

Wikipedia states that “The second and third incarnations of the Ku Klux Klan made frequent references to America’s ‘Anglo-Saxon’ blood, hearkening back to 19th-century nativism. Although members of the KKK swear to uphold Christian morality, virtually every Christian denomination has officially denounced the KKK”.



Figure 9.10: KKK rally in Chicago, c. 1920.



Figure 9.11: Three Ku Klux Klan members at a 1922 parade. Trump's father was a well-known Klansman in New York and New Jersey in his hey days.





Figure 9.12: Cross burning was introduced by William J. Simmons, the founder of the second Klan in 1915.



Figure 9.13: Klu Klux Klan members at a cross burning in 2005.



Figure 9.14: Sheet music to “We Are All Loyal Klansmen”, 1923.



Figure 9.15: Klu Klux Klan members march down Pennsylvania Avenue in Washington, D.C. in 1928.



Figure 9.16: Historically, the Klu Klux Klan has been responsible for innumerable lynchings.

### 9.3 Proud Boys

Wikipedia states that “The Proud Boys is a far-right neo-fascist organization which admits only men as members and promotes political violence. It is based in the United States and has a presence in Canada, Australia, and the United Kingdom. The group was started in 2016 by Vice Media co-founder and former commentator Gavin McInnes, taking its name from the song ‘Proud of Your Boy’ from the Disney film Aladdin. Proud Boys emerged as part of the alt-right, but in early 2017, McInnes began distancing himself from the alt-right, saying the alt-right’s focus is race while his focus is what he defines as ‘Western values’. This re-branding effort intensified after the Unite the Right Rally <sup>1</sup>.

“The group sees men - especially white men - and Western culture as under siege; their views have elements of white genocide conspiracy theory. While the group claims it does not support white supremacist views, its members often participate in racist rallies, events, and organizations. The organization glorifies violence, and members engage in violence at events it attends; the Southern Poverty Law Center (SPLC) has called it an ‘alt-right fight club’.

“The organization has been described as a hate group by the Southern Poverty Law Center and NPR’s *The Takeaway*, and Spencer, McInnes, and the Proud Boys have been described as hipster racists by Vox and Media Matters for America. McInnes says victim mentality of women and other historically oppressed groups is unhealthy: ‘There is an incentive to be a victim. It is cool to be a victim.’ He sees white men and Western culture as ‘under siege’ and described criticism of his ideas as “victim blaming”. Their views have elements of white genocide conspiracy theory. The group is part of the ‘alt lite’ and it is ‘overtly Islamophobic’...

“The organization glorifies political violence against leftists, re-enacting political assassinations, wearing shirts that praise Augusto Pinochet’s murders of leftists, and participating directly in political violence. McInnes has said ‘I want violence, I want punching in the face. I’m disappointed in Trump supporters for not punching enough.’ He stated, ‘We don’t start fights [...] but we will finish them.’ Heidi Beirich, the Intelligence Project director for the Southern Poverty Law Center, said that this form of intentional aggression was not common among far-right groups in the past; she said: ‘We’re going to show up and we’re intending to get in fights, that’s a new thing.’ In August 2018, Twitter shut down the official account for the group, as well as McInnes’ account, under its policy prohibiting violent extremist groups; at the time, the group’s profile photo was a member punching a counter-protester.

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<sup>1</sup>Wikipedia describes this event as follows: “The Unite the Right rally was a white supremacist rally that occurred in Charlottesville, Virginia, from August 11 to 12, 2017. Protesters were members of the far-right and included self-identified members of the alt-right, neo-Confederates, neo-fascists,[13] white nationalists, neo-Nazis, Klansmen, and various right-wing militias. The marchers chanted racist and antisemitic slogans, carried semi-automatic rifles, Nazi and neo-Nazi symbols (such as the swastika, Odal rune, Black Sun, and Iron Cross), the Valknut, Confederate battle flags, Deus Vult crosses, flags and other symbols of various past and present anti-Muslim and antisemitic groups.”



Figure 9.17: Proud Boys founder Gavin McInnes.



Figure 9.18: A member of Proud Boys.

## 9.4 Evangelicals

Here is an excerpt from a December 31, 2018 article in the New York Times by Katherine Stewart:

The month before the 2018 midterms, a thousand theaters screened “The Trump Prophecy,” a film that tells the story of Mark Taylor, a former firefighter who claims that God told him in 2011 that Donald Trump would be elected president.

At a critical moment in the film, just after the actor representing Mr. Taylor collapses in the flashing light of an epiphany, he picks up a Bible and turns to the 45th chapter of the book of Isaiah, which describes the anointment of King Cyrus by God. In the next scene, we hear Mr. Trump being interviewed on “The 700 Club,” a popular Christian television show.

As Lance Wallnau, an evangelical author and speaker who appears in the film, once said, “I believe the 45th president is meant to be an Isaiah 45 Cyrus,” who will “restore the crumbling walls that separate us from cultural collapse.”

Cyrus, in case you’ve forgotten, was born in the sixth century B.C.E. and became the first emperor of Persia. Isaiah 45 celebrates Cyrus for freeing a population of Jews who were held captive in Babylon. Cyrus is the model for a nonbeliever appointed by God as a vessel for the purposes of the faithful.

The identification of the 45th president with an ancient Middle Eastern potentate isn’t a fringe thing. “The Trump Prophecy” was produced with the help of professors and students at Liberty University, whose president, Jerry Falwell Jr., has been instrumental in rallying evangelical support for Mr. Trump. Jeanine Pirro of Fox News has picked up on the meme, as has Ron Dermer, the Israeli ambassador to the United States, among many others.

As the Trump presidency falls under siege on multiple fronts, it has become increasingly clear that the so-called values voters will be among the last to leave the citadel. A lot of attention has been paid to the supposed paradox of evangelicals backing such an imperfect man, but the real problem is that our idea of Christian nationalism hasn’t caught up with the reality. We still buy the line that the hard core of the Christian right is just an interest group working to protect its values. But what we don’t get is that Mr. Trump’s supposedly anti-Christian attributes and anti-democratic attributes are a vital part of his attraction.

Today’s Christian nationalists talk a good game about respecting the Constitution and America’s founders, but at bottom they sound as if they prefer autocrats to democrats. In fact, what they really want is a king. “It is God that raises up a king,” according to Paula White, a prosperity gospel preacher who has advised Mr. Trump.

Ralph Drollinger, who has led weekly Bible study groups in the White House attended by Vice President Mike Pence and many other cabinet members, likes the word “king” so much that he frequently turns it into a verb. “Get ready



Figure 9.19: Apparently insanity rules the United States today. The Evangelical Right believes that Trump was sent by God to be King, despite the fact that, according to Glenn Kessler, author of the Washington Post’s Fact Checker column, Trump told an average of 15 lies per day in 2018, bringing the total number of documented lies since he took office in January 2017 to 7,645. But neither Trump’s lies, nor his racism and mysogeny, nor his cruel authorization of imprisonment of very young children and even babies, are his worst crimes. His most serious offense is a crime against human civilization and the biosphere: his support for coal, his climate change denial, his sabotaging of renewable energy, and his withdrawal from the Paris agreement. These actions, and support for them by Republicans, caused Noam Chomsky to call the Republican Party “the most dangerous organization in history”.

to king in our future lives,” he tells his followers. “Christian believers will - soon, I hope - become the consummate, perfect governing authorities!”

The great thing about kings like Cyrus, as far as today’s Christian nationalists are concerned, is that they don’t have to follow rules. They are the law. This makes them ideal leaders in paranoid times.



Figure 9.20: An artist's impression of Trump's National Security Advisor John Bolton.



Figure 9.21: Stars and stripes.





Figure 9.22: Anit-Mexican language used by Trump is very similar to the language used by the El Paso mass murderer. A recent article *Ex-FBI Official, FBI reluctant to probe white supremacists because Trump considers them his base*, quotes Dave Gomez as saying “There’s some reluctance among agents to bring forth an investigation that targets what the president perceives as his base.”



Figure 9.23: Family members mourning the victims of the El Paso murders.



Figure 9.24: A woman lights a candle at a makeshift memorial outside Walmart, near the scene of a mass shooting which left 22 people dead, on August 4, 2019, in El Paso, Texas.

## 9.5 The El Paso mass murders

On the morning of August 3, 2019, 21-year-old Patrick Wood Crusius, a Republican follower of Donald Trump, walked into a Walmart in El Paso Texas. carrying an AK-47 automatic weapon. He opened fire on the largely Latino customers, killing 22 people and seriously injuring 24 others. In a manifesto, which he published on the Internet just before the murders, he wrote “In general, I support the Christchurch shooter and his manifesto. This attack is a response to the Hispanic invasion of Texas. They are the instigators, not me. I am simply defending my country from cultural and ethnic replacement brought on by an invasion.” The language and ideas used by Crusius are similar to those of Donald Trump, who often speaks of a Mexican invasion.

The following day, there was another mass shooting, this time in Dayton, Ohio. Again an automatic attack rifle was used. Nine people were killed.

Between January and February, 2019, President Donald Trump’s Facebook page ran about 2,200 ads referring to immigration as an “invasion”.

## 9.6 Right-wing parties in Europe and elsewhere.

### Brexit

Across the developed world, the reaction to threatened migration of refugees from climate change has been less than generous, to say the least. The recent decision of Britain to leave the European Union was motivated largely by the fear of British workers that EU laws would force their country to accept large numbers of refugees.

### Swings to the right in Europe

In Germany, Angela Merkel’s generous policies towards refugees have cost her votes, while an openly racist party, the Alternative for Germany (AfD) party, has gained in strength. Frauke Petry, 40, the party’s leader, has said border guards might need to turn guns on anyone crossing a frontier illegally. The party’s policy platform says “Islam does not belong in Germany” and calls for a ban on the construction of mosques.

In September, 2017, eight people from the neo-Nazi Freital Group were put on trial in Dresden for bomb attacks on homes for asylum applicants. Hundreds of similar assaults occur in Germany every year, but they had never before been tried as terrorism in a federal court.

In the German election, which took place on Sunday, October 1, 2017, Angela Merkel won a fourth term as Chancellor, but her party won only 33% of the votes, a percentage much reduced from the 41% won in the election of 2013. Angela Merkel was paying a high price for her refugee-friendly policies.

Meanwhile the far right anti-immigration AfD party made a historic breakthrough, winning 13.5% of the vote, thus becoming the first overtly nationalist party to sit in the

Bundestag in 60 years. The Greens have already complained that “Nazis have returned to parliament”. In fact, members of the AfD party have begun to say that Germans should stop being ashamed of their country’s Nazi past.

In France, the National Front is a nationalist party that uses populist rhetoric to promote its anti-immigration and anti-European Union positions. The party favors protectionist economic policies and would clamp down on government benefits for immigrants.

Similarly, in the Netherlands, the anti-European Union, anti-Islam Party for Freedom has called for closing all Islamic schools and recording the ethnicity of all Dutch citizens. In early November, the party was leading in polls ahead of next year’s parliamentary elections.

Other far-right anti-immigrant parties in Europe include Golden Dawn (Greece), Jobbik (Hungary), Sweden Democrats (Sweden), Freedom Party (Austria), and People’s Party - Our Slovakia (Slovakia). All of these parties have gained in strength because of the widespread fear of immigration.

## **Populism in the United States**

The election of Donald Trump, who ran for President in 2016 on an openly racist and anti-immigrant platform, can also be seen as the result of fear of immigration, especially on the part of industrial workers.

## **A more humane response to the refugee crisis**

In the long-term future, climate change will make the refugee crisis much more severe. Heat and drought will make large regions of the world uninhabitable, and will threaten many populations with famine. The severity of the refugee crisis will depend on how quickly we reduce greenhouse gas emissions.

While making many parts of the world uninhabitable, long-term climate change will make other regions more suitable for human habitation and agriculture. For example, farming will become more possible in Siberia, Greenland, the Canadian Arctic, Alaska and Patagonia. A humane response to the refugee crisis could include the generous opening of these regions to refugees.

The global population of humans is currently increasing by almost a billion people every decade. Global population must be stabilized, and in the long run, gradually reduced. Money currently wasted (or worse than wasted) on armaments could be used instead to promote universal primary health care, and with it, universal access to the knowledge and materials needed for family planning.

Finally, reduced consumption of meat, particularly beef, would shorten the food chain thus make more food available for famine relief.

### Suggestions for further reading

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# Appendix A

## TRUMP COPIES HITLER'S RHETORIC

### Book review: *When at Times the Mob Is Swayed*

Below are some quotations from an article by Steven Rosenfeld, published by *Common Dreams* on Friday, August 9, 2019. Rosenfeld's article is a review of a book by Bert Neuborne entitled *When at Times the Mob Is Swayed: A Citizen's Guide to Defending Our Republic*.

Neuborne doesn't make this comparison [between Trump and Hitler] lightly. His 55-year career began by challenging the constitutionality of the Vietnam War in the 1960s. He became the ACLU's national legal director in the 1980s under Ronald Reagan. He was founding legal director of the Brennan Center for Justice at New York University Law School in the 1990s. He has been part of more than 200 Supreme Court cases and Holocaust reparation litigation.

"Why does an ignorant, narcissistic buffoon like Trump trigger such anxiety? Why do so many Americans feel it existentially (not just politically) important to resist our forty-fifth president?" he writes. "Partly it's just aesthetics. Trump is such a coarse and appalling man that it's hard to stomach his presence in Abraham Lincoln's house. But that's not enough to explain the intensity of my dread. LBJ was coarse. Gerald Ford and George W. Bush were dumb as rocks. Richard Nixon was an anti-Semite. Bill Clinton's mistreatment of women dishonored his office. Ronald Reagan was a dangerous ideologue. I opposed each of them when they appeared to exceed their constitutional powers. But I never felt a sense of existential dread. I never sensed that the very existence of a tolerant democracy was in play."

A younger Trump, according to his first wife's divorce filings, kept and studied a book translating and annotating Adolf Hitler's pre-World War II speeches in a locked bedside cabinet, Neuborne noted. The English edition of *My New Order*, published in 1941, also had analyses of the speeches' impact

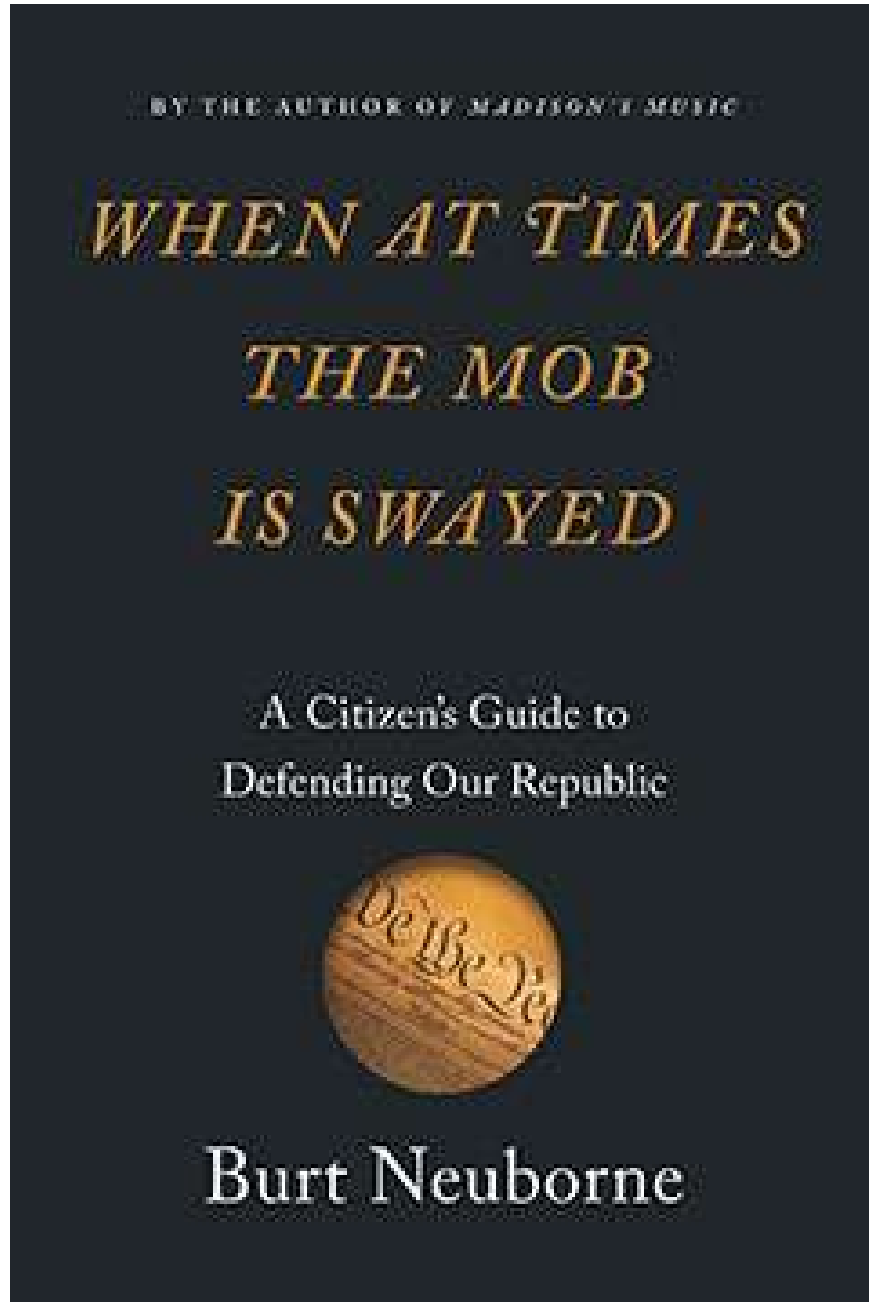


Figure A.1: Burt Neuborne's brilliant book on the current crisis of American democracy is a warning that we must take very seriously.





on his era's press and politics. "Ugly and appalling as they are, those speeches are masterpieces of demagogic manipulation," Neuborne says.

"Watching Trump work his crowds, though, I see a dangerously manipulative narcissist unleashing the demagogic spells that he learned from studying Hitler's speeches - spells that he cannot control and that are capable of eroding the fabric of American democracy," Neuborne says. "You see, we've seen what these rhetorical techniques can do. Much of Trump's rhetoric - as a candidate and in office - mirrors the strategies, even the language, used by Adolf Hitler in the early 1930s to erode German democracy."

Many Americans may seize or condemn Neuborne's analysis, which has more than 20 major points of comparison. The author repeatedly says his goal is not "equating" the men - as "it trivializes Hitler's obscene crimes to compare them to Trump's often pathetic foibles."

Indeed, the book has a larger frame: whether federal checks and balances - Congress, the Supreme Court, the Electoral College - can contain the havoc that Trump thrives on and the Republican Party at large has embraced. But the Trump-Hitler compilation is a stunning warning, because, as many Holocaust survivors have said, few Germans or Europeans expected what unfolded in the years after Hitler amassed power.

Here's how Neuborne introduces this section. Many recent presidents have been awful, "But then there was Donald Trump, the only president in recent American history to openly despise the twin ideals - individual dignity and fundamental equality - upon which the contemporary United States is built. When you confront the reality of a president like Trump, the state of both sets of brakes - internal [constitutional] and external [public resistance] - become hugely important because Donald Trump's political train runs on the most potent and dangerous fuel of all: a steady diet of fear, greed, loathing, lies, and envy. It's a toxic mixture that has destroyed democracies before, and can do so again.

"Give Trump credit," he continues. "He did his homework well and became the twenty-first-century master of divisive rhetoric. We're used to thinking of Hitler's Third Reich as the incomparably evil tyranny that it undoubtedly was. But Hitler didn't take power by force. He used a set of rhetorical tropes codified in Trump's bedside reading that persuaded enough Germans to welcome Hitler as a populist leader. The Nazis did not overthrow the Weimar Republic. It fell into their hands as the fruit of Hitler's satanic ability to mesmerize enough Germans to trade their birthright for a pottage of scapegoating, short-term economic gain, xenophobia, and racism. It could happen here."

## Twenty points of similarity

Neuborne lists the following points of similarity between early Hitler and Trump:

1. Neither was elected by a majority. Trump lost the popular vote by 2.9 million votes, receiving votes by 25.3 percent of all eligible American voters. "That's just a little less than the percentage of the German electorate that turned to the Nazi Party in 1932-33," Neuborne writes. "Unlike the low turnouts in the United States, turnout in Weimar Germany averaged just over 80 percent of eligible voters." He continues, "Once installed as a minority chancellor in January 1933, Hitler set about demonizing his political opponents, and no one - not the vaunted, intellectually brilliant German judiciary; not the respected, well-trained German police; not the revered, aristocratic German military; not the widely admired, efficient German government bureaucracy; not the wealthy, immensely powerful leaders of German industry; and not the powerful center-right political leaders of the Reichstag - mounted a serious effort to stop him."
2. Both found direct communication channels to their base. By 1936's Olympics, Nazi narratives dominated German cultural and political life. "How on earth did Hitler pull it off? What satanic magic did Trump find in Hitler's speeches?" Neuborne asks. He addresses Hitler's extreme rhetoric soon enough, but notes that Hitler found a direct communication pathway - the Nazi Party gave out radios with only one channel, tuned to Hitler's voice, bypassing Germany's news media. Trump has an online equivalent.

"Donald Trump's tweets, often delivered between midnight and dawn, are the twenty-first century's technological embodiment of Hitler's free plastic radios," Neuborne says. "Trump's Twitter account, like Hitler's radios, enables a charismatic leader to establish and maintain a personal, unfiltered line of communication with an adoring political base of about 30-40 percent of the population, many (but not all) of whom are only too willing, even anxious, to swallow Trump's witches' brew of falsehoods, half-truths, personal invective, threats, xenophobia, national security scares, religious bigotry, white racism, exploitation of economic insecurity, and a never ending-search for scapegoats."

3. Both blame others and divide on racial lines. As Neuborne notes, "Hitler used his single-frequency radios to wax hysterical to his adoring base about his pathological racial and religious fantasies glorifying Aryans and demonizing Jews, blaming Jews (among other racial and religious scapegoats) for German society's ills." That is comparable to "Trump's tweets and public statements, whether dealing with black-led demonstrations against police violence, white-led racist mob violence, threats posed by undocumented aliens, immigration policy generally, protests by black and white professional athletes, college admission policies, hate speech, even response to hurricane damage in Puerto Rico," he says. Again and again,

Trump uses “racially tinged messages calculated to divide whites from people of color.”

4. Both relentlessly demonize opponents. “Hitler’s radio harangues demonized his domestic political opponents, calling them parasites, criminals, cockroaches, and various categories of leftist scum,” Neuberne notes. “Trump’s tweets and speeches similarly demonize his political opponents. Trump talks about the country being ‘infested’ with dangerous aliens of color. He fantasizes about jailing Hillary Clinton, calls Mexicans rapists, refers to ‘shithole countries,’ degrades anyone who disagrees with him, and dreams of uprooting thousands of allegedly disloyal bureaucrats in the State Department, the Environmental Protection Agency, the FBI, and the CIA, who he calls ‘the deep state’ and who, he claims, are sabotaging American greatness.”
5. They unceasingly attack objective truth. “Both Trump and Hitler maintained a relentless assault on the very idea of objective truth,” he continues. “Each began the assault by seeking to delegitimize the mainstream press. Hitler quickly coined the epithet *Lügenpresse* (literally ‘lying press’) to denigrate the mainstream press. Trump uses a paraphrase of Hitler’s lying press epithet - ‘fake news’ - cribbed, no doubt, from one of Hitler’s speeches. For Trump, the mainstream press is a ‘lying press’ that publishes ‘fake news.’” Hitler attacked his opponents as spreading false information to undermine his positions, Neuberne says, just as Trump has attacked “elites” for disseminating false news, “especially his possible links to the Kremlin.”
6. They relentlessly attack mainstream media. Trump’s assaults on the media echo Hitler’s, Neuberne says, noting that he “repeatedly attacks the ‘failing New York Times,’ leads crowds in chanting ‘CNN sucks,’ [and] is personally hostile to most reporters.” He cites the White House’s refusal to fly the flag at half-mast after the murder of five journalists in Annapolis in June 2018, Trump’s efforts to punish CNN by blocking a merger of its corporate parent, and trying to revoke federal Postal Service contracts held by Amazon, which was founded by Jeff Bezos, who also owns the Washington Post.
7. Their attacks on truth include science. Neuberne notes, “Both Trump and Hitler intensified their assault on objective truth by deriding scientific experts, especially academics who question Hitler’s views on race or Trump’s views on climate change, immigration, or economics. For both Trump and Hitler, the goal is (and was) to eviscerate the very idea of objective truth, turning everything into grist for a populist jury subject

to manipulation by a master puppeteer. In both Trump's and Hitler's worlds, public opinion ultimately defines what is true and what is false."

8. Their lies blur reality - and supporters spread them. "Trump's pathological penchant for repeatedly lying about his behavior can only succeed in a world where his supporters feel free to embrace Trump's 'alternative facts' and treat his hyperbolic exaggerations as the gospel truth," Neuborne says. "Once Hitler had delegitimized the mainstream media by a series of systematic attacks on its integrity, he constructed a fawning alternative mass media designed to reinforce his direct radio messages and enhance his personal power. Trump is following the same path, simultaneously launching bitter attacks on the mainstream press while embracing the so-called alt-right media, co-opting both Sinclair Broadcasting and the Rupert Murdoch-owned Fox Broadcasting Company as, essentially, a Trump Broadcasting Network."
9. Both orchestrated mass rallies to show status. "Once Hitler had cemented his personal communications link with his base via free radios and a fawning media and had badly eroded the idea of objective truth, he reinforced his emotional bond with his base by holding a series of carefully orchestrated mass meetings dedicated to cementing his status as a charismatic leader, or Führer," Neuborne writes. "The powerful personal bonds nurtured by Trump's tweets and Fox's fawning are also systematically reinforced by periodic, carefully orchestrated mass rallies (even going so far as to co-opt a Boy Scout Jamboree in 2017), reinforcing Trump's insatiable narcissism and his status as a charismatic leader."
10. They embrace extreme nationalism. "Hitler's strident appeals to the base invoked an extreme version of German nationalism, extolling a brilliant German past and promising to restore Germany to its rightful place as a preeminent nation," Neuborne says. "Trump echoes Hitler's jingoistic appeal to ultranationalist fervor, extolling American exceptionalism right down to the slogan 'Make America Great Again,' a paraphrase of Hitler's promise to restore German greatness."
11. Both made closing borders a centerpiece. "Hitler all but closed Germany's borders, freezing non-Aryan migration into the country and rendering it impossible for Germans to escape without official permission. Like Hitler, Trump has also made closed borders a centerpiece of his administration," Neuborne continues. "Hitler barred Jews. Trump bars Muslims and seekers of sanctuary from Central America. When the lower courts blocked Trump's Muslim travel ban, he unilaterally issued executive orders replacing it with a thinly disguised substitute that ultimately narrowly won

Supreme Court approval under a theory of extreme deference to the president.”

12. They embraced mass detention and deportations. “Hitler promised to make Germany free from Jews and Slavs. Trump promises to slow, stop, and even reverse the flow of non-white immigrants, substituting Muslims, Africans, Mexicans, and Central Americans of color for Jews and Slavs as scapegoats for the nation’s ills. Trump’s efforts to cast dragnets to arrest undocumented aliens where they work, live, and worship, followed by mass deportation... echo Hitler’s promise to defend Germany’s racial identity,” he writes, also noting that Trump has “stooped to tearing children from their parents [as Nazis in World War II would do] to punish desperate efforts by migrants to find a better life.”
13. Both used borders to protect selected industries. “Like Hitler, Trump seeks to use national borders to protect his favored national interests, threatening to ignite protectionist trade wars with Europe, China, and Japan similar to the trade wars that, in earlier incarnations, helped to ignite World War I and World War II,” Neuborne writes. “Like Hitler, Trump aggressively uses our nation’s political and economic power to favor selected American corporate interests at the expense of foreign competitors and the environment, even at the price of international conflict, massive inefficiency, and irreversible pollution [climate change].”
14. They cemented their rule by enriching elites. “Hitler’s version of fascism shifted immense power - both political and financial - to the leaders of German industry. In fact, Hitler governed Germany largely through corporate executives,” he continues. “Trump has also presided over a massive empowerment - and enrichment - of corporate America. Under Trump, large corporations exercise immense political power while receiving huge economic windfalls and freedom from regulations designed to protect consumers and the labor force. Hitler despised the German labor movement, eventually destroying it and imprisoning its leaders. Trump also detests strong unions, seeking to undermine any effort to interfere with the ’prerogatives of management.”
15. Both rejected international norms. “Hitler’s foreign policy rejected international cooperation in favor of military and economic coercion, culminating in the annexation of the Sudetenland, the phony Hitler-Stalin nonaggression pact, the invasion of Czechoslovakia, and the horrors of global war,” Neuborne notes. “Like Hitler, Trump is deeply hostile to multinational cooperation, withdrawing from the Trans-Pacific Partnership, the Paris Agreement on climate change, and the nuclear agreement

with Iran, threatening to withdraw from the North American Free Trade Agreement, abandoning our Kurdish allies in Syria..."

16. They attack domestic democratic processes. "Hitler attacked the legitimacy of democracy itself, purging the voting rolls, challenging the integrity of the electoral process, and questioning the ability of democratic government to solve Germany's problems," Neuborne notes. "Trump has also attacked the democratic process, declining to agree to be bound by the outcome of the 2016 elections when he thought he might lose, supporting the massive purge of the voting rolls allegedly designed to avoid (nonexistent) fraud, championing measures that make it harder to vote, tolerating - if not fomenting - massive Russian interference in the 2016 presidential election, encouraging mob violence at rallies, darkly hinting at violence if Democrats hold power, and constantly casting doubt on the legitimacy of elections unless he wins."
17. Both attack the judiciary and rule of law. "Hitler politicized and eventually destroyed the vaunted German justice system. Trump also seeks to turn the American justice system into his personal playground," Neuborne writes. "Like Hitler, Trump threatens the judicially enforced rule of law, bitterly attacking American judges who rule against him, slyly praising Andrew Jackson for defying the Supreme Court, and abusing the pardon power by pardoning an Arizona sheriff found guilty of criminal contempt of court for disobeying federal court orders to cease violating the Constitution."
18. Both glorify the military and demand loyalty oaths. "Like Hitler, Trump glorifies the military, staffing his administration with layers of retired generals (who eventually were fired or resigned), relaxing control over the use of lethal force by the military and the police, and demanding a massive increase in military spending," Neuborne writes. Just as Hitler "imposed an oath of personal loyalty on all German judges" and demanded courts defer to him, "Trump's already gotten enough deference from five Republican [Supreme Court] justices to uphold a largely Muslim travel ban that is the epitome of racial and religious bigotry." Trump has also demanded loyalty oaths. "He fired James Comey, a Republican appointed in 2013 as FBI director by President Obama, for refusing to swear an oath of personal loyalty to the president; excoriated and then sacked Jeff Sessions, his handpicked attorney general, for failing to suppress the criminal investigation into... Trump's possible collusion with Russia in influencing the 2016 elections; repeatedly threatened to dismiss Robert Mueller, the special counsel carrying out the investigation; and called again and again for the jailing of Hillary Clinton, his 2016 opponent, leading crowds in

chants of ‘lock her up.’” A new chant, “send her back,” has since emerged at Trump rallies directed at non-white Democratic congresswomen.

19. They proclaim unchecked power. “Like Hitler, Trump has intensified a disturbing trend that predated his administration of governing unilaterally, largely through executive orders or proclamations,” Neuborne says, citing the Muslim travel ban, trade tariffs, unraveling of health and environmental safety nets, ban on transgender military service, and efforts to end President Obama’s protection for Dreamers. “Like Hitler, Trump claims the power to overrule Congress and govern all by himself. In 1933, Hitler used the pretext of the Reichstag fire to declare a national emergency and seize the power to govern unilaterally. The German judiciary did nothing to stop him. German democracy never recovered. When Congress refused to give Trump funds for his border wall even after he threw a tantrum and shut down the government, Trump, like Hitler, declared a phony national emergency and claimed the power to ignore Congress,” Neuborne continues. “Don’t count on the Supreme Court to stop him. Five justices gave the game away on the President’s unilateral travel ban. They just might do the same thing on the border wall.” It did in late July, ruling that Trump could divert congressionally appropriated funds from the Pentagon budget - undermining constitutional separation of powers.
20. Both relegate women to subordinate roles. “Finally,” writes Neuborne, “Hitler propounded a misogynistic, stereotypical view of women, valuing them exclusively as wives and mothers while excluding them from full participation in German political and economic life. Trump may be the most openly misogynist figure ever to hold high public office in the United States, crassly treating women as sexual objects, using nondisclosure agreements and violating campaign finance laws to shield his sexual misbehavior from public knowledge, attacking women who come forward to accuse men of abusive behavior, undermining reproductive freedom, and opposing efforts by women to achieve economic equality.”



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