

Ideas That Have Helped Mankind

by Bertrand Russell

from "Unpopular Essays" (1950)

Before we can discuss this subject we must form some conception as to the kind of effect that we consider a help to mankind. Are mankind helped when they become more numerous? Or when they become less like animals? Or when they become happier? Or when they learn to enjoy a greater diversity of experiences? Or when they come to know more? Or when they become more friendly to one another? I think all these things come into our conception of what helps mankind, and I will say a preliminary word about them.

The most indubitable respect in which ideas have helped mankind is numbers. There must have been a time when homo sapiens was a very rare species, subsisting precariously in jungles and caves, terrified of wild beasts, having difficulty in securing nourishment. At this period the biological advantage of his greater intelligence, which was cumulative because it could be handed on from generation to generation, had scarcely begun to outweigh the disadvantages of his long infancy, his lessened agility as compared with monkeys, and his lack of hirsute protection against cold. In those days, the number of men must certainly have been very small. The main use to which, throughout the ages, men have put their technical skill has been to increase the total population. I do not mean that this was the intention, but that it was, in fact, the effect. If this is something to rejoice in, then we have occasion to rejoice.

We have also become, in certain respects, progressively less like animals. I can think in particular of two respects: first, that acquired, as opposed to congenital, skills play a continually increasing part in human life, and, secondly, that forethought more and more dominates impulse. In these respects we have certainly become progressively less like animals.

As to happiness, I am not so sure. Birds, it is true, die of hunger in large numbers during the winter, if they are not birds of passage. But during the

summer they do not foresee this catastrophe, or remember how nearly it befell them in the previous winter. With human beings the matter is otherwise. I doubt whether the percentage of birds that will have died of hunger during the present winter (1946-7) is as great as the percentage of human beings that will have died from this cause in India and central Europe during the same period. But every human death by starvation is preceded by a long period of anxiety, and surrounded by the corresponding anxiety of neighbours. We suffer not only the evils that actually befall us, but all those that our intelligence tells us we have reason to fear. The curbing of impulses to which we are led by forethought averts physical disaster at the cost of worry, and general lack of joy. I do not think that the learned men of my acquaintance, even when they enjoy a secure income, are as happy as the mice that eat the crumbs from their tables while the erudite gentlemen snooze. In this respect, therefore, I am not convinced that there has been any progress at all.

As to diversity of enjoyments, however, the matter is otherwise. I remember reading an account of some lions who were taken to a movie showing the successful depredations of lions in a wild state, but none of them got any pleasure from the spectacle. Not only music, and poetry and science, but football and baseball and alcohol, afford no pleasure to animals. Our intelligence has, therefore, certainly enabled us to get a much greater variety of enjoyment than is open to animals, but we have purchased this advantage at the expense of a much greater liability to boredom.

But I shall be told that it is neither numbers nor multiplicity of pleasures that makes the glory of man. It is his intellectual and moral qualities. It is obvious that we know more than animals do, and it is common to consider this one of our advantages. Whether it is, in fact, an advantage, may be doubted. But at any rate it is something that distinguishes us from the brutes.

Has civilisation taught us to be more friendly towards one another? The answer is easy. Robins (the English, not the American species) peck an elderly robin to death, whereas men (the English, not the American species) give an elderly man an old age pension. Within the herd we are more friendly to each other than are many species of animals, but in our attitude towards those outside the herd, in spite of all that has been done by moralists and religious teachers, our

emotions are as ferocious as those of any animal, and our intelligence enables us to give them a scope which is denied to even the most savage beast. It may be hoped, though not very confidently, that the more humane attitude will in time come to prevail, but so far the omens are not very propitious.

All these different elements must be borne in mind in considering what ideas have done most to help mankind. The ideas with which we shall be concerned may be broadly divided into two kinds: those that contribute to knowledge and technique, and those that are concerned with morals and politics. I will treat first those that have to do with knowledge and technique.

The most important and difficult steps were taken before the dawn of history. At what stage language began is not known, but we may be pretty certain that it began very gradually. Without it it would have been very difficult to hand on from generation to generation the inventions and discoveries that were gradually made.

Another great step, which may have come either before or after the beginning of language, was the utilisation of fire. I suppose that at first fire was chiefly used to keep away wild beasts while our ancestors slept, but the warmth must have been found agreeable. Presumably on some occasion a child got scolded for throwing the meat into the fire, but when it was taken out it was found to be much better, and so the long history of cookery began.

The taming of domestic animals, especially the cow and the sheep, must have made life much pleasanter and more secure. Some anthropologists have an attractive theory that the utility of domestic animals was not foreseen, but that people attempted to tame whatever animal their religion taught them to worship. The tribes that worshipped lions and crocodiles died out, while those to whom the cow or the sheep was a sacred animal prospered. I like this theory, and in the entire absence of evidence, for or against it, I feel at liberty to play with it.

Even more important than the domestication of animals was the invention of agriculture, which, however, introduced bloodthirsty practices into religion that lasted for many centuries. Fertility rites tended to involve human sacrifice and cannibalism. Moloch would not help the corn to grow unless he was allowed to

feast on the blood of children. A similar opinion was adopted by the Evangelicals of Manchester in the early days of industrialism, when they kept six-year-old children working twelve to fourteen hours a day, in conditions that caused most of them to die. It has now been discovered that grain will grow, and cotton goods can be manufactured, without being watered by the blood of infants. In the case of the grain, the discovery took thousands of years; in the case of the cotton goods hardly a century. So perhaps there is some evidence of progress in the world.

The last of the great pre-historic inventions was the art of writing, which was indeed a pre-requisite of history. Writing, like speech, developed gradually, and in the form of pictures designed to convey a message it was probably as old as speech, but from pictures to syllable writing and thence to the alphabet was a very slow evolution. In China the last step was never taken.

Coming to historic times, we find that the earliest important steps were taken in mathematics and astronomy, both of which began in Babylonia some millennia before the beginning of our era. Learning in Babylonia seems, however, to have become stereotyped and non-progressive, long before the Greeks first came into contact with it. It is to the Greeks that we owe ways of thinking and investigating that have ever since been found fruitful. In the prosperous Greek commercial cities, rich men living on slave labour were brought by the processes of trade into contact with many nations, some quite barbarous, others fairly civilised. What the civilised nations - the Babylonians and Egyptians - had to offer the Greeks quickly assimilated. They became critical of their own traditional customs, by perceiving them to be at once analogous to, and different from, the customs of surrounding inferior people, and so by the sixth century BC some of them achieved a degree of enlightened rationalism which cannot be surpassed in the present day. Xenophanes observed that men make gods in their own image - 'the Ethiopians make their gods black and snub-nosed; the Thracians say theirs have blue eyes and red hair: Yes, and if oxen and lions and horses had hands, and could paint with their hands, and produced works of art as men do, horses would paint the forms of gods like horses, and oxen like oxen and make their bodies in the image of their several kinds.'

Some Greeks used their emancipation from tradition in the pursuit of mathematics and astronomy, in both of which they made the most amazing progress. Mathematics was not used by the Greeks, as it is by the moderns, to facilitate industrial processes; it was a 'gentlemanly' pursuit, valued for its own sake as giving eternal truth, and a super-sensible standard by which the visible world was condemned as second-rate. Only Archimedes foreshadowed the modern use of mathematics by inventing engines of war for the defence of Syracuse against the Romans. A Roman soldier killed him and the mathematicians retired again into their ivory tower.

Astronomy, which the sixteenth and seventeenth centuries pursued with ardour, largely because of its usefulness in navigation, was pursued by the Greeks with no regard for practical utility, except when, in later antiquity, it became associated with astrology. At a very early stage they discovered the earth to be round and made a fairly accurate estimate of its size. They discovered ways of calculating the distance of the sun and moon, and Aristarchus of Samos even evolved the complete Copernican hypothesis, but his views were rejected by all his followers except one, and after the third century BC no very important progress was made. At the time of the Renaissance, however, something of what the Greeks had done became known, and greatly facilitated the rise of modern science.

The Greeks had the conception of natural law, and acquired the habit of expressing natural laws in mathematical terms. These ideas have provided the key to a very great deal of the understanding of the physical world that has been achieved in modern times. But many of them, including Aristotle, were misled by a belief that science could make a fruitful use of the idea of purpose. Aristotle distinguished four kinds of cause, of which only two concern us, the 'efficient' cause and the 'final' cause. The 'efficient' cause is what we should call simply the cause. The 'final' cause is the purpose. For instance, if, in the course of a tramp in the mountains, you find an inn just when your thirst has become unendurable, the efficient cause of the inn is the actions of the bricklayers that built it, while its final cause is the satisfaction of your thirst. If someone were to ask 'why is there an inn there?' it would be equally appropriate to answer 'because someone had it built there' or 'because many

thirsty travellers pass that way'. One is an explanation by the 'efficient' cause and the other by the 'final' cause. Where human affairs are concerned, the explanation by 'final' cause is often appropriate, since human actions have purposes. But where inanimate nature is concerned, only 'efficient' causes have been found scientifically discoverable, and the attempt to explain phenomena by 'final' causes has always led to bad science. There may, for ought we know, be a purpose in natural phenomena, but if so it has remained completely undiscovered, and all known scientific laws have to do only with 'efficient' causes. In this respect Aristotle led the world astray, and it did not recover fully until the time of Galileo.

The seventeenth century, especially Galileo, Descartes, Newton, and Leibniz, made an advance in our understanding of nature more sudden and surprising than any other in history, except that of the early Greeks. It is true that some of the concepts used in the mathematical physics of that time had not quite the validity that was then ascribed to them. It is true also that the more recent advances of physics often require new concepts quite different from those of the seventeenth century. Their concepts, in fact, were not the key to all the secrets of nature, but they were the key to a great many. Modern technique in industry and war, with the sole exception of the atomic bomb, is still wholly based upon a type of dynamics developed out of the principles of Galileo and Newton. Most of astronomy still rests upon these same principles, though there are some problems such as 'what keeps the sun hot?' in which the recent discoveries of quantum mechanics are essential. The dynamics of Galileo and Newton depended upon two new principles and a new technique.

The first of the new principles was the law of inertia, which stated that any body, left to itself, will continue to move as it is moving in the same straight line, and with the same velocity. The importance of this principle is only evident when it is contrasted with the principles that the scholastics had evolved out of Aristotle. Before Galileo it was held that there was a radical difference between regions below the moon and regions from the moon upwards. In the regions below the moon, the 'sublunary' sphere, there was change and decay; the 'natural' motion of bodies was rectilinear, but any body in motion, if left to itself, would gradually slow up and presently stop. From the moon upwards, on

the contrary, the 'natural' motion of bodies was circular, or compounded of circular motions, and in the heavens there was no such thing as change or decay, except the periodic changes of the orbits of the heavenly bodies. The movements of the heavenly bodies were not spontaneous, but were passed on to them from the primum mobile, which was the outermost of the moving spheres, and itself derived its motion from the Unmoved Mover, i.e. God. No one thought of making any appeal to observation, for instance, it was taken that a projectile would first move horizontally for a while, and then suddenly begin to fall vertically, although it might have been supposed that anybody watching the fountain could have seen the drops move in curves. Comets, since they appear and disappear, had to be supposed to be between the earth and the moon, for if they had been above the moon they would have had to be indestructible. It is evident that out of such a jumble nothing could be developed. Galileo unified the principles governing the earth and the heavens by his single law of inertia, according to which a body, once in motion, will not stop of itself, but will move with a constant velocity in a straight line whether it is on earth or in one of the celestial spheres. This principle made it possible to develop a science of the motions of matter, without taking account of any supposed influence of mind or spirit, and thus laid the foundations of the purely materialistic physics in which men of science, however pious, have ever since believed.

From the seventeenth century onwards, it has become increasingly evident that if we wish to understand natural laws, we must get rid of every kind of ethical and aesthetic bias. We must cease to think that noble things have noble causes, that intelligent things have intelligent causes, or that order is impossible without a celestial policeman. The Greeks admired the sun and moon and planets, and supposed them to be gods Plotinus explains how superior they are to human beings in wisdom and virtue. Anaxagoras, who taught otherwise, was prosecuted for impiety and compelled to flee from Athens. The Greeks also allowed themselves to think that since the circle is the most perfect figure, the motions of the heavenly bodies must be, or be derived from circular motions. Every bias of this sort had to be discarded by seventeenth-century astronomy. The Copernican system showed that the earth is not the centre of the universe, and suggested to a few bold spirits that

perhaps man was not the supreme purpose of the Creator. In the main, however, astronomers were pious folk, and until the nineteenth century most of them, except in France, believed in Genesis.

It was geology, Darwin, and the doctrine of evolution, that first upset the faith of British men of science. If man was evolved by insensible gradations from lower forms of life, a number of things became very difficult to understand. At what moment in evolution did our ancestors acquire free will? At what stage in the long journey from the amoeba did they begin to have immortal souls? When did they first become capable of the kinds of wickedness that would justify a benevolent Creator in sending them into eternal torment? Most people felt that such punishment would be hard on monkeys, in spite of their propensity for throwing coconuts at the heads of Europeans. But how about *Pithecanthropus Erectus*? Was it really he who ate the apple? Or was it *Homo Pekiniensis*? Or was it perhaps the Piltdown man? I went to Piltdown once, but saw no evidence of special depravity in that village, nor did I see any signs of its having changed appreciably since pre-historic ages. Perhaps then it was the Neanderthal men who first sinned? This seems the more likely, as they lived in Germany. But obviously there can be no answer to such questions, and those theologians who do not wholly reject evolution have had to make profound readjustments.

One of the 'grand' conceptions which have proved scientifically useless is the soul. I do not mean that there is positive evidence showing that men have no souls; I only mean that the soul, if it exists, plays no part in any discoverable causal law. There are all kinds of experimental methods of determining how men and animals behave under various circumstances. You can put rats in mazes and men in barbed wire cages, and observe their methods of escape. You can administer drugs and observe their effect. You can turn a male rat into a female, though so far nothing analogous has been done with human beings, even at Buchenwald. It appears that socially undesirable conduct can be dealt with by medical means, or by creating a better environment, and the conception of sin has thus come to seem quite unscientific, except, of course, as applied to the Nazis. There is real hope that, by getting to understand the science of human behaviour, governments may be even more able than they

are at present to turn mankind into rabbles of mutually ferocious lunatics. Governments could, of course, do exactly the opposite and cause the human race to co-operate willingly and cheerfully in making themselves happy, rather than in making others miserable, but only if there is an international government with a monopoly of armed force. It is very doubtful whether this will take place.

This brings me to the second kind of idea that has helped or may in time help mankind; I mean moral as opposed to technical ideas. Hitherto I have been considering the increased command over the forces of nature which men have derived from scientific knowledge, but this, although it is a pre-condition of many forms of progress, does not of itself ensure anything desirable. On the contrary, the present state of the world and the fear of an atomic war show that scientific progress without a corresponding moral and political progress may only increase the magnitude of the disaster that misdirected skill may bring about. In superstitious moments I am tempted to believe in the myth of the Tower of Babel, and to suppose that in our own day a similar but greater impiety is about to be visited by a more tragic and terrible punishment. Perhaps - so I sometimes allow myself to fancy - God does not intend us to understand the mechanism by which He regulates the material universe. Perhaps the nuclear physicists have come so near to the ultimate secrets that He thinks it time to bring their activities to a stop. And what simpler method could He devise than to let them carry their ingenuity to the point where they exterminate the human race? If I could think that deer and squirrels, nightingales and larks, would survive, I might view this catastrophe with some equanimity, since man has not shown himself worthy to be the lord of creation. But it is to be feared that the dreadful alchemy of the atomic bomb will destroy all forms of life equally, and that the earth will remain for ever a dead clod senselessly whirling round a futile sun. I do not know the immediate precipitating cause of this interesting occurrence. Perhaps it will be a dispute about Persian oil, perhaps a disagreement as to Chinese trade, perhaps a quarrel between Jews and Mohammedans for the control of Palestine. Any patriotic person can see that these issues are of such importance as to make the extermination of mankind preferable to cowardly conciliation.

In case, however, there should be some among my readers who would like to see the human race survive, it may be worth while considering the stock of moral ideas that great men have put into the world and that might, if they were listened to, secure happiness instead of misery for the mass of mankind.

Man, viewed morally, is a strange amalgam of angel and devil. He can feel the splendour of the night, the delicate beauty of spring flowers, the tender emotion of parental love, and the intoxication of intellectual understanding. In moments of insight visions come to him of how life should be lived and how men should order their dealings one with another. Universal love is an emotion which many have felt and which many more could feel if the world made it less difficult. This is one side of the picture. On the other side are cruelty, greed, indifference and overweening pride. Men, quite ordinary men, will compel children to look on while their mothers are raped. In pursuit of political aims men will submit their opponents to long years of unspeakable anguish. We know what the Nazis did to Jews at Auschwitz. In mass cruelty, the expulsions of Germans ordered by the Russians fall not very far short of the atrocities perpetuated by the Nazis. And how about our noble selves? We would not do such deeds, oh no! But we enjoy our juicy steaks and our hot rolls while German children die of hunger because our governments dare not face our indignation if they asked us to forgo some part of our pleasures. If there were a Last Judgement as Christians believe, how do you think our excuses would sound before that final tribunal?

Moral ideas sometimes wait upon political developments, and sometimes outrun them. The brotherhood of man is an ideal which owed its first force to political developments. When Alexander conquered the East he set to work to obliterate the distinction of Greek and barbarian, no doubt because his Greek and Macedonian army was too small to hold down so vast an empire by force. He compelled his officers to marry barbarian aristocratic ladies, while he himself, to set a doubly excellent example, married two barbarian princesses. As a result of this policy Greek pride and exclusiveness were diminished, and Greek culture spread to many regions not inhabited by Hellenic stock. Zeno, the founder of Stoicism, who was probably a boy at the time of Alexander's conquest, was a Phoenician, and few of the eminent Stoics were Greeks. It was

the Stoics who invented the conception of the brotherhood of man. They taught that all men are children of Zeus and that the sage will ignore the distinctions of Greek and barbarian, bond and free. When Rome brought the whole civilised world under one government, the political environment was favourable to the spread of this doctrine. In a new form, more capable of appealing to the emotions of ordinary men and women, Christianity taught a similar doctrine. Christ said 'Thou shalt love thy neighbour thyself,' and when asked 'who is my neighbour?' went on to the parable of the Good Samaritan. If you wish to understand this parable as it was understood by his hearers, you should substitute 'German' or 'Japanese' for 'Samaritan', I fear many present day Christians would resent such a substitution, because it would compel them to realise how far they have departed from the teaching of the Founder of their religion. A similar doctrine had been taught much earlier by the Buddhists. According to them, the Buddha declared that he could not be happy so long as even one man remained miserable. It might seem as if these lofty ethical teachings had little effect upon the world; in India Buddhism died out, in Europe Christianity was emptied of most of the elements it derived from Christ. But I think this would be a superficial view. Christianity, as soon as it conquered the State, put an end to gladiatorial shows, not because they were cruel, but because they were idolatrous. The result, however, was to diminish the widespread education in cruelty by which the populace of Roman towns were degraded. Christianity also did much to soften the lot of slaves. It established charity on a large scale, and inaugurated hospitals. Although the great majority of Christians failed lamentably in Christian charity, the ideal remained alive and in every age inspired some notable saints. In a new form, it passed over into modern Liberalism, and remains the inspiration of much that is most hopeful in our sombre world.

The watchwords of the French Revolution, Liberty, Equality and Fraternity, have religious origins. Of Fraternity I have already spoken. Equality was a characteristic of the Orphic Societies in ancient Greece, from which, indirectly, a great deal of Christian dogma took its rise. In these Societies, slaves and women were admitted on equal terms with citizens. Plato's advocacy of Votes for Women, which has seemed surprising to some modern readers, is derived from Orphic practices. The Orphics believed in transmigration and thought that

a soul which in one life inhabits the body of a slave, may, in another, inhabit that of a king. Viewed from the standpoint of religion, it is therefore foolish to discriminate between a slave and a king; both share the dignity belonging to an immortal soul, and neither, in religion, can claim anything more. This point of view passed over from Orphism into Stoicism, and into Christianity. For a long time its practical effect was small, but ultimately, whenever circumstances were favourable, it helped in bringing about the diminution of the inequalities in the social system. Read, for instance, John Woolman's Journal. John Woolman was a Quaker, one of the first Americans to oppose slavery. No doubt the real ground of his opposition was humane feeling, but he was able to fortify this feeling and to make it controversially more effective by appeals to Christian doctrines, which his neighbours did not dare to repudiate openly.

Liberty as an ideal has had a very chequered history. In antiquity, Sparta, which was a totalitarian State, had as little use for it as the Nazis had. But most of the Greek City States allowed a degree of liberty which we should now think excessive, and, in fact, do think excessive when it is practised by their descendants in the same part of the world. Politics was a matter of assassination and rival armies, one of them supporting the government, and the other composed of refugees. The refugees would often ally themselves with their city's enemies and march in in triumph on the heels of foreign conquerors. This sort of thing was done by everybody, and, in spite of much fine talk in the works of modern historians about Greek loyalty to the City State, nobody seemed to view such conduct as particularly nefarious. This was carrying liberty to excess, and led by reaction to admiration of Sparta.

The word 'liberty' has had strange meanings at different times. In Rome, in the last days of the Republic and the early days of the Empire, it meant the right of powerful Senators to plunder Provinces for their private profit. Brutus, whom most English speaking readers know as the high-minded hero of Shakespeare's Julius Caesar, was, in fact, rather different from this. He would lend money to a municipality at 60 percent, and when they failed to pay the interest he would hire a private army to besiege them, for which his friend Cicero mildly expostulated with him. In our own day, the word 'liberty' bears a very similar meaning when used by industrial magnates. Leaving these vagaries on one

side, there are two serious meanings of the word 'liberty'. On the one hand the freedom of a nation from foreign domination, on the other hand, the freedom of the citizen to pursue his legitimate avocations. Each of these in a well-ordered world should be subject to limitations, but unfortunately the former has been taken in an absolute sense. To this point of view I will return presently; it is the liberty of the individual citizen that I now wish to speak about.

This kind of liberty first entered practical politics in the form of religious toleration, a doctrine which came to be widely adopted in the seventeenth century through the inability of either Protestants or Catholics to exterminate the opposite party. After they had fought each other for a hundred years, culminating in the horror of the thirty years' war, and after it had appeared that as a result of all this bloodshed the balance of parties at the end was almost exactly what it had been at the beginning, certain men of genius, mostly Dutchmen, suggested that perhaps all the killing had been unnecessary, and that people might be allowed to think what they chose on such matters as consubstantiation versus transubstantiation, or whether the Cup should be allowed to the laity. The doctrine of religious toleration came to England with the Dutch King William, along with the Bank of England and the National Debt. In fact all three were products of the commercial mentality.

The greatest of the theoretical advocates of liberty at that period was John Locke, who devoted much thought to the problem of reconciling the maximum of liberty with the indispensable minimum of government, a problem with which his successors in the Liberal tradition have been occupied down to the present day.

In addition to religious freedom, free press, free speech, and freedom from arbitrary arrest came to be taken for granted during the nineteenth century, at least among the Western democracies. But their hold on men's minds was much more precarious than was at the time supposed, and now, over the greater part of the earth's surface, nothing remains of them, either in practice or in theory. Stalin could neither understand nor respect the point of view which led Churchill to allow himself to be peaceably dispossessed as a result of a popular vote. I am a firm believer in democratic representative government as the best form for those who have the tolerance and self-restraint that is

required to make it workable. But its advocates make a mistake if they suppose that it can be at once introduced into countries where the average citizen has hitherto lacked all training in the give and-take that it requires. In a Balkan country, not so many years ago, a party which had been beaten by a narrow margin in a general election retrieved its fortunes by shooting a sufficient number of the representatives of the other side to give it a majority. People in the West thought this characteristic of the Balkans, forgetting that Cromwell and Robespierre had acted likewise.

And this brings me to the last pair of great political ideas to which mankind owes whatever little success in social organisation it has achieved. I mean the ideas of law and government. Of these, government is the more fundamental. Government can easily exist without law, but law cannot exist without government - a fact which was forgotten by those who framed the League of Nations and the Kellogg Pact. Government may be defined as a concentration of the collective forces of a community in a certain organisation which, in virtue of this concentration, is able to control individual citizens and to resist pressure from foreign States. War has always been the chief promoter of governmental power. The control of government over the private citizen is always greater where there is war or imminent danger of war than where peace seems secure. But when governments have acquired power with a view to resisting foreign aggression, they have naturally used it, if they could, to further their private interests at the expense of the citizens. Absolute monarchy was, until recently, the grossest form of this abuse of power. But in the modern totalitarian State the same evil has been carried much further than had been dreamt of by Xerxes or Nero or any of the tyrants of earlier times.

Democracy was invented as a device for reconciling government with liberty. It is clear that government is necessary if anything worthy to be called civilisation is to exist, but all history shows that any set of men entrusted with power over another set will abuse their power if they can do so with impunity. Democracy is intended to make men's tenure of power temporary and dependent upon popular approval. In so far as it achieves this it prevents the worst abuses of power. The Second Triumvirate in Rome, when they wanted money with a view to fighting Brutus and Cassius, made a list of rich men and declared them

public enemies, cut off their heads, and seized their property. This sort of procedure is not possible in America and England at the present day. We owe the fact that it is not possible not only to democracy, but also to the doctrine of personal liberty. This doctrine, in practice, consists of two parts, on the one hand that a man shall not be punished except by due process of law, and on the other hand that there shall be a sphere within which a man's actions are not to be subject to governmental control. This sphere includes free speech, free press and religious freedom. It used to include freedom of economic enterprise. All these doctrines, of course, are held in practice with certain limitations. The British formerly did not adhere to them in their dealings with India. Freedom of the press is not respected in the case of doctrines which are thought dangerously subversive. Free speech would not be held to exonerate public advocacy of assassination of an unpopular politician. But in spite of these limitations the doctrine of personal liberty has been of great value throughout the English-speaking world, as anyone who lives in it will quickly realise when he finds himself in a police State.

In the history of social evolution it will be found that almost invariably the establishment of some sort of government has come first and attempts to make government compatible with personal liberty have come later. In international affairs we have not yet reached the first stage, although it is now evident that international government is at least as important to mankind as national government. I think it may be seriously doubted whether the next twenty years would be more disastrous to mankind if all government were abolished than they will be if no effective international government is established. I find it often urged that an international government would be oppressive, and I do not deny that this might be the case, at any rate for a time, but national governments were oppressive when they were new and are still oppressive in most countries, and yet hardly anybody would on this ground advocate anarchy within a nation.

Ordered social life of a kind that could seem in any degree desirable rests upon a synthesis and balance of certain slowly developed ideas and institutions: government, law, individual liberty, and democracy. Individual liberty, of course, existed in the ages before there was government, but when it existed

without government civilised life was impossible. When governments first arose they involved slavery, absolute monarchy, and usually the enforcement of superstition by a powerful priesthood. All these were very great evils, and one can understand Rousseau's nostalgia for the life of the noble savage. But this was a mere romantic idealisation, and, in fact, the life of the savage was, as Hobbes said, 'nasty, brutish, and short'. The history of man reaches occasional great crises. There must have been a crisis when the apes lost their tails, and another when our ancestors took to walking upright and lost their protective covering of hair. As I remarked before, the human population of the globe, which must at one time have been very small, was greatly increased by the invention of agriculture, and was increased again in our own time by modern industrial and medical technique. But modern technique has brought us to a new crisis. In this new crisis we are faced with an alternative: either man must again become a rare species as in the days of Homo Pekiniensis, or we must learn to submit to an international government. Any such government, whether good, bad or indifferent, will make the continuation of the human species possible, and, as in the course of the past 5,000 years men have climbed gradually from the despotism of the Pharaohs to the glories of the American Constitution, so perhaps in the next 5,000 they may climb from a bad international government to a good one. But if they do not establish an international government of some kind, new progress will have to begin at a lower level, probably at that of tribal savagery, and will have to begin after a cataclysmic destruction only to be paralleled by the Biblical account of the deluge. When we survey the long development of mankind from a rare hunted animal, hiding precariously in caves from the fury of wild beasts which he was incapable of killing; subsisting doubtfully on the raw fruits of the earth which he did not know how to cultivate; reinforcing real terrors by the imaginary terrors of ghosts and evil spirits and malign spells; gradually acquiring the mastery of his environment by the invention of fire, writing, weapons, and at last science; building up a social organisation which curbed private violence and gave a measure of security to daily life; using the leisure gained by his skill, not only in idle luxury, but in the production of beauty and the unveiling of the secrets of natural law; learning gradually, though imperfectly, to view an increasing number of his neighbours as allies in the task of production rather than enemies in the attempts at mutual depredation - when we consider this long

and arduous journey, it becomes intolerable to think that it may all have to be made again from the beginning owing to failure to take one step for which past developments, rightly viewed, have been a preparation. Social cohesion, which among the apes is confined to the family grew in pre-historic times as far as the tribe, and in the very beginnings of history reached the level of small kingdoms in upper and lower Egypt and in Mesopotamia. From these small kingdoms grew the empires of antiquity, and then gradually the great States of our own day, far larger than even the Roman Empire. Quite recent developments have robbed the smaller States of any real independence, until now there remain only two that are wholly capable of independent self direction: I mean, of course, the United States and the USSR. All that is necessary to save mankind from disaster is the step from two independent States to one - not by war, which would bring disaster, but by agreement.

If this step can be accomplished, all the great achievements of mankind will quickly lead to an era of happiness and well-being, such as has never before been dreamt of. Our scientific skill will make it possible to abolish poverty throughout the world without necessitating more than four or five hours a day of productive labour. Disease, which has been very rapidly reduced during the last hundred years, will be reduced still further. The leisure achieved through organisation and science will no doubt be devoted very largely to pure enjoyment, but there will remain a number of people to whom the pursuit of art and science will seem important. There will be a new freedom from economic bondage to the mere necessities of keeping alive, and the great mass of mankind may enjoy the kind of carefree adventurousness that characterises the rich young Athenians of Plato's Dialogues. All this is easily within the bounds of technical possibility. It requires for its realisation only one thing: that the men who hold power, and the populations that support them, should think it more important to keep themselves alive than to cause the death of their enemies. No very lofty or difficult ideal, one might think, and yet one which so far has proved beyond the scope of human intelligence.

The present moment is the most important and most crucial that has ever confronted mankind. Upon our collective wisdom during the next twenty years depends the question whether mankind shall be plunged into unparalleled

disaster, or shall achieve a new level of happiness, security, well-being, and intelligence. I do not know which mankind will choose. There is grave reason for fear, but there is enough possibility of a good solution to make hope not irrational. And it is on this hope that we must act.