ETHICS FOR THE ATOMIC AGE

By

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46th Conway Memorial Lecture

Contents also include articles by

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Published by
SOUTH PLACE ETHICAL SOCIETY
Conway Hall, Red Lion Square,
LONDON, W.C.1

Chancery 8032
“Arms and the Man I Sing”. Thus Virgil began his immortal epic. In my few introductory remarks this evening, I propose to reverse the sequence; I shall speak first of the man and then of his theme.

I congratulate those who are responsible for these lectures in securing Lord Boyd Orr as one of those who, year by year, carry on this memorial tribute to Moncure Conway. I can think of none better able to keep alive the Moncure Conway tradition. And if you ask—as many of you well may (missing one of the few privileges of age, the memory of things past) what is this tradition, let me quote it in his own words:

“It is the duty of every human being to maintain openly and valiantly the verdict of his own faculties. The first of the new commandments is this: Seek Truth, and the second is like unto it: love the Truth in thought, word and deed. No doubt there are times for reserve, no doubt there are rocks of prejudice and ignorance which have to be slowly pulverised into a soil before any seed can be sown in them. Reason supplies an instinct adequate to all emergencies, and it is just as much a mind can do to keep that lamp burning steadily through life in a world where the most powerful threats and bribes are continually used to sway and pervert the judgment.”

No, I can think of no man in our time better fitted by his life’s work to follow in this tradition. And I congratulate myself that I have been given the privilege of chairing tonight’s lecture. It does not enable me to repay Lord Boyd Orr, but it does give me the chance of thanking him publicly, for the kindness and the tolerance which he showed me when he was Director-General of the Food and Agricultural Organisation of United Nations, and I chaired the technical Committee advising him on Nutrition.

It was whilst holding this high office that our lecturer preached his gospel of food production and food distribution, and his pulpit was a world-wide one. He has preached this same gospel ever since. He, at least, can say “this one thing I do”. His gospel is interwoven with today’s theme, to which I now turn.

I was a little perturbed by the lecturer’s use of the word “ethics” in relation to what he terms this “atomic age”. I remembered Sir Thomas Browne’s warning that there can be no such thing as old and new “ethicks”* and his insistence that what is wrong in one age cannot be right in another. But I see from the preview of his lecture which Lord Boyd Orr kindly sent me that he gives the word a special slant, making it refer to actions that are desirable at this particular time in human history, assuming the ethic of the Golden Rule. To me this assumption is the real crux: so long as there is a powerful group which does not accept the dictum “live and let live”, I see little hope of resolving the present situation.

In the lecturer’s strong advocacy of action, and action now, we must surely all be in sympathy. The Greeks taught us how to think, but they took this great distinction between man and the beasts—that man thinks—no

* “Live by old ethicks and the classical rules of honesty. Put no new names or notions upon authentic virtues and vices. Think not that morality is ambulatory: that vices in one age are not vices in another; or that virtues which are under the everlasting seal of right reason may be stamped by opinion.”
further. But surely the end of living is action, not thought? Thought is of service to humanity according as it leads to action. What action, just now? The least obscurant of our philosophers—for so I regard Bertrand Russell—says that “to stop war . . . we must cleanse our own hearts of the poisons that make war seem reasonable: pride, fear, greed, envy and contempt.” But he admits that this is a long-term business. So he becomes more practical and more immediately helpful. “There is only one way,” he says, in another place, “in which the world can be made safe from war, and that is the creation of a single world-wide authority, possessing a monopoly of all the more serious weapons”.

I gather that our lecturer’s views march with these. He will now tell us. Ladies and gentlemen; LORD BOYD ORR.

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BY

THE LORD BOYD ORR, D.S.O., M.D., F.R.S.

I appreciate the honour of being invited to add another to the forty-five Conway Memorial Lectures which have been delivered by men who are among the most eminent thinkers of our age. In common with the other activities of South Place Ethical Society, they have made a great contribution to the freeing of men’s minds from stultifying inherited prejudices and beliefs, which the increase of knowledge has made untenable, especially the belief that any human being or group of human beings has a monopoly of truth, and the power to influence rewards or punishments to their fellow men in a future life, according to whether or not they accept without question “the Faith” which they claim was once for all delivered to the saints by divine revelation.

Freedom to be guided by reason in religious as well as in other spheres is essential for intellectual and cultural development, but to have all our activities directed by cold reason would tend to make life arid. Pure reason completely detached from emotion—if indeed that were possible—is the right attitude of mind for the solution of the problems of scientific research or metaphysics. But man is more than an animated electronic calculating machine. For a full life, he needs the exercise of the important emotional part of his being. The great material wealth and physical comforts which modern technology has provided, might afford full satisfaction to the lower animals, but man’s higher nature craves “for something else”, to use a phrase of J. B. Priestley. He needs some kind of ideal worth living for and worth making sacrifices for: something to look forward to. He needs a faith which is the “substance of things hoped for”.

In the present rapid transition phase in the evolution of human society, when the world of the Victorian age with its feeling of assurance and stability and steady progress has crashed, leaving people bewildered and afraid of the future, there is urgent need for such a faith which will give a purpose in life and hope for the future without conflicting with reason. The orthodox religions, with their hope of rewards or fear of punishment in a future life, which provided the “something else”, have had their authority undermined by the advance of science, with resulting loss of faith by many of their former adherents. The Moslem Brotherhood is finding it difficult to resist the penetration of conflicting Western cultures and customs forcibly introduced to Turkey by Kemal Ataturk, and now spreading to other Moslem countries. In Israel the orthodox Jewish religion is in conflict with the scientific outlook. In Europe the Christian faith was
replaced in Germany by a new faith—the neopaganism of the Nazis—and in Russia, by Communism, both of which provided the "something else" for which people (and especially young people) were prepared to devote their lives. In this country where, fifty years ago, the great majority of people regularly attended church services, nowadays only about twenty per cent attend, and the Christian church is reduced to getting Billy Graham, an exponent of high pressure American salesmanship and advertising, to try to get people back to church. Some, having lost their spiritual moorings, and having no confidence in their own reasoning faculties for the solution of the problems of modern life, are giving up the struggle to think for themselves and seeking an escape in the Roman Catholic church, whose adherents need only accept as truth what the church teaches, and are saved the painful process of thought about spiritual matters.

The Ethical Societies which have done so much to promote freedom of thought, and must continue that work, might do more to promote a faith which would provide an outlet for the emotional part of man's make-up, one, which, taking account of the great changes occurring in the structure of human society, offers constructive ideas based on knowledge which, if applied, would afford the hope for a rapid advance in the evolution of human society with the promotion of human welfare.

THE ROLE OF ETHICS IN SOCIETY

No community could hold together without some sort of ethical principles generally accepted as a guide to the action of its members in dealing with their rulers, divine or human, and with each other. Even in primitive forms of human activity, the community was held together by a common belief in the witch doctor, common taboos and common fears of gods or evil spirits, whose wrath had to be appeased or favours sought by various means, often including human sacrifices. The stronger the belief and the more universally held, the greater is the cohesion of the community and the chance of success in peaceful pursuits or war. The spread of unbelief by heretics undermines the authority of government, and leads to disintegration of the social structure. Hence, the importance of "a faith" for the unity and strength of the state. As Napoleon said "if a nation did not have a religion, it would need to invent one".

The effects of a creative faith on the strength of a nation, even if the faith be erroneous and directed to wrong ends, is illustrated by the rise to power of Nazi Germany and Communist Russia. The majority of the people of Germany, especially the young people, were imbued with a fanatical belief that they were a superior race with the power and the right to dominate the world. The unity and sense of purpose of the national faith made the state so strong that within two years, from a poverty stricken defeatist nation, it had changed to a military power able to overrun Europe. The Russians, inspired by the belief that Communism would bring in a wonderful new age in which the masses would get the high standard of living and culture enjoyed only by the wealthy in the capitalist system, have shown an equally impressive growth of power. It is true that in both these totalitarian states criticism of the new national faith was suppressed, and there were doubtless many who never accepted the new national faith: but there is no doubt about the belief of the great majority of the people.

A democracy where there is freedom to criticise the government and advocate any kind of political or religious faith, and where each can pursue his own personal interest with the minimum of government control, is the ideal state provided everyone has the physical and other necessities for a full life. But, it can never be as powerful in war or even in international economic competition as a totalitarian state. In war, it must develop totalitarian features of loss of freedom to criticise the government and the
sacrifice of personal interest to the national interest. Even in this country, with its long history of freedom, many worthy citizens, including the present Lord Provost of Glasgow, and another since elevated to the House of Lords, were in prison in the First World War for criticism of the government and threatening the unity of national effort. A country at war, or in fear of war, must lose much of its freedom which it is difficult to regain, even after the war or threat of war has passed. The ideal democracy can exist only under some form of world government which can keep the peace and free nations from the threat of military aggression.

FAITH AND FREEDOM

In view of the strength to which a nation can attain under a totalitarian government, some might agree with Carlyle’s idea of “Heroes and Hero Worship”, and believe in a benevolent dictator. The difficulty is that a benevolent dictator is hard to find. A man wise enough to be a benevolent dictator has no desire for power over his fellow men. Usually when a man gets power he is loth to lose it. Cincinnatus, who was called from his farm to save Rome and having saved it by defeating the Aequians, gave up the dictatorship and returned to his farm as an ordinary citizen, is one of the few instances in history of a man voluntarily giving up his power over the lives of his fellow men. Power inflames the lust for more power. Dictatorship involves the ruthless suppression of free thought and the expression of opinions conflicting with those of the dictator. The logical development of Carlyle’s hero worship as a leader to be worshipped and obeyed, which he derived from a German philosopher, is a Hitler.

The authority of a dictator is greatly enhanced if, in addition to power to inflict punishment or death, the people can be made to believe that his power extends to rewards and punishments in a future life. Many of the dictators of the ancient world had themselves proclaimed as gods. A more subtle method was to have a special department of government dealing with spiritual affairs—a religion or church with, at its head, one who is the vice-regent of God on earth, and therefore able to tell people what they must do and what they must believe to escape punishment after death. Wrong actions were not so important as failure to believe, because the head of the religious organisation through his subordinate officials, could give absolution of sins, but there is no absolution for disbelief. King James the First of England appreciated the enormous importance of having the people conditioned to obedience by the church. “No Bishop no King” was a sound policy for absolute power. When the Archbishop could anoint the King, conferring Divine Right, and the King could appoint the Archbishop, the throne was well buttressed. A revolt against the King was a revolt against God. Hence the subject’s safety of both body and soul depended on implicit obedience to the King.

Looking back over the course of history, we find that as a general rule, when ethical principles which are a guide to action for both individuals and governments were based on divine revelation, and therefore outside the sphere of reason, there was little or no advance in civilisation. This static condition suited both religious and secular rulers, the magnitude of whose power and wealth was maintained at the expense of the servility and poverty of the masses. This, illustrated by the thousand years of the Dark Ages in Europe, is to a large extent true of all religious systems which suppress freedom of thought and speech about the validity of religious beliefs, as impiety and treason.

Fortunately for the advance of civilisation, there have been men capable of original thought, with the courage to express views contrary to the orthodox faith, and especially since the Renaissance growth of knowledge which has made some religious beliefs untenable. Wise rulers would have
gradually adjusted the political, economic and social structure of the state to the new ideas and the new knowledge, as they became accepted by a considerable part of the population, even if it meant some decrease in their power. When they resisted change to the bitter end, the conflict between the old and the new ideologies had to be decided in ordeal by battle. Mahomet’s new idea of one all-powerful God, to replace the worship of dumb idols, was spread by the sword. The divine right of kings had to be washed out in the blood of the civil war. The feudal system, drawing its authority from the Roman Catholic church, was destroyed in the blood bath of the French Revolution.

If the above views be correct we may assume that:
(a) A nation or any community must have some kind of common faith and common interest which find their expression in its political structure.
(b) The advance of knowledge which takes place most rapidly when there is the greatest freedom of thought, involves adjustment of the faith and the political structure to the new knowledge.
(c) Where those in power resist inevitable change, there is a period of unrest which may end in revolution.

In the last fifty years knowledge giving powers over the forces of nature has increased more than in the previous two thousand years.

We will now consider the changes being brought about by this impact of science on society.

THE REVOLUTION OF THE ATOMIC AGE

We call this the atomic age because the release of nuclear energy is the most spectacular achievement of physical science. But it is only one aspect of the great increase in industrial potential. In the United States and Canada which were outside the battle area, industrial capacity for production increased by about 100 per cent. Even in war-shattered European countries, output is about 50 per cent above the pre-war level. In spite of the destruction of two world wars, the economic crisis of the early 1930s, with millions of men unemployed, and such a large proportion of industry devoted to armaments—in this country now £1,600 million a year—the standard of living is now well above the level of 1914. In spite of the burden of armaments, the Chancellor of the Exchequer anticipates that the standard of living will be doubled within the next twenty-five years, a not unreasonable estimate in view of the fact that capacity for production is increasing at the rate of 6 per cent per annum.

Countries which were formerly content to produce food and raw materials for the industrialised countries, are now bent on enjoying the fruits of industrialisation on which depend wealth and military power. The development in Soviet Russia is so great that it is estimated that within five years the industrial potential will be equal to that of all Western Europe. India with its five-year plan is building new factories to manufacture cotton and other raw materials which she used to export for manufacture in Western countries, and is placing contracts for two additional huge steel-making plants, one to be erected by Soviet Russia to provide the much needed steel for industrial development. Pakistan, the Argentine, and other countries are either already embarked on the now popular five- or ten-year national plans of development, or like Egypt preparing plans and importing the necessary equipment. Such is the urge for industrialisation that some countries short of food, are sacrificing agriculture for industry as did England in the nineteenth century.

The rate at which these countries are being industrialised is illustrated by the increase in their output of steel, a good indication of their industrial potential. In 1918, of a total world production of 76 million tons, Western Europe and the United States produced 95 per cent. By 1953 the others
had increased their output from 4 to 68 million tons, raising their proportion of the total world output of 230 million tons from 5 per cent in 1918 to nearly 30 per cent. As this output of steel continues to increase with resulting increase in the industries dependent on steel, there will be a great expansion of the world capacity to produce goods, with industrial power more evenly distributed between East and West.

The industrial revolution of the nineteenth century depended on the replacement of human muscle by power-driven machine, which increased the output per man. Coal as a source of power has been supplemented with petroleum. Now atomic energy offers the probability of a revolution in industry as great as occurred when the steam engine was invented, and recent researches give prospects of the direct use of solar energy, in which case mankind would have a practically unlimited supply of energy, and be able to produce everything needed or wanted with a minimum of human labour.

Thus the world has passed from an age of scarcity to one of potential abundance. But there remains the problem of adjusting the economic system so that the goods produced can be dispersed and consumed, to prevent the piling up of goods for which there is no market, as occurred in the economic crisis of 1930, with resulting unemployment, which was highest in the countries where the output per man was highest: in the United States it rose to about 14 million. This economic distress was relieved when rearmament in preparation for the Second World War began, solved the unemployment problem first in Germany and later in this country and America. Today, even with governments providing a market for armaments up to a world total of £40,000 million a year, there is fierce competition for export markets for other goods. This competition is increasing by the entry of Soviet Russia into the world market for machinery and industrial products, and the anticipated entry of countries like India exporting manufactured goods which they used to import. This affects all countries, though to a different degree. Countries like Soviet Russia and China can direct their industries to internal development, and with their totalitarian system are not troubled by unemployment or strikes. Countries like Britain and Japan on the other hand, which must export to pay for their imports of food and raw material, depend for their economic safety on an expanding world economy to keep pace with expanding industrial development. They, in their own interest, should be taking the lead to adjust the world economic system to the new age of plenty which modern technology has made possible.

The advance has been as great in biological as in physical science. This is well illustrated in medicine, which can be regarded as the application of biological science to the cure and prevention of disease. Up till the middle of last century, although advance had been made in anatomy and physiology, clinical medicine was not much in advance of the medical school of Alexandria of more than 2,000 years ago. It was only in 1877 that Pasteur established the germ theory of infectious diseases, a fundamental discovery for preventive medicine. Since then, the advance in curative and preventive medicine, especially in the last fifty years, has been so rapid that the expectation of life of a child born today is, in this country, where modern medicine has been applied, twenty years more than that of a child born in 1900. The expectation of life in countries where modern medicine has been applied is now nearly seventy years. In the native population of Asia, Africa and South America where it is only beginning to be applied, it is only about half that length.

The application of modern curative and preventive medicine on a world scale raises a problem, as difficult as that referred to above by the application of modern technology on a world scale. The reduction of the death rate in Asia, Africa and South America without a reduction in the birth
rate is leading to the expansion of population such as occurred in England in the nineteenth century when the population increased from less than 10 million to above 33 million in spite of the emigration of millions to the new Continents of America and Australasia. In 1946 it was estimated that world population was increasing at the rate of about 20 million a year, and it was anticipated that the pre-war population of about 2,000 million would reach 4,000 million by the end of the present century. It is now increasing at the rate of over 30 million a year and it is anticipated that it will reach 4,000 million by 1980.

This raises the problem of providing food and other necessities of life for such large numbers. Before the last war about two people out of three in the world suffered premature death from the lack of these. The position is not much better today. To bring into the world children for whom no provision has been made for their health and happiness is a crime. The solution of the problem of over-population is birth control which, however, the Roman Catholic Church and the Communists both oppose, and the application of science to developing the resources of the earth to provide sufficient food and the necessities of life for the whole human family.

THE DESTRUCTIVE POWER OF SCIENCE

So far we have been considering what modern science could do if it were harnessed to serve mankind. Unfortunately, the forces it has let loose can be turned to destructive ends. We have now the H-bomb 25,000 times as powerful as the atomic bomb which destroyed Hiroshima. It is estimated that one could destroy all life in an area of 400 square miles and contaminate with deadly radio activity an area of 7,000 square miles. Einstein warned the world a few years ago that with the physical weapons which science could produce, it would be possible to eliminate all life on our planet. While medical science can eliminate disease, it can also be applied as an instrument of death. Dr. Brock Chisholm who was in charge of biological warfare in the last war and the first Head of the World Health Organisation, has warned us that it is possible to let loose diseases which would kill off more than 50 per cent of the population in any country to which they were introduced, probably something like the elimination of rabbits by myxamatosis.

It is futile to get agreement not to use these methods of mass murder in war. As Bertrand Russell has argued in a recent broadcast, if war comes every weapon will be used, a view publicly expressed by some of our military experts. It is equally futile to depend upon their destructive power as a deterrent to their use. Fear is the chief danger. Fear causes panic. Fear of one side making a sudden attack with them may make the other side use them to get the great advantage of getting its blow in first. The only hope for survival is the abolition of war. The leaders on both sides in the present struggle for world supremacy loudly proclaim that what they really want is peace. Why then, in the name of common sense, cannot they get together and make peace. The common people of the world are not stopping them. They don't want to continue "peering over the rim of hell" as Sir Winston Churchill has described the present fantastic position of the human race.

Within the next few years mankind must decide whether the powers of science will be applied in war to the destruction of the human family, or to promote human welfare and build a new world, free from poverty, with its hunger and disease and with a higher level of physical and cultural well-being for all mankind than has been enjoyed in the past by the more favoured countries.

ONE WORLD

If any country with common beliefs and interests, like, say, our own, could isolate itself completely from the rest of the world, there would be
no great difficulty in using the powers of science to build a wonderful welfare state, but with the aeroplane and the radio we are now citizens of what is now physically, economically, and politically one world, in which all nations will ultimately share the same fate. The only solution of the problem of war is a world government which can keep the peace and get nations to co-operate with each other on world-wide projects of mutual interest. As our Prime Minister has said: “Without some form of world government there is no hope for the future”.

It is difficult to form a world government. The League of Nations set up by a great American statesman failed. The United Nations set up mainly by the influence of another great American statesman, has not yet fulfilled the hopes it raised. The difficulty is that the world contracted so suddenly that nations with different historical backgrounds, different beliefs and different interests, were brought into the closest contact before they could understand each others’ point of view. Another obstacle to unity is that in all past history, governments ruthlessly pursued their own national interests, and they have not yet appreciated that in this now small world the best national interests are those which are in line with the common interest of all nations. Another obstacle is the shift of power that has taken place. At the end of the last century, with the exception of the United States which is an offshoot of Europe, the six great European nations, of which Britain was the most powerful, had military and economic control of practically the whole world. The power of these nations has decreased and their empires are in liquidation. The vacuum has been filled by the two new powers, the U.S.A. and the U.S.S.R.

Their position in turn is threatened by the upsurge of Asia. With the exception of native rulers like Chiang Kai-shek and Syngman Rhee whose position depends on American support, the Asians are determined to get rid of their poverty and inferior position in the world, and are in revolt against foreign domination and exploitation which they believe caused their poverty and misery. This new nationalism is merely an aspect of racialism. They regard the imperialism of the white man as the common enemy. If countries like China and India with their big populations become industrialised as rapidly as Japan did, then within twenty or thirty years they may rival the United States and Soviet Russia in industrial and in military power. The conference of African and Asian states including China and the Communist part of Indo-China convened by the Colombo powers, may be the beginning of a third group of powers with a coloured population greater than either the Atlantic or the European Soviet group. If so, it is to be hoped that it will be influenced by Gandhi's pacifism. If not, the warning of Kaiser Wilhelm II about the Yellow Peril will prove to have been right. This is unlikely. What it will prove is that, even if there were no nuclear weapons, no single nation or minority group of nations can hope for world domination or, when as at present, two opposing groups have the new weapons, an attempt to conquer the world would be an act of suicide. The advance of science has made the age-long reign of power politics obsolete. If our civilisation is to survive, power will be, not in arms, but in moral leadership.

ETHICS FOR THE ATOMIC AGE

This brief review of the change already brought about and the further greater changes foreshadowed by the advance of science and technology, is sufficient to show that we are passing through the most rapid and momentous transition phase that has ever taken place in the evolution of human society. The bomb that dropped on Hiroshima, the first use to which atomic energy was put, was the death knell of an age. We are now in the throes of the birth of a new age which already is as different from that of the early Vic-
torian age as it was from the age of the Pharaohs. The vital question now is what ethical principles can guide man in safety through this transition phase, and make him fit for the new atomic age.

One view which is being expressed by the most subtle means in some recent books, in the controlled press and even in the B.B.C., is that we must abandon the use of science and the scientific method for the solution of our problems, and be guided by divine revelation given by the church or to be found in the sacred literature of the Bible, the Koran or other ancient scripts which the different religions accept as the source of their respective faiths. It must be admitted that if this view had prevailed, man would never have been faced with the problems of today or the fear of extinction by hydrogen bombs. But he would still have been living under the most primitive conditions, mentally enslaved by the medicine man or priest who claimed to have inside information from the tribal gods or evil spirits. It was by the free exercise of reason from the East that progress was made in the six or seven centuries B.C. and reached fruition in the culture of Greece. It was the spread of rationalism after the Renaissance that delivered Western Europe from the thousand years of the Dark Ages and created our European civilisation with its high standard of living and political and religious freedom for the masses. Now in our day science has made a further great advance with tremendous potentialities for good or evil. One of our Field-Marshal has said that the new power, including nuclear weapons, should be used to defend Christianity. A religion which requires such wholesale death and suffering for its defence is not worth while defending. The most atrocious wars in history have been for the defence or expansion of religion. It was by the exercise of reason that these new powers were created. It is by the same scientific method that guidance for their use must be sought.

As in all scientific investigations it would begin by a review of the facts in so far as they can be ascertained. The main factors which have been discussed above may be summarised as follows:

War with modern weapons would destroy civilisation and possibly eliminate the human race.

The only way to prevent the use of these weapons in war is to abolish war itself.

The abolition of war would involve the gradual disarmament of all nations and the setting up of a world government that can keep the peace.

To prevent economic distress with unemployment, the decrease in the market for armaments must be accompanied by an increase in the market for other industrial goods.

The expanding markets needed can be found by the increased production of the primary necessities of life to abolish want which afflicts two-thirds of the world's population.

The upsurge of Asia has led to a revolt of the coloured races against the military and economic domination of the white race, and the nations which have been granted or won independence, are being industrialised. Throughout the ages the suppression of political and religious freedom has been accompanied by the suppression of the masses and the arrest of progress.

Let us now consider what means can be taken to get these factors directed towards constructive ends. The first and most urgent is the abolition of war as an unmitigated evil which now threatens the continued existence of the human race. The abolition of war would bring about the greatest and most beneficial political revolution that has ever occurred.

Accompanying this political revolution there must be a revolution in economics. In so far as the primary necessities of life are concerned, the old system of adjusting supply to economic demands must be replaced