SCIENCE, PHILOSOPHY & POLITICS

M.N. Roy

Science Philosophy and Politics

M. N. ROY

SCIENCE, PHILOSOPHY & POLITICS

●

M. N. Roy

●

Published by
W. S. Kane
Secretary
Nav Jagriti Samaj
D 46 Lokmanya Nagar,
Mahim, Bombay-400 016.

●

Printed by
Pradeep Munot
Prabhat Printing Works
427, Gultekdi, Pune 411 037.

●

Price
Rupees Four

FOREWORD

On the threshold of the twenty–first century the mankind finds itself in a bewildering situation. On the one hand, there is unprecedented development in science and technology which enables man to go beyond this Earth for exploration and to enhance enormously the capacity to bring nature under human control; on the other hand, there is a growing poverty and suffering for a vast majority of people, particularly in the countries of the so-called Third world. The knowledge and facilities, which should have been used for eradication of poverty and suffering of the mankind, are being channelised for destructive purposes. It is not an accident that frontiers of knowledge are being advanced to a large extent in the laboratories engaged in research for improvement of the weapons for war.

During the last 38 years after the transfer of power from the British rulers to the representatives of the Indian People, great changes have taken place in India in economic, social and political spheres. There has been substantial development in agriculture and industry. With phenomenal spread of network of higher learning and research, India holds one of the leading positions in the number of scientists, engineers, doctors and other experts in various disciplines. She has ventured to step on to the frontiers of scientific research like space exploration and antarctic exploration. Indian experts abroad are contributing to substantial extent to the material progress of countries like U. S. A. and U. K. Nevertheless unimaginable poverty, ignorance, superstition and suffering reign supreme for the larger section of the Indian people.

During this period, the political practice has exposed in a growing number of politicians lack of dedication to welfare of

the people, particularly the poor, handicapped and Ignorant, love of power for self-aggrandizement, hypocrisy, opportunism, dishonesty and proliferating criminality. The arena of politics has been gradually becoming the playfield for ambitious self-seekers and social criminals. This trend has dispelled many honest, dedicated, knowledgeable individuals from participating in the political activities and thereby created a situation in which the unscrupulous individuals enjoy a free run to pursue their private ambition in the political field leading to ever-increasing hardship for the people at large.

Forty-five years ago, this phenomenon in politics was dignosed by M. N. Roy, a revolutionary, who started as a nationalist terrorist in the first decade of this century, became a Marxist leader of the Communist International at the invitation of Lenin, left it ten years later because of difference in principle and policy, and finally developed the theory of Radical Humanism. " Science, Philosophy and Politics " is the text of a lecture delivered by M. N. Roy in 1940 at a Political Study Camp attended by his colleagues and friends. In this lecture, he discusses the nature of knowledge, its source and relationship with reality, relationship between science and philosophy and the importance of a political philosophy for honest practice of politics for changing the existing unsatisfactory setup. In Roy's words, " A revolutionary is one who has got the idea that the world can be remade, made better than it is today. . . . One cannot be a revolutionary without possessing scientific knowledge."

In the present atmosphere of cynicism and resignation in a large section of educated individuals, this lecture clears the mist of misunderstanding, hesitation and indecision about politics and provides the mental sustenance to " noble and pure, detached and unselfish men and women to take to politics as a profession."

New Delhi
August 20, 1985

Sunil Bhattacharya

SCIENCE, PHILOSOPHY & POLITICS

This lecture has been organised as a part of the programme of the All-India Study Camp which is being held here under the auspices of the League of Radical Congressmen. It is quite possible that some of you will be wondering why a subject like this should be smuggled into a programme of political study. Science is supposed to be studied in the seclusion of laboratories, and philosophy cultivated in the fastness of the mountaineous regions of the Himalayas. How can one bring them down to the low level of a political Study Camp ?

As an introduction, I may tell how science and philosophy are related to political study. Politics is considered to be a dirty job, a profession of loafers and of people who cannot do any good in other walks of life. Consequently, one expects the evil sides of human nature to have a free play in the field of political activity. This is the prevailing notion of politics not only in our country. To a very large extent, it is true.

One reason for this is that politics deals with human affairs, and the affairs of the daily life of human beings. Unfortunately, human society, as it is organised to-day, is so very full of dirty things, that any branch of activity embracing human affairs cannot be very pure, elevating and ennobling. But there is another reason why politics is so full of all sorts of disagreeable things. That reason is a false conception of politics itself. It is not generally understood even by most of the political workers themselves that politics is also a science. It is not an independent branch of science, but a branch of what is called social science. Other branches of science deal with more or less stable categories; but social science deals with the component parts of society, that is, human beings, the most unstable and variable quantity ever created.

It is to-day an accepted principle of science that no branch of study can claim the distinction of being scientific, unless it can be stated in mathematical formulas. Mathematics has learned to deal with uncertain quantities. Nevertheless, without some constants, no mathematical formula is possible. Until now, the conventional social science, known as sociology, has not been able to find any constant in human behaviour, in this conglomeration of entities, called human society. If there is really none, then social problems cannot be stated in mathematical formulas; and in that case, politics cannot be a science.

This may be the prevailing view, but it is not the ultimate view. There are people, who maintain that there can be a science of society; the problems of society, problems arising from the collective human behaviour, can be stated approximately in mathematical formulas, meaning, that there are some constants in human behaviour. Politics is a science which tries to formulate a set of fundamental principles governing the behaviour of human beings organised in society. Unless there are some constants, some standards of human behaviour, no principle can be formulated generally to govern human behaviour. So long as politics is considered to be something divorced from physical knowledge, in other words, divorced from what is generally known as science, it naturally becomes

a very arbitrary affair. In that case, there are no fundamental political principles. Now that isolation has disappeared. To-day, it is generally known that scientific knowledge is not something which is to be isolated and abstracted and studied independently of the daily life of human beings. On the other hand, the bridge between science and philosophy has been built. It is known that there exists a thing called political philosophy. But there are many who dispute that there can be such a thing as a political science. That brings us to the question which is the subject of this evening's lecture; Science and Philosophy.

The general conception is that science and philosophy are two distinct things which have nothing in common. Science deals with the affairs of this world, while philosophy with the affairs of another world. If that is the case, it is very difficult to find any connection between science and philosophy. If there is no connection between the two, we cannot maintain that a political science must necessarily follow from a political philosophy.

There are people who would concede that we can state abstractly certain principles which must govern the behaviour of mankind organised in political society; but they insist that, in experience, it has been proved that those principles cannot be always acted upon. Take for instance, democracy. Nothing is so discredited to-day as democracy. For the last hundred years or more; democracy was considered to be one of the fundamental principles of political philosophy. To-day, it stands discredited everywhere. From this experience, the conclusion has been made that democracy may be an ideal, but it can never be realised in life; that it is alright to say that every human being should have the right to contribute to the formulation of the laws and principles which are to govern collective life; but the right of popular sovereignty is more or less an abstract conception which cannot be translated into action; that experience has shown human society to be a herd, and can be governed only by a dictatorial power.

This example, supposed to be drawn from human experi-

ence, is given to prove that there is no connection between political philosophy and political science. One can state certain abstract principles which should be practised in an ideal human society; but in human society, as it is to-day, they cannot be practised. Human nature is immutable; it never changes; therefore human society will remain as it is for ever. That is the conventional contention. Consequently, those principles are never practised. There can never be a political science, that is, the practice of the principles of social behaviour based on a political philosophy.

In order to disprove this contention, we have to deal with the more fundamental question about the relation between science and philosophy : Whether abstract ideals really have any relation to the practical problems of our life. The development of modern science is a story which is more or less known to the average educated man of our days. Nevertheless, it is a general belief that science may create conditions, under which some conveniences and comforts of our daily life can be attained, but the problems of existence, the problems which gave rise to what is called philosophy, cannot be touched by science. Therefore science must be regarded as a branch of knowledge which only scratches the surface of the essential problems of existence; the latter cannot be solved by scientific knowledge.

The point I want to make in this lecture is that science and philosophy are not two different things. Theory and practice cannot be divided into water-tight compartments. If philosophy cannot be brought down from the ethereal heights to our dirty world, it has no sense and no use for us. If there is no logical connection between the problems of philosophy and the problems of practical or experimental science, then, as far as human beings are concerned, the problems of philosophy are illusory or altogether useless.

It is generally believed that science is of recent origin. That is not true. Science is as old as the human race. It is neither younger nor older than philosophy. It is as old as philosophy itself. Some knowledge of the history of philosophy shows that, as a matter of fact, science precedes philosophy. At least,

the incentive to science, that is, the desire to know the causes of physical phenomena, a desire which ultimately culminated in the wonderful unfoldlng of what is known as modern science, certainly preceded philosophy. Indeed, philosophy was born out of that desire.

Man is supposed to be not only concerned with the physical world, but essentially to be only a vehicle through which some supernatural, transcendental, divine, truth is expressed. Therefore, the ultimate objective of human existence is supposed to be to know the nature of that divine truth. If we get acquainted with the history of early human society, a phenomenon that can be studied either as history, that is, in the records of old events or experimentally, by observing the behaviour of primitive human races inhabiting the world even to-day, side by side with the most civilised human communities, that study reveals the fact that the primitive human being is completely devoid of the idea of something beyond himself. The conception of God and soul is completely absent in the thinking process of the primitive human being. Otherwise, he would not be a primitive being. That primitive being was our ancestor. If the desire to understand the origin of the divine spark, supposed to be embedded in everyone of us as the immortal soul, is the essence of human existence, it should be possible to trace that desire down to the primitive human being. Since that cannot be done, it is logical to assume that the desire is not coincident with the entire human existence; it must have intervened somewhere in the process of human evolution.

How then, do we explain that not only in our own country, but practically in all other countries of old civilisation, the fundamental problem of philosophy was, why and how the world is created. If we read the ancient history of India or China or Greece or Egypt, where the human race attained a high level of development earlier than elsewhere, we find the intellectual leaders of those communities deeply concerned with this problem. They were also concerned with the problem of after-life. From this, the conclusion is drawn that man must have been born with the spirit of enquiry into what can be called the metaphysical or supernatural. But one forgets to remember

that Indian society was not born with Kapila or Kanad. Indeed, it is older even than the Rishis who wrote the Rigved. We know that Greece was not born at the time of Thales or Democritos, not to mention Plato or Socrates. Others preceded them. What did they think ? What was their spiritual outfit ? If we go into this question, then, we shall find immediately that the so-called fundamental problem of philosophy is not co-existent with the entire human existence.

Unfortunately, it is very difficult to trace the process of human development down to its origin, because, at a certain stage, recorded history disappears. We have no record to show how Indians before the Vedic era lived, thought and behaved. Similar is the case with the ancient history of other countries. Therefore, the problems regarding the mental state of the primitive human being can be studied from two points of view. For one thing, it is a recorded fact of history that those known as the founders of philosophy were concerned not with metaphysical, but with physical problems. Their thinking process was quickened by the observation of certain physical phenomena which affected human existence on this earth. Consequently, the desire to explain those phenomena was aroused, and the result of that desire was the emergence of what is traditionally called the fundamental problem of philosophy.

To-day, we live in a civilised world. We do not always realise how intimately human existence is connected with such natural phenomena as heat, rain, flood, storm, etc. But even to-day, we can realise our intimate connection with nature, if we take the trouble of getting out of the cities and live in the wilderness of the forests or in the mountains; even remote villages will teach us the lesson. There is nothing to protect us there. If we want fire, there may not be any match-box. We shall have to take two pieces of stone and strike them together. Similarly, we come face to face with other elemental physical phenomena in their brutest form. To-day we make fire with gas or electricity or by striking a match. If we go out for a picnic in the woods and forget to take a matchbox along, it will be a fun; to make fire from stones. For the primitive man, it was no fun, it was a matter of life and death. He did not know from

books that fire can be made by striking two stones. He had to find that out in experience. The difficulty of kindling fire whenever he needed it must have made him think that, if there was a permanent source of fire, he could be spared so much trouble. Hence the speculation about the origin of fire. The speculation of the savage ended in the assumption of a god who could spit fire.

Thus began the search; it was not for pure knowledge, not for the satisfaction of the hankering after truth, **the search for truth grew out of the necessities of human life, as it lived on this earth.** And the truth was to be sought in our physical environments, in a piece of stone or a log of wood.

There is another angle of vision for approaching the problem. We can trace the whole line of biological evolution, and see how progressively, here and there, different forms of life came into existence. We can see the difference between the various forms of life. The difference is mainly two-fold; the change in its inner structure and in its behaviour; how the form itself is changing, and how it is reacting to its environments. **The first sign of life itself is a reaction to environment. An inanimate object does not react to its environment.** Only an object with life can do so. Therefore, reaction to environment is the first sign of life.

In course of time, biological evolution produced the form of human being. A new type of reaction is associated with the new form of organism. It is intelligence. Intelligence can be traced in lower organisms also. But it is the distinguishing feature of human reaction to environment. It is no longer a mere mechanical response. Primarily mechanical, now the reaction is associated with the desire to know how it takes place. That original impulse to know is the beginning of science. The word science itself means knowledge. **The spirit of enquiry into every physical phenomenon confronting us is the spirit of science.** It is very easy to see how that spirit gradually develops into the so-called metaphysical approach to things. In search for the cause of physical phenomena, the primitive man is compelled to assume supernatural causes,

because he cannot find simpler, natural ones. Such assumption again is an integral part of scientific enquiry. No scientific enquiry is possible without a hypothesis. In course of the investigation, either the hypothesis is verified, or discarded upon the discovery of the true cause of the phenomenon under investigation. So long as intellectual, and later technological backwardness prevents man from finding out the physical causes of phenomena, metaphysical assumptions are indispensible. But they have no more abiding value than of hypothesis.

The original habit of man to assume supernatural causes of natural phenomena was a manifestation of scientific spirit, the essence of which is the belief that everything has a cause, something cannot come out of nothing.

We are surrounded by a whole series of physical phenomena. Our entire existence depends on those phenomena. Gradually, the human being comes to realise that some control over those would make human life more tolerable and easier. But control presupposes power which can be derived from knowledge. Thus begins the search into the cause of phenomena. Take rain, for example. It comes periodically and fertilises the earth, so that man can grow corn for his food. Sometimes, it does not come, and the corn dries. If man could know how the rain comes, or at least when it can be expected to come, he could cultivate the ground in proper time to avoid the risk of the crops drying out. In that case, he would no longer be a completely helpless victim of the natural phenomenon of rain. If he does not know how rain happens, he cannot anticipate when and in what intervals rainfall may take place. Similarly, with all the other physical phenomena. In the earlier stages of evolution, the store of human knowledge is limited; it is not possible to discover the physical causes of natural phenomena. But the regularity of their appearance is there. Every year, at a certain time, rains fall; always the rivers flow downwards; night falls regularly; the sun rises every day; the moon has its regular phases. On the other hand, the primitive man finds a similar regularity in his own behaviour. Every morning, he gets up; every night he falls

asleep; in regular intervals, he gets hungry. He does not know anything about the biology of his body: he traces all his habits to his own desires. He behaves so, because he wants to do so. From the similarity, a deduction is made. There must be a desire, an intelligent will, behind all these regularities of natural phenomena. The world is full of regular happenings. They are not caused by any human being; they are too big to be so caused; no human being is powerful enough to bring them about. Yet, they must be caused by others—like men, but immensely more powerful. Thus, primitive man makes gods after his own image. It is a long time before human thinking comes to that position. In the beginning, it ascribes a spirit to every physical phenomenon. Ultimately, the spirits are transformed into gods : a rain god, a sun god, a wind god, so on and so forth.

The point is that the belief in the supernatural did not precede the human desire to explain physical environments. **The desire to know itself originates in the desire to live more satisfactorily on this earth.** Therefore, philosophy should not be conceived as something over and above science, as something different from science, dealing with problems which do not affect our life on this earth, but with some transcendental existence. This conception of philosophy is not correct. Philosophy is science. The term philosophy etymologically means 'love of knowledge.' **The philosopher is a lover of knowledge. Men engrossed in the occupation of knowing things were originally called philosophers. They were also the fathers of science.**

In Sanskrit, the word for philosophy is "darshan." Another word was later on added, and it became "atma darshan." Science was called "vijnan." It is said that the object of science is the knowledge of things, and the object of philosophy is to have "jnan," and that true "jnan" is "atma jnan." I do not see any reason to make all these ad hoc assumptions. Etymologically, 'vijnan' means a higner form of 'jnan' that is to say, scientific knowledge is a higher form of knowledge—higher than what is called philosophical knowledge, speculative thought. The term 'vijnan' can also be translated

as special knowledge–knowledge of phenomena, and as such it is placed below ' jnan.' But the fathers of Indian philosophy, Kanad and Kapila, built their system not on metaphysical assumptions, but on an analysis of the physical world. They started with a division of the physical world into categories. The knowledge about the cause of the world was to be deduced from the knowledge about the world itself. That was placing science above philosophy. Philosophy was constructed on the basis of science which, in those ancient days, was bound to be very largely arbitrary.

The relation is clearer in the case of Western philosophy. Thales, the father of Greek philosophy, trying to explain the root cause of the world, held that the cause of physical existence must be physical. He reduced everything to water which he conceived as the ultimate substance. His contemporary Heraclitos reduced everything to fire. The speculative thinkers, primitive scientists, of ancient India reduced the world to 'panchabhuta.' The Upanishads are to be appreciated as a record of a primitive enquiry into the nature of things. By some, fire is held to be the basis of everything; according to others, it is water; still others call it 'bohm' (void); others again reduced everything to 'akash' (ether). The beginning is always and everywhere an attempt to explain the physical world in physical terms, to reduce the natural phenomena to a unitary physical existence.

But the possibility of acquiring new knowledge is necessarily limited by the store of knowledge accumulated previously. The store of knowledge at that time was so very limited that man could not go farther with those preliminary investigations. But life must go on. The gods may not yield their secrets; Mother nature may be very tyrannical and mysterious. Still, life must have something to go by. Hence the necessity of metaphysical assumptions. In the beginning, there was a whole series of such assumptions. Human imagination populated the earth with a whole gallaxy of gods. But the tendency is towards a unitary explanation. The question arose: Who made the gods ? The gods were reduced to one God, and then again, the question arose : Why do things happen in this or that parti-

cular way, and not otherwise ? From that question, there developed again a whole variety of religions, explaining why and how God made things happen in their peculiar ways. Every religion develops a theology. When a God is assumed as the creator of the world, the natural rationalism of human being raises the question : What is the nature of the God ? There must be a science of God himself. That is theology.

Gradually, what is known as religious philosophy developed. Finally, man returns to the position, from where he originally started, that is, scientific enquiry. **Human being starts with science. Baffled in the primitive effort to explain natural phenomena in physical terms, he fells back upon metaphysical assumptions, but in the last analysis, these also are analogous to the hypotheses of scientific enquiry.** In course of experience, the store of human knowledge increases. There comes a time when man finds that he can make fire, for example. He begins to find out how things happen, what are the laws governing those happenings. The steadily accumulating store of knowledge eventually enables him to explain natural phenomena in terms of physics. He comes to know how rain happens; he discovers how the wind blows; the fire-god and the wind-god disappear.

Once upon a time, ignorance, and the necessity for some explanation compel man to assume supernatural causes and create gods. Later on, his own ability to explain natural phenomena in a simpler and more plausible way frees him from the necessity of creating gods. He was the creator of the gods; as he created them, so he has the right to do away with them. That is the spirit of science. What is assumed to-day as the most plausible explanation, is to be taken as true for the time being. But if tomorrow we find that it is not true, or that there is a higher truth, we should not have the slightest hesitation to discard the assumed truth in favour of what we have come to know as the higher truth. Nothing is so iconoclastic as science. There was a time when Newton was belived to have said the last word about the physical world. He was a sort of god or a prophet with the scientists. To-day, he is almost a back-number. So many *mantras* in the older Shastras of science are

to-day meaningless. **Knowledge knows no finality. But it is never really antiquated. Old knowledge becomes the foundation of new knowledge.** It begins with the biological function of human form, the function of intelligent reaction to environment. Ever since that beginning, it progresses endlessly. Science as well a philosophy are coincident with process. **Science is the method of acquiring knowledge; philosophy is systematisation and co-ordination of the knowledge already acquired, as the guide in the search for new knowledge.**

Knowledge cannot be acquired isolated from the physical existence. Whatever knowledge is there, is a part of our physical existence. The biological functions, which are the foundation of all knowledge, are purely mechanical reactions. Nothing supernatural enters into the process of acquiring knowledge. There is brain, a biological mechanism; and physical objects surrounding us. You see your reflexion in the mirror; but if I turn the mirror, the reflexion is no longer there. That is only a physical reflexion. I am looking at your faces, and every expression on every face is reflected in my brain, and my behaviour towards you must be determined by those impressions. That is not the case with the mirror. In my case, the mind intervenes. This intervention has been mystifying. But mind again is nothing but the function of a physical entity called brain. The mirror has no brain. Therefore, it cannot retain the picture. In the case of living beings, there are two mirrors. Just like the inanimate mirror, my eyes reflect your pictures. But behind my eyes, there is a brain which retains those pictures. Our knowledge is nothing more mysterious than the sum total of such impressions caught by the retina of our eyes as well as by other sense organs, and stored in our brain.

"Jnan," in order to be "jnan," must be "vijnan." If the two are to be distinguished, "jnan" is to be identified with simple consciousness. Is it a higher ideal to be simply conscious than to be learned ? To be learned, to know, is certainly a higher stage. Even the most primitive form of life, the amoeba, possesses a primitive form of consciousness. But to acquire the knowledge of various phenomena is the privilege of that

biological form called human being. In lower biological forms, primitive consciousness develops into intelligence in varying degrees. But the capacity to acquire knowledge is the privilege of man. However in a sense, **knowledge is a higher form of consciousness. It is a resultant of consciousness. Consciousness is the most essential property of organisms.** Thus, if "jnan" is to be identified with simple consciousness, then, "vijnan" is to be recognised as a higher property.

Science is a higher thing than philosophy. But philosophy need not be degraded, if it is conceived as the sum total of scientific knowledge. "Jnan" is not superior to "vijnan" by virtue of precedence; it is superior as the synthesis of the various branches of knowledge resulting from the investigation into the difterent aspects of the physical being.

You may ask : what has all this to do with political study ? Why do you talk of these abstract things, when you should talk about politics ? Just on entering the hall, I was told a very amusing story. Some citizens of this town met a friend of ours and asked : "Is it true that Mr. Roy is going to speak today ? A C. I. D. man tells me that Mr. M. N. Roy from Moscow has come here to speak about revolution. "The story depicts the general approach to politics. I was in Moscow when a revolution took place there. I am known to be an admirer of that revolution, to be what is called a revolutionary. So, whenever I speak of politics, I must describe the world going up in flames, or incite incendiarism. That is the general notion of politics. It is a vulgar notion. It is a stupid notion. Politics must be freed from such vulgarity and stupidity, before it can be really useful.

Perhaps you have also come here to hear something about revolution. What is a revolution ? And who is a revolutionary ? A revolutionary is one who has got the idea that the world can be remade, made better than it is today, that it was not created by a supernatural power, and therefore could be remade by human efforts. A revolutionary further starts with the knowledge that the world has been remade time and again, and that the process of

remaking the world takes place of necessity. Those Indians who have felt the necessity of remaking our country, and are convinced that the people of India have the power to do so, are revolutionaries. One cannot be a revolutionary, without possessing scientific knowledge. One must be a scientist to be a true revolutionary. One must have the conviction that not only human beings can remake the world, can make and unmake gods, but ever since the birth of the race have been doing that. Human nature is to set up gods, topple them down and set up new ones.

With the evolution of human society, certain principles of political organisation were formulated. If we believe them to be immutable, the question of remaking the world and reorganising society does not arise. People with such an opinion must regard revolutionaries either as visionaries or as lunatics. But political principles are not abstract conceptions; they are determined by concrete conditions affecting the daily life of man organised in society. On the other hand, they are expressions of those conditions. Therefore, political principles are empirical conceptions, and have only pragmatic value. They affect us as intimately as the concrete conditions of our social existence. We feel the necessity of changing them, whenever the prevailing social conditions affect us adversely. But unless we have the conviction that we have the power to change them, we cannot feel the necessity. If we start from the assumption that everything is preordained and happens according to some inscrutable metaphysical will, how can we conceive of the idea of changing the adverse social conditions, and of revising the political principles in force ? The idea of improving upon the creation of God can never occur to the God-fearing. We can conceive of the idea only when we know that all gods are our own creation, and that we can depose whomsoever we have enthroned. Once we realise that the world is not as it should be or could be, we cannot resist the desire to dismiss the God as a bad craftsman. And we shall not feel any scruple against that iconoclastic spirit, as soon as we know that the God himself was our own creation. That spirit can be had only from knowledge, from what we call science and only from that

kind of philosophy which does not pretend to be something superior to science.

In this lecture, I was to deal with the philosophical consequences of modern science which are supposed to contradict the relation between science and philosophy, as I have just expounded in brief. In order to make more explicit what I wish to convey, I should now take up that treatment. But I am afraid I cannot do that now, because the philosophical consequences of modern science cannot be explained except on the basis of a fairly comprehensive scientific knowledge. I cannot assume that on your part and it cannot be imparted in one lecture. I have been dealing with problems which were before the science of the nineteenth century and earlier. But an understanding of them is a necessary precondition for the understanding of the problems of the twentieth century science. I need not go into the technical aspects of those problems. We are concerned with their philosophical consequences.

The popular notion about the outcome of modern science is that we cannot acquire true knowledge of the physical existence. What is called scientific knowledge, does not at all. reflect what exists outside, being only a creation of our own mind; it is only our imagination. In other words, modern science is supposed to have brought us back to the position, where the old philosophers dismissed the physical world as illusion, and held that the object of human existence was to free itself from that illusion, to merge itself into the supernatural, transcendental existence which is the only reality.

For rounding up the lecture, I shall briefly touch the matter, I shall certainly not avoid the problem; but for obvious reasons just now the approach can be indicated only rather summarily.

The urge with which human being was born, namely, to reduce physical existence to some unitary foundation, culminated in the formulation of the physical theories of the eighteenth and nineteenth centuries. All those theories were constructed on the assumption that all physical events took place on the background of a constantly shifting mass of minute, indivisible, particles of matter which were conceived as the ultimate sub-

stance. They were called atoms. The atomist theory, however, is not an invention of the eighteenth century science. It is as old as science itself, and science is as old as philosophy. It was propounded in Greece by Democritos, and in India by Kanad, almost at the same time. In course of time, the theory was improved by a succession of great thinkers; finally, Newton and later on Dalton, stated it in the modern form. With this hypothesis, physical science made giant strides and could explain one physical phenomenon after another. Endless secrets of nature were revealed, and humanity made perhaps greater progress during two-hundred years than in the entire preceding history.

But now it has been discovered that the atom is not indivisible. It is composed of smaller entities. To make the blow more shattering, in course of a few years, the atom was divided into electrons, and electrons reduced to waves. The waves then presented a new problem : Their dimensions and movements cannot be accurately measured at the same time. These certainly startling revelations have encouraged the speculation about some mystic, metaphysical, cause of the physical world. Some leading scientists have appeared as the prophets of a new religion. They maintain that a considerable part of our knowledge is the product of our own mind. It does not reflect any objective reality outside; so, the claim of science to have proved the reality of the external world must be given up. They say : One has the idea of a tree, but one can never know whether the tree really exists or not; because, the content of the idea is the picture of a tree in the retina and, according to them, there is no way of ascertaining the connection between the picture in the retina and the tree supposed to be there at a distance; the latter may just as well be a projection of the idea. How do we know that the tree is the first and the picture on the retina is the second.?

That is the fundamental problem of epistemology. For ages, philosophy has concerned itself with the question, how knowledge is acquired. In the first place, epistemology is not the whole of philosophy. The confusion was, and is even now, created by the identification of the two. Secondly, real scientific philosophy does not deny the existence of mind, much less

does it underesitimate the subjective content of ideas. There is no such thing as purely objective knowledge. Three things enter into the making of knowledge : The external object, the knower, and the apparatus of cognition, that is, the mind. Without mind, there will be no knowledge. That is nothing new. The mystically inclined modern scientists only tell us that without mind there can be no knowledge. Everybody knows that. Yet, that is supposed to be the philosophical consequence of modern science. On that basis, it is asserted that philosophy is something higher than science. What is it all about, then ? It is maintained that modern science has completely knocked out the bottom of what is called Materialism. If that is so, then, the logical conclusion would be that the world is not a physical entity; that is not governed by physical laws. Are there scientists who would hold this view, and still call themselves scientists ? I doubt. The conclusion goes even farther. It is not possible for human beings to know how the world is built, to discover the laws of physical being and becoming, if there are no such laws, then, the idea of men remaking the world in which they live, reconstructing their social organisation, can never be conceived.

The bottom will be knocked off from all social and political doctrines based on the conviction that the world is constantly changing, and man plays the decisive role in that process. Politics ceases to be a science; social science becomes impossible. The idea of revolution must be discarded. It cannot even be dreamed of.

The question to be answered, then, is; Whether it is true that the philosophical implications of modern science are such as make social science impossible and consequently politics can be the occupation only of lunatics and gangsters. I have already answered the question in the negative. Modern science says nothing more than that one must have a mind in order to know. As soon as that much is said, a whole chain of preconceived ideas holds the thinking process of the average educated man in its tortuous coil. It is like this : Mind is something different from matter; knowledge is not possible without mind; therefore, all knowledge is the creation of mind; and the

physical world is a reflexion of our imagination; there does not exist anything outside our mind; that being the case, wise human beings should not bother with the non-existing world; there is nothing for them to do; they should withdraw into themselves. This merry-go-round, however, is not without a hitch. If nothing really exists, everything being the creation of mind, that is, imagination, your minds are the creation of my mind. Nothing exists but my mind. But the table can be turned. From your point of view, my mind is the creation of your mind. Thus, the minds of all thinkers cancel each other. There remains only absolute nothing—not even someone to imagine a world. None of those neo-idealists, who maintain that modern scientific research has pulled down all the beautiful castles in the air built by a pretentious science, however, would dare go to such an extent to get hopelessly in the vicious circle of Nihilism. Even if they arbitrarily stop at the insanity of solipsism—only mind exists—the position is not improved. The ego cannot exist by itself. I must have a thou. The existence of the ego depends upon that of the non-ego. Therefore, the attributeless god of the mystic—the Nirakar Chaitanya-Swarup of Hinduism—must create or imagine a world to realise his own existence. But the creation must be equally real, if the creator is real. If the world is the creation of the scientist's mind, the former exists just as well as the latter. One cannot run away from his shadow. The devil has got hold of you. It must be taken by the horns. There is no escape from the world, because we are only parts of it.

Let us resume the argument. Everything is the creation of my brain. Granted. Science cannot tell what the mind is. That is not quite true. But again, let it be granted. The mind, whatever it may be, operates through the brain which is a tangible physical entity. No scientist would deny that. Here we come to the older problem : How does the brain function ? Philosophy, in the traditional sense. cannot explain that. Science can. It tells us a good deal about our brain. There may still be much we do not know. But everything we do not know need not be veiled in mystery. Once upon a time we did not know what lightning was. It seemed to be a mysterious phenomenon : It was the flash of the *bajra*—the weapon of the King of Heaven. To-day

we know that it is not the case. Grown-up people may be amused by nursery-tales, but they don't believe them. It is completely irrational and impermissible to maintain that there are things unknowable, simply because our knowledge is defective, because there are phenomena which have not yet been explained. The history of science is the decisive argument against this neo-mysticism, this morbid glorification of ignorance, this revival of the cult of *ignorabimus*, this mathematician's invention of a mathematical God.

Perhaps we may still know very little of the world. Perhaps our ideas of the nature of the physical world will be still more revolutionised. But that should give us the impetus to know more. And that impetus is the essence of life. To know is the *raison d'etre* of humanity. As soon as the biological form with brain evolved, there began the process of knowing. It is an endless process. The circle of our knowledge has been widenning ever since. Perhaps, even the present circle of knowledge embraces only a fraction of the things to be known. But the very vastness of the field of the knowable opens up before humanity the perspective of a real eternity, the eternity of the human spirit. Since the process of acquiring knowledge is associated with the physical entity called brain, mind cannot be a mysterious category, independent of matter, precedent to matter, weaving in its imagination the picture of a non-existing world.

If modern science has given some blows to the arrogance of the nineteenth century science, that has been only for the good. The feeling that there is nothing more to be known will kill the very incentive of life. Because, then there would be nothing to do, and action is the expression of life. But modern science is not a prescription for the suicide of the entire human race; it does not condemn us to death.

A few words about the concrete consequences of modern science before I finish. It is true that the atom is not the ultimate physical entity. It can be broken up into electrons, the latter again being not a stable category. The electron is not a material entity as popularly conceived. Nevertheless, it is a

physical category; otherwise, it could not be brought under the purview of physical research. To measure is the function of physics. All its standards of measurement, even when conceived in abstract mathematical terms, are physical concepts. Therefore, anything that physics can measure or mathematically describe, is a physical category. The electron is one.

Our idea about the structure of the foundation of the world has changed. But the foundation remains a measurable, and therefore a physical, entity–material substance. It is not metaphysical. That is the decisive point.

Moreover, no scientist will maintain that the happenings of this world are not governed by laws. Previously, some laws were conceived as final laws. Now it has been discovered that they themselves are governed by other laws. There is much talk about statistical laws,–of probability, which is supposed to be antagonistic to Determinism. That is simply a confusion of thought. Probability itself is an expression of Determinism. Prediction presupposes causality. When the world is studied as a complex of an infinite number of inter-connected events, one particular event cannot be deduced from any particular cause. In that situation, calculation must be statistical, predictions must be in terms of probability. But the greatest probability, predicted statistically, usually amounts to certainty. Hence all this talk about the end of determinism, or of the mechanistic picture of the world, is sheer extravagance. Science still studies the world as a cosmos a law-governed system–not as a chaos emerging out of nothing. Only, it has been discovered to be a system not made of an inert mass, but of dynamic events. It is not a static being, but a process of becoming.

Human knowledge increases. Growing knowledge, from time to time, discards old hypotheses which have either served their purpose or proved mistaken. For every law discarded, more valid laws have been discovered. That being the real position of modern physical knowledge, there is no ground for the contention that Materialism has been undermined. Science cannot do without the idea that there is a physical foundation,

a measurable entity, to which all natural phenomena can be reduced. Without that idea, science must disappear, because then no knowledge is possible. It has not liquidated itself, by no means. **Indeed, the philosophical consequence of modern science is to abolish completely the distinction between science and philosophy.** The problems reserved for philosophy–of time, space, substance and causality–have come within the jurisdiction of scientific investigation, and have been at last solved. There is no room for speculation about them any longer. Having thus yielded position to science, **philosophy can now exist only as the science of sciences–a systematic co-ordination, a synthesis of all positive knowledge, continuously readjusting itself to the progressive enlargement of the store of human knowledge.** Such a philosophy has nothing in common with what is traditionally known, particularly in this country, as philosophy. A mystic metaphysical conception of the world is no longer to be accorded the distinction of philosophy.

The habit of attributing everything we do not know as yet to something mysterious, is ultimately based on ignorance. Raymond Du Bois, a French scientist of the nineteeth century, defined this modern philosophy in a Latin term, meaning that we do not know anything and shall never know anything. That was to be the sum total of philosophy ! Those who claim that modern science has brought us back to that position, may have their morbid satisfaction. Science does not offer it; nor can it be shared by those who, armed with the conviction that knowledge is power, have undertaken the task of remaking the world. Mysticism is no philosophy for revolutionary political workers. Revolutionary politics must draw its inspiration from scientific philosophy. Without that inspiration, politics becomes the happy hunting ground for demagogues, charlatans and job hunters. Politics cannot be spiritualised. Spiritual or moral politics is often the refuge for cheats and humbugs. We have had our experience.

The scientific mystics and their gullible pupils philosophise with a motive. The motive is to prove that social behaviour is not to be guided by any law, that the evolution of society is

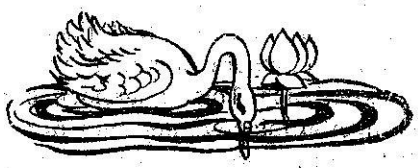
not a determined process, that politics is not a branch of science, that principles of politics are not to be readjusted to the necessities of human existence, and that human society need not undergo revolutions from time to time. All these negative conclusions logically follow from the contention that science has liquidated itself, that the physical world is a chaos or a conglomeration of unpredictable events taking placer none knows why and how. Society, being a small chaos in the midst of the universal chaos, is equally a scene of arbitrary events. It is a rough and tumble in which everybody is fo, himself, the devil taking the hindmost. This 'philosophy' is the foundation of Fascism.

In other words, those who are celebrating the debacle of science and the resurgence of mystic philosophy are trying to create an intellectual bulwark against the rising forces of revolution. The world stands in need of a gigantic change. Science has given confidence to a growing number of human beings that they possess the power to remake the world. Inspired with that confidence, a larger and larger number of human beings are organising themselves as a mighty army to remake the world, to make of it a dwelling place for a happier humanity. To prevent them from doing that, so that the world may remain as it is, namely, a comfortable place for the privileged few, you must deprive them of this confidence. You must tell them that they are automatons, that they are mere slaves of fate, that they are puppets who must act according to the will of somebody constantly pulling the strings from behind the scene. Science to-day enables philosophy to rescue herself from this state of prostitution. The fair maiden of philosophy was prostituted for many years, to serve the interests of the ruling classes, because she did not have the protection of scientific knowledge. To-day, she has regained her godliness.

This distinction between science and philosophy has disappeared. Now, we talk in terms of science, even when we philosophise. Bertrand Russell, an outstanding philosopher and mathematician of our time, says that anybody who pretends to be a philosopher to-day must learn the differential calculus·

Because, he must have the knowledge of the entire realm of science; otherwise, he cannot be a philosopher. Upon the disappearance of the distinction between science and philosophy, the latter appears as the science of sciences. Its function is to co-ordinate the knowledge gathered by science, and to record it into a system of fundamental principles to guide the human race as a whole. Politics being the science of our daily life, of human conduct, there must be an intimate connection between science and philosophy. That has not been realised yet. Therefore, politics has until now been the profession of loafers, lunatics and careerists. But a new breed of professional politicians is growing up. They are just beginning to approach the ideal of philosopher-kings. Only, we shall have not philosopher-kings but philosopher–citizens. That being the ideal of the citizens of the world we want to build, we being revolutionaries wanting to remake the world in such a way, we cannot do without a very deep and profound knowledge of what is science and what is philosophy. We cannot do without realising the intimate connection between science and philosophy and politics. Thus, we shall see that the principles of political philosophy shall not remain abstract principles. They grew out of human experience. This experience changes. Therefore, old principles mustbe rejected, and new ones formulated. Just as general philosophy co-ordinates knowledge acquired in all the various departments of science, similarly political philosophy must co-ordinate the knowledge acquired in the various departments of the social activities of human beings. For that reason, Marxism maintains that politics must have a social and economic basis. What is regarded as the terror of Socialism or the nightmare of Communism or the blasphemy of Marxism. is nothing but a philosophical approach to politics, a scientific mode of solving social problems. It is only our conception of philosophy, of philosophy as the science of sciences : it is the sum total of the entire human knowledge which makes some sense out of politics, and which induces noble and pure, detached and unselfish men and women to take to politics as a profession. Their political activity is motivated by the realisation that there are laws governing human life, as they govern the physical Universe, and that, therefroe, the problems of poli-

tics are to be approached as scientific problems, if political and social ideals are ever to be realised. It is the politics of those who know that man makes the world in which he lives; and has the power to make it over and over again, whenever necessary. Except with revolutionary ideals, politics has no charm for people with a philosophy.



HUMANIST LITERATURE

BOOKS By M. N. ROY (New Reprints)

1.	NEW HUMANISM	Rs. 30/–
2.	BEYOND COMMUNISM	Rs. 30/–
3.	POLITICS, POWER AND PARTIES	Rs. 60/–
4.	HISTORICAL ROLE OF ISLAM	Rs. 30/–
5.	MEN I MET	Rs. 50/–
6.	INDIA'S MESSAGE	Rs. 65/–
7.	NEW ORIENTATION	Rs. 65/–
8.	MATERIALISM	Rs. 85/–

Special rebate 33% for R H subscribers and I R I members

Books about M. N. Roy and Ellen Roy (Commission 25%)

1. The World Her Village, Ed. by Sibnarayan Ray Rs. 50/–
2. Political Biography of M. N. Roy by V. B. Karnik Rs. 124/-

Other Humanist Literature

1. Radical Humanism by V. M. Tarkunde Rs. 32/–
2. People's Plan II Rs. 10/–
3. Draft Constitution of Free India by M. N. Roy Re. 1/–
4. Indian Economic Trends (Proceeding of a Seminar organised R. H. A. Delhi). Rs. 8/–

Roy Memorial Lectures—I. R. I. Publication

1. Rationality of Development Planning by Dr. B. N. Ganguli Re. 1/–
2. Whither Indian Planning ? by B. S. Minhas Rs. 2·50
3. Dissent in the Early Indian Tradition by Dr. Romila Thapar Rs. 3/–
4. Marxism, Pluralism & Orthodoxy by Andre Beteille Rs. 3/–
5. Man in Technological Society by S. H. Vatsyayan Rs. 3/–

Available at the office of

THE RADICAL HUMANIST

B-17, Maharani Bagh, New Delhi - 113 065

and Renaissance Publishers Pvt. Ltd.

15, Bankim Chatterjee Street, Calcutta 73.