IN DEFENCE OF PHILOSOPHY

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AGAINST
POSITIVISM AND PRAGMATISM

by

MAURICE CORNFORTH

1950
LAWRENCE & WISHART
LONDON

By the same author—

SCIENCE VERSUS IDEALISM
An examination of "Pure Empiricism" and Modern Logic

DIALECTICAL MATERIALISM AND SCIENCE

SCIENCE FOR PEACE AND SOCIALISM
(*With J. D. Bernal*)

MADE AND PRINTED IN GREAT BRITAIN BY
CHARLES BIRCHALL AND SONS, LTD.,
LONDON AND LIVERPOOL

PREFACE

THIS BOOK sets out to examine and criticise the work of some of the contemporary representatives of one of the most influential of modern philosophies, the philosophy of positivism. It does so from the point of view of Marxism, dialectical materialism.

It is above all in the United States of America that the positivist philosophy is being energetically propagated today. A number of leading European positivists emigrated to the United States, where their tendencies met and began to coalesce with the typically American philosophy of pragmatism. The result is seen in a considerable output of philosophical writings. In view of the rôle which America plays in world affairs today it seems especially important to take note of such American trends in philosophy.

By positivism I understand an entire tendency in philosophy which, while maintaining that all knowledge is based on experience, says that knowledge cannot reflect objective reality existing independent of experience.

In opposition to this essentially idealist trend in philosophy I defend and expound in this book the principles of dialectical materialism.

It is a sequel to my previous book, *Science versus Idealism*, which was also concerned with the criticism of positivism. It makes the examination of positivism, begun in that book, more complete and up to date. And I have also endeavoured to put right some mistakes which, as I now think, were contained in *Science versus Idealism*, especially in relation to the social rôle of philosophy and the nature of empirical science.(1)

I wish to acknowledge with gratitude:

(1) The help of my wife, Kitty Cornforth, in the writing and revision of all parts of this book, and, in particular, the parts dealing with dialectical materialism;

(2) The assistance of a number of other members of the Communist Party in whose company I have taken part in discussions on Marxism and the natural sciences;

(1) I analysed these mistakes in an article in *Modern Quarterly*, Vol. 4, No. 3, p. 282 ff.

(3) The criticisms made by Howard Selsam and Harry K. Wells, of the Jefferson School of Social Sciences, New York, of the first draft of the chapter on pragmatism;

(4) The criticisms of *Science versus Idealism* contained in reviews of it appearing in the British journal *Communist Review*, the American *Political Affairs*, the Soviet *Bolshevik* and *Problems of Philosophy*, and in the introduction written for the Russian edition by Academician G. F. Alexandrov.

I also gratefully acknowledge the permission of Frederick Muller Ltd., London, and Little, Brown and Co., Boston, to quote from Barrows Dunham's *Man Against Myth* ; of the Clarendon Press, Oxford, to quote from Wallace's *The Logic of Hegel*; of George Allen and Unwin Ltd., London, to quote from J. B. Baillie's translation of Hegel's *Phenomenology of Mind*; and of The Colonial Press Inc., Clinton, Mass., to quote from J. Sibree's translation of Hegel's *Philosophy of History*.

A few paragraphs of Chapter 2 previously appeared in an article on *Marxism and the Development of Philosophy* in *Modern Quarterly*, vol. 3, No. 2, or in a booklet *Dialectical Materialism and Science*, published by Lawrence and Wishart Ltd., London. And a few paragraphs of Chapter 1 and Chapter 6 appeared in an article on *Logical Positivism* contained in the volume *Philosophy for the Future*, published by The Macmillan Company, New York. I gratefully acknowledge the permission of The Macmillan Company to reproduce these paragraphs here.

Page references to quotations from works by Marx, Engels, Lenin and Stalin, by Stuart Chase, William James and John Dewey, as well from all English authors, refer to the English editions of the works in question.

MAURICE CORNFORTH

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INTRODUCTION

EVERYBODY has some kind of philosophy, even though they have never learned to discuss it. Everybody is influenced by philosophical views, even though they have not thought them out for themselves and cannot formulate them. For philosophy is nothing but our most general account of the nature of the world and of our place in it—our world outlook.

But the working out of philosophical views in an exact and systematic way has become a specialised job, undertaken by the trained members of various schools of philosophy. Nowadays it has even become a profession, so that we can speak of "professional philosophers". As a result, much of the discussions of these schools has become largely uninteresting and incomprehensible to everybody but the "professionals" and their coterie.

What is most of all needed, however, is that philosophy should cease to be so specialised—the preserve of the schools—and become the possession of the masses of the people.

This does not mean that it should be vulgarised and made easy. Spinoza, one of the greatest philosophers, said that "all excellent things are as difficult as they are rare". He was right in thinking that excellent philosophy is difficult, but it does not follow that it must also be rare.

What it does mean is that *philosophy must serve the masses of the people by helping them to answer their own problems.*

This is not the aim of the philosophers of the schools. They have tended to become more and more specialised, and more and more remote from the problems and interests of the people. For their part, they look on this as a virtue and think they are painstakingly unravelling the truth—an operation so intricate that only the most highly trained can attempt it. But in reality they are only obscuring and distorting the truth in a maze of conundrums of their own invention.

These conundrums and all the subtleties of the scholastics are not, as they themselves imagine, products of pure abstract thought. If they were, they could be of no possible interest except to other "pure thinkers". But the thinkers and their thoughts are in fact the products of the social order—in our

case, of the capitalist social order. In this way the most metaphysical of their speculations have their roots firmly embedded in material reality. The philosophers of the schools are those who fundamentally accept the social order; they accept its outlook and its valuations and do not seriously challenge it or seek to change it. It is this which determines the character of their philosophical views, their basic theoretical assumptions and approach, their disputes and their problems.

There are a number of schools arguing with one another. But their whole argument fulfils a definite social function. In some cases the philosophical schools elaborate ideas which amount to a more or less direct defence of things as they are. Others know that there is something wrong, but inculcate a passive acceptance of social evils by teaching that they flow from the very nature of things and from the necessary imperfections of mankind. Others express the demand for a change, but sidetrack this into utopian schemes. All, in these various ways, are a force operating in men's minds to make them accept the capitalist order and defend it. And however remote from the common man the philosophical schools may be, their teachings nevertheless do not fail to influence him.

As capitalism has entered upon its last phase –monopoly, the phase of imperialism; and as all its contradictions have become intensified and it has entered upon a state of insoluble general crisis; so its philosophy has become more involved, more abstract, more specialised.

And at the same time one tendency above all has come to the top, and that is to retreat from any point of view which seeks through philosophy to understand the world and our place in it, but to say that the real world is unknowable, that it is the arena of mysterious forces which pass our comprehension. Far from trying to find out how we can advance human knowledge and human action, the philosophers set about explaining the necessary limitations of human knowledge and human action.

This is nothing but the ideological expression of the general crisis of capitalism. Capitalism has reached its limits of development. Within the limits of capitalism men are at the mercy of forces which they can neither understand nor control, and this is reflected in the specialised teachings of philosophers. The consequences of the limitations of the capitalist social order are represented by the philosophers as belonging to the very nature of the world and of the human mind.

All this means that *there has taken place and is taking place a process of the real degeneration of philosophy. Philosophy has become highly specialised, remote from the people, abstract and barren, a doctrine not of the advancement of knowledge but of the limitations of knowledge, not a force for human emancipation but an apology for the existing social order.*

It is against this type of philosophy that this book is written. Against the philosophies of capitalism it defends the philosophy of the struggle for socialism—Marxism, dialectical materialism.

Because of the existing state of "professional" philosophy, many people are asking what is the use of philosophy anyway, and are deciding they have no use for it. But this merely means that they themselves uncritically accept all sorts of odds and ends of philosophical doctrines, including those of the very philosophers they pretend to despise, which operate in their minds without their thinking about it. For everyone is influenced by philosophy, and if they take no interest in it, that merely means that they are influenced by whatever secondhand scraps of it come their way through the schools, the press, the church, the radio and the cinema. To have no use for philosophy means uncritically to accept and to use capitalist philosophy.

Men do need an orientation. And because of the bankruptcy of contemporary "professional" philosophy there are some who are now calling for the revival of all sorts of outworn creeds from the past—such as the philosophy of Plato, or such as "Christian" philosophy, whatever that is conceived to be.

Their desire to escape from the barrenness of the contemporary schools, and to produce a philosophy which will give some conscious orientation to the common man, may be praiseworthy. Nevertheless, by digging for this in the archives of the past they are in effect passing over the achievements of several centuries of human progress, and, in particular, the achievements of modern science. The net result is that they produce an orientation which is the very opposite of a scientific outlook, and leaves men the prey to all sorts of superstitions. It is only another facet of capitalist philosophy. Conscious of the failure of capitalism's professional philosophers, these people turn back and seek for inspiration in the philosophy of the middle ages or of ancient slave society.

The philosophy of the present and the future must build on the foundations of the past. But it must build on them. It must advance our understanding of the world and of human society

on the basis of the discoveries of science and of the experience of the struggle for progress. Only in this way can philosophy meet the needs of the people. And it is just this which Marxism has achieved. *In Marxism, philosophy meets the needs of the people by helping them so to understand the nature of the world and of man's place in it as to be able to change the world and to transform human society—to advance man's dominion over nature and to emancipate mankind from oppression and superstition.*

Marxism, which bases its orientation on the struggle to end capitalism and to advance to communism, sets itself against the barren abstractions of the schools of capitalist philosophy and against those who are seeking to revive dead theories from the past. It unlocks the door of philosophy for the people, and makes alive for them the heritage of the past, by continuing the tradition of philosophical thought which seeks to achieve a rational comprehension of the material world and of history. It is only by striving to change the world that we can understand it, and by striving to improve the condition of man that we can understand human nature.

Marxist philosophy thus stands on the highroad of the development of philosophy, which can only advance as it serves the cause of human emancipation. It is the legitimate successor of all that was best in the philosophy of the past, in contrast to the degenerate philosophical schools of capitalism.

It is for this reason that I have called this book "In Defence of Philosophy". Dying capitalism in its struggle for survival threatens all human values, and we need to defend them. The defence of philosophy and the advancement of philosophy has become the defence of socialist philosophy, that is, of dialectical materialism, just as, indeed, the defence of human culture in general has become the defence of socialist culture.

It is well known that the best method of defence is usually to attack. This is the case in philosophy. Progress and truth is only won in the midst of the struggle against reaction and error. Therefore I attack bourgeois philosophy.

But in this book I have nevertheless not attempted to examine in detail all the various schools of contemporary philosophy. To do that would be a very long-drawn-out affair. I have concentrated on one alone, the school of *positivism*, and of that only on some of its most recent manifestations.

Positivism claims to be an *empiricist* philosophy, that is, a philosophy which says that all knowledge comes from experience

and that nothing can be known by the light of pure reason or intuition independent of experience. Nevertheless, positivism employs its own principles in interpreting experience and interpreting knowledge. And these principles lead to the negative conclusion that we can never know anything of the real external world.

If we are scientific, say the positivists, we can formulate ideas which serve to correlate the sense-data which we receive when we observe things; or, as the particular variety known as *pragmatists* have it, ideas which are found to work, in the sense that we find it pays us to believe them and act on them. But our ideas do not and cannot reflect objective material reality, which exists independent of our thinking of it and experiencing it.

Thus *the central features of positivism as a philosophical tendency are: first, the doctrine that all knowledge must be based on experience, opposition to speculative "system-building"; second, the doctrine that knowledge, based on experience, can serve only to correlate observations or to predict the results of various operations, and cannot reflect objective reality existing independent of experience.*

The positivists have elaborated various theories about the nature of thinking, knowledge, truth, scientific method and language corresponding to this doctrine. The positivist outlook has penetrated deeply into modern philosophy of science in particular, and it includes those philosophical trends and theories known as logical analysis, logical positivism, logical empiricism, semantics and pragmatism. These are the theories which are examined in this book.

I consider these positivist theories to be in essence false and reactionary. What is wrong with them is not that they oppose philosophical "systems" and hold that all knowledge is based on experience. On the contrary, that is quite correct. What is wrong with them is that their denial that knowledge, based on experience, reflects objective reality existing independent of experience leads to their creating new idealist systems and to their disrupting and falsifying scientific thought. I have tried to put the case against them; and the case which I have tried to put against them is the case of Marxism, of dialectical materialism.

Positivism concentrates within itself all the most negative features of bourgeois philosophy—the doctrine of the limitations of knowledge and the unknowability of the real world. At the same time it carries to the

furthest pitch the narrow specialisation of philosophy, scholastic phrase-mongering and barren abstraction. And it issues in views about the natural sciences which serve only the perversion of the sciences to suit the ends of monopoly capitalism, and in views about society which serve exactly the same ends.

Thus it serves as one of the chief and most influential agencies—perhaps the chief one—of capitalist ideology in philosophy. And this makes it particularly worthy of detailed examination.

Both in criticising bourgeois philosophy and in attempting to expound Marxist views, I have made a very liberal use of quotations from the classics of Marxism—the works of Marx, Engels, Lenin and Stalin. Since whenever these works are quoted someone is always sure to start talking about "appeals to the sacred scriptures", it is worth stating briefly why such quotations are necessary in such a book as this.

In the first place, a Marxist is one who, convinced of the correctness of the fundamental principles of Marxism, endeavours to apply and to develop these in theory and in practice. Naturally, therefore, he must seek to make the fullest use of the rich heritage contained in the classical works of Marxism, and continually turns to these for guidance.

In the second place, in these works many things have been said supremely well. Why try to re-state in other terms what has already been so well stated?

In the third place, the statements quoted have been argued and substantiated by their authors in the works to which reference is made. If anyone doubts this, he can turn to the works in question. A Marxist, therefore, in writing about philosophy, or about many other subjects, does not start, as it were, from scratch, but starts from what has already been substantiated in the classical works of Marxism. Marxism is a progressive science, which wins positions and moves forward.

Fourthly, these quotations are intended to be of use to students of Marxism, who must of necessity base their studies on the Marxist classics. They serve to bring out points contained in those classics and to show their relevance and application to contemporary problems.

Lastly, opponents of Marxism do not usually pay much attention to what Marx, Engels, Lenin and Stalin have actually said. They prefer to give their own garbled version of Marxism and then solemnly to discuss its inadequacies and errors.

These quotations are a challenge to such opponents. They are put forward because they provide the basis for cutting the way out of the maze in which bourgeois philosophy is wandering. Let the opponents refute them—they have been trying to do so for years—or else admit the power and truth of Marxist science. And let them reckon with the authentic statements of the founders of Marxism, not knock over Aunt Sallies of their own manufacture.

CHAPTER I

THE LOGIC OF IRRATIONALISM— FROM RUSSELL TO CARNAP AND AYER

1. AGAINST PHILOSOPHICAL "SYSTEMS"

ONE result of the impact of the natural sciences upon philosophical thought has been that as the sciences have branched off from the stream of philosophical systems and developed their own special methods of investigation, so the activity of constructing a purely philosophical "system of the world", standing above the sciences and relying upon speculative and a-priori methods of argument, has become increasingly revealed as futile and unnecessary.

The need for a change in the whole character of philosophy, arising from the development of the natural sciences, was stated long ago and very explicitly by Engels, from the point of view of materialism.

The advance of scientific knowledge, he wrote, led to "a comprehensive view of the interconnection of nature by means of the facts provided by empirical natural science itself." This "finally disposed of" all need for philosophical system-building, and "every attempt at resurrecting it would be not only superfluous but a step backwards".(1)

"Modern materialism", he wrote in *Anti-Duhring*, ". . . no longer needs any philosophy standing above the sciences. As soon as each separate science is required to get clarity as to its position in the great totality of things and of our knowledge of things, a special science dealing with this totality is superfluous. What still independently survives of all former philosophy is the science of thought and its laws—formal logic and dialectics. Everything else is merged in the positive science of nature and history".(2)

A like conclusion as to the futility of the traditional types of system-building has also increasingly forced itself into recognition in bourgeois philosophy. While some of the idealist schools have continued to this day to invent system after system,

(1) Engels, *Feuerbach*, pp. 56-7.

(2) Engels, *Anti-Duhring*, p. 32.

they have as constantly been opposed and criticised by "scientific" empiricists, who have declared that empirical science was the only highway to knowledge.

This was made a leading principle, for example, by Compte, to whom we owe the term "positivism". According to Compte, the "epoch" in which men tried to arrive at a comprehensive view of the world by means of metaphysical speculations was over; henceforth we must cultivate the methods of empirical science, which alone provide "positive knowledge".

The positivistic empiricists, however, in their opposition to philosophical system-building, have regarded the view, expressed by Engels, that empirical science discovered the objective "interconnection of nature", as itself a kind of hangover of past system-building.

Commenting on Engels' statement that "what still independently survives of all former philosophy is the science of thought and its laws", Lenin pointed out that this includes "what is now called the theory of knowledge, which must regard its subject matter historically, studying and generalising the origin and development of knowledge."(1)

The new standpoint of dialectical materialism includes the materialist theory of knowledge, which studies knowledge as the developing social process of the discovery of the interconnections and laws of motion of the real material world.

But far from including in "scientific" philosophy a theory of knowledge which studies and generalises the origin and development of our knowledge of the objective world, *the fundamental feature of the positivist empiricist schools is that they have taken as their basis a theory of knowledge according to which we can know only our own perceptions to exist.*

Impressed by the fact that knowledge has its origin in experience and must be tested in experience, the positivist empiricists have forgotten that experience is itself the product of our practical interaction with external material objects, and have instead regarded it as in itself something ultimate.

Hence they have not regarded the "positive knowledge" which we gain by empirical methods as relating to the objective material world, and as affording a more and more comprehensive view of this world, but they have regarded it as relating simply to our own perceptions. It is perceptions, they say, which are the data of knowledge and the only objects of knowledge: to

(1) Lenin, *On Karl Marx*, Selected Works, Vol. XI, p. 17.

suppose that they are produced by the action of external material things and that they impart information about such things, is itself simply a case of speculation.

Empiricists of this type, then, have come forward and developed their view as "scientific" opponents and critics of all kinds of philosophical systems, and as upholders of empirical science as against speculative philosophy. But they have given an interpretation of science according to which it does not provide knowledge of the objective world, but consists of formulas and rules for correlating observations. And it is this narrow subjectivist standpoint that they have counterposed to the philosophical systems of the past.

Thus, while positivists have opposed philosophical systems, and maintained that it is empirical science that is the road to knowledge, they have interpreted scientific knowledge, not as the knowledge of the interconnections and laws of motion of the objective world, but as restricted to the correlation of empirical data, i.e. sense-data, sensations, perceptions.

2. RUSSELL'S "LOGICAL" METHOD

It was Bertrand Russell who more than anyone else set the pace for the modern development of self-styled "logical" empiricism, by introducing what he termed the method of logical analysis. But in essence he did no more than supply a "logical technique" for reformulating the previous results of empiricist philosophy.

He himself has said as much in the last chapter of his *History of Western Philosophy*, where he writes that: "Modern analytic empiricism . . . differs from that of Locke, Berkeley and Hume by its incorporation of mathematics and its development of a powerful logical technique."(1)

This statement seems quite correct. But when Russell adds: "It is thus able, in regard to certain problems, to achieve definite answers, which have the quality of science . . ." he ventures upon more dubious ground, especially so far as his own contributions are concerned.

According to Russell, philosophy should not attempt to compete with natural science in working out a theory of the universe, or theories about particular parts of it. Past philosophers had mistakenly supposed "that *a priori* reasoning could reveal

(1) Russell, *History of Western Philosophy*, p. 862.

otherwise undiscoverable secrets about the universe."(1) But on the contrary, knowledge was only to be acquired empirically, partly through ordinary perceptions, partly by the refined techniques of natural science. The task of philosophy was, then, to subject the propositions established through ordinary perception and by science to a "logical analysis". The object of this "logical analysis" was to reveal their *exact meaning*, just exactly *what they were about.*

But empiricism had already, two hundred years earlier, given up the attempt "by *a priori* reasoning" to "reveal otherwise undiscoverable secrets about the universe". Hume had already written of every such attempt—"Commit it then to the flames; for it can contain nothing but sophistry and illusion."(2) Following on the work of Locke and Berkeley, Hume thought he had established: (a) that all our knowledge, all our ideas, were founded on the occurrence of sense perceptions, which he called "impressions"; (b) that all our knowledge, all our ideas, could relate to nothing other than those sense-perceptions or impressions.

Russell was right, therefore, to claim for his own analytic method nothing beyond its providing "a logical technique" for developing the standpoint of the empiricism of the past.

"It can be laid down quite generally," Russell wrote, "that, in so far as physics or common sense is verifiable, it must be capable of interpretation in terms of actual sense-data alone."(3) The method of logical analysis provided a technique for working out this interpretation. It provided a technique for saying that whatever our knowledge referred to, whether material objects or our own mental processes, it was always to be interpreted "in terms of actual sense-data alone." The logical analysis showed that whatever we might know, it was always something about sense-data.

Russell has been practising the method of logical analysis for well over thirty years. In *Our Knowledge of the External World*, published in 1914, he worked out an analysis of "the external world" in terms of sense-data, which differed hardly at all from the pure empiricist or positivist "analysis of sensations" produced by Ernst Mach (even without the help of a "powerful logical technique") in 1897.

(1) Russell, *Our Knowledge of the External World*, p. 4.

(2) Hume, *Inquiry Concerning the Human Understanding*, sect. 12.

(3) Russell, *Our Knowledge of the External World*, p. 81.

Incidentally, it is a remarkable fact that one of the very few philosophers of note who are never mentioned in his recent *History of Western Philosophy* is Ernst Mach. Perhaps as so much of what Mach said was repeated by Russell, no such reference was necessary. Another remarkable fact is the slight progress which Russell has made during so long a period of the employment of so "powerful" a method.

In his work on *Human Knowledge, its Scope and Limits*, published in 1948 and representing, presumably, the fruits of a lifetime of logical analysis, Russell has got so far as to distinguish "individual and social knowledge". (1) But he lays it down that "individual percepts are the basis of all our knowledge, and no method exists by which we can begin with data which are public to many observers." (2) How to get from the individual's knowledge of his "private" sense-data to social knowledge of the "public" material world, remains the problem.

Although Russell said that the logical method could "achieve definite answers in regard to certain problems", this "problem" is not one of them. Nor could it be, since it is insoluble. It arises, indeed, only from the tacit assumption of the false positivist view about knowledge. If knowledge could "begin" only with "individual percepts", there could be no knowledge of the "public" objective world.

But knowledge does not in fact have its "basis" in "individual percepts", but is always social, and has its basis in human social activity. Beginning with "individual percepts" you can, as Hume realised, never get beyond "individual percepts"—"We never really advance a step beyond ourselves, nor can we conceive any kind of existence but those perceptions which have appeared in that narrow compass."(3)

How does Russell attempt, by his logical analysis, to solve his insoluble problem?

In his earlier analysis he had accepted that we can know nothing to exist except sense-data, and so had attempted to "construct" the material world out of sense-data—to represent the world as a "logical construction" of sense-data. Now he is having another try.

He begins with the familiar distinction between the "mental" and the "physical", which he defines in a most "logical" if

(1) Russell, *Human Knowledge*, Chapter 1.

(2) *Ibid*, p. 22.

(3) Hume, *Treatise of Human Nature*, Book 1, part II, sect. 6.

unfamiliar way, in terms of "inference". A mental event, he says, is "one with which someone is acquainted otherwise than by inference." And a physical event is one which "if known to occur, is inferred, and which is not known to be mental." (1)

Thus sense-data are "mental events", with which we are allegedly directly "acquainted". What, then, can be inferred about "physical events", with which no one is ever "acquainted"? Only, says Russell, something about their "structure". We are aware of a certain structure of spatial and temporal relations in the field of our private sense-data, and from this we "infer" the existence of events of similar space-time structure constituting the public physical world.

"Physical events are known only as regards their space-time structure. The qualities that compose such events are unknown—so completely unknown that we cannot say either that they are, or that they are not, different from the qualities that we know as belonging to mental events."(2)

As for the justification of this "inference" to the "structure" of a realm of "physical" events whose qualities are unknown, Russell can give no rational account of it at all. Our knowledge of the physical world is said to be based on "postulates" (namely, of the existence of the physical world and of certain features of its structure) which themselves "cannot be based on experience".(3) They are based on a generalisation of what Russell calls "animal expectation". Their justification is not logical but biological. In the course of "the adaptation to the environment upon which biological survival depends" we have formed, he says, certain "inferential habits".(4)

That is all he can say. But, of course, to talk in this way about "the environment" and "biological survival" is itself, according to this way of philosophising, only an exemplification of the same irrational "inferential habit" which it is intended to justify.

So far, then, is Russell, with his "powerful logical technique", from having advanced a step beyond the empiricism of two hundred years ago, that his study of "the scope and limits of human knowledge" ends up with precisely the well-worn

(1) Russell, *Human Knowledge*, p. 265.
(2) *Ibid*, p. 247.
(3) *Ibid*, p. 527.
(4) *Ibid*, p. 526.

irrationalism of Hume. Hume said that there could be no reason whatever for postulating the existence of the external material world, but that we were nevertheless constrained to postulate it by an ineradicable "habit". Russell adds a "biological" explanation of this "habit".

So what is in fact the outcome of Russell's latest "analysis"? It is merely to continue to represent the material world as a "logical construction" out of sense-data. Instead of trying to construct the material world out of sense-data as the "elements" of the world—a method which he borrowed from Mach—Russel now constructs it in terms of the alleged "space-time structure" observed among sense-data—and the objects or events which are "inferred" to have this "structure" are reduced to the status of the unknown.

Russell has gone back another hundred years from Mach, and "infers" the existence of Kant's unknowable "things-in-themselves". Logical analysis now reveals the material world as something utterly unknown and unknowable—a veritable "mysterious universe". We are supposed to "infer"—by means of an "inference", of which no logical but only a biological account can be given—a "space-time structure" for this realm of things-in-themselves, and to construct it out of the spatial-temporal relations with which we are acquainted as holding between sense-data.

I conclude that Russell's "logical method" (which provides the jumping-off point for the various branches of "logical" empiricism I shall be concerned with in this book) is, indeed, as he himself has said, nothing but a method for re-stating the previous standpoint of positivism.

But whereas Russell thinks his "logical method" has brought new power and clarity into the statement of the basic positivist empiricist standpoint, I conclude that the case is rather the opposite. There has taken place, not a progress, but a degeneration of this type of philosophy—a piling up of confusion upon confusion, of obscurity upon obscurity. Such is the inevitable conclusion which emerges if one reads first Hume's *Inquiry Concerning Human Understanding* and then Russell's *Human Knowledge, its Scope and Limits*.

3. POSITIVISM IS NOT A SCIENTIFIC PHILOSOPHY

Positivism sets off from the standpoint that it is futile to construct philosophical "systems": all knowledge must be based

on experience and empirical science is the only road to positive knowledge.

The admirers of positivism point to it as a line of philosophical inquiry which makes a decisive break with the systems of the past and opens up an entirely new—scientific and empirical—development of philosophy.

What the admirers of positivism do not stress, however, are those basic characteristics of positivism which mark it down as anything but a scientific philosophy.

(1) The primary characteristic of positivism is that, in maintaining that empirical science is the only road to positive knowledge, it conceives the task of philosophy as being to interpret and "clarify" the results of science. And it does this on the basis of a theory of knowledge according to which individual percepts are the data from which the whole body of knowledge is derived. On the basis of such a theory of knowledge, scientific knowledge is interpreted, not as knowledge of the interconnections and laws of motion of the objective world, but as restricted to sense-data, their orders, correlations and structures.

(2) It follows that *the essence of positivism is that it always seeks to set limits to the scope and power of human knowledge.*

Whereas scientific inquiry is the means whereby mankind can continually extend their knowledge of nature and dominion over nature; and whereas scientific progress demands that whatever limits are encountered shall be overcome, and science, by developing new techniques and new ideas, has always overcome them; positivism, on the other hand, erects in its philosophical scheme an absolute limit to the scope of scientific knowledge.

(3) Further, because positivism limits knowledge to the correlation of observational data, and sees such data as the starting point of all knowledge, it follows that it can never find the justification of the very scientific methods which it says are the methods of acquiring knowledge, and can give no rational account of these methods.

Starting from the individual data of sense, how can we justify the theory and practice of science?

Positivists are always driven, like Russell, to the invention of all manner of "postulates" to justify scientific inferences, which they have to admit are themselves incapable of rational justification. And in the last resort, like Hume and like Russell,

they come to say that the whole of our understanding of the world is based on nothing better than inborn habits and instincts.

Thus positivism, which restricts the scope of scientific knowledge to the correlation of sense-data and denies the very possibility of knowledge of the objective world, also denies thereby the very possibility of mankind being guided by rational and scientific understanding of the world, and says we are to remain creatures which think and act on the basis of habit. The positivist "logic" in the end gives up logic and substitutes biology for logic (and a rather crude "biology" at that).

(4) *Positivism, which claims to be opening up a new path in philosophy, away from the metaphysical speculations of the system-builders, retains within itself all the elements of metaphysical speculation.*

Interpreting scientific knowledge in terms of the correlation of sense-data, positivism is driven to all kinds of speculative inventions concerning what constitute the "elements" of the known world. Indeed, sense-data themselves—these strange "atoms" of "experience"—are just one such invention. In place of the material world known to science there is invented a metaphysical world of "sense-data", of "elements", of "logical constructions", of "structures", of "inferred" entities of "unknown quality". And the "meaning" and "scope" of the propositions of science is supposed to be made "clear" in terms of all these inventions.

The positivist method in philosophy thus proves itself a fruitful method only for the production of new metaphysical speculations, and not at all, as the positivists claim, for the ending of such speculations. The positivist metaphysics is fully as speculative as any other, and fully as obscure and far-fetched.

(5) Therefore, just like the speculative philosophies of the past, which positivism claims to be supplanting by a new and scientific method in philosophy, positivism itself establishes *a philosophy above science, a new system, which seeks to impose upon the development of science the demands of a philosophical system.*

Positivism seeks to impose upon science its own philosophical interpretation of science. It seeks to legislate for science, laying down what the methods of science must be and what must be the form of all scientific theories, rigidly delimiting the scope and purport of all possible scientific knowledge.

(6) And lastly, in seeking to reduce science to hypotheses about the correlations of sense-data and so denying the possibility of scientific understanding of the objective world and man's

place in it, *positivism not only falsifies but negates science and becomes the ally and support of every form of anti-scientific ideology.*

For science—genuine science, not the "science" of the positivists—is the enemy of superstition and mysticism. Doctrines about the supernatural, dark sayings about the mysterious nature of the universe, views which elevate tradition, authority, intuition and faith above experience and reason—all of these are discarded in the light of advancing scientific knowledge. But if, as positivism teaches, science has after all discovered nothing about the objective world but deals only with the correlation of sense-data, then obscurantism has nothing to fear from science. And so it comes about that obscurantists of all kinds are continually making use of positivist arguments in their fight against science and scientific enlightenment.

The positivist interpretation of science in effect reconciles science and obscurantism, so that the very achievements of science, positivistically interpreted, are turned into arguments against the scientific view of the world and of human nature.

In the same way, every kind of irrationalist view of the world and of human affairs is reinforced by the positivists' "discovery" that scientific method itself is based on nothing but postulates and habits without rational foundation.

4. THE "PRINCIPLE OF VERIFICATION"

In its most recent development, positivism has given birth to the view that the task of philosophy is *the analysis of language*—to what is known as "logical" positivism, or "logical" empiricism. This view arose out of the discussions which in the early twenties of the present century marked the foundation of the so-called Vienna Circle—the beginning of logical empiricism as a definite trend. And of key significance were the views of the Viennese philosopher, Moritz Schlick.

Schlick's standpoint may be understood as arising from the demand for a much more consistent and rigorous application than hitherto of the positivist principle of opposition to philosophical systems.

The system-building philosophers had all tried to say what were the ultimate components of the world, and in their systems they attempted theoretically to construct the world out of these ultimate components. Thus the metaphysical materialists wanted to say that the ultimate components of the world were material particles, and that everything that happened consisted of the

mechanical interactions of particles. Idealists, on the other hand, wanted to say that the ultimate components of the world were spirits, and that nothing was real except the activity of spirit. All such views about the nature of the ultimate components of the world, all such attempts to construct a system of the world, were described by Schlick as "metaphysical".

Positivists, then, had set out to do away with the construction of such systems. They had said that we can know nothing by methods of metaphysical speculation and system-building: knowledge was based upon experience, related to the sense-objects with which we were acquainted in experience, and was to be gained, not by metaphysical speculation, but by the methods of empirical science. But, having got so far, positivists had themselves become metaphysicians. Positivism had itself still to be emancipated from metaphysics. For they had then gone on to say that the ultimate components of the world were the *sense-data* with which we were acquainted in experience, and to construct their own "system of the world" as *a world of ordered sense-data*. Such, for example, was the philosophic system which emerged from such a work as Mach's *Analysis of Sensations*. Such was also the philosophical system contained in Russell's *Our Knowledge of the External World, Analysis of Matter* and *Analysis of Mind*.

Schlick and the Vienna school were undoubtedly quite right in thinking that positivism still contained a large element of "metaphysics". What they set out to do was to purify positivism of "metaphysics", to expunge from it the last traces of system-building.

Schlick insisted that the requirements of a strict empiricism must rule out any kind of "metaphysical" system of the world. Philosophy should not attempt a metaphysical "construction" of the world out of any kind of ultimate components. And he put forward a quite simple formulation of the requirements of empiricism, calculated to rule out "metaphysics".

Whatever was said must be capable of verification (or falsification) in experience, said Schlick. In other words, one must always be able to say, with regard to any statement, what kind of experience would verify it or what kind of experience would falsify it: and one must be able to suggest a method whereby one could, theoretically at least, proceed to test, in experience, the truth or falsity of one's statements.

"Metaphysical" statements are, said Schlick, statements of a

kind which cannot be verified or falsified in experience. With regard to any "metaphysical" statement one must ask—what difference would it make to my experience if this statement were true or false? If it turned out that it would make no difference either way, then the "metaphysical" character of the statement was thereby exposed.

For example, what difference would it make to my experience if the world were ultimately composed of bodies or of spirits? Schlick pointed out that for both metaphysical materialists and metaphysical idealists the experience which they conceived to be produced, in the one case by the interaction of bodies, in the other case by the interaction of spirits, was exactly the same. It was, in fact, a case of "a rose by any other name would smell as sweet". Whether the rose was "really" a body or a spirit, it smelt just the same. Hence the truth or falsity of such metaphysical statements made no difference whatever in experience. Hence there was no possible way of telling whether they were true or false. They were idle statements, a mere playing with words—meaningless.

Following up this formulation of the requirement of strict empiricism—that every statement must be capable of verification in experience, and that a sentence which is not capable of verification in experience is meaningless—it was Schlick who first formulated the principle that "the meaning of a statement is its method of verification." And from this principle he drew the most rigorous conclusions about the future tasks of philosophers, and the meaninglessness of past philosophy.

It followed, according to Schlick, that only statements of fact and scientific statements had meaning. For only such statements were verifiable—and their meaning was given by their mode of verification in experience. The statements usually made by philosophers, therefore—statements which were neither statements of matter of fact nor empirical generalisations of natural science—were all meaningless.

This conclusion about the meaninglessness of philosophy was summed up by Wittgenstein as follows:

"The right method of philosophy would be this. To say nothing except what can be said, i.e. the propositions of natural science, i.e. something that has nothing to do with philosophy: and then always, when someone else wished to say something metaphysical, to demonstrate to him that he had given no meaning to certain signs in his propositions. This method would

be unsatisfying to the other—he would not have the feeling that we were teaching him philosophy—but it would be the only strictly correct method."(1)

Schlick himself expressed it in an even briefer and more oracular form. "No more books will be written about philosophy, but all books will be written in a philosophical manner."(2)

What he intended to convey was evidently that the task was not to construct philosophical systems, speculating about the ultimate constituents of the universe, but the task was to formulate scientific statements "clearly", i.e. in a way which clearly exhibited their mode of verification in experience.

The question which has now to be asked concerning Schlick's purification of positivism from metaphysics is whether he did in fact succeed in purifying it of metaphysics. And the answer is, that he did not.

The principle of verification was a reformulation of the positivist principle that philosophy interprets the propositions of natural science. For positivism, scientific knowledge is founded on the data of sense and its subject matter is the data of sense. The components of the known world, its ultimate components, are, therefore, sense-data. Schlick pointed out, quite rightly, that this was a "metaphysical" view—the formulation of a philosophical system. But all he did was to substitute a metaphysical concept of "experience" for the metaphysical concept of "sense-data".

Schlick's principle of verification—which simply said that the meaning of every statement was its mode of verification in experience—elevated the individual's "experience" into a metaphysical absolute. This "experience" became the ultimate reality, of which, as Hume said, "let us chase our imagination to the heavens or to the utmost limits of the universe, we never . . . can conceive any kind of existence but those perceptions which have appeared in that narrow compass."

Wittgenstein's *Tractatus Logico-Philosophicus* succeeded in underlining the metaphysical character of the view of "experience" as the ultimate reality, and also in expressing the fact that this view was not only metaphysical but "mystical".

"What solipsism(3) means is quite correct," wrote

(1) Wittgenstein, *Tractatus Logico-Philosophicus*, 6.53.

(2) Schlick, *Communication to the 7th International Congress of Philosophy*, 1930.

(3) Solipsism is the view that I can know nothing to exist except what occurs in my own experience.

Wittgenstein; and added: "only it cannot be said, but it shows itself. . . . Solipsism", he continued, "strictly carried out coincides with pure realism. The 'I' in solipsism shrinks to an extensionless point and there remains the reality co-ordinated with it."

He then found something essentially mystical in the contemplation of this limited, solipsistic "reality". "The contemplation of the world *sub specie aeterni* is its contemplation as a limited whole. The feeling of the world as a limited whole is the mystical feeling."(1)

Schlick's absolute experience, invoked in the principle of verification, thus becomes an object of metaphysical contemplation "sub specie aeterni", and the "clarification" of the propositions of natural science leads, not to rational understanding, but to "mystical feeling".

5. THE LOGICAL SYNTAX OF LANGUAGE

Schlick said that "no more books will be written about philosophy." But seldom can any master have made a statement which was more speedily falsified by his followers.

In Wittgenstein's *Tractatus Logico-Philosophicus* the metaphysical character of Schlick's anti-metaphysical views was already startlingly demonstrated. Wittgenstein had already revealed that Schlick's attempted reform of positivism was a system of subjective idealism. And with Wittgenstein this subjective idealism was already carried to its logical conclusion in solipsism.

But Schlick's followers in the Vienna circle, and especially Rudolf Carnap, attempted to write their books in a different "philosophical manner". Schlick himself, and Wittgenstein, were regarded in the Vienna circle as representing "the right wing". The so-called "left wing", led by Carnap, tried to do better.

Theirs was a double endeavour.

First, they could not rest satisfied with Schlick's deduction from the principle of verification that there could be no philosophical propositions. Clearly, philosophers would continue to enunciate philosophical propositions; and if meaningless "metaphysics" was to be avoided, it was necessary to discover the nature of *significant* philosophical propositions.

In the second place, they wished to find a way of developing empiricist philosophy which would finally rid it of the sub-

(1) *Ibid*, 5.62; 5.64; 6.45.

jectivism and solipsism which had haunted it for two hundred years and which no positivist philosopher had so far succeeded in exorcising.

Carnap did not find much difficulty in defining what field was left for philosophic inquiry by Schlick's principle of verification, and, therefore, in defining the subject matter of philosophical propositions.

The principle of verification had the effect of directing attention upon *language*, upon the "logic of language". The metaphysical statements of philosophers were criticised, not on the grounds that they stated anything dubious or false, but on the grounds that the philosophers had put words together in what critical scrutiny revealed to be senseless ways, so that their statements were unverifiable and therefore stated nothing. The criticism of metaphysics was therefore based on the critical analysis of language; and similarly, if philosophy helped to clarify the methods of empirical science and the meaning of scientific statement, this, too, was done on the basis of analysis of language.

The rightful field of philosophic inquiry was, then, the logical analysis of language. Philosophers had been wrong in speculating philosophically about the nature of the world: that only led to senseless metaphysics. Their rightful task was the analysis of the language in which empirical facts and generalisations about the world were stated. "A philosophical, i.e. a logical, investigation must be an analysis of language," Carnap wrote.(1)

But once the subject matter of philosophy has thus been marked off—namely, logical analysis of language—then, argued Carnap, we can immediately define the nature of philosophical propositions, as distinct from empirical scientific propositions. Schlick and Wittgenstein were mistaken in saying that philosophical propositions were senseless, and that only empirical scientific propositions had sense. Philosophical propositions about the metaphysical nature of the world were senseless; but philosophy should not deal with the metaphysical nature of the world but with the logical nature of language.

Carnap, therefore, introduced a distinction which he considered fundamental for philosophy—a distinction between two classes of statements. On the one hand were statements of fact and of natural science, which had to be verified in experience

(1) Carnap, *Unity of Science*.

and whose meaning was given by their method of verification. On the other hand were statements of the analysis of language. The first, Carnap called "object statements", the second "logical statements". Philosophical statements were not object statements, but logical statements.

Having got so far, Carnap began further to delimit the nature of "logical" statements. A logical or philosophical statement can make no reference to "objects" whatever, but only to symbols—words. It is about language, and not about what language is about. Hence the logical analysis of language, which is now identified with philosophy, can make no reference to the relationship between symbols and the objects they symbolise—no reference, that is to say, to "meanings". It deals exclusively with the relations of symbols with symbols in the logical structure, or syntax, of language. To refer to the relation of symbols and objects symbolised is to start using an "object language" in philosophy and is to lapse into metaphysics.

Philosophical statements, said Carnap, were to be regarded, therefore, as statements of logical syntax. The essence of logical syntax, according to him, was its "formal" character. "No reference is made to the meaning of the symbols or to the sense of the expressions, but simply and solely to the kinds and order of the symbols with which expressions are constructed."(1)

By this double reduction of philosophy—first the reduction of its subject-matter to logical analysis of language, and then the reduction of logical analysis to syntax, excluding any reference to meaning—Carnap thought that he had not only mapped out a clear field for "logical" positivist philosophy, but had finally rid that philosophy of all taint of metaphysics, and of subjectivism and solipsism in particular.

Throughout its whole history, positivism has been trying to escape from subjectivism. Positivists have continually interpreted knowledge in a subjectivist way, and as continually have tried to elude the subjectivist implications of their own analytical interpretations. Carnap considered that escape from subjectivism was now effected, because his philosophy ruled out any interpretation of knowledge whatever. His philosophy could not be accused of limiting the reference of scientific statements to Hume's "narrow compass" of the individual's sense-data, because it refused to say anything at all about the meaning of

(1) Carnap, *Logical Syntax*, p. 1.

statements but confined itself to investigating their syntactical forms and syntactical relations.

This was to lay the family ghost by refusing any longer to speak about it. Its howls, wails and clanking of chains as it stalked the eerie corridors of the positivist moated grange were to be ignored as meaningless.

6. THE THEORETICAL POVERTY OF LOGICAL POSITIVISM

Bertrand Russell, endeavouring to supply a "powerful logical technique" for developing the positivist empiricism of Locke, Berkeley and Hume, had stated that "logic is the essence of philosophy."(1) Carnap, endeavouring further to purge empiricist philosophy of every "metaphysical" element, had narrowed down Russell's dictum by the addition that "logic is syntax".

What is most immediately striking about Carnap's conception of philosophy is its extreme poverty. It reduces the subject matter of philosophy to the consideration of the way statements are expressed, without any reference being allowed to their meaning, i.e. to what is expressed in statements, i.e. to the relation of thoughts and things. We must not think about the world we live in, but only about the syntax of our language. This is to deprive philosophy of its whole content, and is a programme for the impoverishment of thought.

This theoretical poverty of "logical" positivism shows itself especially in two respects—in relation to the "analysis of science" and in relation to logic.

(a) Carnap regarded the task of "analysis of science" as the chief task of philosophy. This "analysis" was reduced to the analysis of scientific language. Questions of the meaning and validity of scientific statements were accordingly ruled out. The only account that could be given of science was that it was a changeable "system of sentences", which had continually to be "brought into agreement"—the "agreement" being defined by the syntactical relations of each scientific sentence to the other sentences of the system. The "correctness" of any scientific theory depended on how it could be fitted into the existing system of scientific sentences, and on nothing else.

This result was expressed by Carnap's colleague, Neurath, as follows:

"Sentences are to be compared with sentences, not with 'experiences', not with a 'world', nor with anything else. All

(1) Russell, *Our Knowledge of the External World*, Chapter II.

these senseless duplications belong to a more or less refined metaphysics, and are therefore to be rejected. Every new sentence is confronted with the totality of sentences which are present and which have been brought into agreement. Then a sentence is called correct if it can be brought into the system. Whatever we cannot systematise is rejected as incorrect. Instead of rejecting the new sentences we can also, wherever we find it generally difficult to make a decision, alter the whole system of sentences until the new sentence can be included. . . . In the present theory we always remain within the realm of speech-thinking."(1)

This account of science is based on nothing but a formal "analysis of the language of science". It completely disregards the content of science. It completely disregards the actual process of the development of scientific knowledge and the discoveries of science which reveal the interconnections and laws of motion of the real world. In this respect it is a philosophy more speculative, and more remote from science, than any previous speculative philosophy has ever been. The outcome of the logical positivist interpretation of science is the absolute divorce of philosophy from science.

This is not to say, however, that the logical positivist ideas are not connected with certain trends in the sciences, are not without influence in science and have not been largely applied in some of the recent formulations of scientific theory.

But what does this mean ? Simply that logical positivist ideas reflect and assist the trend towards formalism in scientific theory, which is alien to the development of science as real knowledge of the external world.

The logical positivist views correspond, in fact, to the formalist trend in modern science. It is not demanded that scientific theories should present a comprehensible picture of the interconnections and laws of motion of the real world, but solely that they should contain formulæ, with rules for using these formulæ, which are in "agreement" with observational statements (called "protocol statements" in the logical positivist jargon).

Such formalism is uppermost at the present day in physics. Thus Dirac, for instance, says that it is impossible to "form a mental picture" of objective physical processes(2), and the

(1) **Neurath,** ***Sociology in Physicalism*****:** ***Erkenntnis.*** bd. ii, p. 403.

(2) **Dirac,** ***Quantum Mechanics,*** Preface to 1st ed.

physicist should not try to do so. The aim of physics is to work out formulæ which will enable the results of experiments to be calculated, but which cannot be "understood", and which no-one should try to understand, in the sense of their contributing to such a "picture" of the real physical world.

It is just this collapse of science into formalism which is expressed in the logical positivist "philosophy of science".

(b) In the sphere of logic, the view that "logic is syntax" led to the conclusion that the principles of logic are purely arbitrary and conventional, so that the "logic" we adopt is entirely a matter of free choice.

This conclusion was dignified by Carnap with the name of a principle—the "Principle of Tolerance": "We have in every respect complete liberty with regard to the forms of language; both the rules for construction of sentences and the rules of transformation (the latter are usually designated as 'postulates' and 'rules of inference') may be chosen quite arbitrarily. . . .

"Let any postulates and any rules of inference be chosen arbitrarily. . . ."(1)

Here again, in the sphere of logic, *the logical positivist views correspond to an extreme formalism in logical theory. The principles of logic are not regarded as the instrument of valid thinking about the real world, but are to be worked out in a purely formalistic way, as symbolic constructions.*

The conclusions which logical positivism reaches in relation to both science and logic reveal it as a form of irrationalist philosophy. The attempted purging of positivism from metaphysics has only precipitated it into the morass of irrationalism. The agreement of scientific theory with the real world is denied, together with the practical test of that agreement. The very principles of rational thinking—the principles of logic—are made to depend on the arbitrary choice of the syntactical rules of language.

The burden of these conclusions of logical positivism is the impotence of science and reason as instruments of knowledge and their complete pointlessness in relation to the struggle for human welfare.

And just this is what is meant by the term "irrationalism".

7. PROFESSOR AYER SUMS UP

I conclude this chapter with a reference to the work of Professor A. J. Ayer—not because he has contributed anything

(1) Carnap, *Logical Syntax*, p. x.

new to the corpus of contemporary positivist doctrine, but because the bankruptcy of this philosophy in Britain is indicated by the fact that Professor Ayer is now regarded as its foremost representative. He has even earned himself the title of the *enfant terrible* of British philosophy. Perhaps he deserves it on account of his terribly childlike faith in the teachings of Russell, Wittgenstein, Schlick and Carnap.

Professor Ayer himself says that his *Language, Truth and Logic* "has achieved something of the status of a text-book."(1) At the end of this text-book he naïvely remarks: ". . . there is nothing in the nature of philosophy to warrant the existence of conflicting philosophical parties or 'schools'. . . . Accordingly, we who are interested in the condition of philosophy can no longer acquiesce in the existence of party divisions among philosophers. For we know that if the questions about which the parties contend are logical in character, they can be definitively answered. And, if they are not logical, they must either be dismissed as metaphysical, or made the subject of an empirical enquiry."(2)

So Professor Ayer thinks that "party divisions among philosophers" have come to an end because the philosophical party of Wittgenstein and Carnap, to which he belongs, says that all other parties talk nonsense. He says that philosophy must reject all metaphysical system-building, must leave the investigation of matters of fact to empirical science, and must confine itself to the analysis of language. By this formula he thinks that the logical positivist school, of which he is a follower and populariser, has put philosophy on a new basis above schools and above parties.

Ayer takes his stand on the "rejection of metaphysics"—of "the metaphysical thesis that philosophy affords us knowledge of a reality transcending the world of science and common sense"(3) and "the superstition . . . that it is the business of the philosopher to construct a deductive system."(4) Metaphysics, he says, is "literally senseless"(5), because it consists of propositions which are neither "analytic" nor are capable of verification in experience.

(1) A. J. Ayer, *Language, Truth and Logic*, 2nd ed., p. 5.
(2) *Ibid*, p. 133-4.
(3) *Ibid*, p. 33.
(4) *Ibid*, p. 46.
(5) *Ibid*, p. 45.

A proposition can have meaning, he insists, only (1) if it is analytic, in the sense that "its validity depends solely on the definitions of the symbols it contains [1], or (2) if it states some fact or hypothesis verifiable in experience, i.e. if it is an empirical statement.

Empirical statements, he explains, are such as to satisfy the criterion of verifiability, which means that they function as "rules for the anticipation of future experience"[2]. They always "refer ultimately to our sense-contents"[3], and can always "be translated into propositions about sense-contents."[4] "Sense-contents" is Ayer's word for what Russell called "sense-data" and for what Mach called "the elements" of experience. . . According to Ayer, the propositions of non-metaphysical philosophy are analytic statements about the kinds of symbols used in empirical statements. Philosophy is about words and consists of "definitions or the formal consequences of definitions."[5] As such, it performs a necessary service of "clarification and analysis".[6] It "clarifies" our empirical knowledge by translating it "into propositions about sense-contents".

The "clarification" and "definitive" answer to questions given by Ayer's non-partisan philosophy is to say that everything of which we can form any conception—the whole "choir of heaven and furniture of earth," in Berkeley's phrase—is a "logical construction" out of "sense-contents".

As for "sense-contents" themselves, they are defined "as a part of sense-experience".[7] They do not "exist", says Ayer, they "occur". "When we say that a given sense-content or sense-experience exists, we are saying no more than that it occurs."[8] Everything that exists is a logical construction out of sense-contents which occur as a part of sense-experience.

It appears from this that in Ayer's philosophy sense-experience, consisting of the occurrence of sense-contents, is the ultimate reality, the metaphysical absolute, to which everything that exists is to be reduced, in terms of which all knowledge is to be translated. And from this it also appears that all Ayer's talk about the rejection of metaphysics, like all the similar talk of

(1) *Ibid*, p. 78.
(2) *Ibid*, p. 151.
(3) *Ibid*, p. 151.
(4) *Ibid*, p. 59.
(5) *Ibid*, p. 57.
(6) *Ibid*, p. 51.
(7) *Ibid*, p. 122.
(8) *Ibid*, p. 123.

those from whom he learned it, is so much sham. This positivist doctrine of sense-experience as the ultimate reality is pure speculative metaphysics, however it may be disguised as an "analytic" doctrine about "language".

Expounding the metaphysical theory of sense-contents, Ayer explains that the realm of sense-experience is beyond and above such mundane distinctions as that between the mental and the physical.

"The answer to the question whether sense-contents are mental or physical is that they are neither; or rather, that the distinction between what is mental and what is physical does not apply to sense-contents. It applies only to objects which are logical constructions out of them. But what differentiates one such logical construction from another is the fact that it is constituted by different sense-contents, or by sense-contents differently related."(1)

This, of course, is intended to answer the objection that to reduce everything to parts of sense-experience is subjective idealism. Oh no, says Ayer; sense-contents are not subjective, they are not "mental". Far from sense-contents being mental, the mind itself is nothing but a logical construction out of sense-contents.

This "definitive answer" for simpletons was first thought of at the end of the last century by Ernst Mach, who called it "neutral monism". The question which neither Mach nor Ayer have answered is the question: Can sense-contents ever "occur" except as part of the sense-experience of some sentient organism? Of course they cannot. Therefore Mach and Ayer are saying that all those external objects whose existence is reflected in the sense-experience of sentient organisms are nothing but "logical constructions" out of the parts of the sense-experience in which they are reflected. And this is subjective idealism—a definite school, a definite party in philosophy. It is a much discredited party—so much discredited, that those who belong to it will go to any length of verbal trickery to make out that they do not belong to it.

As for "material things", the objects of the external material world, Ayer says that "the existence of a material thing is defined in terms of the actual and possible occurrence of the sense-contents which constitute it as a logical construction."(2)

(1) *Ibid*, p. 123.
(2) *Ibid*, p. 123.

Thus "to speak about material things is, for each of us, a way of speaking about sense-contents, . . . each of us 'constructs' material things out of sense-contents."(1)

Having said this, Ayer once again goes into contortions in an effort to "prove" that he is not a subjective idealist.

"But although it is a fact that a sense-content cannot by definition occur without being experienced, and that material things are constituted by sense-contents," he explains, "it is a mistake to conclude, as Berkeley did, that a material thing cannot exist unperceived. . . . There is, indeed, no contradiction involved in asserting the existence of a material thing which is never actually perceived. For, in asserting that the thing existed, one would be asserting only that certain sense-contents would occur if a particular set of conditions relating to the faculties and the position of an observer was fulfilled; and such a hypothetical proposition may very well be true, even though the relevant conditions are never fulfilled."(2)

In this passage Ayer does less than justice to Berkeley, who more than two hundred years ago gave an identical "explanation" of how material things could "exist unperceived". Referring to the table in his study, Berkeley explained that although it was, to use Ayer's terminology, a "construct out of sense-contents", nevertheless there was a clear sense in which he could say that the table existed even when he was not perceiving it—"meaning thereby that if I was in my study I might perceive it, or that some other spirit actually does perceive it."(3) Similarly it may be said that the mountains on the other side of the moon "exist"—"meaning thereby" that although no-one has ever yet perceived them, it may be supposed that when men go round the moon in a rocket they will perceive them.

There is literally no disagreement whatever between Ayer and Berkeley on this score. What the subjective idealist Berkeley denied was not that there was a sense in which material things could be said to "exist unperceived", but was their "*absolute* existence . . . without any relation to their being perceived."(4) And this is what Ayer denies, too.

(1) *Ibid*, p. 65.

(2) *Ibid*, p. 140–1.

(3) Berkeley, *Principles of Human Knowledge*, 3.

(4) *Ibid.*

Without originality but, according to his own account of it, "with more passion than most philosophers allow themselves to show"(1), Professor Ayer has summed up the teachings of modern positivism.

Tricky to the last, Professor Ayer even says that the positivist doctrines he expounds are not positivism. The "positivist verification principle," he declares, says that statements have meaning only when some experience could "conclusively" verify them. But yet there are many meaningful statements which can never be "conclusively" verified. Such a statement as "All men are mortal," for example, is verified every time someone dies, but yet is never *conclusively* verified; for, however many people may die, it is never conclusively shown that there are still not some men living who will never die. Therefore, says Professor Ayer, "we dissent" from "the positivist verification principle" and adopt the verification principle in "a weakened form", which allows that verification need not always be "conclusive".(2)

"We dissent" from positivism, says Ayer. And yet there is not a positivist, living or dead, who would not "dissent" with him.

Positivism, says Ayer, stands above parties in philosophy. But in philosophy there is the party of those who say that material things are constructs out of sense-experience and that therefore the existence of material things is dependent on the existence of sense-experience, and the party of those who say that the existence of sense-experience is dependent on the existence of material things. Positivism is a partisan of the one party against the other. Its non-partisanship is a trick to conceal a party policy.

Ayer tries to make out that the teachings of positivism are unassailable because they are "analytic". They "do not describe the behaviour of physical, or even mental, objects; they express definitions, or the formal consequences of definitions."(3)

Thus he "defines" a "material thing" in terms of the actual or possible "occurrence of sense-contents", and from this "definition" draws "the formal consequence" that "material things are constituted by sense-contents". This conclusion is unassailable, he then declares, because it is the formal consequence of a definition. A material thing is *by definition* a construct out of sense-contents—just as a professorship in

(1) A. J. Ayer, *Language, Truth and Logic*, 2nd ed., p. 5.
(2) *Ibid*, p. 135.
(3) *Ibid*, p. 57.

philosophy, for example, is by definition a post held in a university. There can be no possible argument about it

This is an example of the way positivist philosophy has taken refuge in scholastic word-mongering. Of course, you may define words however you like, but the question remains as to whether your words bear any relationship to real things. For example, one might define capitalism as a system for securing the greatest happiness of the greatest number by means of the free play of private enterprise—but the question would remain as to whether this definition did or did not correspond to the actual reality of capitalist society. When Ayer defines material things as constructs out of sense-contents the question remains as to whether this definition fits the material things with which we have dealings in our actual experience. For if one ceases to write down definitions of imaginary "constructs" and attends to the lessons of practical life, then it is evident that material things have absolute existence independent of their being perceived, and that the positivist "definition", with all its "formal consequences", is nothing but a piece of scholastic trickery.

In summing up the doctrines of positivism, Ayer has at least succeeded in exposing very clearly their real character.

He makes it clear that, however disguised by "logical" phraseology, *positivism is a metaphysical system of subjective idealism*, which teaches that the world is nothing but a "logical construction" which "each of us constructs" out of our sense-experience.

He makes it clear that *positivism is a system of verbal trickery*, which evades the issues of the real relations of things by scholastic quibbling about words.

And he makes it clear that *positivism is a system of irrationalism*, which side-tracks logic into formalistic definitions and science into "anticipation of future experience", denying the power of reason and science to create tools of thought and action which can win knowledge of the objective world and power to change the world.(1)

(1) One of Professor Ayer's chapters is devoted to the "Critique of Ethics". I will comment on this aspect of the positivist teaching in Chapter 9.

CHAPTER 2

DIALECTICAL MATERIALISM

1. DIALECTICAL MATERIALIST CONCEPTION OF LAWS OF CHANGE AND DEVELOPMENT

I REFERRED in the last chapter to the theoretical poverty of logical positivism. It rules out from philosophy all consideration of the nature of the objective world, and similarly of the thought processes through which we build our knowledge of the objective world. It succeeds only in reducing philosophy to a barren, abstract and formal analysis of language.

The Task of Philosophy

But *philosophy is the attempt to understand the nature of the world and our place and destiny in it. The task of philosophers has always been to enrich this understanding and to generalise its conclusions.* This is what the great systematic philosophers of the past essentially tried to do. And the measure of their greatness has always been the extent to which they succeeded in expressing in their philosophical generalisations the totality of social experience and scientific discovery available at their time. This explains, incidentally, why it is always impossible either to appreciate or criticise them except on the basis of a consideration of the historical circumstances which at once conditioned the way their problems were presented and the way they set about solving them.

The positivists, and particularly the latest "logical" positivists, explicitly reject the classical aim of philosophy to give an account of the world and of man. They reject philosophy because they separate it from science and from life. They begin by saying that whatever we can know about the world and about human society is expressed in the propositions of the natural and social sciences, and that philosophy has nothing to do with either—it is concerned with analysis of language, a particular, specialised study. Then from this analysis of language they go on to say that the sciences can reveal nothing about the objective world—about the objective laws of motion and interconnection in nature and society—but are concerned solely

with the correlation of observational data. Thus their rejection of philosophy in the classical sense is at the same time a rejection of scientific knowledge. When they reject philosophy as an account of the nature of the world and of human society, they are at the same time rejecting science.

In opposition to positivism, it is necessary to reinstate the classical aim of philosophy. But not in the sense of inventing new philosophical systems. Their time is indeed past. There can no longer be room for any philosophy standing above the sciences and claiming to base a universal system of the world on principles different from those employed in empirical scientific investigation.

What is required of philosophy is rather *that it should draw its principles and conclusions from the sciences themselves; that it should be a generalisation of the sciences, based on the sciences and continually enriched as the sciences advance; and that it should at the same time itself become a weapon of the sciences, a method penetrating the sciences and guiding the strategy of scientific research and the formulation of scientific theory.*

And in contrast to the systems of the past, whose aim was confined to interpreting the world, such a philosophy has the aim of showing how men can effectively change the world. "The philosophers have only interpreted the world in various ways; the point, however, is to change it."(1)

In the course of its gigantic development in modern times, the scientific method of investigation has been extended to cover field after field, so that no part, no aspect of nature or of human society is closed to scientific investigation. There have been scored major achievements of scientific analysis—the analysis of complexes into their constituents, of macro-processes into micro-processes. And from this development of science in its entirety has emerged the conclusion that neither the world as a whole nor any of its parts can be regarded, as both scientists and philosophers tended to regard it in the 17th and 18th centuries, as something whose general nature was fixed and static—given once and for all; but that the world as a whole and everything in it is subject to the laws of change and takes part in a historical process of development.

From the static conception of nature as the eternal repetition of the same kinds of processes, in which the same kinds of things keep on repeating the same kinds of movement, science has

(1) Marx, *Theses on Feuerbach*, XI.

advanced to evolutionary conceptions. Evolutionary ideas have taken possession of one field after another—for instance, in the theories of the origin and development of the solar system, and likewise of the stars and of the galaxy; in geology, which traces the history of the evolution of the earth's crust; in another way in chemistry, with Mendeleyev's periodic scheme of the elements; in biology, with the theory of the evolution of organic species; and in the various conceptions of the stage-by-stage evolution of human society.

From all this, then, stands out a fundamental task of philosophy, which is *to generalise from the sciences the conception of the laws of change and development manifested in nature and society; and in discovering these most general laws—the laws of dialectics—to provide the sciences with a theoretical instrument, a method, for the prosecution of their researches and for the theoretical formulation of the laws of motion operative in their particular spheres.*

Again, the advance to evolutionary conceptions in science, which expressed the discovery of the real evolution in nature and society, coincided with the development of industrial capitalism in the late 18th century and in the 19th century. But this coincidence was no mere coincidence: it expressed a causal connection. The rise of industrial capitalism and of the industrial bourgeoisie, which supplanted the earlier manufacturing and mercantile phase, not only set science new problems to answer and directed inquiry into new fields, arising from the transformation taking place in all spheres of production; it bred the conception that in human society and throughout the whole of nature nothing was permanent and fixed, but everything was in process of change—that a continual forward movement was the law of the universe.

This meant that in every sphere science looked for, and found, not fixity but process.

"The bourgeoisie," wrote Marx and Engels, "cannot exist without constantly revolutionising the instruments of production, and thereby the relations of production, and with them the whole relations of society. Conservation of the old modes of production in unaltered form was, on the contrary, the first condition of existence for all earlier industrial classes. Constant revolutionising of production, uninterrupted disturbance of all social conditions, everlasting uncertainty and agitation, distinguish the bourgeois epoch from all earlier ones. All fixed, fast frozen relations, with their train of ancient and venerable

prejudices and opinions, are swept away, all new-formed ones become antiquated before they can ossify."(1)

These were the conditions which gave rise to the conception of a universal evolution in nature and society. And thus *the task of philosophy, to generalise the laws of change and development, follows, not only from the discoveries of the sciences, but from the whole complex of the movement of modern society in its entirety.*

But more than that. This problem of philosophy is no mere academic problem of generalisation, but takes on a peculiar practical urgency.

The bourgeoisie has continually revolutionised the instruments of production, and enormous new powers of production are placed at the disposal of society. But capitalist society is rent with contradictions. While production has become socialised, it is still subjected to private, capitalist appropriation.

"In this contradiction, which gives the new mode of production its capitalist character, the whole conflict of today is already present in germ," wrote Engels. "The more the new mode of production gained the ascendency in all decisive fields of production and in all countries of decisive economic importance, pressing back individual production into insignificant areas, the more glaring necessarily became the incompatibility of social production and capitalist appropriation. . . . The contradiction between social production and capitalist appropriation became manifest as the antagonism between the proletariat and the bourgeoisie . . ." and again as "the antagonism between the organisation of production in the individual factory and the anarchy of production in society as a whole. The capitalist mode of production moves in these two forms of the contradiction immanent in it from its very nature."(2)

It results that men in capitalist society face a contrast between the enormous new powers of production at their disposal and their apparent lack of ability to control and organise them. Instead of leading to universal plenty, the growth of the powers of production leads to recurrent economic crises, to unemployment, to poverty and to hideously destructive wars.

This means that *the philosophical problem of generalising the laws of change and development becomes the problem of so understanding the forces at work in the processes in which we ourselves are involved that we are able to master them. The problem of finding how to interpret*

(1) Marx and Engels, *Manifesto of the Communist Party*, Ch. 1.

(2) Engels, *Anti-Duhring*, pp. 304–307.

the world becomes the problem of finding how to change it. Philosophy must cease to be the intellectual exercise of men of learning and must become the possession of the masses, their theoretical weapon, in their struggle to end the conditions which oppress them and to find the road to emancipation.

Marxism, the French Materialists and Hegel

Bourgeois philosophy succeeded in recognising the fact of universal evolution, but it could do no more than speculate about its laws.

In the chapter on "Dialectical Materialism" in his *Feuerbach*, Engels wrote:

"The great basic thought that the world is not to be comprehended as a complex of ready made things, but as a complex of processes, in which the things apparently stable, no less than their mind-images in our heads, the concepts, go through an uninterrupted change of coming into being and passing away in which, in spite of all seeming accidents and of all temporary retrogression, a progressive development asserts itself in the end—this great fundamental thought has, especially since the time of Hegel, so thoroughly permeated ordinary consciousness that in its generality it is scarcely ever contradicted."(1)

This "great fundamental thought" of the universality of change and development, and of the progressive character of development, as development from lower to higher, is the highest point reached by bourgeois philosophy. It is the starting point of the philosophy of dialectical materialism. So far as latter-day positivism is concerned, on the other hand, it has beaten a wholesale retreat from such a standpoint.

The central achievement of Marx and Engels in philosophy, their discovery, was the discovery of the dialectical laws of the processes of change and development taking place in the real material world; and this was at the same time the discovery of the dialectical method of the scientific understanding of those processes.

The philosophy of Marx and Engels cannot be understood as merely a continuation, or synthesis, of the work of their predecessors. In posing, as they did, philosophy's problem of generalising the laws of change and development in nature and society, and in finding the way to solve this problem, they effected a veritable revolution in philosophy—*they left the old philosophy behind them, and began a new, scientific philosophy.*

(1) Engels, *Feuerbach*, p. 54.

But, of course, their discovery did not come out of the void. The way for it was prepared by the most progressive achievements of the previous bourgeois philosophy; and these were, on the one hand the mechanistic materialism of the great French philosophers of the 18th century, on the other hand the philosophy of Hegel.

The French mechanistic materialists sought to embrace everything, including man and all his spiritual activities, in a single mechanistic system of the universe. They started from the static view of nature typical of the mechanistic science of the 17th and 18th centuries; but this did not stop them from being pioneers in the conception of evolution.

Thus, for example, the mechanical materialist Condorcet advanced the conception of the progressive movement of human society through stages whose development followed definite laws, and he endeavoured to correlate these stages with corresponding advances of production technique. Diderot taught the inseparability of matter from motion. And the highest achievement of the French mechanistic materialism was the "zoological philosophy" of Lamarck, who based his theory of evolution on the conception that the nature of the living organism was determined by its environment.

Thus the philosophy of the French mechanistic materialists led to the conclusion that the world and everything in it was in continual process of change and development, and that this process proceeded by laws that could be discovered by science and formulated with strict scientific accuracy. Yet this conclusion was in contradiction to their conception of the universe as a mechanical system. They could recognise development, but the mechanistic categories which were their tools of thinking would not suffice to explain it.

Hegel, on the other hand, contributed to philosophy his conception of dialectics.

"Everything that surrounds us may be viewed as an instance of dialectic," he wrote. "We are aware that everything finite, instead of being stable and ultimate, is rather changeable and transient; and this is exactly what we mean by that dialectic of the finite, by which the finite, as implicitly other than what it is, is forced beyond its own immediate or natural being to turn suddenly into its opposite."(1)

(1) Hegel, *Encyclopaedia of the Philosophical Sciences*; *Logic*, Ch. VI, 81. Translated by William Wallace.

But when Hegel said that everything was "an instance of dialectic", he did not conceive of the laws of dialectics as being primarily the laws of change and development of the material world. He conceived of dialectical movement rather as the property of thinking; and thinking he made into an absolute—God—somehow existing apart from the material world, but creating the material world and realising itself in it. Thus if "everything finite" was, as he put it, "radically self-contradictory", and was always "forced to turn suddenly into its opposite", this was because "its concept" was self-contradictory: the thing which realised that concept could not, therefore, be stable, but must eventually turn into something else.

Thus in the last analysis, according to Hegel, to understand the laws of motion of the processes which occur in the world requires, not the investigation of those processes themselves, but, as he put it, the "speculative" working out of the concept of which they were the materialisation. Hegel announced that what he called "the speculative stage" of thinking was the highest stage of all, and that "speculative truth" was the highest truth. "Speculative truth", he added, "means very much the same as what, in special connection with religious experience and doctrines, used to be called mysticism."(1)

Hegel's conception of dialectics was, then, a mystical one. For him the laws of dialectics expressed the self-movement of the "Absolute Idea", which was universal thought, transcending every finite mind, creating the real world in space and time, manifesting various aspects of itself in the temporal process, and driving forward "world history".

"According to Hegel", Engels writes, "dialectics is the self-development of the concept. The Absolute Idea does not only exist—where unknown—from eternity, it is also the actual living soul of the whole existing world. . . . According to Hegel, therefore, the dialectical development apparent in nature and history, i.e. the causal interconnection of the progressive movement from the lower to the higher, which asserts itself through all zig-zag movements and temporary set-backs, is only a miserable copy of the self-movement of the Idea going on from eternity, no-one knows where, but at all events independently of any thinking human brain.

"This ideological reversal," he continues, "had to be done away with. We (i.e. Marx and Engels) comprehended the

(1) *Ibid*, 82.

concepts in our heads once more materialistically—as images of real things, instead of regarding the real things as images of this or that stage of development of the Absolute Idea. Thus dialectics reduced itself to the science of the general laws of motion, both of the external world and of human thought. . . . Thereby the dialectic of the concept itself became merely the conscious reflection of the dialectical motion of the real world and the dialectics of Hegel was placed on its head; or rather, turned off its head, on which it was standing before, and placed on its feet again."(1)

Because of the upside down, idealist way in which Hegel conceived of dialectics, Engels pointed out, "in its Hegelian form this method was unusable."(2)

Marx and Engels by no means practised the Hegelian method. What they did was precisely stated by Engels, as follows:

"The revolutionary side of Hegelian philosophy was taken up and at the same time freed from the idealist trammels which in Hegel's hands had prevented its consistent execution."(3)

For Marx and Engels, the laws of dialectics were not the laws of the self-movement of the Absolute Idea but the laws of the self-movement of material processes; and the dialectical method was not the method whereby the human mind could put itself in accord with "universal mind", but the method for the scientific understanding of the processes of the material world.

This development of the revolutionary side of Hegel's philosophy, and freeing of the dialectical method from its idealist trammels, was in philosophy a discovery of epoch-making importance, namely, the discovery of how to comprehend the processes of the real material world in a consistently materialist way. And so, too, it marked the carrying to completion of what the earlier materialist philosophers had attempted, and had failed to do on account of the mechanistic limitations of their thinking.

The discovery of Marx and Engels showed how to understand real processes of development scientifically. This does not mean that it provided any set of formulæ (three, four or any number of "laws") which represented the complete and final formulation of the dialectical conception of the world. For no genuine discovery is ever a final and absolute truth, but is rather the starting point for a new development of scientific understanding. The discovery of Marx and Engels provided, not the complete

(1) Engels, *Feuerbach*, p. 53.

(2) *Ibid.* (3) *Ibid.*

and final truth about the laws of motion of nature and history, but a basis for developing our scientific understanding of them.

In this way, too, it signified the decided rejection of the old aim of philosophy—which was the aim of the mechanistic materialists no less than of Hegel—to work out a universal system of the world.

"As soon as we have realised", Engels wrote, "that the task of philosophy thus stated means nothing but the task that a single philosopher should accomplish that which can only be accomplished by the entire human race in its progressive development—as soon as we realise that, there is an end of all philosophy, in the hitherto accepted sense of the word. One leaves alone 'absolute truth', which is unattainable along this path or by any single individual; instead, one pursues attainable, relative truths along the path of the positive sciences, and the summation of their results by means of dialectical thinking."(1)

Materialism versus Idealism in the Conception of Change and Development

The scientific value of the method of Marx and Engels can be appreciated, in a general way, by considering the conceptions of universal change and development advanced by various philosophers since Hegel and since Marx.

According to Hegel everything was in process of change and development, and this development happened "because the universal mind at work in the world (the 'world spirit', *weltgeist*) has had the patience to go through these forms in the long stretch of time's extent, and to take upon itself the prodigious labour of the world's history."(2)

According to Herbert Spencer there was a process of universal evolution, which he described as "a change from a less coherent form to a more coherent form, consequent on the dissipation of motion and integration of matter. This is the universal process through which sensible existences, individually and as a whole, pass during the ascending halves of their histories."(3) He thought there might also be a "descending" half afterwards.

But why this process of the increasing "integration of matter"? Herbert Spencer could assign no characteristic of matter to account for it, and so concluded that: "We are obliged to regard

(1) *Ibid*, p. 25.

(2) Hegel, *Phenomenology of Mind*, translated by J. B. Baillie, p. 90.

(3) H. Spencer, *First Principles*, Part II, Chap. 14, section 115.

every phenomenon as a manifestation of some Power by which we are acted upon," and which he described as "Incomprehensible" and "Omnipresent"—both with capital letters in deference to this remarkable Power, the consciousness of which was, he said, "that consciousness on which Religion dwells".(1)

Bergson was another philosopher who had a conception of universal evolution. He also put it down to a mysterious force, immanent in the universe—the *elan vital*, or life force. Bernard Shaw also believes in this "life force", invoking it to account for everything, including the interesting behaviour of the heroines of his plays and the effect of this behaviour on his heroes.(2)

Fairly recently a school of philosophy has emerged in England, calling itself "Emergent Evolution". According to Samuel Alexander and C. Lloyd Morgan, who were the leaders of this school, the universe exhibits a progressive process of the "emergence" of higher forms of organisation of matter from lower forms of organisation. From the physical level of organisation emerges the chemical level, then life, then human society. Each level presents new qualities and new laws of motion.

But for these philosophers the fact of emergence was always a mystery: they could assign no features of the lower levels of organisation which might lead to new qualities emerging. Thus Samuel Alexander said that emergence was always inexplicable, and had to be accepted, quoting a phrase of Wordsworth, "with natural piety". In line with this, he thought some new and inexplicable development would one day happen to mankind, and suggested that this might be the emergence of the quality of "deity" amongst men. Lloyd Morgan said we could only acknowledge the presence of some immanent force at work in the world, which he identified with God.(3)

More recently still, A. N. Whitehead has worked out a philosophy of "process", in which he ends up by seeing all

(1) *Ibid*, Part 1, Chapter 5, section 27.

(2) See *Man and Superman*, Act IV:

ANNA: . . . You do not love me.

TANNER: (*seizing her in his arms*) No, it is false. I love you. The life force enchants me.

(3) See S. Alexander, *Space, Time and Deity*; C. Lloyd Morgan, *Emergent Evolution*.

processes as exemplifying the "ingression of Eternal Objects" into the world of space and time.(1)

All these philosophies, which cover a period of over a century, have it in common that they invoke spiritual or incomprehensible principles of some sort - the World Spirit, an unknown Power, the Life Force, God, Eternal Objects—to account for the processes of development which happen in the real world. Hegel, at the beginning of the list, Whitehead at the end, are distinguished by their saying that the nature of the transcendent reality which they invoke—the Absolute Idea and the realm of Eternal Objects respectively—can be grasped, at least in its essentials, by human reason. But although they say this, they are unable to make good what they say. The others are content, without a struggle, to let the incomprehensible remain so, merely affixing their various labels to it, much as if the distinguishing feature of the philosophy of each was that each wrote the letter "X" in a different coloured ink.

In all these philosophies some fantasy, some transcendental principle, is invoked to account for the development that happens in the world. This is as much as to say that they fail to grasp how this development can be understood scientifically, and what are the forces of development. Such is the essential feature of the idealism which characterise all these evolutionary philosophies.

In contrast to this, Engels states the aim of the materialist approach of himself and Marx. They adopted, he states, "the materialist standpoint. That means it was resolved to comprehend the real world—nature and history—just as it presents itself to everyone who approaches it free from preconceived idealist fancies. It was decided relentlessly to sacrifice every idealist fancy which could not be brought into harmony with the facts conceived in their own and not in a fantastic connection. And materialism means nothing more than this."(2)

In the dialectical materialist method, the discovery of Marx and Engels, "the materialist world outlook was taken really seriously for the first time and was carried through consistently—at least in its basic features—in all domains of knowledge concerned."(3)

The discovery of the dialectical materialist method was the discovery

(1) See Whitehead, *Process and Reality*.

(2) Engels, *Feuerbach*, p. 53.

(3) *Ibid.*

of how, without idealist fancies, to understand scientifically the real processes of development of the material world in nature and society.

2. THE METHOD OF DIALECTICAL MATERIALISM

What, then, is the essence of the dialectical materialist conceptions which Marx and Engels introduced in place of idealist fancies in the understanding of processes of development?

In the first place, universal features of real processes of development are presented—not as part of a speculative philosophical system but on the basis of generalising the scientific empirical study of real processes of development exhibited in the world.

In the second place, the dialectical method is then presented as the method of thinking which has to be adopted if we are to deal with processes of development as they actually happen.

Hence the principles of the dialectical method are necessarily two-sided, on the one hand generalising the objective laws of development, on the other hand formulating a method of investigation.

Principal Features of the Marxist Dialectical Method

In the *History of the Communist Party of the Soviet Union (Bolsheviks)*, Stalin summed up "the principal features of the Marxist dialectical method" under four heads.[1]

And characteristic of this, the clearest and most comprehensive presentation of the philosophic discoveries of Marx and Engels, is the fact that under each head there is presented, first the statement of some universal feature of material processes, and second the statement of a methodological conclusion about the way scientifically to investigate and understand material processes. For the dialectical method is a method of scientific investigation and understanding, based on the appreciation of universal features of the real material world. And the statement of these universal features is not presented as the statement of a speculative philosophical system, but as the basis of the dialectical method of understanding real processes of development scientifically.

I shall summarise Stalin's summary only very briefly, since it is well known to all students of Marxism.

(1) Things and processes do not exist unconnected with and

[1] See *History of the C.P.S.U.(B)*, pp. 106–9.

independent of each other but "are organically connected with, dependent on, and determined by, each other."

Therefore "no phenomenon in nature can be understood if taken by itself", but only "if considered in its inseparable connection with surrounding phenomena, as conditioned by surrounding phenomena".

(2) Change is a universal feature of the world. There is always "renewal and development, where something is always arising and developing, and something always disintegrating and dying away."

Therefore phenomena must be considered "not only from the standpoint of their interconnection and interdependence, but also from the standpoint of their movement, their change, their development, their coming into being and going out of being."

(3) Development is "not a single process of growth", but quantitative changes pass into "open, fundamental qualitative changes", which are "a leap from one state to another". Such changes do not occur accidentally, "but as the natural result of an accumulation of imperceptible and gradual quantitative changes."

Therefore development is always to be understood "as a transition from an old qualitative state to a new qualitative state, as a development from the simple to the complex, from the lower to the higher."

(4) "Internal contradictions are inherent in all things and phenomena of nature." And "the internal content of the process of development, the internal content of the transformation of quantitative changes into qualitative changes" lies in "the struggle of opposite tendencies which operate on the basis of these contradictions."

Therefore development is only to be understood, not "as a harmonious unfolding of phenomena", but as arising out of the struggle of opposite tendencies which operate on the basis of the internal contradictions inherent in all phenomena of nature.

Stalin here quotes a statement of Lenin, taken from his *Philosophical Notebooks*: "In its proper meaning, dialectics is the study of the contradictions within the very essence of things."

In his notes *On Dialectics*, Lenin wrote that "the condition for understanding processes of development" was "the recognition . . . of the contradictory, mutually exclusive, opposite tendencies in all phenomena and processes of nature, including mind and society. . . .

"Development is the struggle of opposites," he continued. And without this conception it was impossible to discover "the driving force" of development, which therefore remained obscure, or was put down to something external, such as God.

Lenin wrote that the conception of dialectical contradiction was the key conception of the dialectical method, for it "alone furnishes the key to the self-movement of everything in existence; it alone furnishes the key to the leaps, to the breaks in continuity, to the transformation into the opposite, to the destruction of the old and the emergence of the new. The unity of opposites is conditional, temporary, transitory, relative. The struggle of mutually exclusive opposites is absolute, just as development and motion are absolute."(1)

Summing up the entire significance of the materialist method of dialectics, Lenin stressed that the philosophical discoveries of Marx and Engels led to a richer and more comprehensive conception of processes of development.

"The revolutionary side of Hegel's philosophy was adopted and developed by Marx," he wrote. ". . . Nowadays the idea of development, of evolution, has penetrated the social consciousness almost in its entirety, but by different ways, not by the way of the Hegelian philosophy. But as formulated by Marx and Engels on the basis of Hegel, this idea is far more comprehensive, far richer in content than the current idea of evolution. A development that seemingly repeats the stages already passed, but repeats them otherwise, on a higher basis ('negation of negation');—a development, so to speak, in spirals, not in a straight line;—a development by leaps, catastrophes, revolutions;—'breaks in continuity';—the transformation of quantity into quality;—the inner impulses to development, imparted by the contradictions and conflict of the various forces and tendencies acting on a given body, or within a given phenomena, or within a given society;—the interdependence and the closest, indissoluble connection of *all* sides of every phenomenon (while history constantly discloses ever new sides), a connection that provides a uniform, law-governed, universal process of motion—such are some of the features of dialectics as a richer (than the ordinary) doctrine of development."(2)

It is precisely this richer, more comprehensive conception of processes of development that contributes to their scientific

(1) Lenin, *Selected Works*, Vol. XI, pp. 81–2.

(2) Lenin, *On Karl Marx*, *Selected Works*, Vol. XI, p. 17.

understanding, and removes the need for inventing idealist fancies to account for processes of development.

Thus the conception of the contribution of all the past stages to every new phase of development—of the interconnection of all sides of every process, which combine to produce every new phenomenon—of the transformation of quantitative into qualitative changes, by a break in continuity—of the impulses to development imparted by the contradictions contained within every process of nature and history—*these conceptions are the instruments, the method, for understanding the course of development in terms of scientifically assignable factors operating within the material world itself, without appeal to the unknowable or the supernatural*

There is then no need to put world history down to "the prodigious labour of the World Spirit." There is no need to appeal to any "incomprehensible and omnipresent Power". There is no need to postulate a "life force". There is no need to suppose that "Eternal Objects" ingress into the world. Nor is there need to accept the emergence of new qualities "with natural piety", since the causes of the emergence of the new can be assigned in the many-sided development of the old—in the transformation of quantitative into qualitative changes, resulting from the operation of the internal contradictions within the pre-existing system of changes.

This is not to say that dialectics gives some formula for working out from first principles the complete explanation of everything that has happened in the past and predicting everything that will happen in the future. Far from it. Nothing can be explained from first principles, but only from the empirical investigation of the facts; and prediction is necessarily limited, both in scope and accuracy, by the limitations of present knowledge. What dialectics does is *to provide the method for seeking an explanation, and for so understanding the real factors operating in the real world as to be able, not so much, or not only, to foretell the course of the future, but to shape and control it.*

For example, according to the idealist notions of Samuel Alexander the past development of the world can never be explained. But dialectical materialism teaches that it *can* be explained—not by philosophic speculation, but by the methods of empirical investigation guided by the dialectical conception of the factors of development. According to the same idealist notions, the future is shrouded in darkness, but we are permitted a happy vision of the emergence of the quality of deity. But

dialectical materialism teaches that when we understand the real forces of historical development we can shape and determine the future—not by waiting for men to turn into gods, but by creating the material conditions for human freedom.

Dialectics versus Mechanism

At the same time as the dialectical method cuts out idealist fancies from the conception of development, it overcomes the limitation and narrowness of the old type of mechanistic materialism.

The conceptions of dialectics are opposed to those of mechanism. But what is the essence of the mechanistic approach to phenomena? A good deal of confusion exists on this question among scientists and philosophers.

Typical is the definition of "mechanism" given in a recently published book on philosophy: "Mechanism is the theory that all phenomena can be reduced to the laws of matter in motion."(1) This definition confuses mechanism with materialism and materialism in general with mechanistic materialism. All materialists, including dialectical materialists, hold that everything that exists is an exemplification of the laws of motion of matter; but dialectical materialists are not mechanists. Mechanism is a particular, restrictive, metaphysical view about matter and its laws. The mechanist conceives the motion of matter exclusively as mechanical motion.

In its purest and simplest form, mechanism is a metaphysical speculation about the material world, which is conceived as consisting of discrete particles, distributed through space and interacting in time. The mechanist assumption is that each particle has certain definite properties, such as its position, mass, velocity, and so on; that the particles interact according to certain definite and eternal laws; that the motion of a particle never changes except as a result of the action of some outside force; and that everything that happens can be reduced to this type of interaction, i.e. to the mechanical interaction, of particles. All the changing qualities which we recognise in matter are, then, nothing but the appearances of the basic mechanical motion of matter.

The essence of mechanism is not that it reduces all phenomena to the laws of matter in motion, but that it reduces all the motion of matter to mechanical motion, i.e. to the simple

(1) Hector Hawton, *Philosophy for Pleasure*, p. 204.

change in place of particles as a result of the action on them of external forces.

So mechanism seeks to reduce the whole range of motion of matter to one form of motion. It teaches that whatever new may arise in the process of development can be new only in appearance, in reality it is but a continuation of the old. Development is reduced to repetition—to decrease or increase of the same kind of motion. Lenin contrasted the dialectical to the mechanistic conception when he wrote: "The two basic conceptions of development are: development as decrease and increase, as repetition, and development as a unity of opposites."(1)

More generally, the mechanistic approach shows itself as a theoretical method which seeks to reduce all happenings to the results of external action. It seeks to analyse every process into the sum of the movements of separate parts, acting externally one on another. It sees all processes as consisting of the interactions of a number of distinct and separate factors strictly external one to another, and whatever develops out of such a process as the resultant of such interactions. This is the essence of the mechanistic approach in biology, for example, and in historical and sociological studies.

And it follows that mechanism, which has elaborated the concept of a strict determinism governing the outcome of every process of interaction, also gives rise to the concept of a pure spontaneity or chance. In so far as it is difficult to assign an external cause for certain happenings, they are written off as uncaused or spontaneous. Thus physicists talk of the spontaneity or "free will" of the electron, while biologists talk of the random occurrence of "mutant genes". The concept of indeterminism is as much an integral part of the mechanistic approach as is the opposite concept of determinism. For mechanism, change is either externally determined, or else it is spontaneous and undetermined.

From the point of view of dialectical materialism it is necessary to correct, in the first place, the mechanist conception of matter as "inert"—the idea that every motion of matter is the response to some external force.

This step was already being taken by the great materialist philosopher Diderot when he wrote:

"A body, according to some philosophers, is, in itself, without

(1) Lenin, *Selected Works*, Vol. XI, p. 82.

action and without force. This is a terrible error, contrary to all sound physics and to all sound chemistry; a body in itself, by the nature of its essential qualities, is full of action and of energy, whether one considers it molecule by molecule or whether one considers it in the mass.

"In order to represent motion to yourself, they add, you must not only conceive of existing matter, but also of a force acting upon it. That is not the case: the molecule endowed with a quality proper to its nature is in itself an active force. . . .

"Again, some say, in order that matter should be moved an action, a force, is necessary. Yes, a force either exterior to the molecule, or else inherent, essential, intimately a part of the molecule, constituting its nature. . . . Force which acts on the molecule exhausts itself; force which is a part of the molecule does not exhaust itself. It is immutable, eternal."(1)

In opposition to mechanism, which separates matter from motion, and regards matter as indifferent to motion and motion as something impressed on matter from outside, the dialectical method embraces the conception of the inseparability of matter and motion. It holds that motion is the mode of existence of matter, and refuses to separate matter from motion, or space and time from matter in motion.

In the second place, in opposition to the metaphysical, mechanist conception of the world as a complex of "ready-made things", each with its own fixed properties, and interacting with other things, the dialectical materialist method embraces the conception of the world as a complex of processes in which all things arise, have their existence, and pass away; it insists that everything must be studied in its movement and in its inseparable connection with other things.

And this involves, too, the conception of the inexhaustibility of the properties of matter. In Lenin's words: "The 'essence' of things, or 'substance' . . . expresses only the degree of profundity of man's knowledge of objects; and while yesterday the profundity of this knowledge did not go beyond the atom, and today does not go beyond the electron and the ether, dialectical materialism insists on the temporary, relative,

(1) Diderot, *Philosophic Principles on Matter and Motion* (1770). The whole of this remarkable essay, in which Diderot approaches the formulation of the principle of the conservation of energy, is worth close study.

approximate character of all these milestones in the knowledge of nature gained by the progressing science of man. The electron is as inexhaustible as the atom, nature is infinite.. . . "[1]

In the third place, in opposition to the mechanist conception of the reduction of all forms of movement of matter to a single, ultimate mechanical form of movement, the dialectical method embraces the conception of the range of forms of movement of matter, from simple change of place to the movement of thinking, the transformation of one form of movement into another and the derivation of one form of movement from another, bringing with it the emergence of new qualities of matter in motion—not as new appearances of the same basic mechanical movement of matter, but as the expression of differences in the form of motion.

The discoveries of modern science in their entirety bear out and vindicate this dialectical materialist criticism of mechanism. At the same time, the crisis of ideas in all fields of science is the expression of the failure of bourgeois scientists to rid themselves of mechanist preconceptions and to advance to the conceptions of materialist dialectics. As Engels put it:

"Modern natural science . . . has proved that in the last analysis nature's process is dialectical and not metaphysical. But the scientists who have learned to think dialectically are still few and far between, and hence the conflict between the discoveries made and the old traditional mode of thought is the explanation of the boundless confusion which now reigns in theoretical natural science and reduces both teachers and students, writers and readers to despair."[2]

This confusion has become many times worse confounded since Engels wrote those words in 1878.

3. A REVOLUTION IN PHILOSOPHY

It is now possible to indicate in what way the discovery of the materialist dialectical method by Marx and Engels constituted a revolution in philosophy and opened up a new path of scientific development of philosophy.

The main thing is that the ideas of dialectical materialism constitute a revolution in philosophy because they introduce into philosophy the outlook of a new class, namely, the class

(1) Lenin, *Selected Works*, Vo. XI, p. 318.

(2) Engels, *Anti-Duhring*, p. 29.

outlook of the modern proletariat, in its struggle to do away with capitalism and build communist society; and because this class is unlike all other classes which historically have aspired to take the leadership of society, or have assumed that leadership, in that its aim is not to replace one form of class exploitation by another, but to abolish all exploitation of man by man, and to abolish the division of society into classes.

It is precisely because it is the militant philosophy of the proletarian class struggle that dialectical materialism opens up the new path of scientific development of philosophy.

The Class Nature of Philosophy

- *Philosophy has always expressed and could not but express a class standpoint.* Every philosophy has been a formulation of the world view of a class, a way in which a class has become conscious of its own position and of its historical aims. The philosophical schools have expressed the world view of the privileged class, or of a class which was striving to become the privileged class.

This does not mean that philosophies have not expressed the striving for knowledge, for mastery over nature, and for man's conscious understanding and control of his own destiny. On the contrary, it is just this which the great philosophies have expressed—otherwise we would not call them great. But they have expressed it in the way that it appears in the consciousness of some definite class.

Exploiting classes, even at times when they have been playing a progressive social rôle, from the very nature of their existence could never face up to the reality of their own system of exploitation, or of their true aims, or of the transitory character of the part they play in history. Instead, they have developed in their world outlook a "false consciousness"—a disguised reflection of their own social position and aims, and a philosophy which presents their own provisional and historically conditioned ways of looking at things as eternal truths. Such has been the character of the schools of philosophy of the past, even the most progressive.

But this conception of the class nature of all philosophy has been alien to the thought of the philosophers. They have thought of themselves as motivated simply by the desire to discover the truth, without realising the social and ultimately economic causes which motivate their version of that truth.

"Ideology is a process accomplished by the so-called thinker consciously indeed but with a false consciousness," wrote Engels. "The real motives impelling him remain unknown to him, otherwise it would not be an ideological process. Hence he imagines false or apparent motives. Because it is a process of thought, he derives both its form and its content from pure thought, either his own or that of his predecessors. He works with mere thought material which he accepts without examination as the product of thought; he does not investigate further for a more remote process independent of thought; indeed, its origin seems obvious to him, because, as all action is produced through the medium of thought, it also appears to him to be ultimately based on thought."(1)

What the philosophers have overlooked is the simple fact that men have always interpreted nature, and have always philosophised, on the basis of their social experience. The way men get their living and the social relations they enter into in getting their living have determined the way they think. The categories derived—not from pure thought, nor yet directly from contemplation of the external world, but—from this social experience, have been projected into nature and used to interpret the whole world.

This is clearly exemplified, for instance, in the most primitive societies we know—in totemic tribes. Thus G. Thomson writes, in a recent study of totemism:

"In Australia the ideology of totemism has been expanded into a comprehensive theory of the natural world. Just as the social organism consists of so many clans and groups of clans, each with its own totem species, so the world of nature—the sea, streams, hills, heavenly bodies, and all that dwell therein—are classified on the totemic model. The various kinds of trees are grouped with the kinds of birds that nest in them; water is assigned to the same group as waterfowl and fish. The world of nature is reduced to order by projecting onto it the organisation imposed by nature on society. The world order is a reflection of the social order—a reflection which, owing to man's weakness in the face of nature, is still simple and direct."(2)

It is a very far cry from this ideology of totemism, which belonged to a pre-class society which knew neither philosophy nor science, to the ideas of philosophers and scientists, and in

(1) Engels, *Letter to F. Mehring*, July 14, 1893.

(2) George Thomson, *Studies in Ancient Greek Society*, p. 40.

particular to the ideology of modern bourgeois society. Here the reflection is neither direct nor simple. Nevertheless there is a process of continuous development—though not without its leaps and transformations—from the one to the other. The law that men's social existence determines their consciousness has continued to operate.

Of course, to demonstrate the operation of this law requires a complete, detailed historical study—a truly gigantic task, for which Marxism provides the intellectual tools, but which Marxists are yet far from having accomplished. Similarly, to demonstrate it in any particular case requires a complete historical study of that particular case. I could not begin such a demonstration here, even were I properly equipped to do so. I am compelled to confine myself to a few general observations, relevant to the understanding of the class nature of philosophy and of the character of the revolution in philosophy effected by Marxism.

Marx and Engels, who stressed again and again that the way men think is dependent on the way they get their living, also stressed again and again that the reflection of the economic organisation of society in the ideas of that society, and particularly in its abstract philosophy and science, was by no means a simple, direct or automatic process.

"Our conception of history is above all a guide to study, not a lever for construction. . . ." wrote Engels. "All history must be studied afresh, the conditions of existence of the different formations of society must be individually examined before the attempt is made to deduce from them the political, civil-legal, æsthetic, philosophic, religious, etc., notions corresponding to them."(1)

Again: "The further the particular sphere which we are investigating is removed from the economic sphere and approaches that of pure abstract ideology, the more shall we find it exhibiting accidents in its development, the more will its curve run into a zig-zag. But if you plot the average axis of the curve, you will find that the axis of this curve will approach more and more nearly parallel to the axis of the curve of economic development the longer the period considered and the wider the field dealt with."(2)

If, then, one considers the ideas of the philosophers, and in

(1) Engels, *Letter to C. Schmidt*, Aug. 5, 1890.

(2) Engels, *Letter to H. Starkenberg*, Jan. 25, 1894.

particular, the ideas of the bourgeois philosophers, from this point of view, it is necessary to stress, in the first place, that *the reflection of the social order in the philosophical ideology cannot be simple or direct*; but to stress, in the second place, that *this ideology does in the last analysis reflect the social order.*

Philosophers as the Products of their Times

Philosophy, of course, is an instance of the social division of labour. Out of the general division of intellectual and manual labour, emerge various divisions of specialised thinkers, amongst them the individuals with an urge to philosophy. Thus the production of philosophy is a very different process from the production of myths and primitive ways of thinking, mentioned above in the case of the general ideology of totemism. Philosophy is the work of individual philosophers—highly specialised people, highly gifted people and intensely individual people. And the reflection of the social order takes place through the medium of their individual, personal thought.

It will be found, however, that *in every epoch the ways of thinking characteristic of the philosophers do reflect the character of the economic development and social relations of that epoch.* With all their intellectual labour after truth the philosophers cannot free themselves from the actual material circumstances under which they live.

For example, Marx and Engels wrote that "the bourgeoisie, wherever it has got the upper hand, has put an end to all feudal, patriarchal, idyllic relations. It has pitilessly torn asunder the motley feudal ties that bound man to his 'natural superiors', and has left no other nexus between man and man than naked self-interest, than callous 'cash payment'."(1)

It is impossible not to recognise the reflection of this state of affairs in bourgeois philosophy from its very inception—and not merely the acceptance of this state of affairs and the assertion of ideas corresponding to it in opposition to feudal ideas, but also the recognition of the problems that arise from it and the attempt to grapple with and solve those problems.

And this reflection is to be found not only in the realm of social philosophy. For example, it was typical of the natural philosophy or physics of the feudal period that insistence was continually laid on final causes. Everything was regarded as having its proper place in the universe and its end which it subserved. Thus bodies were said to fall because that was their

(1) Marx and Engels, *Manifesto of the Communist Party*, Ch. I.

proper motion. The earth was in the centre, and the proper place of earthy bodies was in the centre, towards which they naturally tended. The natural motion of fire, on the other hand, was upwards. And just as the bourgoisie in its economic activity set about destroying the feudal relations which were reflected in these feudal ideas (and that reflection, too, by the way, was complicated and indirect: the feudal ideologists proceeded by adapting much earlier Greek ideas, and in particular the philosophy of Aristotle, for their own purposes); so the bourgeois philosophers and scientists proceeded by destroying—and they did so quite consciously—these feudal ideas. By doing so they made a mighty advance in science and philosophy, a truly revolutionary advance, just as capitalism was a revolutionary advance on feudalism. But their own outlook was by no means a product of pure thought or of pure intellectual criticism, but was itself determined, formed and bounded by the new social relations within which the philosophers were confined.

The Movement of Ideas

Here, it is, however, again necessary to stress the indirectness of the reflection of social relations in philosophical ideas, in as much as those ideas always take shape out of a process of the criticism and assimilation by the individual philosophers of already existing ideas.

The philosophers must always take as their starting point the ideas which they receive from their predecessors. Partly they develop their ideas in struggle against the past ideas: their own ideas are formed in contradiction to those of their predecessors. Partly they take over past ideas and work them up in their own ways. But in any case, what they have to say is always conditioned by what others have said before them. In other words, *no idea is ever simply a direct response to the needs of the present, but meets the needs of the present only with the help of the heritage of the past.*

In the 17th century, for example, men of letters engaged in a conscious struggle against various dogmas of the past. At the same time, past ideas were revived and given new life by them. For instance, they contradicted the version of Aristotle's philosophy taught by the scholastics and at the same time there was a revival of the ancient atomistic system of Democritus and Epicurus, whose concepts were borrowed and transformed. And even when they contradicted the scholastic philosophy, in

many respects they still continued it. Thus the leading ideas of science and philosophy in the 17th century were no direct reflection of new social conditions; the ideas which reflected these social conditions took their shape partly in struggle against and partly by revival, assimilation and transformation of the ideas of the past.

Engels writes of ideologists in general:

"In so far as they form an independent group within the social division of labour, in so far do their productions, including their errors, react back as an influence upon the whole development of society, even on its economic development. But all the same, they themselves remain under the dominating influence of economic development. . . . I consider the ultimate supremacy of economic development established . . . but it comes to pass within conditions imposed by the particular sphere itself: in philosophy, for instance, through the operation of economic influences (which again generally only act under political etc. disguises) upon the existing philosophic material handed down by predecessors. Here economy creates nothing absolutely new, but it determines the way in which the existing material of thought is altered and further developed, and that, too, for the most part indirectly, for it is the political, legal and moral reflexes which exercise the greatest direct influence upon philosophy."(1)

Here Engels makes a further point of great importance, namely, that *the economic development determines philosophical ideas mainly via the political, legal and moral development which takes place on the basis of the economic development.*

Science, Technology and Philosophy

Another point to note is *the profound influence on philosophic ideas of scientific discoveries and technical inventions.*

Here again, as Engels stated, "the ultimate supremacy of economic development" is manifest. The level of technique on which the economy is based largely determines the corresponding level of natural science. At the same time, it sets problems for science, and the success with which science tackles these problems becomes a lever for further technical development. There is a reciprocal influence of science and technology. Technological problems stimulate scientific discovery, which in turn leads to fresh technological development, which

(1) Engels, *Letter to C. Schmidt*, Oct. 27, 1890.

again provides the stimulus and means to fresh scientific discovery.

In this process, inventions and discoveries are themselves a material, revolutionary force operating to change society. And they serve as a basis for the overthrow of past, illusory conceptions of nature and their replacement by fresh, more true, more adequate ideas. Thus Engels wrote that "the history of science is the history of the gradual clearing away of . . . nonsense." But he immediately added: "or of its replacement by fresh but already less absurd nonsense."(1)

Technology sets the pace for scientific theory, which has to work out the theoretical principles involved in current techniques, and at the same time it is often more or less directly reflected in philosophical ideas. Philosophers tend to conceive of the workings of nature on the model of the current techniques with the workings of which they are familiar. Their imaginings of how nature works have their source in human artifice.

For example, as Benjamin Farrington has observed in his study of Greek science,(2) the speculations of the earliest Greek natural philosophers had their basis in the techniques of the age. Their ideas of the transformations which a single substance could undergo, of the elements and of the diverse results which could accrue from the mixing and interaction of the elements, and so on, had their basis in current techniques, such as metal working and pottery. Again, the speculations of the Pythagorean school were quite explicitly based on the techniques of the manufacture and use of musical instruments.

In modern philosophy, the influence of the development of machine technique is manifest in the mechanistic conceptions of nature which were held by all philosophers of all schools right up to towards the close of the 18th century. A machine is an arrangement of independent and movable parts, which can be set in motion by an external motive force and then goes on working according to its own laws. And this provided the model for the entire conception of nature. The older conceptions of mechanism began to be modified and to break up with the newer techniques of the industrial revolution—the internal combustion engine, chemical techniques and then electronics. For example, the dialectic of Hegel was to a very great extent based on the development of chemistry.

(1) *Ibid.*

(2) Benjamin Farrington, *Greek Science, Thales to Aristotle.*

Another example of the reflection of techniques in the ideas of philosophers is provided by the undoubted influence of the development of microscopy on the speculations of Leibnitz. "Each portion of matter is not only infinitely divisible," he wrote, "but is also actually subdivided without end, each part into further parts, of which each has some motion of its own. . . . Whence it appears that in the smallest particle of matter there is a world of creatures, living beings, animals, entelechies, souls."(1)

At the same time, while technology sets the problems of science and is reflected in the conceptions of philosophy, it would be wrong to suppose that scientific and philosophical theory is drawn from technology alone. Techniques are developed and used by men organised in a definite system of economic relations, in which certain classes play the leading rôle. And consequently the whole way in which technological development is reflected in scientific and philosophical theory is in the last analysis conditioned by the economic structure of society.

The general ideas which are current in the sciences and in philosophy have their source partly in the techniques which men have at their disposal, but more profoundly in the social relations into which they enter in making use of those techniques. The technical inventions and scientific discoveries which advance and enlarge men's knowledge of nature are themselves interpreted, and that knowledge is formulated, in terms of conceptions which ultimately reflect the economic relations of society and the way of living and aims of definite classes.

A feature of the activity of philosophers, and especially of the bourgeois philosophers, has been that they have in effect abstracted the categories of interpretation characteristic of science in its various stages of development, and have generalised these into philosophical systems—hardening them into dogmas, into hard and fast systems claiming to be eternal truth.

Originally there was little or no distinction between natural science and philosophy. A feature of the development of science, especially in the bourgeois epoch, has been that the various sciences have separated themselves from philosophy and carried on with their own experimental methods of investigation. Thus the field of independent philosophical investigation has continually narrowed.

This has meant, however, that the influence of the sciences

(1) Leibnitz, *Monadology*, 65, 66.

on the development of philosophy has simultaneously become more pronounced, while at the same time the very scientists who think that they have emancipated themselves from the swaddling clothes of philosophy are still thoroughly enmeshed in the principles and systems which have been formulated for them by the philosophers.

The philosophers have had the task—and some of them, indeed, have been largely conscious that this was their task—of so interpreting technical progress and scientific discovery as to bring it into harmony with the moral and political ideas and social aspirations which were being developed out of the economic movement of their time.

And in fulfilling this task, philosophers have claimed not only to interpret scientific discovery but to go far beyond the natural sciences. They have claimed to reveal the ultimate nature of the reality which science deals with, and to reveal the nature of spiritual reality inaccessible to the methods of science—the nature of God and of the human soul, and the moral springs of individual action and social development.

The National Development of Science and Philosophy

A last point to note—and it is one of considerable importance—is that, so far as the bourgeois epoch is concerned, the development of both science and philosophy is essentially *national.*

The growth of the bourgeois mode of production and exchange gave rise to the modern European nations. Capitalism develops through a process of uneven national development. And the scientific and philosophical conceptions also manifest a national development.

Hence so far as the bourgeois philosophies are concerned, it must always be a false abstraction and over-simplification to seek to deduce their development from the development of capitalism in general. Their development follows a national path. And the national development of philosophy reflects the entire complex of the economic development, together with its political, legal and moral reflexes, and with the traditions and national-cultural characteristics, of the given nation. Thus philosophy has developed differently in Britain from in France, and differently again in Germany. British empiricism, French rationalism and mechanical materialism, German idealism, were all national developments whose peculiarities can only be understood, not by considering the development of bourgeois

society in general, but by taking into consideration its national development in those particular countries.

The streams of national development of philosophy are not, of course, independent, any more than the history of one nation is independent of the history of another. They are continually meeting and exchanging influences. The reciprocal interaction of English, French and German philosophy mentioned above, in fact, follows fairly closely the course of historical development of the bourgeois revolution in those countries. In the 19th century the creation of the world market and the birth of imperialism in the 20th century have had further profound influences on the national course of bourgeois philosophy, tending to de-nationalise it and give it a cosmopolitan character. This tendency corresponds, as a matter of fact, to the period of the decline and disintegration of bourgeois philosophy. The general thesis that bourgeois philosophy in its development follows a national course remains valid. An elementary exemplification of the national character of bourgeois philosophy is the fact that the philosophers wrote in a number of different languages, whereas in the Middle Ages they all wrote in Latin.

A rash conclusion which might be drawn from these considerations is that the philosophy of the economically most advanced country ought to be the most advanced philosophy. This is very far from being the case and the inference that it ought to be the case follows only from a very simple-minded idea of the way philosophy reflects economic development. The philosophers of economically backward France in the 18th century were able to draw on both the rich heritage of Cartesianism and of British empiricism, and elaborate it in their own way in the conditions of the maturing French Revolution. Then the German philosophers had all this to draw on in the conditions of the late development of the national bourgeoisie in Germany. The result was that the spearhead of advance of bourgeois philosophy in the late 18th and early 19th centuries was located in economically backward France and Germany. Thus Engels wrote :

"The philosophy of every epoch . . . has as its presupposition certain definite intellectual material handed down to it by its predecessors, from which it takes its start. And that is why economically backward countries can still play first fiddle in philosophy: France in the 18th century compared with England, on whose philosophy the French based themselves, and later

Germany in comparison with both. But the philosophy both of France and Germany and the general blossoming of literature at that time were also the result of a rising economic development."(1)

In general, then, it may be stated *that philosophical conceptions have always in the last analysis reflected the economic development of society and therefore the standpoint of definite classes which have been the principal protagonists in that economic development; but this reflection is a complicated and indirect process—mediated by the personalities of the philosophers; by the pre-existing ideas which they have received from their predecessors; by the entire complex of the political, legal and moral development of society; by the progress of technical invention and scientific discovery; and, in the bourgeois epoch, by the peculiarities of national development in the various countries.*

Marxism as the Revolutionary Philosophy of the Working Class

The revolution in philosophy which was effected in the mid-19th century by Marx and Engels—which constituted the emergence of a new type of philosophy, radically different from everything that had preceded it, and from the entire contemporary bourgeois philosophy and the entire bourgeois philosophy which continued after it—had its basis in definite economic facts.

It had its basis in the fact that the development of capitalism generates the working class movement and, with it, the struggle of the working class against capitalism, which can end only with the expropriation of the capitalists.

Marx and Engels gave the nascent proletarian revolutionary movement its theory. This theory was not simply an economic theory, nor yet a political theory, but a revolutionary philosophy, which for the first time consciously based itself on revolutionary practice. It took as its premisses the highest achievements of the preceding bourgeois thought, and at the same time it developed by the revolutionary criticism of bourgeois ideology in all its aspects.

The great philosophical discovery of Marx and Engels, by virtue of which they were able not only to continue but to transform the best ideas of previous philosophy, and which was at once their weapon of criticism and their method of investigation, was the materialist dialectical method.

(1) Engels, *Letter to C. Schmidt*, Oct. 27, 1890.

The discovery of this method, prepared by the entire preceding course of philosophy, was made possible precisely by the circumstance that at that time the proletarian revolutionary movement was arising, generating a consciousness of a social aim corresponding to a real aim—namely, to change society, not in the interests of some new exploiting class, but in the interests of the masses of the people; to conquer political power for the proletariat and build socialist society. It was precisely because of this movement and of this aim that it became possible for the first time to generalise in a rational, scientific form the basic laws of change and development of the objective world of nature and society. And by their philosophical discovery, and their entire doctrine, Marx and Engels were able to arm the working class movement with the revolutionary theory which the achievement of its historical aim required.

The point is that the modern proletariat, unlike other classes which have played a leading historical rôle, does not aim at establishing its own system of class exploitation, but at abolishing all exploitation of man by man. Its aim is not to subjugate the rest of society, but to liberate the whole of society—for this is the aim that corresponds to its class interests.

This means that the standpoint of the proletariat, which receives its philosophical expression in Marxism, has no need for any ideological disguise of social aims, of human relationships and of the relationship of man and nature. On the contrary, it demands the effort to study and understand the processes of nature and history *as they are*, without weaving any fantasy around them, in order as effectively as possible to guide the struggle for the liberation of mankind from oppression and the building of a classless society, and for the extension of man's dominion over nature.

This is why it was only in our times that it became possible to begin to establish a truly scientific philosophy; for the material basis for the development of a new scientific standpoint of philosophy had come into being with the birth of the modern working class movement. This, too, is why such a philosophy was not, and could not be, developed as the narrow, academic philosophy of a school, but was first conceived and has since been developed as the militant philosophy of the proletarian class struggle.

This is also why dialectical materialism, as the class philosophy of the proletariat, provides the essential basis for the future

development of philosophy in the classless communist society which it is the aim of the revolutionary proletarian class struggle to establish.

4. DIALECTICAL MATERIALISM AND SCIENCE

Dialectical materialism is the philosophy which expresses the standpoint and meets the needs of the working class. But it is not asserted that dialectical materialism is true because it suits the working class to have it so. It expresses the standpoint and meets the needs of the working class by investigating the real laws of motion of nature and of society in the light of the facts themselves, without pre-conceived fantasies, in order to show how the world can be changed. It is true because it passes the test of practice and experience. It is precisely the standpoint of the working class which for the first time provides the basis for such a philosophy.

It is a standpoint which requires no kind of ideological disguise or deception, either concerning nature or concerning human relationships. If such ideas arise, based on any particular phase of the social movement, then this standpoint demands that they shall be criticised and corrected.

This point is most vividly expressed by the fact that the working class is the one class which is able to recognise the necessity of its own disappearance as a class. Indeed, it not only recognises the necessity of its own disappearance as a class, but strives to hasten that disappearance. Its class aim is to establish communist society, in which classes cease to exist. When the working class has gained power, its aim is to build communist society, in which not only will its own existence as a class eventually come to an end, but also its party and its state will come to an end.

"When a man becomes old, he dies. The same thing happens to parties. When classes disappear, the instrument of class struggles—political parties and the state apparatus—will, as a result, lose their functions, cease to be necessary, gradually disappear and, having completed their historical mission, give way to a higher stage of human society. . . . Young comrades who have not yet studied the foundations of Marxism-Leninism probably do not understand this truth. But they must understand it if they are to develop a truly world outlook."(1)

(1) Mao Tse-tung, *The Dictatorship of People's Democracy*, in *For Lasting Peace, for a People's Democracy*, July 15, 1949.

The working class standpoint, therefore, requires absolutely no sort of philosophical system, no sort of philosophical principles, which justify things as they are. It requires ideas which faithfully reflect the real motion and change—the coming into being, development and ceasing to be—of everything in the world. And it has generated the principles and methods for the elaboration of such ideas.

All this makes dialectical materialism scientific philosophy. What, then, are its specific features in relation to the natural and social sciences?

The Scientific Basis of Dialectical Materialism

(1) In the first place, the ideas of materialist dialectics—the dialectical conception of the processes which make up the material world and its history—are not any system of abstract first principles, are no speculative philosophical deduction, but find their basis in the results of science. It is the discoveries of science, the whole experience of the scientific investigation of the processes of the world, that has furnished the empirical basis from which the conceptions of dialectics are generalised. Nature is the test of dialectics, which has its basis in the discoveries of the sciences and is continually confirmed and enriched by those discoveries. *Dialectical materialism is a method and a conception of the world which finds its test and confirmation in the achievements of the sciences, which bases itself on those achievements and generalises them, which develops the conception of their full significance for humanity, and which at the same time shows how to carry those achievements forward and to rid science of pre-conceived ideas which impede its progress.*

Hence, in dialectical materialism there begins an entirely new stage of the development of philosophy as a science. Philosophy no longer seeks to invent a universal system of the world, or to interpret the discoveries of science in the light of first principles which are arrived at independently of scientific investigation. The task of philosophy is, basing itself on the achievements of science, to show how "the facts are to be conceived in their own and not in a fantastic connection". And this means that there opens up the path of development of an absolutely consistent philosophical materialism.

Philosophy has always advanced through the struggle of materialist with idealist trends. But hitherto even the most consistently materialist philosophy had borne a metaphysical

character, and had never been free from the elements of idealism. The materialists sought to comprehend everything in terms of rigid, mechanistic ideas, which were, however, quite inadequate for the comprehension of real processes of development, and, in particular, of the development of human consciousness and of history. The discovery of Marx and Engels meant the overcoming of the limitations of previous materialist thought and, with it, the removal of all need for appeal to idealist fancies.

Dialectics as an Instrument for the Advance of Science

(2) In the second place, the ideas of materialist dialectics, which are generalised from the results of science and from the experience of scientific investigation, are at the same time an instrument for the further advance of science.

"Nature is the test of dialectics", wrote Engels, "and it must be said for modern natural science that it has furnished extremely rich and daily increasing materials for this test, and has thus proved that in the last analysis nature's process is dialectical and not metaphysical. But the scientists who have learnt to think dialectically are still few and far between and hence the conflict between the discoveries made and the old traditional mode of thought is the explanation of the boundless confusion which reigns in theoretical natural science. . . ."[1]

Natural science has emancipated itself from the systems of philosophy in as much as it has embarked upon its own experimental investigation irrespective of the demands of this or that system. At the same time, scientific thought has always been penetrated with philosophical preconceptions, which continually find expression in the theories with which scientists endeavour to summarise and interpret their results. These preconceptions have been not the less but rather the more influential when they have been latent and unconscious. As Engels points out, the materials of the sciences prove the truth of dialectics; but scientists have seldom been able to think dialectically.

The dialectical materialist method is a weapon of criticism of idealist and metaphysical ideas which penetrate the sciences, ridding the sciences of the incubus of such ways of thinking. It is a weapon of criticism of limiting and formalistic theories in the sciences, which seek merely to formulate sets of laws accounting for the

(1) Engels, *Anti-Duhring*, p. 29.

observed correlations amongst given experimental data, but which do not analyse the dialectic of the real material processes expressed in those data, and so raise a barrier to the more profound investigation of those processes.

In opposition to metaphysical and idealist attitudes in the sciences, the typical products of bourgeois science, dialectical materialism shows how to investigate, comprehend and explain real processes by the method of studying things in their dialectical interconnection and in their movement, by seeking out the laws of transformation of quantitative into qualitative change through the struggle of opposed tendencies operating on the basis of the internal contradictions inherent in every process. The goal of science becomes, not the disclosure of the ultimate elements of nature and the mode of their mechanical interaction, but the disclosure of the dialectical contradictions.

This makes of the dialectical materialist method, on the one hand *a weapon of criticism*, on the other hand *an instrument for advancing and unifying scientific theory and developing the strategy of the further progress of scientific knowledge.*

Particularly important was the contribution which dialectical materialist philosophy made, in the hands of Marx and Engels themselves, to the scientific understanding of society and of history.

Hegel first began to formulate the principles of dialectical thinking; but his approach was idealist. For him dialectics was not the method to be adopted by scientific thought in order to comprehend the laws of motion of the real world, but it was a procedure inherent in thought itself—and he elevated thought into an absolute, the first cause of everything in the world.

The dialectic was, according to Hegel, manifested in the process of human history, every stage of which he imagined as embodying some "moment" of the dialectical movement of Spirit. History was Spirit realising itself in the world. But as for the material world, the arena in which history took place, it was simply the "other" of Spirit. Dialectical development, according to Hegel, did not belong to nature, and nature had no history.

In this respect Hegel's philosophy remained fixed in the same *dualism* which is inherent in all idealist philosophy—the invention of a rigid, absolute distinction between matter and spirit, nature and history.

Thus, for example, Hegel wrote: "The changes that take

place in nature, how infinitely manifold soever they may be—exhibit only a perpetually repeating cycle; in nature there happens 'nothing new under the sun' . . . only in those changes which take place in the region of Spirit does anything new arise. This peculiarity in the world of mind has indicated in the case of man an altogether different destiny from that of merely natural objects—in which we find always one and the same stable character, to which all change reverts; namely, a real capacity for change, and that for the better—an impulse of perfectibility."(1)

Marx and Engels, rejecting Hegelian idealism, were able to apply the discoveries of dialectical materialism in founding the science of society and history, historical materialism. Life is to be regarded as the mode of existence of matter at a certain stage of its development; society and history begin when the new species of animal, man, with his unique development of hands and brain, begins to use tools to produce his own means of subsistence; men thus create their own forces of social production, whose development is the basic determining factor of the movement of society and history.

Dialectical materialism sees the whole world as one historical process, in which men and human society come into existence at a definite stage of development. The same laws of dialectical development are at work in nature and in history. It thus shows the way to discover the specific character of the laws of development of human society, which Marx traced from their origin in the mode of social production.

Recognising the dialectical character of the development of the world, Marx did not try to explain human society in terms of physical or biological laws; nor did he treat it as something divorced from the natural world, not amenable to methods of scientific investigation; but he understood human society as a new development in the history of the world and applied the method of dialectics to the study of its specific laws of motion.

This demonstration of the continuity of nature and history, which manifests itself in the discontinuity of the dialectical leap from one qualitative state to another, was a contribution of revolutionary significance to the unity of science, to the scientific understanding of the material world and of man and his place in it.

(1) Hegel, *Philosophy of History*, translated by J. Sibree, p. 54.

The Development of Materialist Dialectics

(3) In the third place, the ideas of materialist dialectics, which are generalised from the experience of scientific investigation, and which serve as an instrument for the further advance of science, *are themselves to be developed in the light of the fresh discoveries achieved by science and in application to the new problems presented by the movement of society.*

Thus A. A. Zhdanov wrote: "Marxist philosophy, as distinguished from preceding philosophical systems, is not a science dominating the other sciences; rather it is an instrument of scientific investigation, a method, penetrating all natural and social sciences, and enriching itself with their attainments in the course of their development."(1)

Dialectical materialism, as cannot be too often emphasised, is not a finished philosophical system, a set of ideas complete and rounded off. Nature is the test of dialectics. The methods of dialectics are applied in the scientific investigation of nature and the materials of science continually furnish fresh proof that nature's process is dialectical. But the discoveries of science do not merely exemplify the laws of dialectics. For the new exemplifications of the laws of dialectics continually add to our understanding of the modes of operation of those laws, and so need to be made the basis for fresh philosophical generalisation, enriching and extending the content of the conceptions of materialist dialectics.

Particularly important is it to realise that dialectical materialist philosophy is, moreover, called upon to develop the concepts of the laws of dialectics in their application to the movement of society. Marx declared that "philosophers have only interpreted the world in various ways; the point, however, is to change it."(2) And in changing the world, men change themselves, bring into operation new laws governing the course of history. This fact provides a most important field for philosophical generalisation.

Dealing with the operation of the laws of dialectics, Engels wrote that "in nature and also up to now for the most part in human history these laws assert themselves unconsciously in the form of external necessity in the midst of an endless series of seeming accidents."(3)

(1) A. A. Zhdanov, *On the History of Philosophy.*

(2) Marx, *Eleventh Thesis on Feuerbach.*

(3) Engels, *Feuerbach*, p. 54.

But when the stage is reached in human history—and that stage is being reached in our own times—when men are able to order their affairs in accordance with a conscious plan, having established socialist ownership of the means of production and abolished exploitation of man by man, then the movement of history takes place in a new way—not according to "laws which assert themselves unconsciously in the form of external necessity", but according to the volition and plan of men who have the forces of society under their own conscious control.

"And at this point, in a certain sense, man finally cuts himself off from the animal world, leaves the conditions of animal existence behind him and enters conditions which are really human," wrote Engels. "The conditions of existence forming man's environment, which up to now have dominated man, at this point pass under the domination and control of man, who now for the first time becomes the real conscious master of nature, because and in so far as he has become master of his own social organisation. The laws of his own social activity, which have hitherto confronted him as external, dominating laws of nature, will then be applied by man with complete understanding, and hence will be dominated by man. Men's own social organisation, which has hitherto stood in opposition to them as if arbitrarily decreed by nature and history, will then become the voluntary act of men themselves. The objective, external forces which have hitherto dominated history, will then pass under the control of men themselves. It is only from this point that men, with full consciousness, will fashion their own history; it is only from this point that the social causes set in motion by men will have, predominantly and in constantly increasing measure, the effects willed by men. It is humanity's leap from the realm of necessity into the realm of freedom."(1)

Clearly, there confronts dialectical materialism the task of mastering the new content of the laws of dialectical development—the laws of men's conscious making of their own history—which emerges with the transition to the communist stage of society. And this task is not an academic exercise but a practical issue arising from the struggle to establish and build communist society.

A. A. Zhdanov dealt with this question, and gave an answer to it, when he said, at a conference of philosophers in the U.S.S.R. (June, 1947), that "the particular form of struggle

(1) Engels, *Anti-Duhring*, p. 318.

between old and new, between the dying and the rising, in our Soviet society, is known as criticism and self-criticism.

"In our Soviet society, where antagonistic classes have been liquidated, the struggle between the old and the new, and consequently the development from lower to higher, proceeds, not in the form of struggle between antagonistic classes and of cataclysms, as is the case under capitalism, but in the form of criticism and self-criticism, which is the real motive force of our development, a powerful instrument in the hands of the Party. This is, without a doubt, a new form of movement, a new type of development, a new dialectical law."(1)

5. THE DIALECTICAL MATERIALIST THEORY OF KNOWLEDGE

Very important is the application of the dialectical materialist method in the theory of knowledge, and in the criticism of the various conceptions of bourgeois philosophy concerning the foundations of knowledge and its scope and limits.

The Theory of Knowledge of Bourgeois Philosophy

Two contrasted types of view concerning the foundations of knowledge are to be found in bourgeois philosophy. On the one hand are views which stress the importance of "innate ideas", intuitions of "eternal truths", self-evident "synthetic propositions", *a priori* "first principles", as the basis of knowledge. On the other hand are the various empiricist views, which say that all knowledge is founded on individual sense-perceptions. Many and prolonged have been the polemics between upholders of various forms of these contrasted views on knowledge, which constitute two opposed sides or facets of the theory of knowledge of bourgeois philosophy.

Both have it in common that they treat knowledge abstractly, apart from the actual process of the evolution of knowledge in human society. They do not investigate how knowledge has actually been won by socially organised mankind. Instead, they try to consider how a system of knowledge can ideally be founded on some set of indubitable premisses, whether these be innate general ideas or particular sense presentations. In either case they regard knowledge as arising from some kind of individual contemplation, not from social activity.

And both have it in common that their theory of knowledge

(1) A. A. Zhdanov, *On the History of Philosophy.*

is fundamentally idealist. By idealism is meant that approach in philosophy which treats spirit as prior to nature. In what ways, then, are these contrasted theories of knowledge idealist?

They are idealist, in the first place, in their treatment of the foundations of knowledge. For both see the foundation and starting point of knowledge in something arising within the mind, whether this be individual sensations or general ideas or both.

They agree in this idealist approach, even though the empiricists say that sensations come first and that general ideas are only in some way "copies" of sensations, whereas the others say that sensations are merely the "raw material" of knowledge, which is "worked up" by the mind with the help of its own innate apparatus of a-priori categories.

True, many empiricists have explained that the sensations, which they take to be the starting point of cognition, are produced in the mind by the action of external material objects on the sense-organs. Nevertheless, for them it is still these sensations which constitute the data from which the whole edifice of knowledge is built up.

In this respect even materialists, notably some of the great French materialists of the 18th century, adopted an idealist standpoint in the theory of knowledge. Their remarks about the action of the material world in producing sensations in the human mind were introduced only as a kind of preface to their theory of knowledge, not as an integral part of it; and afterwards they had to try to deduce the existence of the material world from the data of sense-perception. Helvetius, for example, who in one place says that all our cognitions are produced by the action of material objects on our sense-organs, in another place says that the external material world is merely a hypothesis which we make to account for our sensations, and that quite likely no such world exists.

In the second place, both contrasted theories of knowledge are idealist in their conclusions about the known world.

Those who postulate innate ideas and intuitions come to the conclusion that the world is revealed to true knowledge as in essence spiritual, and that spiritual causes underly all material phenomena.

The empiricists, on the other hand, who deride all this as misty speculation, reach a conclusion which is equally idealist, namely, that nothing is indubitably known to exist except the

sensations in our own minds. The schools of empiricists variously regard the material world either as itself consisting of complexes of sensations, or as a shadowy realm of things-in-themselves, or as a convenient but rather dubious hypothesis, or else as a complete delusion and a product of metaphysical speculation.

The Theory of Knowledge of Dialectical Materialism

Whereas both contrasted types of the bourgeois theory of knowledge see the starting point of knowledge in sensations or ideas, abstracting these aspects of individual experience from the real material process of human activity in which they arise, dialectical materialism studies knowledge as it actually arises and develops on the basis of men's material social existence, of their interaction with one another and with nature.

The dialectical materialist theory of knowledge breaks with the abstract treatment of knowledge characteristic of bourgeois philosophy, and with its idealist methods, assumptions and conclusions. As Lenin said, it "regards its subject matter historically, studying and generalising the origin and development of knowledge, the transition from *non*-knowledge to knowledge."(1)

The last phrase is of importance here—the transition from *non*-knowledge, or ignorance, to knowledge.

That the winning of knowledge is a transition from ignorance to knowledge, may seem a mere truism. But if so, it is one which has never been recognised in bourgeois philosophy. For the theory of knowledge of bourgeois philosophy has been unable to understand precisely this transition.

It has always assumed that knowledge comes only from previous knowledge: hence the real origin of knowledge has been a mystery to it. It has assumed, namely, that knowledge must be founded, either on knowledge (immediate acquaintance in sense-presentation) of sense qualities, or on knowledge (innate ideas) of general principles, or perhaps on both. In any case, knowledge always comes from previous knowledge and not from previous ignorance, according to the old metaphysical principle that "out of nothing, nothing comes ". The bourgeois philosophers have all sought to show how the whole of knowledge is founded on some special sort of immediate or intuitive knowledge, not how knowledge itself arises and develops.

But on the contrary, it is out of the transformation of a

(1) Lenin, *On Karl Marx, Selected Works*, Vol. XI, p. 17.

previous state of *non*-knowledge that there comes the winning of knowledge.

How is this transformation effected? It is effected by human social activity.

Dialectical materialism grasps the scientific truth that knowledge arises, develops and is tested in social practice. That was its key discovery in the sphere of the theory of knowledge.

In the light of this discovery, dialectical materialism is able to answer questions about knowledge which have been argued back and forth by bourgeois philosophy for a very long time, and to embark upon important generalisations concerning the nature and scope of our knowledge.

Generalising from the actual historical development of knowledge, dialectical materialism teaches that, at every stage and in all circumstances, knowledge is incomplete and provisional, conditioned and limited by the historical circumstances under which it was built up, including the means and methods employed for gaining knowledge and the historically conditioned assumptions and categories employed in the formulation of ideas and conclusions.

But this development of knowledge, every stage of which has such a conditional character, is a development of knowledge of the real material world, of the discovery of the interconnections and laws of motion of real material processes, including the development of human society and human consciousness. It is a progressive development, in which the bounds of knowledge are stage by stage enlarged, in which the agreement of ideas and theories with objective reality is stage by stage increased, and in which stage by stage what was provisional and hypothetical gives place to what is assured and verified.

In this development, it is always the case that the known is bounded by the unknown. The progress of discovery always comes up against barriers which arise from the limitations of existing knowledge and of existing methods. Dialectical materialism teaches that there are, however, no absolute bounds or limits to knowledge. While the progress of knowledge always faces barriers to further advance, knowledge progresses precisely by finding out how to get over them. There are no absolute limits to knowledge, no unknowable things-in-themselves, no mystery or secret of the universe, nothing which cannot in principle be known and explained.

Such is the extremely bold and optimistic credo of the

dialectical materialist theory of knowledge. And such a theory of knowledge corresponds to the requirements of science.

In the first place, it is based on no idealist assumptions or abstract speculations, but is a generalisation from the actual development of science, from the history of the origin and development of human knowledge.

In the second place, it supplies the sciences with conceptions of the nature of knowledge and of its development which, being rooted in the actual practice of science, serve as a guide and instrument in the development of science.

The dialectical materialist theory of knowledge is for the sciences a means for the examination and criticism of their own assumptions and procedures. And this is something essential for the formulation and solution of the problems and tasks of science.

CHAPTER 3

MATERIALISM *VERSUS* IDEALISM IN CONTEMPORARY PHILOSOPHY

1. THREE FORMS OF MODERN IDEALISM

IN the last chapter I stressed the class character of dialectical materialism, which is consciously the philosophy of the revolutionary proletarian movement. It is this which accounts for the attitude taken towards dialectical materialism over the past hundred years by the philosophers of the various bourgeois schools. They can on no account reconcile themselves with dialectical materialism or adopt its standpoint, and do not wish do so. By many, dialectical materialism has been completely ignored, as if it belonged to another world from theirs—which in a certain sense is indeed the case. Others have adopted towards it an attitude of bitter and uncomprehending hostility. Others have found it worth discussing. They have reinterpreted its propositions in their own terms, "refuted" some of them and so revised and reformulated others as to make them acceptable from the standpoint of bourgeois philosophy.

Bourgeois philosophy has produced numerous ramifications of schools and systems since the time of Marx and Engels. Its tendency has been to become ever more specialised and academic, more and more the province of closed groups of university professors, more and more incomprehensible to all who have not been through the specialised "philosophical training" which capitalist society has evolved for its "philosophers". But this has not prevented the theories of philosophers from being broadcast in various vulgarised forms for the benefit of the general public. Since the invention of broadcasting, philosophers themselves have begun to make a lucrative business out of this very vulgarisation of their own esoteric productions. Their theories provide a source which feeds the whole muddy stream of bourgeois popular "culture".

Dialectical materialism, as I have pointed out, is the first absolutely consistent materialist philosophy. In this respect it has in fact completed the polarisation of philosophy into its

materialist and idealist camps. These two camps have become most sharply differentiated in contemporary philosophy.

In the one camp is dialectical materialism, which is that which is rising and growing in philosophy, which inherits the achievements of the great philosophies of the past and which develops philosophy as a science. In the other camp are the various schools of idealism—whose condition of disintegration, confusion and ideological collapse faithfully reflects the corresponding condition of bourgeois society.

Between the two there remain various schools of compromise, which maintain a standpoint materialist in some respects but inconsistently materialist. Chief representatives of such compromise schools at the present day are some of the so-called critical realists and humanists in the United States. Marxists recognise such progressive bourgeois philosophers as allies of materialism against idealism—though not, it must be confessed, very reliable or consistent allies.

The majority of the bourgeois schools of philosophy, however, including the schools of empiricism which it is the business of this book to examine, have passed over absolutely and completely into the camp of idealism.

Lenin wrote that "the genius of Marx and Engels consisted in the very fact that in the course of a long period, nearly half a century, they developed materialism, that they further advanced one fundamental trend in philosophy."(1) The struggle of Marxism in philosophy is the struggle of materialism against idealism.

What is the central issue between materialism and idealism, which has run through the entire history of philosophy? It was simply stated by Engels as follows:

"The great basic question of all philosophy, especially of modern philosophy, is that concerning the relation of thinking and being . . . the answers which the philosophers gave to this question split them into two great camps. Those who asserted the primacy of spirit to nature, and, therefore, in the last instance, assumed world creation in some form or other . . . comprised the camp of idealism. The others, who regarded nature as primary, belong to the various schools of materialism."(2)

To grasp, however, the central points at issue between Marxist materialism and the idealists in contemporary philosophy, it is

(1) Lenin, *Selected Works*, Vol. XI, p. 386.

(2) Engels, *Feuerbach*, pp. 30, 31.

necessary to particularise further, and to distinguish various different elements or components of the idealist approach. This task was undertaken, and the results summarised, by Stalin, in his chapter on Dialectical and Historical Materialism contained in the *History of the Communist Party of the Soviet Union (Bolsheviks)*.(1)

Stalin distinguishes three principal elements of idealist theory.

(1) There is that element of idealism which "regards the world as the embodiment of an 'absolute idea', a 'universal spirit', 'consciousness'"; that is to say, the element of insistence upon the ultimate spiritual nature of the world, the existence of a spiritual reality which underlies, conditions or explains the material world.

This is the element of *objective idealism*—old-fashioned, classical idealism. It does not deny that the material world exists, or that we can gain extensive knowledge about material processes. But it says that material existence is secondary, or derivative, and that behind it is the ultimate reality, which is spiritual. Such idealism is exemplified in the simple theological view that God created the world (not always so simple, it is true, when they try to say how he did it); and then again in more complicated philosophical theories, such as Leibnitz's theory that matter is only the outward manifestation of the activity of spiritual monads, Hegel's theory that the world is the embodiment of the Absolute Idea, or Whitehead's that real processes consist in the ingression of Eternal Objects into space and time.

(2) There is the element of idealism which denies that the material world exists at all, and asserts that only sensations, perceptions, ideas exist. This is the element of *subjective idealism*, for which the material world is neither a separate existence created by God, nor the outward manifestation of a collection of spiritual monads, nor the materialisation of the Absolute Idea, but is a collection of sensations in my mind.

(3) Closely related to *subjectivism* is the *relativism* which denies the possibility of knowledge of objective reality. Relativism insists that whether the material world exists or not, we can know nothing about its nature: all knowledge is relative, phenomenal, of appearance only and not of "things in themselves". It "denies the possibility of knowing the world and its laws . . . does not believe in the authenticity of our knowledge, does not recognise objective truth, and holds that

(1) See *History of C.P.S.U.(B)*, p. 111–3.

the world is full of 'things in themselves, which can never be known to science . . ."

It is important to distinguish these three elements of idealist theory—which can be conveniently labelled *objective idealism, subjectivism and relativism*—because in different idealist philosophies different elements play a more or less prominent part. Thus in the thought of some philosophers one element plays so predominant a part, the others being relegated to a minor rôle or even excluded, that it is possible to speak of definite types or forms of idealist philosophy—objective idealism on the one hand, subjective idealism and relativism on the other.

Hegel, for instance, was predominantly an objective idealist—the elements of subjectivism and relativism played little part in his views. In the case of most positivists, on the other hand, the elements of subjectivism and relativism are predominant, and views typical of objective idealism may be explicitly opposed. In the case of Berkeley, it was the element of subjectivism that played the major part in his idealist philosophy. On the other hand, a contemporary positivist like Hans Reichenbach (who has recently been honoured by having some of his views repeated by Bertrand Russell) is predominantly a relativist, and explicitly argues against both subjective and objective idealism. Again, an ancient philosopher such as Plato, in whose philosophy the element of objective idealism was predominant, and who maintained that while absolute knowledge was possible of the realm of Ideas, knowledge of material things was always partial, uncertain and relative, was at the same time strongly opposed to the relativism of the Sophists.

Thus, in considering idealism in philosophy it is always necessary to distinguish these various elements of idealism, which are combined in various ways in the works of different idealist philosophers.

Marxist Philosophical Materialism

Stalin then brings out the principal features of modern philosophical materialism, that is, of Marxist philosophical materialism, in terms of the materialist opposition to *all* these elements of idealism. "As to Marxist philosophical materialism", he says, "it is fundamentally the direct opposite of philosophical idealism."

(1) "Contrary to idealism, which regards the world as the embodiment of an 'absolute idea', a 'universal spirit', 'consciousness', Marx's philosophical materialism holds that the world is by its very nature material, that the multifold phenomena of the world constitute different forms of matter in motion, that interconnection and interdependence of phenomena, as established by the dialectical method, are a law of development of moving matter, and that the world develops according to the laws of movement of matter and stands in no need of a 'universal spirit'."

(2) "Contrary to idealism, which asserts that only our mind really exists, and that the material world, being, nature, exists only in our mind, in our sensations, ideas and perceptions, the Marxist materialist philosophy holds that matter, nature, being is an objective reality existing outside and independent of our mind; that matter is primary, since it is the source of sensations, ideas, mind, and that mind is secondary, derivative, since it is a reflection of matter, a reflection of being; that thought is a product of matter which in its development has reached a high degree of perfection, namely, of the brain, and the brain is the organ of thought; and that therefore one cannot separate thought from matter without committing a grave error."

(3) "Contrary to idealism, which denies the possibility of knowing the world and its laws, which does not believe in the authenticity of our knowledge, does not recognise objective truth, and holds that the world is full of 'things in themselves' that can never be known to science, Marxist philosophical materialism holds that the world and its laws are fully knowable, that our knowledge of the laws of nature, tested by experience and practice, is authentic knowledge having the validity of objective truth, and that there are no things in the world which are unknowable, but only things which are still not known but which will be disclosed and made known by the efforts of science and practice."

Such are the consistently materialist teachings of Marxist philosophy, of dialectical materialism, which are opposed to *all* forms of idealism and which, in particular, are the basis for the criticism of the subjectivism and relativism which has become *the most widespread and persistent form of idealism* in contemporary philosophy.

2. THE IDEALIST NATURE OF CONTEMPORARY POSITIVISM

I now turn to the materialist criticism of positivism, or rath of posivitism in its contemporary form of so-called logic positivism. Logical positivism reveals itself in the light materialist criticism as a thorough-going idealist philosophy.

When idealism is defined in its most general aspect as th doctrine that spirit is prior to nature, it may at first sight see strange to assert that logical positivism is a variety of idealism since logical positivism neither asserts that spirit is prior t nature nor that nature is prior to spirit, neither asserts no denies "world creation", but declares that all such assertion are meaningless nonsense.

Logical positivism, reducing philosophy to analysis language, claims to have transcended the "metaphysical disputes of idealists and materialists—a claim which does no prevent it from also claiming to be materialist - not "met physical" materialism, but, in Carnap's phrase, "methodic materialism".

"Our approach has often been termed positivist; it migh equally well be termed materialist," writes Carnap. "N objection can be made to such a title, provided that the distinctio between the older form of materialism, and methodic materialism—the same theory in a purified form—is no neglected."(1)

But the idealist nature of logical positivism becomes manife in relation to the key issues over which the difference betwee materialism and idealism has come to be expressed in moder philosophy, which were detailed in the previous section. An thereby the type of idealism which logical positivism represen also becomes clear. The radical opposition of logical positivist to materialism, and, consequently, its own idealist nature, ca be seen most clearly in relation to the three features materialism as opposed to idealism which were delineated b Stalin. It will be convenient to take them in reverse order.

(1) Does logical positivism hold, with materialism, tha "the world and its laws are fully knowable, that our knowledg of the laws of nature, tested by experiment and practice, authentic knowledge having the validity of objective truth"?

On the contrary, it rejects such a view of knowledge.

Logical positivism agrees that our knowledge of the laws

(1) Carnap, *The Unity of Science.*

ture is expressed in natural science. But what is science? cording to logical positivism, science is "a system of sentences", d "sentences are to be compared with sentences, not with perience', not with 'a world', nor with anything else." The orrectness" of scientific theory depends on how well it can "systematised", on how well the general statements can be ought into agreement with the other general statements of ence and with the observational protocol, and not on how ll it can be brought into agreement with objective reality.

This view is equivalent to a complete relativism respecting owledge. According to this view, our knowledge cannot be uthentic knowledge having the validity of objective truth", t represents merely the way we have chosen to systematise r general statements and to bring them into agreement with servations.

Logical positivists never talk about "things-in-themselves", about the "unknowable", because they regard such talk as iseless. Nevertheless their views dovetail with idealist views out the limits of knowledge and the existence of unknowable ngs-in-themselves.

This is shown by the application of logical positivism in ence, which finds expression, as I have already said, in the malist approach now widely current in various branches of tural science. This formalist approach means that science ks exclusively for formulæ to correlate observations and andons the attempt to know the material reality which gives e to the observations, but which is said to lie beyond the nits of empirical knowledge, to be unknowable.

Such an approach is strikingly manifested in contemporary antum mechanics.

Thus Reichenbach, for instance, in his *Philosophical Foundations Quantum Mechanics*, distinguishes "phenomena", which occur the intersection of physical processes and are "observable", m "interphenomena", which are not observable. No account n be given of "interphenomena", according to him, which is e from "anomalies" and contradictions; statements about nterphenomena", i.e about the physical processes themselves, e in principle unverifiable and are "neither true nor false". e physical world consists of "interphenomena", which is rely another word for unknowable "things-in-themselves".(1)

(1) See Hans Reichenbach, *Philosophical Foundations of Quantum Mechanics*, section 6 et seq. and section 37.

In a similar strain, Dirac states that "What quantum mechanics does is to try to formulate the underlying laws in such a way that one can determine from them without ambiguity what will happen under any given experimental conditions. It would be useless and meaningless to attempt to go more deeply into the relations between waves and particles than is required for this purpose. . . . The only object of theoretical physics is to calculate results that can be compared with experiment, and it is quite unnecessary that any satisfying description of the whole course of the phenomena should be given."(1)

Dirac's confusion here arises from the fact that, like most bourgeois physicists, he equates a "satisfying description" of the physical world with a description in classical mechanistic terms. Because every such description breaks down in the face of advancing physical knowledge, he comes to the conclusion that no "satisfying description" either can or should be given.

What he does not see, but what dialectical as distinct from mechanistic materialism would tell him, is that the way to seek a more "satisfying description of the whole course of the phenomena" is not by seeking to reduce these phenomena to a process of mechanical interaction between ultimate components, whether particles or waves, but by seeking to disclose the dialectical contradictions inherent in the processes of nature. But that is by the way. The point is that Dirac's formalism is in essence an application of logical positivist ideas in physics and he himself justifies it in terms of positivist philosophy.

This logical positivist relativism respecting our scientific knowledge, which is most clearly exemplified in physics, but which the logical positivists say has application throughout the whole field of science, quite clearly limits scientific knowledge in a way that accords fully with the idealist view that "the world is full of things-in-themselves that can never be known to science."

Despite its "materialist" pretensions, logical positivism does not oppose but supports this type of idealism—and can be, and is, used accordingly to give countenance to all the spiritualistic and mystical doctrines respecting these "things-in-themselves" which are invented by less "scientific" idealists.

(2) Does, then, logical positivism hold, with materialism, that "matter is objective reality existing outside and independent of our mind"?

(1) P. A. M. Dirac, *Quantum Mechanics*, 1st ed., pp. 2, 7.

On the contrary, it rejects such a view of matter. It rejects it as "senseless metaphysics".

Of course, logical positivists, like all other positivists, will admit that science teaches "that perceptions arise from the stimulation of the sense-organs", "that thinking is a function of the brain", and so on. But what are all these statements of science, according to logical positivism? They are formulæ in which a "scientific language" is used to co-ordinate the statements of our observational protocol.

The point was succinctly put by A. J. Ayer, professor of philosophy, or rather of logical positivism, in the University of London, in a symposium on *The Physical Basis of Mind* arranged by the B.B.C. Third Programme.

"What are the facts?" asked Professor Ayer. And he answered: "The facts are that the physiologist makes certain observations, and that these observations fall into different categories. On the one hand there are the observations which lead him to tell his story about nerve cells and electrical impulses. That is to say, the story is an interpretation of the observations in question. On the other hand there are the observations which he interprets by saying that the subject of his experiment is in such and such a "mental" state, that he is thinking, or resolving to perform some action, or feeling some sensation, or whatever it may be. It is then found to be the case that these two sorts of observations can be correlated with one another . . . My conclusion is . . . that talking about minds and talking about bodies are different ways of classifying and interpreting our experiences."(1)

So logical positivism, when it accepts from science statements about "the physical basis of mind", accepts such statements simply as "interpretations" of "our experiences", as ways of correlating given observations. Some observations are conveniently expressed in one language—the language of "nerve cells and electrical impulses"; other observations are conveniently expressed in another language—the language of "mental states". But both languages refer to observations, and to speak of "the physical basis of mind" is only a way of expressing a particular correlation amongst observations. All the observations are part of the same basic protocol, whose statements, as Carnap put it, "describe directly given experience".(2)

But materialism asks the question: Does this "directly given

(1) *The Listener*, Vol. XLI, No. 1066, June 30, 1949, p. 1110.

(2) Carnap, *The Unity of Science*.

experience", do our perceptions, reflect objective reali existing outside and independent of our experience, or do th not? Materialism asks this question, and answers it in t affirmative. Logical positivism, on the other hand, does not a this question and cannot recognise such a question. But there in effect it rejects materialism, and answers that there is reality outside the "given experience".

It rejects the materialist view that our perceptions are source of knowledge of objective reality existing outside a independent of our minds, and that the test of science lies in agreement or disagreement with this objective reality. In doing, it tacitly accepts and supports the subjective idea view, that nothing exists but our own sensations, ideas a perceptions, and that the test of science lies solely in its agre ment or disagreement with "directly given experience".

According to materialism, "one cannot separate thought fr matter without committing a grave error." Logical positivi say they agree. Of course not, they reply, and they point o that in the "language of science", statements about thought a coordinated with statements about matter in such a way th this separation is not allowed by scientific language.

All they mean is that, in experience, one set of observati is correlated with another set of observations. But it is one thi to say that observations which we express in a language "mental states" are correlated with observations which express in a language of "nerve cells and electrical impulse It is another thing to say that those mental states are t conscious aspect of the neural activity of the brain, which is form of movement going on in the objective material wo which exists independent of all experience, and that conscio ness is nothing but a reflection of matter. Materialism says latter; logical positivism rejects such a statement and substitu for it the former statement.

Materialists are not dealing "formally" with "the language science", but with the content of scientific and philosophi views. It is precisely in what logical positivism has to say ab the language of science that is contained its idealist separati of thought from matter, its subjective idealism.

For materialism, thought is a product of matter and a reflect of matter. But logical positivism bases itself on considering properties of the expression of thought—language—in absol abstraction, completely severed from its material basis, from

ual functioning as an instrument of thought in reflecting and nprehending the objective world.

Logical positivism starts from an abstraction which is entially idealist in character. It considers thinking, which is ;ed on material processes and reflects them and is itself thing but one form of the movement of matter, just by itself, its linguistic expression. On this idealist basis it proceeds to luce what can and cannot be "said" and to lay down rules the interpretation of statements. And it inevitably arrives at idealist conclusion that it is senseless to talk about matter objective reality existing outside and independent of our nds.

Thus logical positivism rejects the materialist view that tter is objective reality existing outside and independent of r minds, precisely on the basis of its idealist approach to ought and its expression, precisely on the basis of its idealist aration of thought from matter.

(3) Lastly, does logical positivism hold, with materialism, t "the world is by its very nature material, that the manifold enomena of the world constitute different forms of matter in tion" ?

Obviously, it denies this, it rejects it as senseless.

For the logical positivists, applying their conception of the alysis of language and the principle that the meaning of a tement is given by its mode of verification in experience, instakingly explain that to describe the world in terms of natter in motion" and, alternatively, to describe it in terms "perceptions and sense-data", are merely two different anguages" for doing the same thing, namely, making state-ents which can be verified in experience.(1) Clearly, therefore, ey reject the materialist view that "the world is by its very ture material".

Logical positivists explain that they prefer to say nothing out "the nature" of the world, for they regard such statements senseless. Nothing can be said or known about the nature of e world; theirs is an extreme form of relativism.

As for science, Carnap says it "is a system of statements sed on direct experience and controlled by experimental rification".(2) The aim of science is to produce formulæ which ll give the right answers in relation to the protocol of observa-

(1) See A. J. Ayer, *Foundations of Empirical Knowledge*. Chapter I.

(2) Carnap, *The Unity of Science*.

tional statements which become available to scientists. Scientific theory is thus diverted into formalist channels by the logical positivist doctrine of idealism, which teaches that the last thing science can or should try to do is to reveal the objective laws of matter in motion.

The logical positivists say that they have no views about the nature of the world. But their "logic of science" nevertheless provides a battery of arguments for those who are concerned to propagate spiritualistic views about the nature of the world. There is today not a single idealist philosopher or theologian, however different and opposed his idealism may be to that of the positivists, who does not continually make use of positivist arguments against materialism and in support of idealism.

I conclude, therefore, that *logical positivism is, in its whole approach and in its opposition to materialism, a thorough-going idealist philosophy; and that the type of idealism which it represents is the subjectivist and relativist type of idealism.* This is the basis of the materialist criticism of logical positivist philosophy in all its ramifications.

3. POSITIVISM AND "SHAMEFACED" MATERIALISM

In expounding Marxist materialism in the introduction to his *Socialism, Utopian and Scientific*, Engels noted that some of his contemporaries, who were propagating and defending materialist views against idealism, had nevertheless introduced into their expositions of materialist views an idealist gloss, in the form of positivist conceptions.

These men were materialists. But because materialism was not held to be a respectable doctrine in 19th century bourgeois society, they drew back at an open and unashamed advocacy of materialism and covered up their materialism by a simultaneous advocacy of positivist views. He therefore referred to them as "shamefaced" materialists. It was the great agnostics of the latter part of the 19th century that he had in mind when he used this term—men such as T. H. Huxley.

Hence, despite the positivist conceptions of these thinkers, Engels did not treat their philosophy as idealist, but regarded their positivism simply as a kind of idealist face-saving clause superimposed upon a philosophy essentially materialist in its approach. How does this square with my statement that contemporary "logical" positivism is a thorough-going idealist philosophy?

Engels gave a very precise characterisation of the agnosticism of the thinkers to whom he was referring.

"What, indeed, is agnosticism," he wrote, "but, to use an expressive Lancashire term, 'shamefaced' materialism? The agnostic's conception of nature is materialistic throughout. The entire natural world is governed by law, and absolutely excludes the intervention of action from without. But, he adds, we have no means either of ascertaining or of disproving the existence of some supreme being beyond the known universe. . . .

"Again, our agnostic admits that all knowledge is based upon the information imparted to us by our senses. But, he adds, how do we know that our senses give us correct representations of the objects we perceive through them? And he proceeds to inform us that, whenever he speaks of objects or their qualities, he does in reality not mean these objects and qualities, of which he cannot know anything for certain, but merely the impressions which they have produced on his senses. . . .

"As soon, however, as our agnostic has made these formal mental reservations, he talks and acts as the rank materialist he at bottom is. He may say that, as far as *we* know, matter and motion can neither be created nor destroyed, but that we have no proof of their not having been created at some time or other. But if you try to use this admission against him in any particular case, he will quickly put you out of court. If he admits the possibility of spiritualism *in abstracto* he will have none of it *in concreto*. As far as we know and can know, he will tell you that there is no Creator and no Ruler of the universe; as far as we are concerned, matter and energy can neither be created nor annihilated; for us, mind is a mode of energy, a function of the brain; all we know is that the material world is governed by immutable laws, and so forth. Thus, as far as he is a scientific man, as far as he *knows* anything, he is a materialist; outside his science, in spheres about which he knows nothing, he translates his ignorance into Greek and calls it agnosticism."(1)

It has been asked: Does not this description fit the contemporary "logical" positivists? Are they not rather "shamefaced" materialists than idealists? Such a question shows a lack of understanding both of the progressive thinkers whom Engels called "shamefaced materialists" and of the contemporary

(1) Engels, *On Historical Materialism*. See Introduction to *Socialism, Utopian and Scientific*.

positivists, as well as a lack of understanding of the difference between materialism and idealism.

In no sense have the contemporary positivists a materialist conception of nature comparable with that of the great agnostics.

In the first place, their conception is one which rules out the objective existence of causality in nature and of natural laws, vehemently asserted by the agnostics but which, the positivists now assert, is a mere metaphysical invention, a meaningless expression. *They are not materialists with "formal mental reservations", but have systematised these reservations into a complete anti-materialist system. They are not materialists in science like the agnostics, but it is precisely in the field of science that they defend idealism, in the form of subjectivism and relativism, and attack materialism.*

In the second place, a leading feature of the materialist views of the agnostics was their conception of development, of the universality of progress. They held the view that in nature, as Engels put it, "in spite of all seeming accidents and of all temporary retrogression, a progressive development asserts itself in the end". They held that this development proceeded throughout according to natural law, alike in the formation of living organisms from inorganic matter, in the evolution of the species of living organisms and in the evolution of human society. This materialist conception of development was a central feature of their thinking, although their lack of understanding of materialist dialectics made it impossible for them to elaborate it and led them to the introduction of many idealist fantasies in their endeavour to explain the process of development. *But this whole progressive, materialist concept of development has disappeared in contemporary positivism: it has been entirely given up and cast out by the latest "logicians".*

This fact corresponds to the social and political changes which have taken place in the capitalist world in the meantime. In the 19th century, bourgeois thought had still its ideologists of progress, who based themselves on materialist ideas, in however "shamefaced" a way, and with whatever formal reservations. Monopoly capitalism today knows nothing of progress. The idea, like the reality, is foreign to it. In this respect, too, the views of the contemporary positivists are utterly unlike those of the agnostics, whose materialism was recognised by Engels.

4. "LOGICAL" IDEALISM

In as much as there are two opposite and conflicting movements or trends in philosophy, then, materialism and idealism, it is clear that logical positivism is part of the trend of idealism. It is a variety of modern idealist philosophy.

But within the stream of idealism there are various different currents.

There is the idealism of the old-fashioned, classical type, which still seeks to establish some kind of "system" of idealist philosophy. This type of idealism proclaims that the real or ultimate nature of the world is spiritual—that the material world is mere appearance and that only spirit exists; or else, admitting a dualism of spirit and matter, that spirit is prior to matter and that behind material processes, or immanent in them, are spiritual forces, in terms of which alone can the world ultimately be understood and explained.

Contrasting with this classical type of idealism is the new "logical" idealism of the positivists. This idealism will have nothing of any "system", it will say nothing of "the nature of the world". Instead, it sets about an "analysis of language", in order to discover what can and cannot be "said", in order to regulate and direct our thoughts about the world by considering the "logical syntax" of the language in which we express them.

This idealism is new—and yet it is at least as old as Kant. Kant said that the task of philosophy was not to "dogmatise" about the nature of the world, but "critically" to examine the way we think. And on that basis, entirely separating thought from matter, he arrived at the conclusion that "things-in-themselves" are unknowable and that all possible knowledge is limited to the realm of "phenomena". Logical positivism is simply a "new" brand of neo-Kantianism, in which the "critical" examination of the logic of language, as the expression of thought, is substituted for the "transcendental deduction of the categories".

This idealism may aptly be termed "logical" idealism. Logical positivism or logical empiricism, as it terms itself, is simply "logical" idealism.

The essence of idealism, as was brought out in Engels' classical definition of the conflict of idealism and materialism, is that it falsifies the relationship of thinking and being. It falsifies the relationship of

thinking and being by asserting "the primacy of spirit to nature". Logical idealism carries out this falsification precisely in its "analysis of language", as the expression of thinking. This is the peculiarity of "logical" idealism, as a current of idealism.

The fact that "logical" idealism is a current of idealism distinct from other currents, which pursue the classical procedure of generalising about the spiritual nature of the world, has misled many people as to its true nature. For the "logical" idealists will be found arguing with the other idealists, and the remarks which each pass about the other's views are often far from complimentary. This leads to the impression that here is a fundamental philosophical conflict—that the "logical" idealists are in fact opposed to idealism.

But these arguments are merely the surface eddies produced when there are different currents in the same main stream. Such eddies may well puzzle and mislead the poor fish that swim in the far from limpid waters of the stream of idealist philosophy.

The current of "logical" idealism flows along the main stream. Like all the currents of idealism, it issues in the same opposition against the materialist view of the world and of mankind and human thought. Its arguments and analyses of language serve to reinforce every idealist view opposed to materialism. It joins with every other contemporary current of idealism in teaching the limitations of scientific knowledge, the impotence of reason, the impossibility of a rational comprehension of objective reality, the relativity of truth, the mysteriousness and incomprehensibility of the universe, the illusoriness of social progress.

CHAPTER 4

PURE SEMANTICS—A METAPHYSICAL THEORY

1. WIDENING THE CONCEPTION OF "ANALYSIS OF LANGUAGE"

In Chapter One I considered the general character of modern positivist philosophy, its pretensions to be a scientific philosophy which overthrew the speculative systems of the past, and its degeneration into the view that philosophy consists of "the analysis of language", reducing philosophy to a specialised, technical investigation of "logical syntax." In the next chapter I outlined the views of dialectical materialism. And in Chapter 3 I showed how logical positivism is essentially a brand of idealism, a system of extreme subjectivism and relativism.

Now I shall consider some of the additions, amplifications and "corrections" of the "logical" idealist theory of "analysis of language" and "logic of science" which have been made since this style of theorising was widely taken up in the universities of the United States, subsequent to members of the old Vienna Circle shifting their headquarters across the Atlantic.

In this chapter I shall consider how Rudolf Carnap, the leader of the "logical" idealists, has, since he entered upon his duties as professor of philosophy in the University of Chicago, tried to generalise his earlier studies of "logical syntax" into a complete system of "the logic of language".

Previously he had succeeded in philosophising about language while completely ignoring the fact that words have a meaning. Now he has tried to give an account, not only of those rules which govern the formal structure of language, but also of those rules which determine that statements shall have a meaning. His system of philosophy is a system of rules which are alleged to have universal and necessary application in any language: if you understand these rules then you will understand how to use language rightly, and will consequently know how to avoid errors due to the misuse of language and how to talk sensibly on all occasions.

In the following chapter I shall consider how this system of rules has been applied by certain of its enthusiasts in the field

of sociology and politics. Then in Chapter 6 I shall consider how the same rules are applied in the field of the physical sciences. After that I shall have done with this philosophy of the analysis of language and shall turn to the allied philosophy, indigenous in the United States of America, known as pragmatism, with which "logical" idealism is at present coalescing.

The subject-matter of the present chapter, which is Carnap's system of "pure semantics", has the disadvantage that it becomes necessary to follow Carnap into certain very abstract and technical questions. This cannot be helped, since the very essence of his approach is to turn philosophy into a scholastic exercise concerning the structure and rules of something which has no real existence, namely, language in general, divorced from any real language and from life and society. But I am afraid that many readers may find the whole subject of this chapter both tedious and incomprehensible. In that case I would urge them to skim through this chapter very quickly and get on to the next one. But they may find the discussion on the metaphysical nature of Carnap's "pure semantics", which begins with section 5, more worthy of attention.

The starting point of the trans-Atlantic philosophical adventures of the "logical" idealists—or "logical empiricists", as they now call themselves—is to be found in an extension of what is contained in the "analysis of language". Just as Carnap's view of philosophy as "logical syntax of language" was designed to cut out the subjectivism and "metaphysics" of other brands of positivism, so these latest developments of "logical" idealism were evidently designed to avoid some of the more paradoxical consequences of the theory of "logical syntax", which I referred to in the section above on the theoretical poverty of this philosophy. The amendments which have been made were evidently designed to overcome the complete inability of the earlier conceptions to give even the least convincing account of either logic or empirical science.

The extension and amendment of the former concept of "analysis of language" was announced in 1938 by the American C. W. Morris, in an article entitled *Foundations of the Theory of Signs*, which forms the second number of the *International Encyclopædia of Unified Science*, whose publication was begun in that year.

C. W. Morris points out that "a sign" always functions in a three-fold relationship, namely: (1) to the people who use it

as a sign, (2) to whatever it designates, (3) to other signs. Corresponding to these three relationships in which a sign functions, there may be distinguished respectively: (1) the *pragmatic*, (2) the *semantic* and (3) the *syntactic* aspects or "dimensions" of the functioning of signs.

Language is an example of the use of signs. And from this "analysis" of the three "dimensions" of the functioning of signs the conclusion is drawn that in the "analysis of language" there is no occasion to limit consideration, as Carnap had previously maintained, to the syntactic dimension, i.e. to the relationship of signs to other signs. The semantic and pragmatic dimensions must also be considered, i.e. the meaning of words and statements and how they are used by the persons who employ them.

Accepting this analysis in his *Introduction to Semantics* (1940), Carnap says that three distinct fields of investigation may be distinguished in the analysis of language, namely, pragmatics, semantics and syntax. "The whole analysis of language" includes these three studies, and is not confined to syntax alone. He therefore concludes:

"Many of the earlier discussions and analyses are now seen to be incomplete, although correct; they have to be supplemented by corresponding semantical analysis. The field of theoretical philosophy is no longer restricted to syntax, but is regarded as comprehending the whole analysis of language, including syntax and semantics, and perhaps also pragmatics".(1)

In the light of this wider conception of "the field of theoretical philosophy", "logical" idealism now starts its task of "analysis" all over again, but inspired with better hopes of success. What was said before is to be "supplemented by corresponding semantical analysis". This "supplementation" takes place in two fields—in the field of the general theory of language and logic, and in the special field of the analysis and interpretation of the sciences.

2. THE SUBJECT-MATTER OF SEMANTICS

In the Preface to *Introduction to Semantics* Carnap says that for the analysis of science we need, besides a purely "formal" analysis of language, also an analysis of the signifying function of language, i.e. a theory of meaning and interpretation. This is the general theory of semantics. And semantics, he continues,

(1) Carnap, *Introduction to Semantics*, 39.

contains "not only a theory of designation" but also "a theory of truth and of logical deduction."

At the outset he makes a distinction between "descriptive" semantics and "pure" semantics.

Descriptive semantics is supposed to deal with given historically constituted languages, and to describe how the various signs in those languages are actually used by the people speaking them for the purposes of communicating with one another. It is therefore "an empirical study" and is a branch of "pragmatics", which considers signs in relation to the people who make use of them and describes how and for what purpose those people employ those signs. Descriptive semantics includes the vocabulary and grammar of the particular historically constituted languages.

To descriptive semantics Carnap pays no further attention. On the other hand, pure semantics is the general theory of the "construction and analysis of semantical systems", i.e. of the definitions and rules involved in assigning meaning, and hence truth or falsity, to any expressions in any language, and of the analytic consequences of those definitions and rules.

Just as logical syntax, or pure syntax, was conceived as a logical as distinct from empirical theory, concerned with the formulation of the general forms which must be taken by the syntactical rules operative in the construction of any language, without reference to the actual characteristics of particular historically constituted languages, so pure semantics is also conceived of as a purely logical theory, concerned with the general form which must be taken by semantical rules—once again without reference to any actual language.

3. DESIGNATION AND TRUTH

From the purely syntactical point of view, says Carnap, a language is characterised by its "rules of formation and transformation".

The *rules of formation* are the rules which state how the signs employed in the language may be combined to form sentences. The *rules of transformation*, which correspond to the rules of deductive inference, are the rules which state how sentences may be combined and one derived from another.

Thus it is a "rule of formation" that a subject-sign, S, may be combined with a predicate-sign, P, by means of the copula

"is", to form a sentence "S is P". It is a "rule of transformation" that the sentence "This S is P" may be derived from the sentence "Every S is P".

The rules of "formation" and "transformation" are purely syntactical: they involve reference only to the connections of signs with other signs, not to any connection of signs with what they designate, or with "meanings". But when, in addition, the semantical point of view is adopted, then there are also assigned "rules of designation" and "rules of truth".

A *rule of designation* is a statement indicating what objects—things, properties or relations—a given term in a language is being used to designate. The *rules of truth* indicate under what conditions statements in the language are to be classed as "true" and under what conditions as "false".

In his latest book *Meaning and Necessity* (1947), Carnap states as an example the "rule of truth for the simplest atomic sentences". It is as follows: "An atomic sentence . . . consisting of a predicate followed by an individual constant is true if and only if the individual to which the individual constant refers possesses the property to which the predicate refers".(1) For example, the "atomic" sentence "Mr. Smith is bald" is true if and only if the individual designated by the name "Mr. Smith" has the property designated by the predicate "bald".

The "rules of truth" for what Russell called "molecular" sentences (i.e. sentences formed out of two or more "atomic" sentences by joining them by connectives such as "and", "or", "if . . . then" and so on) may be stated, if one understands the "rule of truth" for "atomic sentences". For example, a sentence of the form "p or q" is true "if and only if at least one of the two components is true".(2)

Thus Carnap remarks that the so-called "truth-tables" constructed by Wittgenstein were of the nature of semantical "truth rules".(3)

The logical importance of semantics and of semantical rules is brought out by Carnap in the following way.

If "a system of signs" is constructed by the method of giving a list of the signs employed, with rules of formation and transformation determining how those signs are allowed to be

(1) Carnap, *Meaning and Necessity*, 1–3.

(2) Carnap, *Ibid*, 1–5.

(3) Carnap, *Introduction to Semantics*, 8.

combined in the system, but without assigning any meaning to them, i.e. without indicating what kind of things they are meant to designate, then the system is called a "syntactical system" or "calculus".

Obviously, one cannot be said to understand what the sign-combinations of a "calculus" mean, because no meaning has been given to them. Nor can it be asked whether they are true or false: they are merely allowable or not allowable in the system.

A meaning is given to the signs and sign-combinations of a "calculus" by the method of adding to it a system of semantical rules of designation and truth, i.e. rules which say what the different signs signify and under what conditions a combination of signs is true or false. Such a system is called "a semantical system", and it constitutes an "interpretation" of a syntactical system or calculus.

4. THE PRINCIPLES OF LOGIC : LOGICAL TRUTH, LOGICAL NECESSITY

By the introduction of the conception of semantics and of semantical rules, Carnap hopes to be able to introduce into the "analysis of language" an account of the meaning of our statements—e.g. of the meaning of the statements and theories of the sciences. For to set out the semantical rules of designation and of truth which characterise any system of statements is to explain their meaning. "The meaning of a sentence, its interpretation, is determined by the semantical rules".(1)

Moreover, semantics is conceived to have the most important application in the general sphere of logic. For, according to Carnap, the introduction of semantical considerations enables an account to be given of such conceptions as logical implication, validity, logical necessity and so on, which could not receive due recognition from the exclusively syntactical standpoint. In terms of semantical conceptions, it can now be shown, he says, how the truth of one statement necessarily follows from the truth of another statement, and how necessarily true principles of logic can be formulated, which supply the basis for valid procedures of deduction of one statement from another.

Referring to the special question of the principles of logic,

(1) Carnap, *Meaning and Necessity*, p. 10.

Carnap says that while the "principle of tolerance" (see above, page 19) still applies in the construction of a calculus, to the expressions of which no meaning is assigned, nevertheless the principles of logic which apply when rules of designation have been assigned and rules have been laid down for determining under what circumstances statements are true or false, are no longer "a matter of mere convention". The principles of logic are then "predetermined by the semantical rules of designation and of truth which are employed in constructing any semantical system".(1)

He makes the same point in his *Foundations of Logic and Mathematics*. The rules of logic, he says, can be chosen arbitrarily, and hence are conventional, if they are taken as the basis for the construction of a calculus, an interpretation of which is to be superimposed later. On the other hand, a system of logic is not a matter of free choice, but is either right or wrong, if an interpretation of the signs used is given in advance.(2)

How semantical considerations are supposed to throw light on the principles of logic may be indicated in the following way.

In order to construct any system of significant statements, we must employ and specify three sets of "rules".

(a) There are the *rules of designation*, according to which the terms employed stand for things and for their properties and relations. For example, the rules of designation will say that terms S_1, S_2, S_3, stand for objects; that P_1, P_2, P_3, stand for properties of objects; and that R_1, R_2, R_3, stand for relations between objects.

(b) There are the *rules of formation* for constructing sentences which state that a particular object has a certain property, or stands in a certain relation to other objects; and for constructing compound (molecular) sentences and generalisations from atomic sentences. For example, the rules of formation will say that atomic sentences may be formed by writing "S is P", or by writing "S_1 is R to S_2"; that compound or molecular sentences may be formed by combining atomic sentences by means of the connecting words "and", "or", "if . . . then", etc.; and that generalisations may be formed by the operations effected by the words "all" and "some".

(c) There are the *rules of truth*, which say under what conditions atomic sentences are true, and under what conditions compound

(1) Carnap, *Introduction to Semantics*, 39.

(2) Carnap, *Foundations of Logic and Mathematics*, 12.

sentences and generalisations are true. For example, the rules of truth will say that "S is P" is true whenever the object designated by "S" has the property designated by "P"; that "if S is P_1, then S is P_2" is true so long as it is not the case that the object designated by "S" has the property designated by "P_1" but lacks the property designated by "P_2"; that "all P_1's are P_2's" is true so long as there is no object which has the property designated by "P_1" but lacks the property designated by "P_2"; and so on.

When, in addition to syntactical rules of formation, the rules of designation and of truth are specified—when, in other words, we are dealing, not just with a "calculus" but with a "semantical system"—then, Carnap now maintains, the principles of logic become no longer a matter of free choice but can be shown to be necessary, i.e. to be necessary truths. Their logical necessity arises, he says, from the fact that the semantical rules employed in constructing significant statements by themselves suffice for establishing their truth.(1) The principles of formal logic are analytic consequences of the semantical rules employed in giving meaning to our statements, and can therefore be understood as themselves always and necessarily true.

For example, take the principle of formal logic which says that "if all P_1's are P_2's, and if all P_2's are P_3's, then all P_1's are P_3's" (which is one of the figures of the Aristotelian syllogism). Given the rules of designation which state how the expressions "P" stand for properties of objects, plus the rules of truth which state under what circumstances sentences constructed by means of the expressions "all" and "if . . . then" are true, then it follows that the above principle must be true always and under all circumstances: it is necessarily true and cannot ever be false, and this results simply from the semantical rules. Thus instead of being arbitrary syntactical conventions, the principles of logic are now, from the point of view of semantics, characterised as necessary truths.

Thus the principles of formal logic, which Carnap, from his previous purely syntactical point of view, described as arbitrary conventions, are now asserted by him to be necessary truths. He calls them "L-true", which is shorthand for "logically true". An "L-true" statement, a principle of formal logic, requires no empirical verification. For its truth follows from the very rules

(1) Carnap, *Meaning and Necessity*, 2.

of designation and rules of truth of the semantical system to which it belongs.

I proceed to some critical observations about these general principles of semantics which Carnap has now formulated, and which lie at the basis of the present endeavours of logical empiricism to develop a philosophical analysis of science.

5. THE METAPHYSICAL AND DIALECTICAL WAYS OF THINKING

In introducing the conceptions of semantics, Carnap noted that "many empiricists" had expressed the fear that semantical discussion would lead to "metaphysics". It was an axiom of logical positivism, at the time when it concerned itself exclusively with syntax, that one should speak only of the relations of sentences with other sentences, and never of the relations between sentences and the objects referred to. Semantics lifts this ban. Carnap expressed the opinion that, nevertheless, "metaphysics" could still be avoided.

But the outcome shows, I believe, that there were solid grounds for the expectation that he would become entangled in metaphysics as a result of his method of semantical investigation. I shall try to show in what way Carnap's semantics is entangled in metaphysics.

But it now becomes necessary to discuss what we mean by "metaphysics", and particularly by the use of this term as a term of criticism. I am not aware that logical positivists have ever defined their own use of it very exactly.

What is Metaphysics?

Many philosophers agree nowadays that "metaphysics" is something to be avoided. But the word is vague and ambiguous, and if it is to be used as a term of criticism, then it is important to clarify the sense in which it is so used.

Historically, the term "metaphysics" derives from Aristotle, whose treatise on the subject which he called "first philosophy" came to be known as "metaphysics" because it came after his physics in the order of his collected works. He defined it as "a science which investigates being as being and the attributes which belong to it in virtue of its own nature", adding that it was concerned primarily with substance, "of which the philosopher must grasp the principles and causes".(1)

(1) Aristotle, *Metaphysics*, Book 4, Chaps. 1–2.

When modern empiricists speak about "metaphysics" they often seem to have rather vaguely in mind the kind of thing Aristotle referred to as "first philosophy". Thus they characterise as "metaphysics" any attempt to arrive at a very wide generalisation about the world, or to describe the "essential nature of the real" or "the substance of things". This, they say, cannot be done and should not be attempted; and so the word "metaphysics" acquires with them its derogatory significance.

Such a characterisation of "metaphysics" clearly derives from John Locke, whose ideas have had great influence in modern empiricism. For he may be said to have been expressing "anti-metaphysical" conceptions, in this sense, when he wrote that we can form no idea of "the secret abstract nature of substance in general"—for he was saying that it is impossible to work out any accurate idea of the nature of substance as such.(1)

Such an attempt, however, to define "metaphysics" in terms of its subject-matter, is hardly satisfactory. For in a sense all science, as well as philosophy, is concerned with the substance of things and with the nature of the world. If, then, to speak of the substance of things and the nature of the world is "metaphysical", then science itself has a "metaphysical" tendency.

It may be said that "metaphysics" is not concerned, as are the various empirical sciences, with particular things or particular parts or aspects of the world, but with "being as being", that is to say, with attempting *very wide generalisations about the world, which go beyond anything coming within the province of any of the special sciences.*

However, to say this only conceals a very important distinction, namely, *the distinction between a wide philosophical generalisation which is based on experience and the results of the sciences, and which we attempt to justify and are prepared to modify in the light of experience and science, and one which is not so based but which is of a dogmatic, speculative or a-priori character.* Aristotle, it is true, made no such distinction when he originally defined "first philosophy"; but the progress of science during the intervening two thousand years has made such a distinction highly relevant today.

I conclude that the use of the term "metaphysics" to cover any and every attempt at generalisation about the nature of

(1) Locke, *Essay on the Human Understanding*, Book II.

the world is not a helpful use of this term in contemporary philosophy. It is both vague and misleading. And *it is in fact employed simply as a convenient device or stereotype for branding as a "metaphysician" anyone who is not prepared to accept the positivist theory of knowledge and the positivist interpretation of science. It completely fails to distinguish between that type of philosophical generalisation which is scientifically valid and useful, and that type which is not. If "metaphysics" is to be used as a term of criticism, it will be best to reserve its application to the latter type of generalisation.*

This means that we should seek to characterise metaphysics, not as comprising every generalisation about the nature of the world, but as a generalisation of a definite type, or as a definite *way of thinking.* In contrast to the loose use of the term by contemporary empiricists, this is how it was defined by Engels, and this is how it is used in contemporary scientific or dialectical materialism.

What, then, is the metaphysical way of thinking, whose products are to be characterised and criticised as "metaphysics"?

Engels, in his *Anti-Duhring*, characterised the metaphysical way of thinking by examining its historical roots, how it arose.

"When we reflect on nature, or the history of mankind, or our own intellectual activity," he wrote, "the first picture presented to us is of an endless maze of relations and interactions, in which nothing remains what, where and as it was, but everything moves, changes, comes into being and passes out of existence. This primitive, naïve, yet intrinsically correct conception of the world was that of ancient Greek philosophy, and was first clearly formulated by Heraclitus: everything is and also is not, for everything is in flux, is constantly changing, constantly coming into being and passing away. But this conception, correctly as it covers the general character of the picture of phenomena as a whole, is yet inadequate to explain the details of which this total picture is composed; and so long as we do not understand these, we also have no clear idea of the picture as a whole. In order to understand these details, we must detach them from their natural and historical connections, and examine each one separately, as to its nature, its special causes and effects, etc. . . ."

Engels goes on to say that the metaphysical way of thinking arises out of the very achievement of scientific methods of thought.

"The analysis of nature into its individual parts," he continues,

"the grouping of the different natural processes and natural objects into definite classes, the study of the internal anatomy of organic bodies in their manifold forms—these were the fundamental conditions of the gigantic strides in our knowledge of nature which have been made during the last four hundred years. But this method of investigation has also left us as a legacy the habit of observing natural objects and natural processes in their isolation, detached from the whole vast interconnection of things; and therefore not in their motion but in their repose; not as essentially changing but as fixed constants; not in their life, but in their death. And when . . . this way of looking at things was transferred from natural science to philosophy, it produced the specific limitations of . . . the metaphysical mode of thought."(1)

In his *Feuerbach* he characterises the metaphysical way of thinking as a way of thinking which regards "things as given, fixed and stable," which "accepts things as finished objects" and tries to know "*What* each particular thing *is*".(2)

Metaphysics, then, may be said to take its origin from certain universal and necessary functions of scientific thought, namely, abstraction and classification.

To think at all it is necessary to abstract. It is necessary to separate out certain objects for consideration, to detach them as separate and distinct objects of thought from the total flux of becoming in which we live our lives. Indeed, this process of abstraction, and the resulting classification, takes place in the activity of perception itself, even before anything of the nature of reflective thinking arises. And in reflective thinking it becomes necessary, in order to obtain any scientific and detailed conception of the world, or of any part or aspect of it which concerns us, to carry forward this process of abstraction by distinguishing the main kinds of things with which we are concerned, classifying them, distinguishing their various properties and the various kinds of relationship into which they enter.

This is how we think, and this universal character of thinking is embodied in the very structure of language.

But when we abstract and classify and assign the properties of things—which we have to do, in order to think at all—it needs to be remembered that the objects which we separate out

(1) Engels, *Anti-Duhring*, pp. 27–28.

(2) Engels, *Feuerbach*, p. 55 (my italics).

in thought do not exist in separation—that they are changeable and come into existence and cease to exist; that their properties depend on circumstances; that a given thing may turn into something else; and that the principles of classification which we adopt, useful as they may be for the purposes originally intended, may under certain circumstances break down and need to be revised.

It is extremely easy, however, to adopt a habit of thought which ignores all this, and does not take it into account. And it is from such a habit of thought that metaphysics arises.

Metaphysics arises when we try to generalise our picture of the world, and when in doing so we speak as though to the things which we think of in abstraction there corresponded things which exist in abstraction, and which have their own fixed nature independent of other things and of their own coming into being and ceasing to exist; as though to the properties which we assign to things there corresponded just so many fixed properties which everything must either have or not have; and as though to the classificatory distinctions which we make there corresponded rigid and impassable antitheses between things.

Metaphysical generalisation in philosphy may be described as that kind of generalisation which tries to comprehend the world in a single formula, of the sort which says that the world consists of things of such and such a kind, whose nature is marked off, circumscribed and delimited in terms of fixed categories, and which exist in a fixed framework of relationships.

Typical of the metaphysical way of thinking, for instance, is the time-honoured controversy of monism and pluralism, at least in the way it is commonly presented, as a controversy between metaphysicians who say that the world is a single substance, which they endeavour to characterise, and whose internal structure they seek to describe by means of some formula; and those who say that the world is an aggregate of many substances, each of which has its own characteristic and clearly defined properties and which co-exist in a definite system of relationships.

Again, when it is said that metaphysics is concerned with "being as such" or with "the ultimate nature of reality", it is the production of such metaphysical formulæ that is usually in question. Philosophers have wanted to say that everything that exists has precisely such and such a character, or that the whole flux of change and becoming which is presented to us in our perceptions is produced by certain definite and fixed types of

interaction between certain definite and fixed types of things.

It may be remarked that in the passage which I quoted above, Engels referred specifically to the production of metaphysical generalisations in modern scientific and philosophical thought. This type of generalisation was, however, already well represented in Greek philosophy, where it arose for the reasons which he assigned for metaphysics—namely, from the first attempts at "the analysis of nature into its individual parts". Thus, for example, the Greek atomists constructed a generalisation according to which everything that happens is the result of movements and collisions of atoms in the void. Their formula was that the world consists of a void containing indestructible atoms in eternal motion. This metaphysical type of materialism has also found its place in modern philosophy. It is known as mechanistic materialism, for *mechanism is a form of metaphysics.*

Again, I pointed out above that Locke thought he was formulating an anti-metaphysical conception when he said that we cannot inquire into "the secret nature of substance"; and the same applies to Kant when he distinguished the unknowable "thing-in-itself" from the "phenomenon". Nevertheless, it may now be stated that they were both continuing to think metaphysically. They were drawing a purely metaphysical distinction between the "substance", what a thing is "in itself," and the totality of its properties and relations and what it is "for us".

Dialectics versus Metaphysics

Such, then is metaphysics. And it is contrasted by Engels to dialectics. It is precisely in the dialectical way of thinking that the limitations of the metaphysical way of thinking are overcome.

Dialectics, said Engels, is that way of thinking, "which grasps things and their images, ideas, essentially in their interconnection, in their sequence, their movement, their birth and death. . . ."(1)

While the metaphysical way of thinking owes its origin to science, nevertheless the development of science itself shows the way to overcome the metaphysical way of thinking. "The revolution which is being forced upon theoretical natural science. . . .is of such a kind that it must bring the dialectical character of natural events more and more to the consciousness even of those empiricists who are most opposed to it. The old rigid antitheses, the sharp,

(1) Engels, *Anti-Duhring*, p. 29.

impassible dividing lines are more and more disappearing. . . . The recognition that these antitheses and distinctions are in fact to be found in nature, but only with relative validity, and that, on the other hand, their imagined rigidity and absoluteness have been introduced into nature only by our minds—this recognition is the kernel of the dialectical conception of nature."(1)

The dialectical way of thinking, in contrast to metaphysics, has at its foundation "the great basic thought that the world is not to be comprehended as a complex of ready-made *things*, but as a complex of *processes*, in which things apparently stable no less than their mind images in our heads, the concepts, go through an uninterrupted change of coming into being and passing away. . . ."(2)

Dialectics rests on the conception "that nature does not just *exist*, but *comes into being* and *passes away*. . . ."(3) On this basis it can be seen that no formula can be valid which describes the world in terms of a system of metaphysical categories.

Empiricists have been in the habit of contrasting their own empirical point of view to the fantasies of metaphysicians. But it can now be seen that this contrast is false. *An empirical philosophy can be just as metaphysical as a philosophy which is avowedly based on a-priori speculations.* In fact, the metaphysical way of thinking has been more in evidence amongst so-called empiricists than among any other class of philosophers. And this has been demonstrated throughout the whole history of modern empiricism.

The empiricist Locke, for instance, formulated the rigid, metaphysical distinction between "primary and secondary qualities", and between the unknowable "substance" and its knowable properties and relations. When Berkeley criticised these Lockean distinctions as metaphysical, he only paved the way to more metaphysics. After him came the metaphysical analysis of pure experience into its components, already begun by Locke—into separate impressions and ideas, which were combined together according to certain rules; into sensations and "sense-data". And this has given rise to a flood of metaphysical speculation during the last hundred years, from Mach's "neutral monism", according to which the "elements" of the world are

(1) *Ibid*, pp. 17–19.

(2) Engels, *Feuerbach*, p. 54.

(3) Engels, *Dialectics of Nature*, p. 9.

separate sensations, to Wittgenstein's theory that the world consists of "atomic facts", each of which "can be the case or not be the case, and everything else remain the same".(1)

Thus *the endeavour to encompass the known world within the framework of a metaphysical formula has been the constant preoccupation of empiricists, right up to the present day, and finds its negation only in dialectics-in dialectical materialism.*

At the same time, the empiricists are equally wrong in thinking that any and every attempt to arrive at a conceptual representation of "the nature of the objective world" is inevitably metaphysical—that to speak of "the reality of the physical world" and so on is metaphysics. True, such a theoretical enterprise may be approached in a metaphysical way and lead to metaphysical conclusions. But such an enterprise need not be approached metaphysically. On the contrary, as Engels has pointed out, "an exact representation of the universe, of its evolution and that of mankind, as well as of the reflection of this evolution in the human mind, can . . . only be built up in a dialectical way, taking constantly into account the general actions and reactions of becoming and ceasing to be, of progressive or retrogressive changes".(2)

Of course, such a dialectical representation of reality cannot be spun out of the heads of philosophers, but must be based on experience and the results of science. "To me", said Engels, "there could be no question of building the laws of dialectics into nature, but of discovering them in it and evolving them from it(3). . . . Nature is the test of dialectics."(4)

Moreover, it cannot be complete and final, in the way that so many metaphysical "systems" have claimed to be. "A system of natural and historical knowledge which is all-embracing and final for all time is in contradiction to the fundamental laws of dialectical thinking," wrote Engels; but went on to add: "which, however, far from excluding, on the contrary includes, the idea that the systematic knowledge of the universe can make giant strides from generation to generation."(5)

This discussion of the nature of metaphysics leads, then, to the following conclusion. *Positivistic empiricists have regarded as metaphysical any attempt to form a conceptual representation of the*

(1) Wittgenstein, *Tractatus Logico-Philosophicus*, 1.21.
(2) Engels, *Anti-Duhring*, pp. 29–30.
(3) *Ibid*, p. 17. (4) *Ibid*, p. 29.
(5) *Ibid*, p. 31.

nature of the objective world. But, on the contrary, from accumulating scientific knowledge we do gain such a representation, which is dialectical not metaphysical in character.

Metaphysics is correctly regarded rather as the attempt to sum up the nature of the world, or of any particular part of the world which is being investigated, under some formula of the sort which says that there exist certain definite things, each with its own fixed nature and properties, marked off and distinct from one another and co-existing and interacting in some fixed framework of relationships. In this sense, empirical philosophy itself has always borne a metaphysical character. And, as I shall now indicate, its latest excursions into "semantics" prove no exception.

6. PURE SEMANTICS AND PURE METAPHYSICS

In semantics, Carnap speaks of the relation of designation in which a sign or expression stands to that which it designates, and he distinguishes signs on the one hand from "designata" on the other hand.

He provides a list of the principal sorts of signs employed in language, with the corresponding designata. The signs include "individual constants", "predicates of degree 1" and "predicates of degree 2 . . ." to which are correlated as designata, "individuals", "properties" and "relations". He also says that to a combination of signs constituting a sentence there is correlated a "proposition" and that a sentence designates a proposition. All the designata—individuals, properties, relations and propositions—he calls "entities".(1)

In *Meaning and Necessity* he speaks with a certain air of embarrassment about the "entities" which are designated by signs. "The term 'entity' is frequently used in this book. I am aware of the metaphysical connotations associated with it, but I hope that the reader will be able to leave them aside and to take the word in the simple sense in which it is meant here. . . ."(2)

Now there is, of course, an obvious commonsense way of speaking in which a name such as "John" is used to stand for a particular individual, and in which a predicate such as "bald-headed" is used to designate a property of such an individual,

(1) Carnap, *Introduction to Semantics*, 6.

(2) Carnap, *Meaning and Necessity*, p. 22.

and in which a sentence, "John is bald-headed", means or expresses a proposition, i.e. the same proposition as is expressed by some different sentence in another language, e.g. "Jean est chauve". Carnap appears to be appealing to his readers to understand his words in nothing but this plain commonsense way.

He calls it "simple"—but yet its simplicity is problematic. As Engels said about commonsense—"Sound commonsense, respectable fellow as he is within the homely precincts of his own four walls, has most wonderful adventures as soon as he ventures into the wide world".(1) And it is a fact that the usages of commonsense no longer suffice when we enter into philosophical discussions. On the contrary, obscurities and contradictions concealed within the commonsense standpoint then manifest themselves and have to be dealt with.

Carnap himself already shows that he is transgressing the bounds of commonsense expression when he begins to speak of "entities"—for it is not commonsense, it is not ordinary usage, to speak of properties or relations or propositions as "entities".

Indeed, a classification of the "entities" which compose the world, and which we designate by our speech expressions, is essentially and inescapably a "metaphysical enterprise". And in such an enterprise Carnap has willy-nilly entangled himself—just as his more cautious empiricist friends warned him would happen.

In fact, in turning to semantics, Carnap has entangled himself in precisely the metaphysics which it was the achievement of Russell and Wittgenstein to have introduced into modern formal logic.

Russell gave this metaphysical theory the name of "logical atomism". According to this view, there are three sorts of ultimate components of the world—things, properties and relations; and these ultimate components are combined together in so-called "atomic facts" of the form that a certain thing has a certain property, or that certain things are related together by a certain relation. Wittgenstein began his *Tractatus Logico-Philosophicus* by observing that the world is the totality of atomic facts—an atomic fact being a combination of "simple objects", which "form the substance of the world", every atomic fact being independent of every other.

This "logical atomism" provides a classical example of the

(1) Engels, *Anti-Duhring*, p. 28.

metaphysical way of thinking; and Carnap, as a result of his semantical investigations, is now repeating it. He is using a philosophical language which describes the world as being composed of individuals and their properties and relations—and he freely adds other "entities" besides, such as propositions, which Russell and Wittgenstein never admitted into their own scheme. Carnap is explaining how we construct "atomic sentences" out of signs designating the "entities", and then how we construct compound sentences, generalisations, and so on. The truth of "atomic" sentences depends on whether the "entities" are actually combined in the way the corresponding signs are combined in the sentence, and the truth of other sentences depends on that of the atomic sentences.

This metaphysical scheme, which forms an integral part of Carnap's general semantics, culminates in the semantical concept of "state-description" which he has introduced into his *Meaning and Necessity*.

Carnap speaks of a language, or semantical system, S_1, which contains signs designating individuals, and other signs designating their properties and relations. From these signs atomic sentences are constructed. The atomic sentences may then be grouped into sets, called "state-descriptions", each of which "obviously gives a complete description of a possible state of the universe of individuals with respect to all properties and relations expressed by predicates of the system. Thus the state-descriptions represent Leibniz's possible worlds or Wittgenstein's possible states of affairs".(1)

Carnap continues: "There is one and only one state-description which describes the actual state of the universe; it is that which contains all true atomic sentences. . . .A sentence of any form is true if and only if it holds in the true state-description".

He then goes on to explain that "a sentence is logically true if it holds in all state-descriptions", corresponding to "Leibniz's conception that a necessary truth must hold in all possible worlds".

Thus we have the conception that "the actual state of the universe" is described in a collection of "atomic sentences"; and that there are many, indeed an infinite number, of possible states of the universe, of which only one is privileged to be actual. Later Carnap considers (without, however, decisively embracing) the conception that "there is only one

(1) Carnap, *Meaning and Necessity*, pp. 9–10.

fact, the totality of the actual world, past, present and future".(1) And the laws of logic are distinguished in that they hold, not only of the actual world, but "of all possible worlds".

Such is the metaphysics in which the general theory of semantics becomes involved.

Logical positivism sought an escape from metaphysics by refusing to speak about the world and the relation of thought with its objects. That refusal led to such absurdities that the ban was lifted. And the empiricists have immediately fallen back again into barren discussions of metaphysics.

7. THE "ANALYSIS OF MEANING"

The difficulty which entangles those empiricists who engage in "pure semantics" is that of formulating the nature of the rules of designation and truth which determine meaning. They consider a language of a given structure, containing individual constants and predicates of various degrees (simple properties and relations of various orders) and have to describe the rules whereby those terms designate various "entities", and whereby sentences are true or false depending on the actual arrangement of the "entities".

In *Meaning and Necessity* Carnap discusses a variety of "methods" for formulating the rules of semantics. "The different conceptions of other authors discussed in this book," he writes, "for instance, those of Frege, Russell, Church and Quine, concerning semantical problems, that is, problems of meaning, extension, naming, denotation and the like, have sometimes been regarded as different theories, so that one of them at most could be right while the others must be false. I regard these conceptions and my own rather as different methods. . . . Our differences are mainly practical differences concerning the choice of a method for semantical analysis. Methods, unlike logical statements, are never final. For any method of semantical analysis which someone proposes, somebody else will find improvements, that is, changes which will seem preferable to him and many others."(2)

I will not attempt to follow him in discussing the numerous complications into which these various "methods" lead their

(1) Carnap, *Meaning and Necessity*, p. 29.

(2) *Ibid*, p. 204.

authors. He opens up a prospect of endless experimentation with semantical methods, to keep academic philosophers gainfully employed for generations. But what he and the others are up against all the time is that the world does not analyse out metaphysically into such "entities" as they discuss, because "in the last analysis nature's process is dialectical and not metaphysical".(1) And so whatever "method" they adopt in working out "different conceptions concerning meaning, extension, naming, denotation and the like", the result is always some metaphysical scheme.

Source of the trouble may be found in the conception of the three "dimensions" of the functioning of signs, and of the three corresponding distinct fields of investigation, pragmatics, syntax and semantics.

They want to study the semantical "analysis of meaning in language" as a separate and distinct field of investigation, i.e. as the field of investigation of the relationship of signs to what they signify. But signs and combinations of signs only signify in so far as they are used for purposes of communication by definite groups of people; and what they signify, and how they signify, is conditioned by the context of their employment and the human ends which their employment serves.

We speak, for example, of things and properties and relations. But this logical structure of language—which is exemplified in the many different grammatical and syntactical mannerisms of actual historically constituted languages—is the product of a long evolution. It is a product of man's efforts to organise society and to dominate nature. The way in which we distinguish and characterise things, and abstract their properties and relations—in short, the formation of concepts and their use—is the way in which objective material reality has come to be reflected in our thought-representation of it, conditioned by the human ends of communication and expression which our language serves in the whole process of social evolution, and by the interaction of men with the external world. It is not a mirror-image of the existence of "things, properties and relations" as ready-made "entities".

According to Marx, "the ideal is nothing else than the material world reflected by the human mind and translated into forms of thought."(2) The semantical positivists, on the other

(1) Engels, *Anti-Duhring*, p. 29.

(2) Marx, *Capital*, Preface to the Second Edition.

hand, are content to take "the ideal", as expressed in the logical structure of the most developed languages, as something given, fixed and ultimate—to be taken "in itself" and not in its interconnections, origin and historical development. And then, when they come to speak of the meaning of language and the designation of terms, they postulate metaphysical "entities" corresponding to the elements of the logical structure. *Considering language in an abstract way, as a system of signs, they seek to analyse the relation of signs to what they designate; and all they can do is postulate a metaphysical "entity" whenever they want to find a designation, and invent "rules" correlating these "entities" with the signs which are supposed to designate them.*

But to understand "the problems concerning meaning, extension, naming, denotation and the like" which are involved in the significant use of language, it is necessary to consider the way in which language is historically constituted, and the human purposes it serves. It will not do to consider a language of a particular structure in isolation, and to try to invent "methods" for formulating its "semantic rules". All such "methods" can only result in metaphysical fantasies. These metaphysical fantasies are in fact the products of the basically idealist approach to the "analysis of language" which is characteristic of "logical" idealism in all its forms, and which is by no means "corrected" by the addition of semantical to syntactical "investigation".

To the "methods" of the "logical" idealists may be counterposed the method of dialectical materialism. Dialectical materialism is by no means unconcerned with the problem of the "analysis of meaning in language". But *dialectical materialism demands that language shall be considered in its actual historical development, as an "essential tool of human association",*[1] *as a means of communication, expressing the reflection of the material world by the human mind and its translation into forms of thought.*

It is important to study language, and what is involved in the meaning function of language, just because it is "the essential tool of human association" and we do need to understand the nature and functions of such a tool. Many errors are connected with the misuse of language. But if language itself is understood materialistically, then it is understood that formal misuses of language do not arise merely from ignorance of semantics, but belong to the use of language as a tool of human

(1) Caudwell: *Illusion and Reality*, p. 139.

association, and have their roots in human association.

The logical idealists have investigated semantics, the meaning function of language, only to falsify it. They have falsified it, in the first place, by the principle that the meaning of a statement is its mode of verification in experience, which leads to subjectivism and solipsism. And they have now falsified it, in the second place, by the doctrine that we give meaning to signs by stipulating rules of designation, i.e. by saying that there is an "entity", a certain thing, property or relation, which is designated by each sign to which a meaning is to be given.

Thus this idealist semantics represents a mixture of subjectivism and metaphysics. Considering language and its formal structure in isolation from the real development of language, it teaches, in the first place, that statement is limited to the recording and correlation of observations. It teaches, in the second place, that this recording and correlation of observations is to be done in terms of a rigid, metaphysical schematism.

CHAPTER 5

SEMANTICS APPLIED IN SOCIOLOGY AND POLITICS

1. THE PROMISE OF "SEMANTIC DISCIPLINE"

A great deal has been claimed for semantics—much more than would appear from Carnap's recent logical treatises. For it is supposed not merely to be a "discipline" which helps to interpret and clarify science by analysing the semantical as well as syntactical rules of scientific language, but to be a new doctrine which can prove the salvation of humanity.

Before Carnap and his fellow "logical" idealists took it in hand and began to reduce it, after their own style, to the bare bones of a formal theory, there were already protagonists of semantics in the United States who disseminated it in more popular form. One of the principal prophets of semantics is Stuart Chase, who, in *The Tyranny of Words*, describes it as "heady, exciting stuff," and undertakes to tell his readers "what it has done for me personally in laying ghosts and sharpening meaning, and what it might do for men in general if enough of them could become acquainted with the discipline."(1)

The misuse of language, which occurs when people do not understand the nature of the semantic rules governing meaning in language, leads, it is asserted, to many social evils and social conflicts. For people do not merely talk nonsense, but they get emotionally carried away by it and fight one another about it, when if only they would talk sense and learn to understand one another their conflicts could be smoothed over. Once get clear as to the meaning function of language, and get used to making only statements with a clear meaning, and conflicts will be resolved, fanaticism will be overcome. Hence *semantics is brought forward, not merely as an abstract logical theory, but as a new weapon of social reform and an instrument for human progress.*

With the aid of semantics, Stuart Chase diagnoses the causes of some of the principal ills afflicting contemporary capitalist society and propounds a method of cure.

Stuart Chase has always, so he tells us, been a reformer.

(1) Stuart Chase, *The Tyranny of Words*, p. 10.

Indeed, he was once a very active one. "As a young reformer," he writes, "I had organised meetings, written pamphlets, prepared lectures, concocted programmes, spread publicity with enthusiasm." But he became disillusioned, because he found that "the apathy of the unconverted was as colossal as it was baffling. As the years went by it became apparent that I was largely wasting my time. The message—and I still believe it was a human and kindly message—had not got through; communication was blocked."(1)

This disheartening experience led him to the conclusion that he was reforming the wrong thing, fighting the wrong enemy. If "communication was blocked", he decided that this must be due to a fault in the tools of communication—words. It was no use struggling for reforms if people could not understand you, and if you yourself did not possess the necessary technique for making what you had to say clear and comprehensible. What had first to be reformed was the use of words, and the enemy to be fought was "bad language".

"I had long been aware of the alarming futility of most of the literature dedicated to economic and social reform," he writes.(2) And so he ceased to dedicate his efforts to "economic and social reform" and dedicated them to semantics instead. Semantics could achieve the improvement of human relations which "economic and social reform" (in the United States at least) had failed to achieve.

"*The Name is not the Thing*"

For Stuart Chase, it is a first principle of semantics that "the name is not the thing".

"The senses of man," he writes, "receive a sign from the outside world" and "to the thing which this sign indicates human beings in due course give a name. But the name is not the thing. The thing is nameless and nonverbal."(3)

In expounding and developing this principle, Chase borrows extensively from the long book, *Science and Sanity*, written by Count Alfred Korzybski, who was, he informs us, "the first pioneer to help me", and under whose guidance "I looked for the first time into the awful depths of language. . . ."(4)

(1) *Ibid*, p. 3.
(2) *Ibid*, p. 2.
(3) *Ibid*, p. 25.
(4) *Ibid*, p. 4.

At the bottom of these "awful depths" is to be dimly discerned the "space-time event" which is nonverbal, unspeakable and infinite in its awful complication. With the space-time event "the bottom has been reached; this is as far as the language mechanism goes. Below lie the meanings of undefined terms, which we somehow know but cannot tell: the nonverbal level, where one can point but cannot utter, the very threshold where the senses make contact with the outside world. This contact comes before language and cannot be spoken."(1)

As a result of this contact with the senses, which cannot be spoken, the senses receive a sign, which is interpreted as the sign of the presence of an object—and to this object we give a name.

To have interpreted the sign given by the senses as the sign of an object is called by Korzybski and Chase the first level of abstraction. The second level of abstraction is to give the object a name. Then comes the third level of abstraction, when we connect with the name various "statements or descriptions", designating properties of the object of immediate practical interest to us. Next, with the fourth level of abstraction, we make generalisations and inferences about all or some objects of a certain kind. And lastly, having got thus far, "abstractions can break out in all directions . . . increasingly remote from the object. . . ."(2)

Chase gives as an example the case of a pencil. First there is a nonverbal space-time event, which Chase nevertheless tries to verbalise as "a mad dance of electrons". This makes contact with our senses, as a result of which we are aware of the presence of an object. (*First level of abstraction.*) Then we give the object a name, and say:"This is a pencil". (*Second level of abstraction.*) Then we begin to make statements about it, such as "This pencil is six inches long". (*Third level of abstraction.*)Then we begin to generalise about pencils, making statements such as: "Long pencils are better than short ones". (*Fourth level of abstraction.*) Finally, having once begun to generalise, we go on making abstractions of higher and higher orders, such as "Pencils are commodities", "Pencils are products of capitalist production", "Pencils are an essential element of human culture", and so on, and so on, each abstraction becoming "increasingly remote from the object clutched between my fingers".

(1) *Ibid*, p. 25.
(2) *Ibid*, p. 56 ff.

How, then, does this semantical analysis tie up with the diagnosis of the present ills afflicting society?

Very simply, says Chase. Most of our troubles have their roots in a failure to understand the semantical nature of the higher-order abstractions. People do not understand that "the name is not the thing", and instead identify names and things. So they believe that all the higher-order abstractions to which they give utterance are real things. And believing this, they behave accordingly—with disastrous results.

"Abstract terms," says Chase, "are personified to become burning, fighting realities."(1) He gives a whole list of them—the Fatherland, the Nation, the Flag, the Constitution, the Law, Progress, Fascism, Communism, Liberty, the Masses, Capital and Labour, Wall Street. . . . People mistake these abstract words for things, and then they begin to fight one another, either for or against these "fabulous concepts", and terrible "conflagrations" are started.

"Yet", says Chase, "if the knowledge of semantics were general, and men were on guard for communication failure, the conflagration could hardly start". For "if people were armed with semantic understanding, such fabulous concepts could not arise".(2)

One example which he gives of the dire results of semantical error is the occurrence of anti-semitism. "The long agony of the people labelled 'Jews' is largely caused by semantic confusion", he writes.(3) So the cure for anti-semitism is to give all the fascists and their dupes a course in semantics. And then we shall find that both fascism and anti-fascism are semantical errors as well.

It appears, then, that men are set at loggerheads with one another, and so come to manage their collective affairs very badly, because of their lack of understanding of the semantical nature of their own language. Indeed, men are the victims of a tyranny—a tyranny created by themselves, the tyranny of words. "Bad language", the personification of abstractions, is the root cause of much evil, and at the same time "most of the literature dedicated to economic and social reform" has demonstrated its "futility" by failing to attack this evil at its root. It is semantics that must come to the rescue, undertaking

(1) *Ibid*, p. 13
(2) *Ibid*, p. 15.
(3) *Ibid*, p. 230.

the noble mission of destroying the tyranny of words and so setting men free to live together in peace and amity.

"*Find the Referent*"

Just as semantics has penetrated to the cause of our troubles by its discovery that "the name is not the thing", so it propounds their cure in the slogan—"Find the referent."

"The point of every discussion", writes Chase, "is to find the referent. When it is found, emotional factors dissolve in mutual understanding. The participants are then starting from a similar foundation, talking about similar things. The disagreement, if it must arise, is grounded on a firm base. It is easier, of course, to find the referent for 'oxygen' than to find referents, one or more, for 'liberty' or 'feudalism'. If referents for a high-order abstraction are impossible to find, further discussion is futile. If referents are difficult to locate, that is a bother. But they must be found".(1)

The admonition to "find the referent" does not mean, however, that we must pursue the reference of every word and statement right down to the "awful depths" of the "space-time event". It means that we must pursue the reference down to the first level abstractions—the objects signified by the signs received by our senses. Finding the referent means that we must name the objects which we are talking about, the properties which we assert them to have and the relations in which we assert them to stand.

Thus: "We frequently use the abstraction 'mankind'. What is the referent? Depending somewhat on the context, or the way we use 'mankind', the referent is every person who ever lived, or every living person, or a sample study of enough persons to warrant limited conclusions about all persons. On the basis of persons living today, the referents are $Adam_1$, $Adam_2$, $Adam_3$, up to about $Adam_{2,000,000,000}$. . . . . Yet how often in using the term have you completely overlooked the parade of Adams, a file of men, women and children two billion strong which, if marching one foot apart, would stretch fifteen times round the equator? This is your referent. Too often have I forgotten it, and used 'mankind' as a lever to promote a private concept of what I wanted men to do or be. There is no entity 'mankind'. Call as briskly as you may, 'Hey, Mankind, come here!' and not an Adam will answer".(2)

(1) *Ibid*, p. 68.
(2) *Ibid*, p. 69.

From all this Chase concludes:

"A good semantic discipline gives the power to separate mental machinery from tangible events; makes us conscious of abstracting; prevents us from peopling the universe with non-existent things. . . .

"Abstractions we must use. But as we use them, we should look as it were over their edges and ask:

" *What is really happening out there?*

" *How do the facts hang together out there?*

" *What are people really doing out there?* . . .

"Beware of eternal certainties. . . . Look to the context. Find the referent. . . .

"The promise of semantic discipline lies in broadening the base of agreement. . . . Good language alone will not save mankind. But seeing the things behind the names will help us to understand the structure of the world we live in. Good language will help us to communicate with one another about the realities of our environment, where now we speak darkly in alien tongues."(1)

2. ABSTRACTIONS AND REALITIES

Stuart Chase wishes to make out that the "semantic discipline" leads back to concrete realities from meaningless abstractions. But is this in fact the case? On the contrary, the very opposite is the case.

When Chase was, as he informs us, a "social reformer", he was concerned with concrete realities and with the struggle to change them. But he turned away from social reform and decided to try to reform language instead. He turned away from the job of trying to understand social reality in such a way as to change it and took refuge instead in general theorising about words.

This means that he did just what he says semantics teaches not to do. He turned away from reality to "high order abstractions" about words. For semantics is, indeed, a very "high order" abstraction. It is a turning of the mind inwards to speculative generalisation about the tools of thinking, away from thinking about real things.

And this turning away was a crossing over. Chase left the camp of the friends of labour struggling against the tyranny of capital, on the pretext that the tyranny of capital was only a

(1) *Ibid*, p. 247 ff.

phrase and the real tyranny was "the tyranny of words". This meant that he left the one camp and joined the other. He became, as will appear clearly enough in the sequel, a mouthpiece of reaction. *Where real tyranny exists*—and the tyranny of monopoly capital is real enough—*no-one can render it a better service than to say that it does not exist, that it is a mere phrase, and that men are enslaved, not by other men, but by the words they use. This is the service that semantics renders to reaction today.*

In performing this service, semantics is led to attribute a quite remarkable power to words.

Semanticists are fond of commenting on the errors of primitive "word magic". But they seem themselves to share the belief in this magic. How else could Chase believe that the use of the word "Jew" had power to have caused "the long agony of the people labelled 'Jews'?"

Chase stresses the power of all sorts of abstract words to influence social behaviour. This semantic doctrine has also become a commonplace nowadays in much of the latest "social psychology", which is being extensively peddled in the U.S.A. In his *Handbook of Social Psychology*, Kimball Young devotes much attention to the social rôle of the "stereotypes, clichés, slogans and myths" which make up the content of "ideologies".(1)

Examples of stereotypes are such words as "nigger" and "bolshevik", which are used in America to lash people into fury against "groups" which are labelled by these stereotypes. As for myths: "The most sweeping and dynamic economic myth of the 19th Century, of course, was that developed by Karl Marx and Friedrich Engels." (2) (Note here the use of the cliché, "of course".)

Kimball Young says that words used in these ways play a key rôle in fomenting "human conflict". "A prejudice", he writes, "is a composite of stereotypes, myths and legends in which a group label or symbol is used to classify, characterise and define an individual or a group considered as a totality. . . . The function of prejudice is to facilitate the segregation of opposing groups from each other".(3)

It is quite true that many abstract words do play an important and remarkable social rôle. We must examine this rôle.

Chase says, and Kimball Young and others have developed

(1) Kimball Young, *Handbook of Social Psychology*, p. 197.
(2) *Ibid*, p. 219.
(3) *Ibid*, pp. 257–8.

the point in terms of "social psychology", that abstractions get a grip on men's consciousness and lead them to irrational behaviour productive of many social evils and much human suffering. But this rôle of abstract words, this "tyranny of words", is no new discovery of semantics. It has been recognised for a long time, and eloquently expressed by many progressive writers—by William Blake, for example, when he wrote:

> In every cry of every man,
> In every infant's cry of fear,
> In every voice, in every ban,
> The mind-forged manacles I hear.(1)

But whence these "mind-forged manacles", and to what do they owe their power? Is it because of the improper use of language and men's ignorance of semantics? Blake was a poet who never gave a thought to semantics, but he already knew better than that. These "mind-forged manacles" are the reflection in men's consciousness of the material conditions of their social existence. And the "manacles" which Blake was writing about, and which still attract the attention of Stuart Chase and others in the United States of America, were produced by and owe their influence to—as Blake knew, and expressed in some of his poems—the exploitation of man by man.

Why do words enslave? It is because some men enslave others, and use words to further this oppression, to further the exploitation of man by man, to express ideas corresponding to it, justifying it, furthering its ends, and constituting an ideology which binds not only the oppressors but also the oppressed.

"Why, if we must have principles," asks Stuart Chase, "do many of them have to be so cruel in their tangible effects, and so badly timed for what is happening in the real world now? I think one important answer is found in the structure of the language we use."(2)

Stuart Chase's answer to the question why there are principles "cruel in their tangible effects" is that "the structure of the language we use" allows of the production of meaningless abstractions, which we then mistake for "things", with cruel results. The way out, he says, is to study the structure of language and to use it better.

But these "cruel principles" are only meaningless from the

(1) William Blake, *London*, in *Songs of Experience*.

(2) Stuart Chase, *The Tyranny of Words*, p. 79.

point of view of an abstract semantics, which turns its back on social realities. In fact they express a cruel reality. And the way to combat them is to understand and change the reality of which they are an expression.

This fundamental point concerning what Chase calls "high order abstractions" and "fabulous concepts" and their criticism, was already trenchantly stated by Marx in one of the earliest of all his writings—The *Critique of Hegel's Philosophy of Law*, published in the *German-French Annual* in 1844. In that essay Marx began by dealing with the abstractions of religion—a set of "high-order abstractions" which are "personified" in what Marx called "the fantastic reality of heaven".

"The foundation of non-religious criticism is: Man makes religion, religion does not make man. Indeed, religion is man's self-consciousness and self-estimation when he has either not achieved himself or has already lost himself again. But . . . man is the world of men, the State, society. This State, this society, produces religion, which is a topsy-turvy world-consciousness, because they are a topsy-turvy world. Religion is the general theory of this world, its encyclopaedic compendium, its logic in popular form, its spiritual point of honour, its enthusiasm, its moral sanction, its solemn completion, its general basis of consolation and justification. . . . The struggle against religion is therefore indirectly the struggle against that world whose spiritual aroma is religion.

"Religious misery is on the one hand the expression of actual misery, and on the other a protest against actual misery. Religion is the sigh of the oppressed creature, the kindliness of a heartless world, as it is the spirit of unspiritual conditions. It is the opium of the people.

"The abolition of religion, as the illusory happiness of the people, is the demand for their real happiness. The demand to abandon the illusions about their condition is a demand to abandon a condition which requires illusions. Criticism of religion is therefore at heart a criticism of the Vale of Tears whose halo is religion. . . .

"Thus the criticism of heaven transforms itself into the criticism of earth, the criticism of religion into the criticism of law, and the criticism of theology into the criticism of politics."

Marx went on to apply the same method of criticism to the

abstractions of Hegel's philosophy of law and to the Hegelian theory of the State.

"The criticism of German political and juridical philosophy," he wrote, "which has received through Hegel its most consistent, its richest, its definitive form, is at once the critical analysis of the modern State and of the realities bound up with it and also the decisive negation of the entire previous mode of German political and juridical consciousness, whose principal and most universal expression, elevated into a science, is precisely speculative philosophy of law itself."

The Hegelian abstractions about "law", about "jurisprudence" and about "the State", were, he said, nothing but an "abstract and transcendental conception of the modern State". And he described them as a "dream history" which philosophers had superimposed on the real history of their country. He concluded: "The German people must therefore include this dream history of theirs among their existing conditions, and subject to criticism not only these conditions but at the same time their abstract continuation."

That was how Marx attacked the harmful abstractions of his time. Semantics, setting out to attack and demolish such abstractions a hundred years later, just as if this were a new idea and no-one had ever done it before, refrains from attacking their real basis. It may urge us to "look over their edges", but it never looks under them.

Korzybski, whom Chase admires so much, said in his *Science and Sanity* that we were in danger of insanity, and were actually driven to insane behaviour, because of the way we use words. So the cure for the "insanity" of the modern capitalist world was to reform our use of words. He got things exactly the wrong way round. The irrational use of words reflects the irrational society, it is not the cause of the irrationality of society. Men's consciousness expresses their existence. And the criticism of illusions is the criticism of the "condition that requires illusions".

This explains Chase's sophistry about the Jews, for example. The use of the word "Jew" for incitement to Jew-baiting follows from social conditions in which pogroms are required for definite political ends. The pogroms are not caused by the semantical errors of those who incite them and participate in them, nor will they be ended by any course in semantics. Indeed,

it is a fact today that quite influential and powerful circles of the ruling class of the United States regard the doctrines of semantics with definite approval; but we have yet to find that this makes any difference to anti-semitism and to lynchings in the United States.

This criticism of the semantical doctrine about "high-order abstractions" makes it clear that semantics is able to exercise a certain appeal to some progressive-minded though gullible people by building up the semblance of a case based on fact—namely, the fact that certain abstract words do play a rôle in expressing men's "illusions about their condition" and in giving utterance to what Chase calls "principles cruel in their tangible effects and badly timed for what is happening in the real world now". It would seem, then, that semantics is doing a useful service in exposing this fact and debunking these words.

But the trick which semantics plays is to direct attention to abstract words while refusing to attack the real conditions of life which give rise to the abstractions which it finds so harmful. It does not look for the reality which the abstractions express, but regards abstract words as merely meaningless. Chase calls them "semantic blanks", because they are "without discoverable referents", and says that whenever we use such an abstract word we might just as well say "blab, blab".(1) And then he supposes that these meaningless "blabs" have an extraordinary power of determining our actions and the whole way we organise our social affairs.

Moreover—and to this point I shall return again presently—when semantics regards abstractions as meaningless "blabs", because it does not consider how they express realities, it entirely fails to consider the way we use, and must use, abstract terms, not to express illusions, but to express scientific truth.

Our consciousness of the world is always expressed in general concepts; and the division is not between the use of abstractions and the avoidance of abstractions, but between concepts which express illusions about our condition and those which approximate to truth. But for semantics, the more we generalise, the more "remote" we are from "the referent". Hence its attack upon abstractions, which purports to be an attack upon harmful, misleading abstractions, is in practice turned into an attack upon scientific ways of thinking.

(1) Chase, *The Tyranny of Words*, p. 13.

3. APPLICATION OF SEMANTICS

I now want to consider some of the applications and consequences of semantics. For the semantic doctrine about abstractions, and the semantic criticism of abstractions, is in fact quite extensively used. It is used to avoid the reckoning with the realities expressed by these abstractions, and to falsify them and cover them up.

Chase says—"Search for the referent". But he has a semantic prescription for covering it up and preventing you from finding it.

"*Unspeakable Reality*"

(1) In the first place, there is the semantic doctrine of the lower depths. The reality is the "unspeakable" space-time event. Here semantics coincides with the old irrationalist-relativist doctrine of the mysterious and unknowable thing-in-itself. Chase says we must "face the world outside".(1) But for semantics the truth about "the world outside" is "unspeakable". The only "referent" which we can find is an abstraction of our own making, corresponding to some "sign from the outside world" received by our senses. It is an isolate torn from its context, and the context is unknowable and unspeakable.

A good example of the application of the semantic doctrine of unspeakable reality and levels of abstraction, and of the type of conclusion this doctrine gets used to justify, is afforded by an American book which recently gained a little notoriety—*The Road to Survival*, by William Vogt. This is a book about the spoliation of land and destruction of natural resources. Vogt's thesis is that human population has increased faster than the means of subsistence (no very new thesis, this); that we have been plundering the land, undermining its fertility and destroying natural resources; and that, therefore, if humanity is to survive, we must do two things—control and reduce population and restore natural resources. In the course of arguing this case, Vogt introduces a whole chapter about semantics.

"A factor limiting the sound use of natural resources", says Vogt, is "the lack of consciousness of abstraction" and corresponding misuses of language, which "have so shaped our thinking and, therefore, our treatment of our land and associated resources that they often exert as powerful an influence as

(1) *Ibid*, XIX.

rainfall and soil structure. As the basis of sound resource management, the necessity of recognising and rejecting these mistaken notions can scarcely be over-emphasised".(1)

Vogt, applying semantics, points out, first of all, that the land is "unspeakable reality".(2) But, he says, we generalise about this unspeakable reality in terms of all manner of high-order abstractions, such as "forest land", "range", "watershed", "corn land", "real estate", and so on. And from these abstractions flows the endless spoliation of the land which goes on in the United States. From talk about "forest land", timber resources are denuded; from talk about "corn land", fertile areas are reduced to a dust bowl; and so on. So it is of the first importance, says Vogt, to criticise these harmful abstractions in the light of a "sound" semantics, and to realise that the real land is not forest, watershed, corn land or real estate, but is something unspeakable.

Vogt uses this piece of semantics to justify the conclusions of his book. In actual fact, semantics is used by him in two ways. First, in making abstractions and lack of consciousness of abstraction "a factor limiting the sound use of natural resources", he has conveniently obscured the circumstance that it is the anarchic system of "private enterprise" that has led to the wholesale spoliation of American land, and that the types of harmful generalisation which he condemns express precisely the points of view of the various interests (timber interests, corn growers, real estate, and so on) which arise within that system. So he puts down to "bad language" something which is really the result of a bad social system, and substitutes the criticism of abstractions for the criticism of the social realities behind the abstractions.

Secondly, having turned the land and its resources into an unknowable thing-in-itself, he rules out the possibility of a science which really understands these resources and their inter-relationships and how to transform and develop them to meet the growing needs of mankind.

That there really is such a science, and that it can be applied when the rapacious private interests which express themselves through Vogt's abstractions are swept aside, is shown by the example of what is taking place in the socialist Soviet Union. Here, in the very year (1948) that Vogt's gloomy prophecies

(1) W. Vogt, *The Road to Survival*, p. 56.

(2) *Ibid*, p. 48 ff.

were published in the U.S.A., was published a fifteen-year plan to transform nature throughout the entire southern area of the European part of the U.S.S.R. by a system of forest shelter-belts, crop rotations and construction of ponds and reservoirs; the aim being to develop and transform the natural resources of that very large area so as to ensure more of the fruits of the earth to a rapidly expanding population.

Instead, Vogt offers the advice that we shall try to "restore" those mysterious resources which have already been dissipated and shall reduce the human population to numbers which the unspeakable land will perhaps be better able to support.

To end anti-semitism, Chase proposed courses in semantics. To end land erosion, Vogt proposes, not only courses in semantics, but also courses in birth control. With the aid of semantics he seeks to make plausible some of the most reactionary ideas it is possible to imagine—the unknowability of the earth's resources, the limitation of its resources that can be used by man, and the need drastically to limit the numbers of the human race.

This is an example of what the admonition to "search for the referent" comes to mean in practice. For *semantics is a doctrine of the unknowability of the real world and a doctrine of abstraction which serves to obscure the knowable reality which is expressed in abstractions. For this reason, semantics, which claims to be an antidote to all manner of false generalisations, in practice becomes a support for all manner of false generalisations.*

The Semantical Metaphysics

(2) Along with the doctrine of the unspeakable reality which lies at the bottom of the "awful depths" of language, Chase, when he begins his "search for the referent", evolves from his semantics a system of the metaphysical way of thinking. It is here that the semantics of Korzybski and Chase coincides with the formalised "pure semantics" of Carnap. The "search for the referent" coincides with the formulation of "rules of designation".

Reality, according to semantics, is unknowable and unspeakable. Nevertheless, we have to speak about it, and semantics teaches us to speak about it in a metaphysical way. We use words and have to give them meaning, and we give them meaning by rules of designation which apply them to metaphysical entities. The metaphysics which lies at the heart of semantics finds expression in the doctrine that the "referents"

for which we have to "search" consist exclusively of the "first order abstractions" which are signalised to us by the "signs" received by our senses. This in turn develops into an all-out attack upon scientific ways of thinking.

Chase allows himself to speak about "unspeakable reality" as "a mad dance of electrons". Actually, however, this "dance" is neither "unspeakable" nor "mad". It is organised in knowable processes, in physical systems and in living organisms; some of the living organisms, men, are organised in societies, in institutions and social movements; and all of these have their comprehensible laws of motion. We speak of them in terms of general concepts, and in terms of those general concepts we formulate our knowledge of their interconnections and laws of motion.

But not so for semantics. For semantics reality is unspeakable and unknowable, and most general concepts are meaningless abstractions. Hence, instead of trying to formulate and generalise scientific knowledge of objective reality, of the real material world and its dialectical movement and interconnection, semantics calls upon us to refer in everything we say to a metaphysical scheme of particular things, with their qualities and relations, the "signs" of which we are said to receive in our immediate sense data. Real processes, for semantics, are unknowable—"unspeakable" and "mad"; and for the knowledge of them it substitutes this metaphysical scheme.

Semantics and Sociology

Where this leads when it is applied to the interpretation of the physical sciences I shall examine in the next chapter. Here I shall direct attention to the field of applied semantics in which Chase specialises—the application of semantics in the field of sociology.

Semantics, as I have indicated, claims to come to the rescue of suffering humanity by teaching us how to avoid "bad language" when speaking of our own affairs. Its prescription is to "search for the referent", and the referents are $Adam_1$, $Adam_2$, $Adam_3$, . . . up to $Adam_{2,000,000,000}$

As a matter of fact all these "Adams" are born into a social organisation, whose basis is the process of social production. "In the social production which men carry on they enter into definite relations that are indispensable and independent of their will. . . . The sum total of these relations of production constitutes the economic structure of society—the real founda-

tion, on which rise legal and political superstructures and to which correspond definite forms of consciousness."(1) The "Adams" participate in families, states, social institutions, social movements, whose activities are the activities of "Adams" in association and are independent of the will and inclinations of particular "Adams".

If, then, we wish to understand social affairs—and particularly if we wish to understand social affairs so as to direct them—we must refer, not only to all the "Adams" and the kind of things which each of them do, but to the economic systems, the classes, and class relationships, the institutions, states and so on, which arise out of the social production of the "Adams" and out of their relations of production, to the laws of motion of these products of the associated "Adams" and to what effect they have on the life and activity of the particular "Adams". But for semantics, these are all "high order abstractions" and so cannot be "referents"—the "referents" are the particular "Adams", and whatever we say about human affairs must be reduced to statements about $Adam_1$, $Adam_2$, $Adam_3$, up to $Adam_{2,000,000,000}$.

Here semantics has produced a formula the significance of which is precisely expressed in the old saying, "not to see the wood for the trees". Its application produces remarkable results.

The principles of the application of semantics in sociology were outlined by the late Otto Neurath in an article in the American *International Encyclopædia of Unified Science*, entitled *Foundations of the Social Sciences*.

Neurath inveighs against attempts to describe and explain historical events in terms of high-order abstractions. For instance, he says, cases of wars and conquests are often described by historians ignorant of semantics in such terms as these: "Forced by its historical mission, the nation started to spread its civilisation." Here, he says, are three well-nigh meaningless abstractions. The correct account of such an event, Neurath maintains, would be rather as follows: "One human group killed another and destroyed their buildings and books."(2) That is to say, we "search for the referent", and we find that what we are talking about is that members of one group of Adams set on members of another group of Adams, killed them, and destroyed their buildings and books.

(1) Marx, *Critique of Political Economy*, Preface.

(2) O. Neurath, *Foundations of the Social Sciences*, p. 7.

Here Neurath's criticism of the abstraction about the "historical mission" and "civilisation" seems justified. But why? Not because they are abstractions, but because they are idealist abstractions employed by reactionary historians. Neurath, however, is against abstractions in general, and wishes to replace them by bald statements about the actions of particular men. The outcome is that he is able to say that there are wars in which men kill one another and destroy buildings and books; but he is not able to say why such wars happen, which wars are just and which unjust, how wars are determined by economic factors and class interests, and what part the various human institutions play in them. From the point of view of understanding wars and their causes and how to prevent them, he is as much in the dark with his semantics as the other idealists were with their own abstractions.

The theoretical and practical impotence and absurdity of the application of semantics in sociology is shown even more vividly in the next example Neurath takes of the semantically "correct" formulation of "a sociological principle". This time it concerns the "mission of civilisation", not of one nation to conquer another, but of man to conquer nature. Neurath says we should talk like this: "Milleniums ago, when a swamp and a human group met—the human group vanished, the swamp remained; now the swamp vanishes, the human group remains."(1)

Let us consider this remarkable statement of a "sociological principle". One of the places where today there is a marked tendency for swamps to vanish and human groups to remain is the Soviet Union. This is because the people of the Soviet Union, organised on the basis of socialist planned economy, armed with socialist science and technique, and carrying out their Five-Year Plan, are systematically draining swamps. On the other hand, as will be discovered by consulting William Vogt, in the United States of America a different process is to be observed. There it has happened that human groups have vanished and dust bowls have remained. But with the aid of semantics it is possible only to formulate "sociological principles" which state what happens to particular collections of "Adams" when they walk into a swamp or find themselves living in a dust bowl. It is not possible to analyse the real economic and social determinants of the vanishing of swamps and appearance of dust bowls. This is as

(1) *Ibid*, p. 20.

much as to say that sociological principles, genuine sociological science, are ruled out by semantics.

After this it is not surprising to find that Neurath ended his inquiry into the "foundations of the social sciences" by likening the present condition of humanity to that of "sailors far out at sea", in a "clumsy vessel" amidst "heavy gales and thundering waves". And he concluded: "The whole business will go on in a way we cannot even anticipate today. That is our fate."(1)

The application of semantics in sociology thus ends in complete theoretical and practical helplessness and bewilderment. For semantics the real processes of social life lie in the "awful depths", and are unknowable, unspeakable and mad. They are unpredictable and unaccountable, and beyond the scope of scientific understanding or rational management.

The Defence of Things as They Are

Semantics seeks to make out that all general concepts are meaningless, oblivious of the fact that it is only in terms of general concepts that we can understand real events and their causes. This leads to complete inability to understand events. But it leads to worse than that.

Amongst other examples of "bad language" selected by Stuart Chase for reprobation is the use of the word "fascism". This is only a word, says Chase, and a meaningless one. The semanticist, he explains, is prepared to recognise the occurrence of such events as groups of "Adams" wearing brown or black shirts setting upon and beating up others whom they label Marxists or Jews: and if such events occur, the semanticist may be prepared to intervene. But he does not recognise "fascism". "He refuses to shiver and shake at a word, and at dire warnings of what that word can do to him at some unnamed future date."(2)

Chase wrote that in 1937. Within a few years, as it happened, the "dire warnings" came true. It amounts to this, that the semanticist is prepared to recognise—indeed, he can hardly help it—the consequences of the unchecked growth of fascism when they occur; but he is not prepared to recognise fascism as a social phenomenon which gives rise to those consequences, or to "label" as fascists the persons who are participating in the fascist movement and advocating and pursuing fascist policies. Nor, in consequence, is he prepared to do anything to oppose

(1) *Ibid*, p. 47.

(2) Chase, *The Tyranny of Words*, p. 132.

and check the growth of fascism; and if others call attention to the danger and demand that action be taken, he accuses them of semantical confusion and of "shivering and shaking at a word".

This semantical attitude to fascism was forcibly commented upon by Professor Barrows Dunham in the chapter on semantics in his book, *Man against Myth.*

"Whenever a man or a movement exhibits all or most of the usual fascist ideas and is named accordingly, some semanticist is sure to arise and pronounce the naming meaningless. The left wing has its labels, he will say, no less than the right; and both sets of labels lack content. Such 'impartiality' is mere show. In reality it protects the fascists by enabling them to escape public identification, and it injures the anti-fascists by an accusation of word-mongering. It is now scarcely possible to gather men together on behalf of human welfare, without someone's blocking the whole programme by a complaint of 'semantic confusion'. If we were to apply to the semantic philosophy one of its own favourite tests, the operational, we should find that its real meaning, abundantly demonstrated in practice, is defence of things as they are."(1)

That this line of semantic "criticism" is no mere fad of armchair philosophers, but serves political ends, exactly as Barrows Dunham states, has already been shown in discussions at the United Nations. In June, 1948, a proposal was moved in the Human Rights Commission of the United Nations Social and Economic Council that the United Nations should prohibit all fascist activities and organisations as a menace to human rights. This was opposed by the American delegate, who carried the majority with him, on the ground that the concept of "fascism" was so unclear that the prohibition would be meaningless. The Soviet delegate tried to explain the meaning of the word, but was overruled for using "bad language".

Point of View on Human Conflicts

Another aspect of the application of semantics is revealed in Chase's idea that semantics gives a recipe for resolving human conflicts—that if we will only follow the prescription to "search for the referent", then "emotional factors dissolve in mutual understanding".

How bitterly men fight one another, exclaims Chase, in the name of high-order and virtually meaningless abstractions, such

(1) Barrows Dunham, *Man against Myth*, p. 193.

as "labour and capital", the "profit system", "capitalism", "socialism", "communism", "fascism" and so on. If only they could be brought to understand the semantic criticism of these "fabulous concepts", then they would realise that there is nothing to fight about.

This idea, too, has been ably commented on by Barrows Dunham. "So now we see it all," he writes. "There are no dogs-in-general, no mankind, no profit system, no parties, no fascism, no underfed people, no inadequate housing, no shoddy clothes, no truth, no social justice. Such being the case, there can be no economic problem, no political problem, no fascist problem, no food problem, no housing problem, no scientific problem, and no social problem. . . .

"By the simple exhalation of breath", he continues, "they have conjured out of existence every major problem which has vexed mankind throughout the entire history of the human race."(1)

To take a simple example, consider a dispute, such as is of very common occurrence, between workers and employers. What is the semantic prescription for settling this dispute? It is most fitly enunciated from the mouth of the employer, who says: "Let us forget all this talk about 'labour' and 'capital' and 'profits' and 'exploitation', which is a meaningless invention of political agitators who play on your emotions. Let us talk as man to man, as 'Adam' to 'Adam', and try to understand one another." This is, indeed, how the employers very often do argue. They had learned to be semanticists even before semantics was invented.

But has this application of semantics really removed the grounds of conflict between workers and employers? It has not, for the conflict is grounded precisely in the relations between labour and capital, in the capitalist system of exploitation. All that has been done is to obscure the grounds of conflict by verbal trickery.

The truth is in this case—and the example can be generalised—that the semantic version of the issues under dispute is precisely the version of one side of the dispute, the side of the employers, the side of the capitalist class. From the point of view of the capitalist class, there are Adams who sit on boards of directors and Adams who work at the bench; there are Adams who receive salaries and dividends and Adams who receive weekly wages;

(1) *Ibid*, p. 208.

but there is no exploitation and there are no contradictions of capitalism.

Thus under the guise of the "search for the referent", under the guise of objectivity, impartiality and the rejection of meaningless abstractions, semantics teaches us to view human affairs from a point of view which is neither objective nor impartial, which utterly fails to refer to the realities of class society but obscures them with tricky phrases—the point of view of the capitalist class.

Such is the semantic prescription for calming our emotions and dissolving human conflicts.

The truth about what semantics calls "unspeakable reality", to whatever real processes we may be referring, is not to be gained by any verbal prescription which tells us to speak only about some fixed system of particular objects and their relations which semantics selects as "referents", but is to be gained in the practice of seeking to change reality. And then we express what we find out in terms of general concepts. Dialectics, as opposed to the metaphysical schema which have been taken over by the semanticists, comprises the art of working with such concepts.

The truth about social affairs is discovered by those who are trying to change society, and who for that very reason are not content to talk about $Adam_1$, $Adam_2$, $Adam_3$, up to $Adam_{2,000,000,000}$, but seek to formulate accurate concepts of social and economic relations and of the contradictions contained within them. The objective truth about capitalist society cannot be "impartial" and cannot serve to "dissolve" the basic contradictions and conflicts of that society. For to seek for that truth, i.e. to investigate capitalist society in its real existence and movement in order to change it, is by its very nature a partisan activity, which uncovers the contradictions and does not cover them up. The truth belongs to the revolutionary working class movement and is expressed in the "high-order abstractions" of the theory of that movement.

The prescriptions of semantics, as Barrows Dunham has pointed out, amount to a "defence of things as they are". In their time those who have theorised about society from the point of view of the capitalist class have invented many "high-order abstractions" of their own, which served to obscure the real issues of the social struggle and to paint over the ugly facts of capitalist exploitation with a coating of verbal whitewash. Some of this whitewash is wearing a bit thin. The semantic apologists

of capitalism have now come forward with a new scheme. Examine words, they say. Give the facts a double coating of whitewash, not only with words but with words about words.

And this word-mongering of semantics is also admirably adapted to the defence of things as they are in other ways.

(1) It enables the semanticists to accuse those who try to speak the truth of using meaningless abstractions.

(2) It enables them to make out that every evil arising from the workings of capitalism does not arise from the workings of capitalism but from verbal confusions.

(3) It enables them to make out that the whole struggle against capitalism and for social progress is likewise the result of verbal confusion and can claim support only by playing on verbal confusions.

And (4) it prescribes a way of speaking about social affairs which renders the real movement of society, its structure and the causes which operate unknowable and inexplicable. For that very reason it is perfectly adapted to express the viewpoints of the capitalist class at a period when that class has nothing left to contribute to human progress, but is helpless in the throes of a general crisis of its own making and from which it cannot possibly escape.

Anti-Thinking Philosophy

To sum up the argument.

Since general concepts, expressed in abstract words, are a necessary component of thinking; and since thought proceeds not only by paths of truth but also by paths of error; it is not surprising that there are abstractions and abstractions—abstractions which are the vehicle of knowledge, and abstractions which are the vehicle of illusion and fantasy. Moreover the distinction is not absolute. For, as Lenin pointed out, illusion has a basis in knowledge of reality, and, on the other hand, truth may contain an element of illusion.

Semantics, pretending to criticise the use of abstractions to propagate illusions, attacks the use of abstractions in general. They are all, it says, illusory. In consequence it attacks the general concepts in which are expressed our knowledge of reality, and says that they are illusions. It concludes that reality is unknowable and unspeakable.

"The ideal", said Marx, "is nothing else than the material

world, reflected by the human mind, and translated into forms of thought."

Semantics denies the way in which "the ideal" is the reflection of the material world. The "forms of thought" in terms of which the material word is translated in our thinking are constituted out of general concepts. In its attack on general concepts, and in its doctrine of the unknowability of the material world, semantics attacks and stultifies the very activity of thinking. It is an anti-thinking philosophy. In fact, it is irrationalism in its most pronounced and extreme form.

At the same time as proclaiming the world unknowable and attacking the use of general concepts, semantics, under the slogan of "search for the referent", advocates a scheme of the metaphysical way of thinking the most barren and abstract imaginable. Thus, for example, it bids us think of human affairs in terms of the schema "$Adam_1$, $Adam_2$, $Adam_3$, . . . $Adam_{2,000,000,000}$"; that is to say, in terms of the extremely bare abstraction of "Adam"—the particular human individual—instead of formulating concepts of the social activities, organisations and relationships which in reality determine the course of human affairs.

We can neither think nor speak without using abstractions. Semantics does not show how we can do so. It succeeds only in advocating a metaphysical use of abstractions, which renders it impossible to understand the inter-relations and movement of real processes. It is this metaphysics which proclaims reality unknowable and renders the semanticist incapable of rational and scientific thinking.

Semantics pretends to find a way to dissolve human conflicts. But such conflicts today are those which arise from the working of the capitalist system; and semantics finds a way only to obscure the grounds of conflict, to fog the issues, and to present the issues precisely and exclusively as they appear from the point of view of the capitalist class. This can dissolve no conflicts. All it can do is to aid the struggle of the forces of reaction against the forces of progress. And this it is, indeed, capable of doing effectively.

4. CONCRETE THINKING

But when all this is said, a point still remains. Surely, it is argued, semantics has nevertheless its positive features, and these

features are of genuine importance and value for contemporary philosophy. For surely it is right to "search for the referent", to beware of being led astray by abstract terms and phrases, and, as Chase says, to "look as it were over the edges" of our words and ask: "What is really happening out there? How do the facts hang together out there? What are people really doing out there?"

Yes, that is quite right. But the point is that this in itself is no new discovery of semantics, for materialism knew all this long ago; and Marxist dialectical materialism, in particular, is distinguished for its consistent carrying out of such principles. "It was decided", wrote Engels, "relentlessly to sacrifice every idealist fancy which could not be brought into harmony with the facts conceived in their own and not in a fantastic connection. And materialism means nothing more than this."(1)

As for semantics, it professes to provide a method of criticism of idealist fantasies of all kinds by showing them up as "meaningless blabs". It professes to put us on the path of truly concrete thinking, in place of meaningless abstraction. It professes to teach us how to make everything we say refer to concrete facts, events and objects, instead of to "personified abstractions". But in contradiction to its profession, semantics actually cooks up a system of abstract terms and phrases of the most misleading kind, embodying an idealist theory about words and about the unknowability of the reality to which words refer.

The path of the criticism of idealist fantasies and of the study and understanding of things and processes as they exist in concrete reality is not by the recipes of semantics but by the methods of dialectical materialism.

Lenin, for example, pointed out that the concrete approach to any problem must be guided by the demands of "dialectical logic"; and he formulated four such demands:

"In the first place, in order really to know an object we must embrace, study, all its sides, all connections and 'mediations'. We shall never achieve this completely, but the demand for all-sidedness is a safeguard against mistakes and rigidity.

"Secondly, dialectical logic demands that we take an object in its development, its 'self-movement', in its changes. . . .

"Thirdly, the whole of human experience should enter the full 'definition' of an object as a criterion of the truth and as a practical index of the object's connection with what man requires.

(1) Engels, *Feuerbach*, p. 53.

"Fourthly, dialectical logic teaches that 'there is no abstract truth, truth is always concrete. . . ."(1)

Thus Lenin pointed out that in formulating and using the general, abstract concepts by means of which we seek to comprehend any subject matter we must take into account the different sides and aspects of that subject matter, its various connections; that we must consider it, not as something fixed and static, but as changing and developing, and the laws and tendencies of this change must be included in its concept; that the general conceptions which we employ must be defined and elaborated in a way that is based on our actual experience, connects up with our practical requirements and serves as a guide to practice; and that we must always proceed "by means of a thorough detailed analysis of the process in all its concreteness."(2)

In this way, *to think concretely is to think dialectically, and to think dialectically is to think concretely.*

The method of materialist dialectics is opposed to idealist, abstract schemes, which are substituted for the examination and study of things as they are, in their actual movement and interconnections. It is equally opposed to the metaphysics of the "search for the referent", which proceeds to name some set of particular objects and their properties and relations as the "referents" or "designata" of every inquiry, and forbids the formulation of the general concepts in terms of which alone their movement and interconnections can be grasped.

The one method is as much productive of abstract schemes as the other. In contrast, it is the dialectical materialist method that is the method of thinking concretely. And the essence of the dialectical materialist method is that, in opposing all such abstract schemes, and substituting for them the study and generalisation of concrete reality, it is based on practice. We know things in their real movement and interconnection, not by formulating some conceptual scheme based on how the things have affected us—which is the essence of idealism and of fantasy—but by acting on things, changing them, and generalising this practical experience in concepts which sum up what we have learned of things, which point the way to learning more and doing more, and which are tested, amplified and developed in the course of practice.

(1) Lenin, *Selected Works*, Vol. IX, p. 66.

(2) *Ibid*, Vol. II, p. 463

To think concretely is to think about the problems which face us in actual practice, and to work out ideas which help us to formulate those problems and to solve them, and which are consequently tried and tested in that practical process. Our ideas and their expression become clear in proportion as we succeed in doing precisely this. We do need to think concretely and we do need clear ideas. That is what materialist dialectics teaches.

Semantics, on the other hand, pretending to teach this, turns from the consideration of things to the consideration of words; it produces a metaphysical scheme for saying empty nothings about a world which it teaches us to regard as unknowable and incomprehensible; and it ends by turning the edge of its criticism, not against the fantastic abstractions which it begins by condemning, but against the general ideas in terms of which alone it is possible to think out and solve the real problems and to advance human knowledge and human welfare.

The conclusion about semantics has been so admirably expressed in Barrows Dunham's chapter on the subject that I cannot end this discussion better than by quoting his final paragraphs :

"The real world sets us real problems, and . . . the real problems are susceptible of real solutions. We have to repair a ravaged world, to feed and clothe and house its people, to liberate the yet oppressed, to deal justly with millions who have never known the touch of honest hands. It is inconceivable that even the smallest of these mercies can be visited, if we permit ourselves to think that the words which express them are meaningless and vain. Nor shall we succeed by imagining the contrary folly, that problems can be solved by a simple adjustment of language.

"There is a problem of language, to be sure; but that is not our main concern. There is need for speech of clarity and precision, but neither is that our final goal. What we shall find is that our speech will grow clearer in proportion as we solve the objective non-verbal problems; and that, so far as we fail to solve them, our speech will remain halting and obscure. It is precisely for this reason that semanticists cannot make themselves intelligible; and the semantic philosophy, a tower of confusion, warns us for ever that men who forsake the care of humankind will lose all understanding from their hearts and all vision from their eyes."(1)

(1) Barrows Dunham, *Man Against Myth*, p. 212.

CHAPTER 6

"UNIFIED SCIENCE"

1. THE APPLICATION OF SEMANTICS IN THE ANALYSIS OF SCIENCE

I NOW return to the more austere exercises in semantics by Carnap and the members of the school of "logical empiricism", who have applied semantics in the philosophical interpretation of the physical sciences.

In these philosophical speculations is continued the same "search for the referent" and the same criticism of abstractions which Stuart Chase and others applied in the sociological and political field. In this case the "referent" is found in the data of physical observations, or in the operations whereby those data are obtained; and the abstractions—the general concepts and general theories of the physical sciences—are not so much rejected out of hand as meaningless, but reinterpreted as rules and formulæ for predicting the occurrence of observational data, the observed results of physical operations.

Thus Carnap says that the reference of the concept of the electron, for example, is to the particular observations—pointer readings and so on—obtained in the physical laboratory. To speak of electrons is to formulate rules about these observations. The physical operations and observations now take the place of the "Adams".

It is clear, then, that this application of semantics to the physical sciences cannot produce anything strikingly new or original. It is simply a restatement of the time-honoured theory of positivistic idealism. I shall examine this restatement in some detail.

In *Formalisation of Logic* Carnap suggests that semantics has considerable philosophic "application", and in the preface to *Introduction to Semantics* he ties up the whole question with the central philosophic aim of logical empiricism, namely, the "analysis of science".

For the analysis of science, he says, we need, besides a purely formal analysis of language, i.e. syntax, also an analysis of the signifying function of language, i.e. semantics, "a theory of meaning and interpretation".

The application of semantics to the analysis of science means, then, that the logical empiricists are no longer concerned merely with the "logical syntax" of the language of science but also, and primarily, with the question of the designations of the terms used in the sciences and with the mode of determining the truth or falsity of the statements of the sciences.

In this way a return is made to the kind of "analysis of science" which was practised by the earlier exponents of the so-called "logical-analytic" method—it is permitted to speak of the meaning of scientific statements and to try to clarify their meaning. But this clarification is now to be carried out by "semantical" methods.

The basic idea remains in force, that the philosophic analysis of science is analysis of the language of science. The subject-matter of philosophical discussion, for the logical empiricists, is always language. Thus in *Foundations of the Theory of Signs*, for example, C. W. Morris roundly asserts that the study of science falls "entirely" under the study of the language of science, because the study of the language of science includes not only the formal structure of that language, but the relations of its signs to the objects signified and to the persons using the language.

The task of the semantical study of the language of science has been undertaken in a collective work published in the U.S.A., entitled *International Encyclopædia of Unified Science*. I shall examine some of the results of this analysis available in England up to the time at which I am writing. Further numbers of the *Encyclopædia* are still scheduled to appear; and, of course, neither I nor anyone else can foresee what new twists and turns the logical empiricist method of analysis will take in the future.

2. THE INTERPRETATION OF PHYSICS

In an article entitled *Foundations of Logic and Mathematics*, Carnap indicates the way in which semantical analysis applies to the science of physics.

Considering in the first place the terms employed in physical science, and their designation, he distinguishes what he calls the "elementary" from the "more abstract" terms employed. This distinction is fundamental in his "analysis".

The "elementary" terms are those which refer to what is directly observed—such as pointer-readings, flashes on screens, lines on photographic plates, tracks in Wilson chambers, and so on. These terms are said to designate such observational data.

Carnap then points out that "singular sentences with elementary terms" can be "directly tested".—For instance, such a singular sentence as "the pointer-reading is 5" can be directly tested by examining the pointer and seeing if it coincides with the mark "5" on the scale. In other words, the system of physical science includes readily formulable semantic rules for determining the "designation" of the elementary terms of science, and for determining the truth or falsity of singular sentences with elementary terms. According to the semantic definition of "truth", the singular sentence: "The pointer-reading is 5", for example, is true if and only if the pointer-reading is 5; and whether or not the pointer-reading is 5 can always be "directly tested" by looking at the pointer.

But on the other hand, the "theorems" of physics, expressed in the "more abstract" terms, such as theorems about electro-magnetic waves, electrons, mesons and so on, can only be "indirectly tested". Such indirect test consists in deriving from them singular sentences with elementary terms according to the syntactical rules of the science, and then utilising the procedure contained in the semantic rules to find out whether such singular sentences are in fact true.

For instance, a theorem about electrons is tested by observing tracks in Wilson chambers, a theorem about alpha-particles is tested by observing flashes on screens, and so on. From the theorem about electrons is derived, by a calculation employing exclusively syntactical rules, a singluar statement about a track in a Wilson chamber, and the direct test of this singular statement is the indirect test of the general theorem about electrons.

From this Carnap concludes that in the science of physics we need give no "explicit interpretation" of any of the more abstract terms or theorems. We need assign no designation to such terms, i.e. we need not try to make out that there are such "entities" as electrons, electro-magnetic waves, and so on. It is enough that physics includes syntactical rules for connecting the more abstract theorems with singular elementary statements, and only the latter need be "interpreted".

"Only singular sentences with elementary terms can be directly tested", says Carnap. "Therefore we need an explicit interpretation only for those sentences". We need not "understand" the abstract terms and theorems of physics, he continues. It is enough that physics contains a "calculus" whereby from

those theorems can be derived singular sentences which can be interpreted and tested.(1)

This result is in essence clear enough. It is a complicated way of saying exactly what Eddington said with simplicity and candour in his statement that : "The whole subject matter of exact science consists of pointer-readings and similar indications."

Instead of saying, as classical empiricism said, that the meaning of scientific statements is to be made clear by interpreting them as being about sense-data, it is now said that they are not themselves to be "explicitly" interpreted at all. They are rather to be regarded as strings of signs whose function is that we can derive from them results which can be interpreted in observational terms.

In no sense does this depart from the two-centuries old empiricist tradition that the whole significance of science is to give rules for the prediction of observations. The application of semantics to the analysis of science in this case leads only to another way of presenting the old "analysis of science".

It is interesting to observe in this connection the twists which have been given to logical empiricist theory over the past twenty-five years, since Schlick first formulated the "principle of verification".

The first use of the principle of verification led to the purest subjectivism, i.e. to Wittgensteinian solipsism. The conceptions of logical syntax were introduced to afford a way out of this impasse. Instead of saying that the meaning of a scientific statement was to be elucidated in terms of expectations of experience, it was laid down that it was "metaphysical" to speak of meanings at all. Science was to be regarded as a system of statements based on protocol statements, governed by complicated syntactical rules connecting the general theorems with the basic protocol. But then it turned out that no account could be given of how the "basic protocol" was arrived at. Science had to be regarded simply as a "system of sentences", and the "correctness" of any statement or theory was established simply and solely by whether it could be "brought into the system".

Thus while the subjectivist analysis based on the first use of the principle of verification led to a severing of the connection between science and the objective world by making science deal purely with predictions of future sense-data, the new syntactical analysis only severed the connection even more completely by

(1) Carnap, *Foundations of Logic and Mathematics*, Chaps. 24, 25.

making science deal with nothing at all.

From this new impasse a way out has now been sought in terms of "semantics". And with what result? Simply that the logical empiricists are again "interpreting" science in the classical empiricist way in terms of predictions of observations. They are once again saying that scientific theories are shorthand expressions for saying what we may expect to observe, or what sense-data we may expect to experience, under various specifiable conditions. Once more, therefore, the old type of subjectivism puts in its appearance.

Thus *logical empiricist philosophy continues to present nothing but a perpetual repetition of the classical ideas of positivism. As difficulty after difficulty is encountered in making traditional subjectivist ideas presentable, they are continually reformulated, covered up, disguised, by a more and more elaborate "logical" technique.*

Amidst all the vicissitudes and twists and turns of logical analysis, the essence of the whole philosophy remains consistently the same. It is to confuse and deny the reference of scientific knowledge to the material world.

3. THE "BASIC PROCEDURE" OF EMPIRICAL SCIENCE.

In a contribution to the *International Encyclopædia* on *Procedures of Empirical Science*, Victor F. Lenzen writes: "The basic procedure of empirical science is observation."

This statement appears to be taken as self-evident, and it is this conception of "basic procedure" which determines the whole account of the meaning of science in the *International Encyclopædia*.

Thus we are told that the statements and theories of the empirical sciences are based on observations and are tested in further observations, and that all the designations of the terms employed by the sciences are assigned by reference to observations.—Such is the simple account which is presented of the sciences.

More explicitly, Leonard Bloomfield, writing on *Linguistic Aspects of Science*, details various "steps" involved in what he calls a "typical act of science". The steps are as follows: Observation; Report on Observations; Statement of Hypotheses; Calculation; Prediction; Testing for further observations.

This account of the "steps" involved in an "act of science" shows clearly enough in what way observation is conceived to

be the "basic procedure". L. Bloomfield points out that all but the first and last steps are "acts of speech". These scientific "acts of speech", then, are governed throughout by the basic procedure of observation: scientific theories are on the one hand based on a selection of observations, on the other hand they enable calculations to be made issuing in predictions which can be tested by comparison with further observations.

From this it follows that the analysis of the language of science, in so far as it takes into account the meaning, or semantical aspect, of the language of science, consists in showing how scientific statements are based on observations and issue in predictions of further observations. What scientific statements mean, what they refer to, is to be explained in terms of the observations on which they are based and which they can be used to predict.

Thus in science we have: (1) a basic procedure of observation, and (2) the construction of a scientific language whose statements are to be interpreted, given a meaning, as referring to observations and predicting observations.

Attention is entirely focused on the intricacies of the "rules"—syntactical and semantic—of the "scientific language". As for the "observations", they seem to be regarded as a simple matter—something just turns up and we "report" it.

The whole inadequacy of this kind of "analysis" is contained in the lack of analysis of what is involved in "observation".

If we consider, for example, what is involved in the observation of a pointer-reading, then it surely becomes very clear that the "act of science" is far from beginning with "observation". For, in order to get a pointer-reading (or a flash on a screen, a black line on a photographic plate, a track in a Wilson chamber, or any other of the stock "observations" usually mentioned in logical analysis) there is first necessary the technical process of devising and constructing scientific apparatus. This is an "act" of social technique, which consists in the production of a physical system whereby the scientist-technician will be able to control the occurrence of certain processes and record or measure them.

The point is that the basic observational data for scientific theory are not "given", but *produced.*

The "observations" and the "records" of observations, which serve as starting point for a further development of scientific theory, are themselves produced by the application of a

technique; and this technique has its foundations in already established theoretical knowledge, in the light of which it seeks to win further knowledge and control over physical processes.

The real "act of science", then, has its basis, not in a mere "observation", but in an activity of social technique. The subject matter of scientific theory, that to which the theory refers—its "designation", if we are to use such a term—is by no means the observations ("pointer-readings and similar indications" in Eddington's phrase), but *the objective material processes to which the technique relates and which are registered, recorded, measured by means of the observations obtained by the use of the technique.*

The theories of science are tested in the further application of technique, and in the success or otherwise of new techniques invented in the light of the theories. Once again, to say merely that they are "tested by further observations" is to conceal the real character of the test.

And it must be added that, just as the observations of science are obtained in such a way that they throw light on the actual constitution and laws of physical systems, so scientific theories serve the ends—or rather can, if properly devised and understood and made use of, serve the ends—of increasing our all-round understanding of ourselves and the universe, and of increasing thereby our dominion over nature and our ability to organise our own social affairs successfully. In this way, the "test" of scientific theory is by no means confined to a laboratory test, but is effected in the whole application of science in social life.

All this is conveniently covered up by the formula of the *International Encyclopædia* about "basic procedure of observation."

4. THE "OPERATIONAL MEANING" OF "PHYSICAL REALITY"

When the question is raised of the existence of the material world and the objective reference of scientific theory, Carnap long ago thought he had settled and dismissed this question when he wrote, in *Philosophy and Logical Syntax*: "We reject the thesis of the reality of the physical world: but we do not reject it as false, but as having no sense, and its idealistic antithesis is subject to exactly the same rejection. We neither assert nor deny these theses; we reject the whole question."(1)

This passage expresses the entire standpoint of the "logical"

(1) Carnap, *Philosophy and Logical Syntax*, p. 20.

positivists. *They will not allow that the physical world is real—but they do not want to be driven into denying its reality.* Therefore they "reject the whole question". As for science, it consists of statements that are based on observations and issue in predictions of observations—and beyond that there is nothing to be said.

This standpoint is in no way changed by the advent of the "semantical" method in analysis. It is stoutly maintained in the *International Encyclopædia.* But a few more obscurities are woven into it, which I shall now proceed to examine.

In a contribution on *Foundations of Physics* (published in 1946, i.e. some years later than the analysis of physics by Carnap, which I have quoted) Philipp Frank introduces a conception called "operational meaning". In discussing the foundations of physics, he says, "we must discuss the operational meaning of all symbols used and the kind of relations which exist between these symbols".(1)

Proceeding to "the logical structure of physical theories", he says: "In every physical theory there are: (1) the equations of the theory, the 'calculus'. (2) The laws of transformation of the calculus (i.e. the 'syntactical rules' of the physical calculus, M.C.). And (3) the statements defining the physical meaning of terms, the 'semantical rules'."(2) In physics, he continues, the semantical rules "consist in the description of physical operations". They give "operational definitions" of terms, of immense complexity if worked out in detail.(3)

He launches into a long discussion of the conceptions employed in relativity theory and in quantum mechanics. Towards the end of this discussion he remarks: "The new mechanics, we are often told, does not describe physical reality at all". But he is unwilling to accept this point of view; on the contrary he is willing to allow a sense in which physical theorems do "describe physical reality".

In this respect, it appears that he is revising Carnap's view about physical theorems, expressed in an earlier number of the *Encyclopædia.* Carnap maintained that "no explicit interpretation need be given" of theorems about electrons, for example. But Frank is ready to allow an "operational definition" of the terms of such theorems, and an "operational meaning" of the theorems

(1) P. Frank, *Foundations of Physics*, Introduction.
(2) *Ibid*, 1.
(3) *Ibid*, 2.

themselves. Thus he states: "we can ascribe 'physical reality' to the objects of our new mechanics, provided we mean 'reality' in the operational and not the metaphysical sense".(1)

What is this "operational sense" of "reality" in which the physical world is now allowed to be "real"?

I have carefully read Philipp Frank's contribution several times, but do not find that he is willing to commit himself to any more definite statement. But it is possible to turn for enlightenment to the clearer statements of the spiritual father of all positivist empiricists, Bishop Berkeley, who long ago declared: "The table I write on I say exists; that is, I see it and feel it; and if I were out of my study I should say it existed, meaning thereby that if I was in my study I might perceive it. . . ."(2) Berkeley is here explaining, to use the lingo of the 20th-century "encyclopædists", the "operational sense" in which a table exists.

Subjective idealism always insisted that physical objects, whether tables or electrons, exist in just this "operational" sense, and in no other "metaphysical" sense. Philipp Frank is saying nothing new. He is not substantially revising the formulation of Carnap, any more than Carnap was substantially revising the formulations of Berkeley or Hume or Mach.

If Philipp Frank or any other logical empiricist means anything else, they have ample opportunity of explaining what else they do mean. They have never yet availed themselves of that opportunity. They prefer their meaning to remain veiled in decent semantical obscurity.

The "operational sense" of physical reality, and the "operational definition" of physical concepts, found its way into the *International Encyclopædia of Unified Science* from P. W. Bridgman's *The Logic of Modern Physics*, in which this particular terminology was extensively employed.

According to Bridgman, "we mean by any concept nothing more than a set of operations", and "the proper definition of a concept is not in terms of its properties, but in terms of actual operations".(3)

Thus spatial concepts, for example, such as length, refer to certain definite operations, such as measurement with a foot rule, and not to properties and relations of physical objects which

(1) *Ibid*, 47.

(2) Berkeley, *Principles of Human Knowledge*, 3.

(3) P. W. Bridgman, *The Logic of Modern Physics*, pp. 5, 6.

exist independent of those operations. And physical concepts, such as the electron, again refer to certain definite sets of operations, and not to physical processes which exist independent of operations. In general, physics is about the operations of physicists and the observations—pointer-readings and so on—which result from such operations.

"It is possible to analyse nature into correlations," says Bridgmen. ". . . Such a thesis is the most general that can be made if nature is to be intelligible at all."(1) That is to say, it is possible to correlate the observed results of operations, and this represents the entire content of physical theory.

From this Bridgman concludes: "All our knowledge is relative", that is to say, "relative to the operations selected."(2) Thus our physical knowledge relates to the operations of physicists, not to the objective physical reality on which and with which they operate.

He sees the advantage of this philosophy of physics in that it stops us from asking "meaningless questions", that is, questions such that there is no operation to answer them. He does not see that it stops us from understanding the meaning of our operations. He does not see that *by means of our operations we are probing physical reality and discovering its objective properties;* that *by means of developing physical technique we are increasing our knowledge of the properties of matter*, and not simply finding more observational data to correlate; and that, moreover, questions which existing technique affords no operations for answering may not necessarily be meaningless, but may, on the contrary, be charged with meaning, because they stimulate the production of new refinements in technique which make it possible to answer them and to establish new and more profound physical discoveries.

The "operational meaning" of physical reality is, then, in truth nothing but a new formula of relativistic idealism, applied in the interpretation, or rather misinterpretation, of physics.

Ban on "Matter"

Having said that "physical reality is 'operational'," Frank has something to add about "matter".

"In order to avoid ambiguity and to keep strictly to the operational meaning", he declares, we must "ban" words like "matter" from physical science. Thus we may say that the

(1) *Ibid*, p. 37.
(2) *Ibid*, p. 25.

world is "real in an operational sense", but on no account may we say that it is material.(1)

Here the *International Encyclopædia* adds its authority to the chorus of those who have been telling us for the past half-century that, for physical science, "matter has disappeared".

Meanwhile physical science remains unrepentant in its investigation of the structure and laws of material systems. In the 2nd (revised) edition of his standard textbook on *Quantum Mechanics*, for example, Dirac lays it down that quantum mechanics studies "the structure of matter".(2) In the philosophical introduction to this book he falls almost immediately into considerable "ambiguity" in seeking to expound, in an idealistic way, the fundamental concepts of quantum mechanics in terms of physical operations. Nevertheless, he falls into no ambiguity in speaking of "the structure of matter", because this term bears the precise, scientific sense which was defined by Lenin—"Matter is the objective reality which is given to man by his sensations, and which is reflected in our sensations while existing independently of them."(3) But for Philipp Frank and the other contributors to the *International Encyclopædia*, this is a "metaphysical sense".

The utter confusion of Philipp Frank is shown when he says: "Words like 'matter' . . . are left to the language of everyday life, where they have their legitimate place and are understood by the famous 'man in the street' unambiguously." Thus he explains that, in an "everyday sense", we may call a table or a brain "a piece of matter", but on no account may we refer to electrons or photons as "matter".

It is quite true that if we think of an electron as "a piece of matter", like a little billiard ball, we will be unable "to avoid ambiguity". But this only shows that "the famous man in the street" has not, after all, a completely "unambiguous" conception of what he means by "matter".

This unambiguous conception was expressed philosophically by Lenin when, in answering the confusions of the empiricists, he wrote: "The sole property of matter with whose recognition philosophical materialism is bound up is the property of *being an objective reality*, of existing outside our mind."(4) It is further

(1) P. Frank, *Foundations of Physics*, 51.
(2) P. A. M. Dirac, *Quantum Mechanics*, p. 3.
(3) Lenin, *Selected Works*, Vol. XI, p. 192.
(4) *Ibid*, p. 317.

amplified by Engels when he writes, for instance, that the material world is not a complex of things but "a complex of processes", that "motion is the mode of existence of matter", and that space and time are the forms of matter, "the basic forms of all being."(1)

The question which Philipp Frank refuses to face, and which, like every contributor to the *Encyclopædia*, he covers up and "rejects", is the question of whether science is knowledge of objective reality, and whether physical science in particular describes objective physical processes.

An electron has "physical reality" according to Philipp Frank—but only "in an operational sense". That is to say, we may speak of the "physical reality" of electrons provided we only mean that when we conduct certain "physical operations" with a Wilson chamber, for example, then we shall afterwards observe a certain pattern of streaks on a photographic plate—just as Berkeley spoke of the existence of the table in his study, "meaning thereby that if I was in my study I might perceive it."

5. THE "CRITERION OF OBJECTIVITY"

While "rejecting" the "thesis of the reality of the physical world", and substituting for the scientific concept of matter confusing phrases like "reality in the operational sense", empiricists have always been anxious to rebut the charge that they preach subjective idealism. Another effort along these lines is made in Victor F. Lenzen's contribution on *Procedures of Empirical Science*. Here he undertakes to expound "the development of the concept of an object" and to provide "the scientific criterion of objectivity".

"The development of the concept of an object," he writes, "is completed by the hypothesis of the identity of the perceptible objects of a society of observers. Thus the concept of objective thing is social; science is tested by social procedure. The scientific criterion of objectivity ultimately rests upon the possibility of occurrence of predicted perceptions to a society of observers."(2)

V. F. Lenzen apparently thinks that he has here convincingly demonstrated in what way we can speak of the existence of external objects. Unfortunately, his remarks contain several confusions.

(1) Engels, *Feuerbach*, p. 54; *Anti-Duhring*, pp. 71 and 63.

(2) V. F. Lenzen, *Procedures of Empirical Science*, 11, 3.

He is right in saying that "the concept of objective thing is social"—obviously, because all concepts are social. And he is right in saying that "science is tested by social procedure". But lest this epistemological truth should lead to the conclusion that to the social concept of an object there corresponded the objective existence of the external material world, he twice invokes the fantasm of "a society of observers".

What real society or social unit this strange phrase is intended to "designate" he does not explain. But it is from the proceedings of "a society of observers" that "the concept of an object", together with "the scientific criterion of objectivity" is supposed to arise.

I think it may be doubted, in the first place, whether "a society of observers" could ever "develop the concept of an object". For one thing, they would be apt to perish of hunger and exposure before they had time to "complete the hypothesis".

V. F. Lenzen apparently imagines a "society" of beings with similar sense impressions. Somehow or other they agree upon a language in which to report their perceptions. It turns out that at one and the same time they all produce rather similar reports. So they hold a conference, and arrive at the conclusion of "the identity of the perceptible objects" which they are all perceiving.

Of course, when such "observers" are asked whether there are "really" objects corresponding to their "hypothesis", they will become irritated and denounce the questioner as a "metaphysician". The "concept of an object", they will say, was formulated to correlate their perceptions. And that is all "a society of observers" need be concerned about.

However, there is no need to puzzle our heads about the conundrums propounded at the meetings of the "society of observers". For the "concept of an object", with which everyone is familiar, was not in fact "developed" by any such "society".

The concept of an object was developed, presumably at a very early stage of human development, out of the process of social interaction with the real objects with which we are always surrounded. Men developed the concept of an object because they were concerned with such objects in practical life, and so had to invent a way of speaking to one another about them. There is not, and never has been, the slightest genuine theoretical difficulty about the existence of external objects, or about how, in principle, we come to know of their existence.

Such difficulties are only invented when leisure-class philosophers begin to theorise from the standpoint of "a society of observers" and regard "the concept of an object" as a "hypothesis" erected upon the foundation of recorded observations.

V. F. Lenzen proceeds to ask what is "the scientific criterion of objectivity". In itself, this is a legitimate and important question. It is well known, for example, that people often mistake their own fantasies for objective things—as when they believe in fairies or devils. Again, if an astronomer observes a speck of light on the reflector of his telescope, in a position not corresponding to that of any known star or planet, then he has to ask whether this speck represents a newly discovered star or is due to a fault in the telescope or in his own eye.

To answer this question, V. F. Lenzen again appeals to the proceedings of his imaginary "society of observers". The criterion, he says, "rests upon the possibility of occurrence of predicted perceptions to a society of observers". Whatever does this mean? When statements about "matter" are ruled out "in order to avoid ambiguity", it is indeed surprising to find what ambiguous statements are nevertheless allowed to occupy the pages of the Encyclopædia of "Unified Science".

V. F. Lenzen can hardly mean that because we can "predict perceptions", therefore external things objectively exist. For "a society of observers" might be able to "predict perceptions" because, as Berkeley suggested, God caused the members of that society to receive perceptions in a predictable order. When he says that "the criterion of objectivity" "rests" on "the possibility of occurrence of predicted perceptions" he can only mean that when "the hypothesis of an object", that is to say, the use of the words "such and such an object exists", enables us to "predict perceptions", then we are "scientifically" justified in employing that hypothesis, i.e. in using that form of words.

Such, apparently, is the account of "objectivity" which we are invited to accept in the name of "unified science". It is an account of "objectivity" to which Bishop Berkeley, were he alive today, could certainly raise no objections—except, perhaps, to ask why it was necessary to adopt such strange phraseology to express ideas which he himself had expressed over two hundred years ago in plain English. But the answer to his question would be obvious: Science has progressed since his time, and it is not so simple nowadays to combat scientific materialism.

I mentioned above the case of an astronomer who believes he has discovered a new star. He invites other astronomical observers to follow his directions in looking through their telescopes, and predicts that they, too, will see a point of light similar to the one he saw. His predictions are verified, and so he has a criterion of the objectivity of the star he has discovered.

"But is there 'really' a star out there?" our astronomer asks.

"Don't ask metaphysical questions," replies the President of the Society of Observers. "You have successfully predicted that we shall all see a point of light—what more are you concerned about?"

Thus, instead of charting the material universe for the enlightenment of humanity, the astronomer finds himself predicting the occurrence of points of light in the perceptual experiences of the "society of observers".

Such is the account of science and of the objectivity of scientific knowledge which positivist philosophers are still foisting upon the world in the name of "unified science."

For the rest, it is a gross over-simplification to say that "the scientific criterion of objectivity" rests merely upon "predicted perceptions". For example, there can be little doubt as to the "objectivity" of Julius Cæsar: such a man really did exist. As for Romulus and Remus, on the other hand, their existence is more doubtful. It may be left to logical empiricists to explain to us how the practical certainty of the existence of Julius Cæsar, as compared with the dubiety of the existence of Romulus and Remus, rests upon "the occurrence of predicted perceptions to a society of observers"—and how the "hypothesis" of Julius Cæsar gives such "observers" better predictions of perceptions than does the hypothesis of Romulus and Remus.

Scientific Method and its Development

The "scientific criterion of objectivity" can hardly be summed up in any simplified formula, such as the empiricists want to impose upon science. The scientific methods whereby we distinguish objective fact from fantasy and illusion, and the more probable from the less probable, have been painfully evolved in the course of the history of civilisation and have still but a precarious hold in our culture. What is more, they are still being evolved. There is no complete "scientific method"

which leapt perfect and fully-finished out of the heads of scientists some time between the 17th and 19th centuries, although empiricist philosophers and scientists have continually tried to formulate the canons of such a method.

The methods of science—under which must be included not only laboratory technique, but the whole procedure of interpreting experiment, generalising from it, and preparing new experiment—have been worked out in the practice of science, which has developed with the development of the forces of production and with men's efforts to formulate a theory of nature corresponding to the stage of that development. This process has not concluded, but is rather at its inception.

Moreover, as Marx was the first to demonstrate, "in the social production which men carry on they enter into . . . definite relations of production," which "correspond to a definite stage of development in their material powers of production . . . and to which correspond definite forms of social consciousness."(1)

Science is penetrated by this "social consciousness". The concepts and methods of science are the concepts and methods—not of a perfect and ideal "pure science"—but of the science of a definite class society. They represent not the efforts of abstract man to carry on scientific investigation and formulate scientific theory, but the efforts of men whose activities and thoughts, including their science and the methods and concepts of their science, reflect the existing stage of development of the forces of production and the existing relations of production.

"At a certain stage in their development," Marx continued, "the material forces of production in society come into conflict with the existing relations of production. . . . From forms of development of the forces of production these relations turn into their fetters. Then comes the period of social revolution." At this stage, too, the scientific concepts and methods, which had been advancing men's knowledge of nature and power over nature in the previous period, begin themselves to turn from forms of development into fetters. They require radical criticism and renewal. This is effected in profound scientific controversy, which reflects, not simply differences between rival schools of science, but the social controversy between classes and the struggle to break the fetters of the old relations of production and establish and build a new social order.

(1) Marx, *Critique of Political Economy*, Preface.

The history of science is the history of the advancement of man's knowledge of nature and of human society, and therefore of man's dominion over nature. What has just been said does not in the least detract from this fact. The point is, however, that the progress of science does not consist in the steady accumulation of knowledge through the repeated application of canons of scientific method which are given and fixed once and for all, but that the methods of science themselves develop. They develop, *not in the course of a smooth evolution co-ordinated with technological advance, but in the course of the struggle for new and advanced methods and concepts in the sciences against old and obsolete ones. And in this struggle, up to and including the present time, is exemplified the class content of scientific theories, the fact that the methods and concepts of the sciences are those corresponding to the outlook and needs of definite classes at definite historical stages of development.*

It is important, therefore, to study and criticise the methods of the sciences, in order to strengthen and advance scientific culture. For the same reason, facile and one-sided generalisations about scientific methods are a danger to the progress of science. Such generalisations can only serve to fix and ossify the limiting features of existing scientific practice, and most often they do not even do justice to that. Such a generalisation is the one about "predicted perceptions" and "a society of observers". For we do not, in fact, advance scientific knowledge simply by "observing" and "predicting".

6. "UNITY OF SCIENCE": "REDUCTION BASIS OF THE LANGUAGE OF SCIENCE"

In the hands of the logical empiricists, "semantics", just like the "logical analytic method" and "logical syntax", plays the part of an instrument for covering up the objectivity of scientific knowledge and for continuing to assert the restriction of science to the formulation of rules for predicting observations.

This conclusion is further borne out by the account of the "unity of science" which is presented in terms of the concepts of semantics in the *International Encyclopædia*.

In an earlier work, *The Unity of Science*, written while he was still engaged in "syntactical investigations" and had not yet realised the virtues of semantics, Carnap had already tried to show how science can be "unified". He had regarded the

different sciences as each employing its own peculiar "scientific language", which raised in an acute form the question of how all these diverse "languages" were connected together.

This question he answered by asserting that a single universal language of science could be constructed, into which all the statements in all the different languages of the different sciences could be translated. In other words, the analysis of the language of science had made the edifice of science appear as a tower of Babel, in which the practitioners of each separate science spoke different languages; and Carnap proposed to "unify" science by establishing a single language into which each of their different languages could be translated.

This universal language of science, he asserted, was the language of physics. All science could be reduced to physics. And this theory he named "physicalism".

Thus what Carnap called "the thesis of the unity of science" asserted that there was a single language, the "physical language", into which all the statements of all the sciences could be translated.

"Every scientific statement can be translated into physical language," he wrote. "Every fact contained in the subject matter of science can be described in physical language". He defined this "physical language" by stating that in it "statements of the simplest form attach to a specific set of co-ordinates (three space and one time co-ordinate) a definite value or range of values of physical state", or in other words "express a quantitatively determined property of a definite position at a definite time".

"It is convenient, of course, for each department of science to have a special terminology adapted to its distinct subject matter," he wrote. "All our thesis asserts is that immediately these terminologies are arranged in the form of a system of definitions, they must ultimately refer back to physical determinations. . . . If we have a single language for the whole of science, the cleavage between different departments disappears. Hence the thesis of physicalism leads to the thesis of the unity of science."(1)

This "thesis of physicalism" seems to have been quietly dropped in the *International Encyclopædia*—no great loss, it is true—and a revised concept of the "unity of science" is expounded by Carnap in the very first number. But while

(1) Carnap, *The Unity of Science.*

"physicalism" in its original form is dropped, the fundamental idea is retained that the concept of "the unity of science" is to be formulated in terms of the language of science. In Carnap's words: "The question of the unity of science is a problem of the logic of science, not of ontology."(1)

The "question of the unity of science" is regarded as the question of showing that the various different "languages" of the different sciences all have a formal relationship to a single "universal language", such that the statements in each special language are "reducible" to statements in the "universal language".

Carnap deals first with the problem presented by the terms employed by the special sciences. He proceeds to define a sense in which a term is "reducible" to other terms.

"We know the meaning (designatum) of a term," he writes, "if we know under what conditions we are permitted to apply it in a concrete case and under what conditions not." Then: "If a certain term, x, is such that the conditions of its application . . . can be formulated with the help of terms y, z, etc. . . . we call x reducible to y, z, etc."(2)

The statement of the way x is reducible to y, z, etc. is called a "reduction statement", and the terms y, z, etc. are called a "reduction basis" for x. If all the terms of one "language" are reducible to terms belonging to another "language", then the terms of the latter are called "a sufficient reduction basis" for the statements of the former.

Carnap now makes little difficulty about finding a single language whose terms provide a "sufficient reduction basis" for the language of all the sciences. This is the language in which we formulate direct observations. For the conditions under which "we are permitted to apply" the terms of every empirical science are formulable in observational terms. These terms Carnap calls "observable thing-predicates". And so he re-states the basic "thesis" of "the unity of science" as follows:

"The class of observable thing-predicates is a sufficient reduction basis for the whole language of science."(3)

Thus, "the unity of science" consists in the "reduction" of everything that is said in every science to terms of "observable thing-predicates".

(1) Carnap, *Logical Foundations of the Unity of Science*, I
(2) *Ibid*, III.
(3) *Ibid*, IV.

Carnap goes on to explain that this "reduction" provides the basis for a further "unity of laws" among the sciences.

Can the laws of one science be derived from the laws of another science? he asks. In particular, postulating the general division of the sciences into physical and biological sciences, can the laws of the biological sciences be derived from the laws of the physical sciences? If they can, there is established a "unity of science" in the further sense of a "unity of laws".

Carnap answers that because all scientific statements are reducible to terms of "observable thing-predicates", "there is a common language to which both the biological and physical laws belong, so that they can be logically compared and connected." But this is not the same as to say that one set of laws is actually derived from the other. This question, he says, must remain open. Thus he concludes:

"There is at present no unity of laws. . . . But there is a unity of language in science, viz. a common reduction basis for the terms of all branches of science."(1) And this "common reduction basis" provides the condition for the possibility of a "unity of laws", although such "unity of laws" is still to be realised and may, perhaps, never be actually demonstrated.

If the above is disentangled from the technical jargon in which it is presented, what does it amount to in essence? Quite clearly, it amounts to saying that all the sciences agree in giving rules for deriving statements of the sort that can be directly compared with observations; or more simply still, *that all the sciences agree in giving rules for predicting observations.*

And it adds that this provides the formal possibility of formulating scientific laws in such a way that the laws of all the sciences can be formally derived from a single basic law, though this possibility has not been realised to date and may never be realised.

Thus physics, for example, consists of formulæ relating to the kind of observations recorded by physicists, biology consists of formulæ relating to the kind of observations recorded by biologists, and one day it may be possible to devise a formula embracing both sets of recorded observations. "Unified science" is science presented as a language, or as a set of languages, reducible to terms of "observable thing-predicates", i.e. to terms of the data of observations, i.e. *to perceptions, sensations, sense-data.*

(1) *Ibid,* V.

Thus we are presented with a theory of "the unity of science" according to which the unity of the sciences consists in their all "reducing" to statements about observational data—not in their dealing with different aspects of the objective world, which are investigated by the empirical techniques of the various sciences.

We are presented with a theory of the "unity of science" according to which the possibility of relating the theories of one science with the theories of another science arises from the formal possibility of inventing more comprehensive formulæ about observational data—not from the objective interconnection of the aspects of the world studied by the separate sciences, which may be revealed by deeper and more comprehensive investigation.

In connection with what Carnap calls "the unity of laws" he appears to suggest that if this "unity of laws" is ever realised—and to realise it would be the final achievement of "unified science"—then this will be done by the discovery of some extremely comprehensive formula from which may be deduced all the special laws of all the physical and biological sciences. Thus he holds out the prospect of discovering some single basic formula of the universe. The question "remains open" as to whether such a formula will ever be found, but to seek for it is clearly the goal of science.

Thus, just as the semantic analysis of the language of science exactly corroborated the conclusion of the idealist physicist Eddington, that "the whole subject matter of exact science consists of pointer-readings and similar indications", so it also exactly corroborates Eddington's final conclusion in his last work, when he set out to discover a unitary formula of the universe. This is the point of view of idealism pure and simple, that the whole universe is the manifestation of some divine mathematical concept.

In short, the "unity of science" is to be realised, first of all, by reducing all the sciences to statements correlating observational data; and is then to be completed by the discovery of a single formula from which all correlations can be deduced.

For the *International Encyclopædia*, "the question of the unity of science is a problem of logic, not of ontology", i.e. it is a question of semantical juggling with the "language of science".

But the possibility of the unity of science, and the process of its realisation in the development of scientific theory, does not

rest on the logical-semantic properties of words, but on the material foundation of the real unity of the world.

"The real unity of the world," said Engels, "consists in its materiality. And this is proved, not by a few juggling phrases, but by a long and tedious development of philosophy and natural science."(1)

Science is unified in proportion as it presents a more and more connected picture of the material world, and this unity cannot—as Lenin insisted in his commentary on the above passage from Engels—be deduced from the properties of thought and language, but only "from the objective reality which exists outside us".(2) Nor can it issue in any single formula of the universe.

The unity of science is progressively realised in the course of scientific investigation itself, which discovers the interconnections of material processes and the laws of motion of nature and society. It is the progress of scientific knowledge that creates unified science, and unified science is a weapon of enlightenment and material progress. According to the *International Encyclopædia*, on the other hand, unified science is science doctored by an application of semantical rules, reducing all scientific theories to formulæ correlating recorded observations and predicting future observations, and then seeking for a single master formula from which all the rest can be deduced.

Concealed behind the semantical theory of the "unification" of science by the construction of a single scientific language into which the separate languages of all the separate sciences can be translated, and behind the myth of a single master formula of "unified science", is the fact that the entire logical empiricist approach is directed against the real unity of science.

For the entire approach is clearly based on the uncritical acceptance of the division of science into a number of separate "disciplines". It takes its stand, not on the unity but on the disunity of science. Its starting point is the separation of the sciences one from another. And in face of the fact of this disunity and disruption of science into separate parts, it postulates a merely fantastic, dream unity, which cannot be achieved in the actual practice of the sciences but only in the imagination of philosophers, through the formal construction of a "universal language".

(1) Engels, *Anti-Duhring*, p. 54.

(2) Lenin, *Selected Works*, Vol. XI, p. 234.

All of this, it may now be added, bears witness to the fact that *the positivist philosophy has deep roots in the character of the sciences and of their development under capitalism.* The sciences have developed with the development of bourgeois society. And just as the development of capitalism has been anarchic, unplanned, unco-ordinated, so it has been with the development of the sciences. Scientists have been compelled to work in isolation, on a series of separate problems. This has bred the empiricism and specialisation which is so characteristic of bourgeois science, and this in turn has received expression in the positivist philosophy of science, which regards the job of the scientist as being to record his observations and to write down formulæ and laws correlating them.

This philosophy dates right back to the British empiricists of the 18th century. And just as it expressed the narrow specialisation of science, so it also served and serves the turn of the reigning bourgeoisie by depriving science of any tendency to militant materialism. If science is only correlating observations and not discovering the laws of motion of the real, objective world, then science leaves plenty of room over for religion or for any species of obscurantist teaching which is current in the capitalist world.

Just as capitalist production has created the conditions for passing over to planned, socialist production, so bourgeois science, by its achievements, has created the conditions for planned, unified science. The logical empiricist approach is directed against the unity of science and, therefore, against the progress of science. On the other hand, *the real unity of science is to be achieved only by the organised pressing forward of research in all fields of science in accordance with a single plan—directed towards a single practical goal, the enlargement of knowledge in the service of the people, and informed by a single scientific method, the method of dialectical materialism.*

This is in fact the direction which is given to science by socialism. As things stand at the present time, this socialist science, already flourishing in the first socialist country, the Soviet Union, but which will certainly owe its future development to other countries as well, has become clearly differentiated from a contrary trend, the trend of bourgeois science. *It is precisely the crisis of bourgeois science, the breakdown of its ideology and its disruption into fragments, which is expressed in the semantical theory of "the unity of science".*

CHAPTER 7

PRAGMATISM

1. PRAGMATISM AS A VARIETY OF POSITIVISM

PRAGMATISM is a peculiarly American trend of positivist thought. It has had its representatives in other countries—such as F. C. S. Schiller in Britain, le Roy in France and Papini in Italy—but has never taken firm roots outside the U.S.A.

In his book *Pragmatism*, William James gave credit for the formulation of pragmatism as a definite philosophical trend to Charles Peirce. "The term is derived from the same Greek word, *pragma*, meaning action, from which our words 'practice' and 'practical' come. It was first introduced into philosophy by Mr. Charles Peirce in 1878. In an article entitled 'How to Make our Ideas Clear' . . . Mr. Peirce, after pointing out that our beliefs are really rules for action, said that, to develop a thought's meaning, we need only to determine what conduct it is fitted to produce: that conduct is for us its sole significance. . . . To attain perfect clearness in our thought of an object, then, we need only consider what conceivable effects of a practical kind the object may involve—what sensations we are to expect from it and what reactions we must prepare. Our conception of these effects, whether immediate or remote, is then for us the whole of our conception of the object. . . ."(1)

Thus James said that: "the pragmatic method . . . is to try to interpret each notion by tracing its respective practical consequences."(2)

Using a homely commercial metaphor, he explained that: "If you follow the pragmatic method . . . you must bring out of each word its practical cash-value, set it to work within the stream of your experience. It appears less as a solution, then, than as a program for more work, and more particularly as an indication of the ways in which existing realities may be *changed. Theories thus become instruments, not answers to enigmas, in which we can rest.* We don't lie back upon them, we move forward,

(1) James, *Pragmatism*, p. 46.

(2) *Ibid*, p. 45.

and, on occasion, make nature over again by their aid."(1)

Later, James remarked: "Our obligation to seek truth is part of our general obligation to do what pays. The payments true ideas bring are the sole why of our duty to follow them."(2)

"Interpreting" ideas and theories in terms of "their practical consequences", and in this way seeking their "practical cash value", James developed a distinctive conception of the nature of truth, as "a property of certain of our ideas".

"Truth *happens* to an idea. It *becomes* true, is *made* true by events. Its verity *is* in fact an event, a process; the process namely of verifying itself, its veri-*fication*. Its validity is the process of its valid-*ation*."(3)

This "process of verification" is something which we ourselves do with our ideas, making use of them in Peirce's terms, as "rules for action". Thus truth does not consist in the "agreement" of our ideas with a prior and independent reality—either with the objective material world or with the "given" complex of our own sensations; but ideas and theories become true in proportion as they serve us well as "instruments" in practical life.

It will be seen from the above that pragmatism, like other forms of positivism, gives a "method of interpretation" of our ideas and theories. But it differs in its emphasis on "practice".

Historically, I think it may be safely asserted that the pragmatic philosophy represents a reformulation of traditional positivist-empiricist ideas in the unique conditions of American life in the latter part of the last century and the first part of the present.

It is characteristically impatient of all general theories, and of "armchair" and introspective types of theorising. It has thrown off much of the negativity and pessimism of European empiricism, too—the conception of the narrow limitations of human knowledge, as predicting the order of sensations. It is firmly convinced that the great problem of humanity is to fulfil its "obligation to do what pays", and it is satisfied that this obligation can be fulfilled and over-fulfilled by go-ahead people. It seeks to interpret and evaluate all ideas by this standard.

It is characteristic that William James advertised the advantages of his philosophy to contemporary Americans quite in the manner of a high-pressure salesman.—The following

(1) *Ibid*, p. 53.
(2) *Ibid*, p. 230.
(3) *Ibid*, p. 201.

quotations might almost have been taken from a story by O. Henry.

"Now what kind of philosophy do you find actually offered to meet your need? You find an empirical philosophy that is not religious enough, and a religious philosophy that is not empirical enough for your purpose. . . . I offer the oddly named thing pragmatism as a philosophy that can satisfy both kinds of demand. It can remain religious like the rationalisms, but at the same time, like the empiricisms, it can preserve the richest intimacy with facts. I hope I may be able to leave many of you with as favourable an opinion of it as I preserve myself. . . . On pragmatistic principles, if the hypothesis of God works satisfactorily in the widest sense of the word it is true. . . . When I tell you that I have written a book on men's religious experience, which on the whole has been regarded as making for the reality of God, you will perhaps exempt my own pragmatism from the charge of being an atheistic system. . . . The type of pluralistic and moralistic religion that I have offered is as good a religious synthesis as you are likely to find."(1)

These passages show that, like other forms of positivist empiricism, pragmatism also offers its reconciliation of the scientific and religious standpoints. It regards both science and religion less as theories of the nature of the world than as pointers to ways of action; and each has its place in the regulation of conduct. Both scientific and religious ideas lead to rewarding results—the reward being in this world in both cases; and so one is as "true" as the other.

This aspect of pragmatism attracted the attention of Anatole France, and led him to remark: "Just lately pragmatism has been invented for the express purpose of gaining credit for religion in the minds of rationalists."(2)

In point of fact, pragmatism has had a considerable influence in modernistic and liberal protestant theology, not only in the United States.

Comparing pragmatism as a theory of interpretation, a method for "making clear" the meaning of our ideas, with the European varieties of positivism, certain striking differences may first be noted.

For the European varieties, ideas, propositions, theories are

(1) *Ibid*, pp. 15, 33, 299, 301.

(2) Anatole France, *The Revolt of the Angels*, Ch. 30.

to be interpreted as rules for predicting the order of sensations. For pragmatism, they are "rules for action"—"instruments" to help us "move forward, and, on occasion, make nature over again by their aid".

For the European positivists, our idea of an object is to be made clear by stating "what sensations we are to expect from it". Pragmatism adds: "and what reactions we must prepare." The pragmatist does not find "cash-value" just in observing things but rather in "doing what pays", and he is interested in "the payments true ideas bring".

For the European positivists, verification consists in comparing patterns of ideas with patterns which turn up in experience. For pragmatism it consists in "setting our ideas to work". Pragmatists are not interested in the comparison of ideas with given reality, but in finding "ways in which existing realities may be changed".

For Hume's subjectivist and, indeed, solipsist conception of man as a "bundle of sensations", which has haunted European empiricist philosophy, pragmatism substitutes the conception of man as an agent in practical interaction with his environment, constantly doing, achieving results, changing the objects which environ him.

These emendations of the traditional positivist empiricist position have, at first sight, much to recommend them. Nevertheless, I think it will be found that the pragmatists' conception of the nature of man's practical interaction with his environment and of the problems of human practice leaves much to be desired, and that pragmatism, like other forms of positivism, serves mainly to obscure the purport of human knowledge.

The chief and central difficulty in which pragmatism is involved can be expressed in a preliminary way as follows :

It is true that we need to formulate ideas and theories, not in order to correlate our sense-data, but to inform our conduct and to guide us in "making nature over again" and "changing existing realities". But consciously to change realities supposes the existence of realities for us to change, and a knowledge of their properties, interconnections and laws of motion. It has been well written—though not by a pragmatist—that "freedom is knowledge of necessity". That is to say, we can consciously direct our efforts to intended results in proportion as we know the objective properties and laws of the objects and processes with which we have to deal.

Our working ideas, to serve their purpose as "rules of action", must be made to correspond to real objects and their properties, and must reproduce or "copy" the interconnections and laws of the objective world. As Lenin put it: "Knowledge can be useful biologically, useful in human practice, useful for the preservation of life, for the preservation of the species, only when it reflects an objective truth independent of man. For the materialist, the 'success' of human practice proves the correspondence between our ideas and the objective nature of the things we perceive".(1)

Pragmatism, on the other hand, sees the whole significance of ideas in their pragmatic function as "rules for action", and the only correspondence with reality it will recognise is the correspondence of a plan of action with the successful fulfilment of that plan.

Just as European positivism interpreted ideas as rules for predicting the order of sensations, so pragmatism interprets ideas as rules for conduct. Thus, despite divergences, they are at one in obscuring by their interpretations the fact that we discover the laws of objective material processes, that we are building knowledge of the objective material world. A settled hostility to any materialist view of the world and of human knowledge is a leading feature of pragmatism, as of all forms of positivism.

In the case of William James, this led him, in his later writings, to formulate a philosophy of "pure experience", which he dubbed "radical empiricism".

"My thesis is", he wrote, "that if we start with the supposition that there is only one primal stuff or material in the world, a stuff of which everything is composed, and if we call that stuff 'pure experience', then knowing can easily be explained as a particular sort of relation towards one another into which portions of pure experience may enter. The relation itself is a part of pure experience; one of its 'terms' becomes the subject or bearer of the knowledge, the knower, the other becomes the object known. This will need much explanation before it can be understood."(2)

The last sentence is undoubtedly correct. But what seems readily explicable is that, denying the reference of knowledge to the objective material world, James should end by agreeing with Berkeley, Mach and numerous other empiricist metaphysicians that what alone exists is "pure experience." He goes

(1) Lenin, *Selected Works*, Vol. XI, p. 202.

(2) W. James, *Essays in Radical Empiricism*, p. 4.

so far as to assert (what was also asserted by the German phenomenologist, Husserl) that this "pure experience" is absolutely "self-contained": "though one part of our experience may lean upon another part . . . experience as a whole is self-containing and leans on nothing".(1)

With this "radical empiricism", the pragmatist conception of the meaning of ideas was reduced in the end by William James to exactly the same as the traditional subjectivist conception. The "cash-value" of ideas is paid in a currency of "pure experience".

The most interesting feature of James' "radical empiricism" is that it shows *how easily pragmatism, which obscures the reality of the material world and of our knowledge of it, collapses into the ordinary forms of subjectivism and phenomenalism.* James was, however, cautious enough to say, in introducing his lectures on pragmatism, that "there is no logical connection between pragmatism, as I understand it, and a doctrine which I have recently set forth as 'radical empiricism'. The latter stands on its own feet. One may entirely reject it and still be a pragmatist."(2)

The most consistent and systematic development of pragmatist views is to be found in the philosophical writings of John Dewey. To these I shall now direct attention. I shall consider some leading features of Dewey's account of the processes of thinking; how his "naturalistic" view of thinking can be criticised from a materialist standpoint; and the essence of his pragmatist view of knowledge, truth and science.

2. "EXPERIMENTAL LOGIC"—"LOGIC OF INQUIRY"

In his *Essays in Experimental Logic*, John Dewey polemises against the idealists who separate human thought from human practice. Thinking, he says, does not start "from the fact that in each human being is a 'mind' whose business it is just to 'know'."(3) On the contrary: "Thinking is instrumental to a control of the environment, a control effected through acts which would not be undertaken without the prior resolution of a complex situation into assured elements and an accompanying projection of possibilities. . . . Thought . . . is a name for the events and acts which make up the processes of analytic inspection

(1) *Ibid*, p. 193.

(2) James, *Pragmatism*, p. x.

(3) Dewey, *Essays in Experimental Logic*, p. 23.

and projected invention and testing. . . . These events, these acts, are wholly natural. . . . Thinking is what some of the actual existences *do*."(1)

Thus thinking is an activity of concrete human organisms in interaction with their environment, and is "instrumental to a control of the environment". Nor is it just "cortical". Dewey further insists: "hands and feet, apparatus and appliances of all kinds are as much a part of it as changes in the brain."(2)

In *Logic, The Theory of Inquiry*, he further amplifies this "naturalistic" view of thinking as follows: "The traits that differentiate deliberate inquiry develop out of biological activities not marked by these traits. . . . If one denies the supernatural, then one has the intellectual responsibility of indicating how the logical may be connected with the biological in a process of continual development."(3)

From this point of view, Dewey likewise polemises against the whole conception, which he sees as a characteristic of all "idealist logic", that thinking has its starting point in "given" data—sense-impressions, sensations, sense-data, or what you will.

Idealist logic, he says, "formulated the problem of logic as the problem of the connection of logical thought with sense-material." But in doing so, it "overlooked its essential feature: control of the environment in behalf of human progress and well-being",(4)

Thinking, he says, is not called forth by the occurrence of a peculiar mode of consciousness or "immediate" knowledge called sense-impression. It is rather the "whole situation", i.e. the entire complex of relationships between man and his environment, that arouses thought. "The conception of thinking as an independent activity somehow occurring after an independent antecedent, and finally effecting an independent result, presents us with just one miracle the more."(5)

To suppose that thought operates with "given" sense-data, he says in his *Logic*, is "a monstrous superstition".(6) The observational data relevant to any genuine process of thinking or of inquiry are always "selected", and have themselves to be

(1) *Ibid*, pp. 30, 31.
(2) *Ibid*, p. 14.
(3) Dewey, *Logic*, p. 25.
(4) Dewey, *Essays in Experimental Logic*, pp. 21–22.
(5) *Ibid*, p. 175.
(6) *Logic*, p. 428.

"tested". Data, he says in *The Quest for Certainty*, are not "givens" but "takens".(1)

Dewey is equally opposed to the idea that the "logical forms" manifested in thought—the forms of judgment and modes of inference—are in some way eternal, necessary and intrinsic features of thought as a pure and independent mental or spiritual activity. These forms have rather been evolved in the natural history of human thinking, as an enterprise instrumental to control of environment.

"All logical forms (with their characteristic properties)", he writes, "arise within the operations of inquiry and are concerned with control of inquiry so that it may yield warranted assertions. . . . The forms *originate* in operations of inquiry. . . . Inquiry can develop in its own ongoing course the logical standards and forms to which further inquiry shall submit."(2)

"It is astonishing," says Dewey, "that, in the face of the advance of evolutionary method in natural science, any logician can persist in the assertion of a rigid difference between the problem of origin and of nature, genesis and analysis, history and validity. . . ." Yet logicians and philosophers persist in regarding thought "as something 'in itself,' having just in and of itself certain traits, elements and laws."(3) They vacillate between regarding the "logical traits" as "resident in mind" and regarding them as necessary features of the ontological structure of the world.(4) Neither view is correct. The logical forms are in no sense "ready made", but "the various forms of propositions . . . mark stages of progress in the conduct of inquiry."(5)

To sum up the essence of these brief extracts. In his writings on logic, John Dewey puts forward a view of thinking according to which:

(1) Thinking is not the activity of "minds" whose business it is just to contemplate and know, but it is an activity of concrete human organisms, arising from interaction with environment and instrumental to control of environment.

(2) Processes of thinking are not based on the occurrence of data of sense, which can be regarded as "given" and ultimate—

(1) See *Quest for Certainty*, Ch. 7.
(2) *Logic*, p. 4.
(3) *Essays in Experimental Logic*, p. 93.
(4) *Ibid*, p. 419.
(5) *Logic*, p. 309.

to be organised, as the Kantians said, in a unity of apperception, or to be analysed and correlated in the ways suggested by the various neo-Kantian and post-Kantian empiricists. Thinking does not issue from the "miraculous" occurrence of any such data, but from our interactions with the environment and efforts to control and reshape the environment; and the observational data employed in processes of inquiry have themselves to be obtained, selected and tested.

(3) The logical forms and modes of inference manifested in processes of thinking are not ready-made eternal forms of thought, but are evolved in the process of the natural history of thinking.

3. THE NATURALISTIC VIEW OF THOUGHT

Dewey's pragmatic view of thought has been called "naturalistic". From the point of view of materialism, too, one is bound to take a "naturalistic" view of thought, in the sense of regarding it as "wholly natural", as "what some of the actual existences do" and not as the "miraculous" function of "a mind whose business it is just to know".

But materialism does not regard thought simply as an activity of concrete human organisms, arising "naturally" from interaction with environment, instrumental to control of environment, and so on. *For materialism thought is always reflection of reality, of the really existing material world, whatever fantastic forms this reflection may take.* Herein lies a profound difference between materialism and pragmatist "naturalism".

For materialism, matter is prior and thought is secondary, derivative. Thinking is the highest form of movement of matter, produced when matter has reached the high degree of organisation of the human brain, and the objective material world is the source of all thought, which is nothing but reflection of matter, of objective reality existing independent of its reflection in thought.

This materialist position is glossed over and denied in Dewey's "naturalistic" account of thinking. For he combines his "naturalistic" view, that thinking is an activity of the human organism, with the denial that objective reality is the source and original of ideas, and with the denial that thought is nothing but reflection of objective, material reality.

Dewey makes a parade of denying that "the mind" or "consciousness" exists as something "in itself." He proposes to show

that thinking is "wholly natural", that the logical is continuous with the biological, that thinking is a mode of practical activity instrumental to control of environment, and so on. He makes out that all this constitutes a deadly blow against the errors of idealism. But in fact his real attack is not against idealism but against materialism—against the proposition that all thought is reflection of material reality, which constitutes the very heart of materialism. Under cover of an attack upon certain doctrines of certain schools of idealists he delivers his real attack against the very heart of materialism.

And so, for all his "naturalism", Dewey's philosophy is itself idealist. For denying that thoughts reflect objective reality and that it is objective reality which is the source of our ideas, he affirms that, on the contrary, everything we suppose to exist in the objective world is constituted and determined in the process of thought. Denying that the truth of our ideas consists in their correspondence with objective reality, he affirms that, on the contrary, no objective reality corresponds to our ideas.

Thus *Dewey's philosophy, which he parades as "naturalism", in opposition to idealism, is actually itself nothing but a subtle and disguised form of subjective idealism. It is subjective idealism in a new dress of "naturalism", patched up of doctrines about the organism and its environment, of stimulus and response, of the continuity of the logical with the biological, of ideas as instruments of practice, of truth as that which works in practice.*

All these pragmatic doctrines, which have seemed to many to be opening out a new path in philosophy, in fact lead along the well-trodden path of idealism—not along any new path but along a very old path. Behind all the wordy confusion of Dewey's naturalism, one thing is clear—its idealism; amid all the inconsistencies of pragmatism, one thing is consistent—its opposition to materialism.

It is, then, important to begin by scrutinising, with some care, Dewey's "naturalistic" account of thinking, which constitutes the key to his philosophy.

Thinking is a "natural" product of man's interaction with his environment, and human thought cannot be separated from human practice. That is quite true. But it is necessary to consider rather more closely the precise account which is being offered of the process of thinking, of its genesis, natural history and functions.

Thinking as "Response" to a "Stimulus"

According to Dewey, if we take a naturalistic view, and refuse to regard thinking "as something 'in itself' ", then "we have no choice save . . . to conceive of thinking as a *response to a specific stimulus*. . . ."(1) This statement is fundamental to Dewey's "naturalism", and it provides the clue to understanding what is wrong with his pragmatic brand of "naturalism".

Later, this "stimulus-response" view of thinking is further elaborated. Dewey insists that thinking is not a "state of consciousness", nor a "functional operation" of "a peculiar existence" called "consciousness".(2)

"States of consciousness", he says, anticipating the standpoint of behaviourist psychology, should be replaced by "behaviour". Thinking is to be regarded as an "intra-organic" event, which is "continuous with extra-organic events", i.e. it is aroused by "extra-organic" stimuli. It serves, he continues, "as means for the elaboration of a delayed but more adequate response".(3)

That is to say, if features of the environment arouse the "inner" process of thinking, then the motor response to the stimuli in question is delayed while the "intra-organic event" is proceeding; and this process of thinking results eventually in the elaboration of a "more adequate response".

For instance, I am walking along and come to a fork in the road; this arouses a process of thinking, during which I stand still; as a result of the process of thinking I eventually respond to the situation presented by the fork in the road by walking along one of the forks; thus I am able to make a "more adequate response" to that situation, from the point of view of reaching my destination.—Of course, the process of thinking is not exclusively an "inner" process; it is not, as Dewey has said, purely "cortical". It includes various forms of overt behaviour, intended to secure "data" to assist the thinking process. For example, I look about for a sign-post, I consult my map, I take my bearings by various landmarks, and so on.

Thinking is to be regarded as essentially an "intra-organic event" occurring in response to "a specific stimulus". This does not imply that the thinking process does not involve in its course various forms of overt behaviour. Nevertheless, the

(1) *Essays in Experimental Logic*, p. 93.

(2) *Ibid*, p. 221.

(3) *Ibid*, p. 227.

function of the thinking process is that, occurring in response to "a specific stimulus", it serves "as means for the elaboration of a delayed but more adequate (motor) response" to that stimulus.

What then, is the type of situation, or "specific stimulus", which arouses thinking? For clearly, not every stimulus arouses thinking.

It arises, says Dewey, "because of the appearance of incompatible factors within the empirical situation", i.e. it arises "when there is something seriously the matter, due to active discordance . . . when a situation becomes tensional".(1)

Thinking issues "from an effort to get out of some trouble, actual or menacing".(2) Successful thinking issues in knowledge, and "to place knowledge where it arises and operates in experience is to know that, as it arose because of the troubles of man, it is confirmed as reconstructing the conditions which occasioned those troubles".(3)

The meaning of these remarks will become plain if one takes as an illustration the example I have just given of the thought-process aroused by coming to a fork in the road. Here then are "incompatible factors"—the two roads, only one of which can be the right one; there is "active discordance" and "the situation becomes tensional"—I cannot go along both roads, but must go along one of them. Under the "specific stimulus" of this tensional situation I have to think out which road to take, and my thinking is my effort to find out how to "get out of the trouble" in which I am involved. Dewey himself gives a similar example (which I shall refer to later) of a man who has to do some hard thinking because he has lost his way in a wood.(4)

At first sight this "naturalistic" view of thinking may appear extremely plausible and well-founded. But it is important to grasp its consequences—and its peculiar limitations.

Regarding thinking as an "intra-organic" event occasioned by the stimulus of a tensional situation and leading to a delayed but more adequate response to a situation, the *only* connections which Dewey is able to recognise between thoughts, as intra-organic events, and the external (or extra-organic) world, are: (a) the connections between a specific stimulus and the response

(1) *Ibid*, pp. 10, 11.
(2) *Ibid*, p. 23.
(3) *Ibid*, p. 73.
(4) *Ibid*, Chap. 8.

which it arouses, and (b) the connections between a tensional situation and the eventual pattern of behaviour which is elaborated to resolve the tension.

(a) In connecting each process of thinking with the specific stimulus which arouses it, Dewey recognises how thinking arises from problems of practice. But he does not take into account what is peculiar and unique about human practice and human social organisation. He does not take into account the way in which thinking arises, not merely from external factors in the environment which present problems for solution, but from the nature of human social activity itself. And in treating each act of thinking as a response to a specific stimulus, he does not take into account the way in which thinking is generated out of human social activity, as a unique kind of response, as a new kind of activity with very special and peculiar features.

(b) In recognising the function of thinking as elaborating patterns of behaviour appropriate to the situations that arouse thought, Dewey recognises how thinking serves practical ends and is tested by its practical efficacy. But he does not recognise the unique relationship which arises between thought and its objects, which consists in the fact that external reality is reproduced and reflected in terms of thought.

He sees how thinking can help to elaborate a pattern of behaviour which may correspond more or less adequately to the conditions and needs that aroused the effort of thought, but not how the content of the thought itself corresponds or fails to correspond with external reality.

These considerations, I believe, provide the key to understanding what is wrong with Dewey's "naturalistic" view of thinking, and with his whole philosophy. I shall endeavour to develop them now in more detail.

The Genesis of Thinking in Social Production

(a) Dewey repeatedly asserts that thinking arises "when a situation becomes tensional", "because of the appearance of incompatible factors within the empirical situation," "from an effort to get out of some trouble." Of course, we do have to exercise thought upon such occasions. But I do not think that these assertions can provide anything approaching an adequate picture of the genesis of thinking. All animals continually have to face "tensional situations" and those which survive succeed in elaborating patterns of behaviour which resolve such tensions

more or less successfully. But they do not all think. Reflective or conceptual thinking is a peculiarly human activity. And its genesis and nature is connected with what is peculiarly human.

In *Logic, the Theory of Inquiry*, Dewey speaks of the "biological matrix" of thinking, and says that "the logical", i.e. processes of conceptual thinking, is "connected with the biological in a process of continual development." He had in mind the way in which the function of thinking develops out of the "natural" interactions of the human organism with its environment.

"An organism", he insists, "does not live *in* an environment; it lives by means of an environment".(1) Thinking, then, arises in the way we live "by means of" our environment, and serves us to find the way to overcome the "troubles" which arise in such living.

So far, so good. But the human organism, which thinks, is one which has evolved certain important biological attributes, namely, the human brain and hands, which are evolved from the brain and hands of the higher apes which stand next below us on the scale of evolution, but which belong to man alone. Without our hands our brains would not be of much use to us, and without our brains we would not think. The logical has, then, developed out of the biological thanks to the human brain and hands.

But the way man uses his brain and hands, in co-operative, social production, immediately leads to the position that human living ceases to be merely "biological". Man does not live simply in accordance with biological laws, but in accordance with social laws. And it is in men's social life, whose foundation is the process of social production, that thinking originates and develops. Hence to speak of the "biological matrix" of thinking, as though thinking was generated and developed out of the biological relationship of organism and environment, is to overlook the important fact that the human activity of thinking arises precisely when man emerges from the sphere of the biological and starts his social existence and his social evolution.

In this way Dewey's "naturalism", which leads him to speak of the "biological matrix" of thinking, leads him to render obscure the real social matrix of thinking, and to treat human social activity and social relationships as biological activity and biological relationships. By parading this obscurantism as

(1) *Logic*, p. 25.

"naturalism" he seeks to give it a "scientific" and "progressive" appearance. But it is not scientific but obscurantist, nor progressive but profoundly reactionary.

It is just this type of "naturalism", the "biological" view of man and of human activities and relationships, which in other contexts manifests itself in racialism and in the social doctrines of eugenics: there is a direct link—none the less direct because not obvious on the surface—between Dewey's philosophic "naturalism" and those forms of man-hating, pogrom-mongering reaction, which, together with "naturalistic" philosophy, are quite widespread in the U.S.A.

After dealing with the "biological matrix" of thinking, Dewey devotes a chapter to the "cultural matrix". Of course, he knows perfectly well that "man is a social animal". And he expresses this by saying that the environment of man is not merely physical but cultural—social, and that human activities are culturally modified. "Transformation from organic behaviour to intellectual behaviour, marked by logical properties," he writes, "is a product of the fact that individuals live in a cultural environment."(1)

He goes on to devote the chapter mainly to the rôle of language in the genesis and conduct of thinking. What he does not deal with, however—and he deals with it no more in connection with the "cultural matrix" than with the "biological matrix"—is the basic character of human social activity, of human society and its development, which determines the fact that men create "a cultural environment" for themselves and engage in thinking.

What he has left out can be put in a very few words as follows:

Men, endowed with hands and brains but in various other respects biologically less well equipped than many other animals, have been able to learn how to make and use various tools, for defence against enemies and to secure food and warmth, i.e. to produce their means of subsistence. And tools are social products, their manufacture and use involves social co-operation between individuals, and in turn leads to new, specifically human, forms of social organisation and of social development. It is in learning to use tools for the production of their means of subsistence that men have created human societies and culture. And thinking has been generated and developed in the same process. We have come to use our brains to think, as part

(1) *Ibid*, p. 45.

of the same process of evolution whereby we have come to use our hands to make tools.

This topic was dealt with some time ago by Marx and Engels, who used the word "labour" to denote the manufacture and use of tools by man. Thus in a chapter in his *Dialectics of Nature* entitled *The Part Played by Labour in the Transition from Ape to Man*, Engels wrote: "Labour . . . is the primary basic condition for all human existence, and this to such an extent that, in a sense, we have to say that labour created man himself."(1)

This was to repeat what Marx and Engels had stated earlier in their joint work, *The German Ideology*: "Men . . . begin to distinguish themselves from animals as soon as they begin to produce their means of subsistence, a step which is conditioned by their physical organisation. By producing their means of subsistence men are indirectly producing their actual material life."(2)

Engels went on to point out that it was labour the social manufacture and use of tools to produce the means of subsistence—that "widened man's horizon at every new advance. He was continually discovering new, hitherto unknown, properties of natural objects. On the other hand, the development of labour necessarily helped to bring the members of society closer together by multiplying cases of mutual support, joint activity and by making clear the advantage of this joint activity to each individual. In short, men in the making arrived at the point where they *had something to say* to one another. . . . This explanation of the origin of language from and in the process of labour is the only correct one."(3)

Dewey himself has observed that the "natural" development of thinking is inseparable from the development of language as a means of communication. But what he fails to observe is that the "matrix", to use his own term, of human society and culture, of language and thinking, is to be found in the fact that men co-operate to produce their means of subsistence by social labour, by the manufacture and use of tools.

This, I believe, is the first basic fact which Dewey leaves out in his "naturalistic" account of thinking. Indeed, it is a materialistic conception of human nature which is unacceptable

(1) Engels, *Dialectics of Nature*, p. 279.

(2) Marx and Engels, *German Ideology*, p. 7.

(3) Engels, *Dialectics of Nature*, pp. 282–3.

to all bourgeois philosophers without exception—whether they take the "idealist" view that man is endowed with a "mind" which somehow transcends his physical existence, or whether they take a "naturalistic" —in fact, mechanist—view, which regards mental functions as "intra-organic responses to specific stimuli" and replaces "states of consciousness" by "behaviour".

Dewey says that if we refuse to regard thinking "as something 'in itself' " then "we have no choice" but to regard it as the "response to a specific stimulus", as a mode of behaviour called forth "when a situation becomes tensional". But this antithesis is false, and only arises because of the inadequacy of his general conception of human nature. Even though we do not regard thinking "as something 'in itself' ", we need not regard it as merely "a response" to given troublesome situations, preparing the way for appropriate behaviour patterns to "get out of some trouble".

To regard thinking as "a response" to given environmental conditions is to miss the essence of thinking as a part of human activity. For men, in virtue of human labour, do not just react to a given environment but consciously change the environment and in many respects consciously produce their own environment. And thinking arises, not merely from the external circumstances that "incompatible factors" demand a response, but because human labour and the growth and development of human social organisation set intellectual problems. This is what conditions the genesis of thinking and the forms taken by thought in its development.

Men are distinguished by the social manufacture and use of tools, and to do this they have to think—that is what Dewey has left out in his "naturalistic" account of thinking.

When Dewey regards thinking as merely a "response" to the "stimuli" of specific tensions proceeding from the environment, he gives a purely *mechanist* account of the matter. And this type of mechanism in fact divorces conceptual thinking from the basic processes of human social production just as effectively as does the "idealist" view which he attacks, which regards thinking as the work of " 'a mind' whose business it is just to know".—Such a divorce, it may be added, arises quite "naturally" in the philosophy of representatives of a class which is itself divorced from the labour process, but lives on the products of the labour of others.

Thought as Reflection of Reality

(b) Regarding processes of thought as occurring simply in response to "specific stimuli" and as serving the function of elaborating patterns of behaviour appropriate to deal with such stimuli, Dewey fails to take account, secondly, of the way in which thought reflects and reproduces external reality. His "naturalism" sees thinking exclusively as a means of elaborating a pattern of behaviour, a "delayed but more adequate response" to a specific stimulus.

According to this view, to speak of thoughts as affording a representation of reality, or to speak of the reflection of the world in terms of thought, is to fall into the "idealist" error of regarding thinking as "something 'in itself' ". But on the contrary, this view itself joins hands with idealism in denying the real connection of thought with the objective, material world, which is reflected in thought. And this solidarity of pragmatist "naturalism" with idealism is the expression of its failure to understand the true nature of the social genesis and development of thinking.

Conceptual thinking is generated and develops on the basis of human social production. And this fact determines the characteristic of conceptual thinking, that it not only serves to elaborate patterns of behaviour, but does so by reproducing the external world, material things and human relationships, in conceptual terms, i.e. by elaborating a conceptual or ideal representation of reality.

Dewey says that we must replace "consciousness" by "behaviour". We must not regard thinking as elaborating a reflection of the world in human consciousness, but as elaborating patterns of behaviour. This is to overlook the basic fact of human social behaviour, the labour process, which from its very nature involves the production of a definite mode of consciousness, namely, the elaboration of a reflection of the world in terms of thought.

The conscious character of the labour process was stressed by Marx in the following often-quoted passage of *Capital*: "We presuppose labour in a form which stamps it as exclusively human. A spider conducts operations that resemble those of a weaver, and a bee puts to shame many an architect in the construction of her cells. But what distinguishes the worst of architects from the best of bees is this, that the architect raises

his structure in imagination before he erects it in reality. At the end of every labour process, we get a result that already existed in the imagination of the labourer at its commencement".(1)

The labour process involves the production of ideas which reflect the things and processes with which men are operating in their social productive activity, the results at which they are aiming, and the relationships into which they enter with one another in the process of production.

This does not mean that men are "miraculously" endowed with a "consciousness", to use Dewey's phrase, which is something "in itself". Conceptual consciousness arises quite "naturally" out of the social activity of organisms like men, equipped with brains and hands, and co-operating together in the use of tools to produce their means of subsistence.

To trace this process in detail is no doubt very difficult indeed. But in general it may be suggested that the social use of tools demands that we should be able to refer to and characterise the things, relationships, processes and operations involved and the results aimed at, and to do this we invent a symbolism, a language. In this way there begins the elaboration of concepts and of a conceptual representation of the world. Men begin to think. And their thought is by no means a mere mechanism for elaborating delayed but more adequate responses to specific stimuli, but is a mode of consciousness, a reproduction, reflection or representation of the world, elaborated by human brains operating under the conditions of human social production.

The laws of the production and development of human consciousness are enormously complicated. But the whole process has this material basis. And in its entirety, considered both from the point of view of the individual thinker and of the social production of ideas and ideologies, it has the basic character of being, to repeat another passage from Marx, "nothing else than the material world reflected in the human mind and translated into forms of thought."(2)

This, then, is the second basic fact which Dewey leaves out in his "naturalistic" account of thinking. The first thing he left out was the basic factor differentiating men from animals, namely, social labour—the fact that men, equipped with hands and brains, co-operate to produce their means of subsistence by

(1) Marx, *Capital*, Vol. I, Part 3, Ch. 7, Sect. 1.
(2) Marx, *Capital*, Preface to 2nd Edition.

the manufacture and use of tools, and that it is this which determines that they think. The second thing he left out was, then, that human thinking, arising on this basis, is not simply a specific intra-organic response productive of specific patterns of behaviour, but is the elaboration of a conscious reflection or representation of the external world and of human society.

Dewey regards thinking (a) as a response, occasioned by difficult and tensional situations, and (b) as productive of patterns of behaviour appropriate to meet the actual situations that prevail. This is to leave out the way in which thinking elaborates an ideal representation of the world, and the way in which that representation arises because man does not merely respond to his environment, but by his labour changes his environment and produces his own environment.

The world is translated by man into forms of thought; and this conceptual reproduction of the world has its foundation in the character of human labour and of the social relations arising from the labour process, and takes its genesis from the problems that are thereby set.

Mechanism of the "Naturalistic" View of Thinking

Dewey refuses to regard thought as something "in itself", as the activity of "a mind whose business it is just to know". In this respect he seems to side with materialism against idealism. Thus Marx said that thinking was "the life process of the human brain", whereas the idealists had regarded it as "an independent subject" and had even said that nothing existed but thought and that thinking itself created the world.(1)

But Dewey regards thinking only mechanistically, as an intra-organic response to external stimuli, serving the function of preparing the way in each case for a delayed but more adequate motor response. This account of thinking, which he calls "naturalistic", misses the real material basis of thought just as much as does the idealist view which it criticises.

Very characteristic of this mechanistic "naturalism" is the way that it stresses that "the logical (i.e. thought) may be connected with the biological in a process of continual development".

Stressing this continuity of development from the biological to the logical, Dewey cannot comprehend the leap from the merely biological mode of existence which is made when men begin to co-operate in the use of tools and to think. He cannot

(1) *Ibid.*

comprehend that thinking marks the emergence of something qualitatively new, but instead seeks in effect to reduce the logical to the biological by regarding thinking merely as the response to an external stimulus, merely as a very elaborate response. In a word, Dewey's "naturalism" lacks dialectics. It is precisely the dialectical leap from animal to man, from the biological to the logical, from nature to human society, which his purely mechanistic approach fails to comprehend.

A scientific materialist view of thinking needs to regard thinking dialectically, in the process of its genesis and development in human society—arising from and conditioned by social labour and the productive relations into which men enter with one another—and not according to a mechanist scheme of stimulus and response.

The mechanist, "naturalistic" view, on the other hand, leads straight to a form of the very idealism which it began by criticising. For it obscures and denies the fact that our thinking reflects the material world.

But more than that. Not only does it obscure, in a general way, the fact that thinking reflects the material world, but it obscures the entire manner in which thinking reflects the material world.

Men do not simply invent ideas, and systems of ideas, in response to a series of specific stimuli issuing from external conditions. Conceptual thinking has its origin in social labour, and the formation of concepts is conditioned by the totality of social relations into which men enter in the labour process. Thus there are formed, not separate concepts of this and that, but ways of thinking, systems of ideas, ideologies, which correspond to different stages in the development of the productive relations in society, and which represent the ways in which the material world is reflected in the thinking of men who have definite productive forces at their disposal and who have entered into definite social relations of production. And in particular, with the division of society into classes, the dominant ideology, the dominant way of thinking, is that of the dominant class.

This, too, is utterly obscured in Dewey's "naturalistic" view of thinking.

In point of fact, his "naturalism", which regards ideas as responses to external stimuli, whose "worth" is to be judged by how well they help to resolve a particular "tensional situation", is merely an example and application of the mechanist way of thinking which has arisen as one of the leading features of specifically bourgeois ideology. And in close connection with

this, his view which denies that thinking reflects the material world is an example and application of a second marked trend in bourgeois ideology– subjective idealism. Dewey's "naturalism" is a system which succeeds in combining these two features of bourgeous ideology—mechanism and idealism. This is worth stressing, for it is sometimes erroneously supposed that a mechanist approach must always be associated with materialism.

Dewey has a stimulus-response view of thinking, then, which in the first place denies that thinking in general reflects the material world, and in the second place denies that the form of this reflection is conditioned by the ideology of particular classes. This view is itself a perfect example of bourgeous ideology.

4. KNOWLEDGE AND TRUTH

In the first chapter of *The Quest for Certainty*, Dewey says it has been a basic error of theories of knowledge to have separated human knowledge from human practice.

Practice, he continues, is always attended by risk and uncertainty. But men have tended to seek in knowledge something absolutely certain, unattended by any of the hazards of practical life. For this reason they have tried to find as the object of knowledge something eternal and unchanging. But this is an illusory quest. The task is rather to accept the hazards of practical life and to minimise them by winning knowledge that will effectively give us a greater practical control.

"The quest for certainty becomes the search for methods of control".(1) Such certainty as knowledge possesses is not the "abolute" certainty imagined by idealist philosophers, but is "practical certainty". And it is obtained by experimental methods, by "inquiry".

Dewey quite correctly classes amongst theories which posit the existence of "absolutely" certain knowledge, not only transcendentalist views which maintain that we possess non-empirical modes of knowledge, but also the views of those empiricists (such as Bertrand Russell) who suppose that we possess absolutely certain empirical knowledge, namely, "immediate" knowledge of our sense-data (what Russell called "knowledge by acquaintance").(2) In opposition to such views Dewey writes:

(1) Dewey, *Quest for Certainty*, p. 124.

(2) See *Logic*, Chap. 8.

"Every special case of knowledge is constituted as the outcome of some special inquiry. . . . Knowledge . . . is the name for the products of competent inquiries. . . . To be knowledge is being *so* settled that it is available as a resource in further inquiry; not being settled in such a way as not to be subject to revision in further inquiry."(1)

Knowledge as "Warranted Assertibility"

According to Dewey, the methods of "competent" inquiry which yield products which can be classed as knowledge have been discovered—and are still being discovered—in the course of social evolution. "We know that some methods of inquiry are better than others in just the same way in which we know that some methods of surgery, farming, road-making, navigating or what not are better than others. . . . They are the methods which experience up to the present time shows to be the best methods available for achieving certain results."(2) The reliability of such methods has been very well tested, and they yield products which have a practical warrant or guarantee, expressed by calling them "knowledge".

Dewey contrasts his own view of knowledge with the "doctrine that knowledge is a grasp or beholding of reality without anything being done to modify its antecedent state. . . . Knowing is not the act of an outside spectator but of a participator inside the natural and social scene."(3) We possess knowledge just in so far as we possess ideas—products of inquiry—which experience teaches us to rely on in a practical sense.

The essential character of knowledge, according to Dewey, is that the possession of knowledge leads to successful practice. Thinking is preparatory to patterns of behaviour. It yields knowledge when it follows certain well-tried methods and so acquires maximum practical reliability. It is this practical reliability that for Dewey constitutes the essential character of knowledge, and not any conformity of thoughts with the objects reflected in thinking.

One might suppose that practical reliability would itself be a product of conformity of thought with reality, just as conformity of thought with reality would be tested by its reliability in practice. Nevertheless, Dewey counterposes his view that

(1) *Logic*, pp. 8–9.
(2) *Ibid*, p. 104.
(3) *Quest for Certainty*, p. 188.

practical reliability is a mark of knowledge to any view that in knowledge our thought conforms to objective reality. He is very insistent that, just as knowledge is not a "beholding of reality" by a "spectator", so it has no object which has reality independent of the act of knowing.

"The assumption that the true and valid object of knowledge is that which has being prior to and independent of the operations of knowing" is, he says, a basic error. "The true object of knowledge resides in the consequences of directed action . . . an archetypal antecedent reality is not a model to which the conclusions of inquiry must conform. . . . Known objects exist as the consequences of directed operations, not because of conformity of thought or observation with something antecedent."(1)

Dewey sums up what he takes to be the essential character of knowledge in the phrase that knowledge is "warranted assertibility".(2) That is to say, we know that which we have a practical warrant to assert, i.e. to act upon. And the warrant does not involve that what is known is established as corresponding to the objects we are dealing with, which Dewey calls "an archetypal reality"— but simply and solely that it is the product of an inquiry employing competent methods and so may be relied upon for practical purposes. As for "the object of knowledge", "what we know"—this is not material reality but rather "the consequences of directed action".

Thus, according to Dewey, our knowledge does not unfold a more and more complete and reliable picture of the material universe and our place in it, of the objective laws of motion of nature and society, but rather elaborates a more and more complex and efficient apparatus for calculating the consequences of actions. In this way, Dewey follows Peirce and James in amending the traditional positivism which said that theories, beliefs, knowledge were rules for predicting sensations, by saying that they are rather "rules for action".

This theory of knowledge as "warranted assertibility" has made much work for Dewey's American disciples, who have to try to explain what he meant by it. The obvious method of asking him to explain himself has so far not been found to work in practice. None of his expositions are clear and unambiguous, and it would seem as if verbal obscurity and ambiguity were part of the very essence of this theory of knowledge.

(1) *Ibid*, p. 188.
(2) *Logic*, p. 9.

Truth as Correspondence "Between a Plan and its Execution"

Meanwhile, it may be observed that Dewey's account of knowledge is closely connected with his views about truth—obviously, because that which is known must evidently be true. I will turn to what he has to say upon this allied topic.

In *Essays in Experimental Logic*, Dewey says that a scientific man will regard truth as "that which is accepted upon adequate evidence".(1) He seems to think that this statement must be accepted by all scientific men even without any evidence at all. But that is open to question. The issues raised will help towards reaching an estimate of Dewey's account of knowledge and truth.

It is doubtless correct that a scientific man will accept as true only "that which is accepted upon adequate evidence". As regards that for which adequate evidence is lacking, he will suspend judgment. But this is not the same as saying that, for science, being true, *truth*, is the same as being accepted upon adequate evidence.

Consider, for example, such a statement as: "There is life on the planet Mars". Because adequate evidence is lacking for or against this statement, a scientific man will certainly not commit himself to saying positively that it is true, or that it is false. But he will certainly allow that it *may* be true, i.e. it may be true *now*, even while adequate evidence is lacking. If some astronomer finds adequate evidence, then the proposition will be entered upon the list of propositions which science regards as true. But few scientific men would say that no proposition was true unless it figured in that list.

Thus it may be true "that there is life on Mars", even though we have as yet insufficient evidence of its truth. It is true if there *is* life on Mars, i.e. if what Dewey would call "the archetypal reality", Mars, has "antecedently" to any inquiry of ours, given birth to living organisms. Truth is one thing, evidence is another. But Dewey consistently—or perhaps one should say persistently—refuses to make any such distinction.

Speaking of the "correspondence or agreement" between statement and fact which is commonly supposed to constitute truth, Dewey lays it down that: "The correspondence or agreement is like that between an invention and the conditions which the invention is intended to meet."(2)

(1) *Essays in Experimental Logic*, p. 63.

(2) *Ibid*, p. 24.

This sentence is revealing. Radio, for instance, is an invention intended to aid communication; and it does aid communication, i.e. it corresponds with the conditions it was intended to meet. In the same way, presumably, statements about radio waves help us to construct serviceable radio sets; and so Dewey says that their truth consists in the fact that they do so help us. We are not to say that they are descriptive of objective physical processes, which we can then learn to use for purposes of communication. True statements, though "accepted upon adequate evidence", are, nevertheless, "inventions", i.e. verbal inventions adapted to direct our behaviour towards certain ends; and their truth consists in the fact that with their assistance those ends are attained.

Lest there should be any mistake about this, Dewey devotes a whole chapter to "The Control of Ideas by Fact".(1) In this chapter the episode occurs which I referred to above of a man getting lost in a wood. Luckily he has "an idea of the way home", and by acting on this idea he does succeed in reaching home by the end of the chapter. His idea of the way home, says Dewey, was thereby shown to be true. His idea of the way through the wood was controlled by the facts.

Are we to say, therefore, that the idea on the basis of which he planned his route home corresponded with the actual objective lay-out of the wood?

By no means, answers Dewey, for that would be to postulate the wood as "an archetypal antecedent reality", or "model to which the conclusions of inquiry must conform". The agreement or correspondence of his idea with fact was only "the agreement between a plan and its execution".

In the same way, presumably, a traveller in London, or New York, or Moscow, who studies the map of the underground railway system with a view to reaching some destination, must not regard that map as corresponding to any "archetypal" tunnels "antecedently" existing beneath his feet. He is simply to regard it as a plan of action, which many citizens have found useful, and in which he, too, may repose confidence.

Of course, the map does serve, and is intended to serve, as a plan of action. But the invariable success of journeys correctly planned on the basis of such a map is none the less due to the fact that the map does conform—and was intended by the people who drew it up to conform—to "an arche-

(1) *Ibid*, Chapt. 8.

typal antecedent reality", namely, the underground railway.

Considering such examples as these, it appears that the scientific men and practical men of action, of whom John Dewey writes, wander through woods, or travel on railway systems, which have no "antecedent reality". They differ from the beings who figure in other empiricist writings because they do much more than "observe". They respond to stimuli. They draw up plans and execute them. They go busily about their worldly affairs. But the world they inhabit seems nevertheless quite as elusive as the world of "sense-data" or of "pure experience".

It is not surprising, therefore, that Dewey's account of both knowledge and truth should be extraordinarily confusing.

In his *Logic*, Dewey carries his views on truth a stage further by explicitly denying that "propositions" are true or false at all. Propositions, he says, are to be regarded as "means", and "since means as such are neither true nor false, truth-falsity is *not* a property of propositions. Means are either effective or ineffective, pertinent or irrelevant, economical or wasteful. . . ."(1)

It is not the proposition but the act of asserting it, one gathers, that is true or false. And it is true when it is the product of a competent inquiry and leads to the achievement of the goals to which that inquiry was directed.

Two Main Confusions

I think it is now possible to single out two main confusions in Dewey's pragmatic account of truth and knowledge, and to indicate the source of these confusions in his naturalistic view of thinking.

(1) Dewey persistently speaks as though the object of knowledge was somehow created by the operations of knowing. "Known objects," he says, "exist as the consequences of directed operations". This is why he repeats so often that the objects of knowledge do not exist "prior to and independent of the operations of knowing", and that knowledge does not "conform with something antecedent".

He maintains that knowledge is not the result of any mere contemplation of reality, but is the result of "directed operations". Our idea of an object, he maintains, must be constructed in terms of the operations whereby we know it, we describe objects in terms of the results of "directed operations".

(1) *Logic*, p. 287.

If he had meant that we gain knowledge, not by contemplation, but by practical interference with real objects; and that what we know about those objects, what we find out about them, is relative to the means of investigating their properties which we have had at our disposal; then he would undoubtedly have been correct. But in that case, it would have to be admitted that *the object of knowledge is the real external object, whose properties we investigate by means of particular operations.* Yet this is precisely what Dewey denies. For him the object of knowledge is not the real external object, but only "the consequences of directed operations".

The confusion of which he is guilty is an elementary one—and such an elementary confusion is only possible because of the extraordinary verbosity with which he surrounds the whole discussion. *He has confused the object of knowledge, the object which we know—which exists independently of our knowing it—with the account we are able to give of it in terms of the particular aspects of it which we have been able to investigate.* The latter, of course, the account which we are able to give of an object, only comes into being and only exists as a result of our own operations of knowing, and is relative to those operations; but the former, the real object that is known, is not created by the operations of knowing it, but exists independently of those operations.

An account of an object ranks as knowledge in so far as it is produced by reliable operations and is tested in practice—that is correct. But this description has been shown to conform—not absolutely, no doubt, but approximately, provisionally, for certain purposes—with an object existing independently of the operations of knowing.

Again, an object becomes an object of knowledge—in the words of Engels, "a thing-in-itself becomes a thing-for-us"—when as a result of definite operations related to that object we are able to produce an account of it whose reliability stands the test of practice. That the object in this way becomes an object of knowledge—a "thing-for-us"—is brought about by the operations of knowing. But the object itself is not created by those operations.

Dewey's first confusion, then, is to substitute for the correct statement, that objects only become known to us as a result of our operations of knowing them, and in a way conditioned by those operations, the obscure and misleading statement that

known objects only exist as a result of the operations of knowledge. This, like all positivist confusions, serves to obscure the fact that we have knowledge of the objective world.

In this context it is worth noting that Dewey simply repeats the long-standing confusion of relativism, which in varying forms turns up again and again in empiricist philosophy. The essence of such relativism, and of what is wrong with it, was expressed by Lenin. "Relativism", he wrote, "is not only the recognition of the relativity of our knowledge, but also a denial of any objective measure or model existing independently of humanity to which our relative knowledge approximates."(1)

That all knowledge is relative, is true; for it is always relative to the conditions of the particular process of knowing. But it is also true that knowledge is objective; for it is knowledge of the objectively existing material world.

In opposition to relativistic idealism—such as is expressed by pragmatism, as well as by other forms of positivism—Lenin wrote:

"From the standpoint of modern materialism, i.e. Marxism, the limits of approximation of our knowledge to the objective, absolute truth are historically conditioned, but the existence of such truth is unconditional, and the fact that we are approaching nearer to it is also unconditional. The contours of the picture are historically conditioned, but the fact that this picture depicts an objectively existing model is unconditional. . . . The materialist dialectics of Marx and Engels certainly does contain relativism, but is not reducible to relativism, that is, it recognises the relativity of our knowledge, not in the sense of the denial of objective truth, but in the sense of the historically conditioned nature of the limits of the approximation of our knowledge of this truth."(2)

(2) As regards his account of truth, Dewey persistently *confuses the way in which ideas are tested with what it is that is thereby tested.*

As has been shown, he frequently, and, I believe, quite correctly, insists that our ideas are not framed as a result of the passive "beholding" of objects by "a spectator", but are framed as a result of definite "operations". And in *The Quest for Certainty*, for example, he further writes: "The active and productive character of ideas, of thought, is manifest." He

(1) Lenin, *Selected Works*, Vol. XI, p. 199.

(2) Ibid, pp. 198–9.

continues: "Their worth is to be tested by the specified consequences of their operation." And he concludes that ideas "are tested by the consequences of these operations, not by what exists prior to them".(1)

In stating this conclusion Dewey is quite correctly insisting that ideas are tested—verified—in practice, and not by a contemplative comparison with some "given" reality, such as was imagined, for example, in Wittgenstein's theory of verification and of truth. But that ideas are framed as a result of practical operations and are tested by the consequences of such operations, is not to say that what the test reveals is not the approximate correspondence of ideas with objective reality.

Ideas are tested by the consequences of practical operations—that is correct. But *in so far as our idea of an object passes the test of practice, that is—as Engels insisted long ago—the proof that, so far, our idea does correspond with reality outside ourselves. That is what is tested when we test or verify our ideas by the consequences of operations.*

Dewey's second confusion, then, is to substitute for the correct statement, that the truth of our ideas is tested by the consequences of practical operations, the obscure and misleading statement that the truth of our ideas consists only in the correspondence between the expectations which ideas arouse and the results of operations based on those expectations.

The correspondence between expectation and result is the test of a correspondence between idea and object. This is what he does not admit. And this again, like all positivist confusions, serves to obscure the fact that our ideas do reflect, correctly or incorrectly in varying degree, the objective world.

These confusions, it remains to add, have their source in Dewey's so-called "naturalistic" conception of thinking.

I tried to show above how, according to the "naturalistic" conception, thinking is essentially a means for elaborating patterns of behaviour. Processes of thinking, or inquiry, are conceived of as responses to specific stimuli. Thoughts are to be evaluated, in "naturalistic" terms, simply according as they constitute more or less appropriate responses to the situations which arouse processes of thinking, and according as the patterns of behaviour elaborated are more or less effective in achieving specific goals. The character of thinking as an ideal reflection of the objective world does not enter into the "naturalistic" scheme.

(1) *Quest for Certainty*, pp. 160–1.

It follows that, on this view of thinking, the only account that can be given of truth is that ideas are true according to the results of the practical operations to which they lead; and that the only account that can be given of knowledge is that we possess knowledge when experience affords some practical warrant of the practical reliability of our ideas.

This follows because *the unique character of thinking as a reflection of reality is ruled out by the "naturalistic" conception of thinking.* And it is ruled out because *this "naturalistic" conception fails to take into account the real material conditions of the genesis of thinking, the human modes of activity which determine its development and the emergence in the thinking process of ideas that reproduce or copy objective reality.*

That truth is a function of the way ideas reflect reality, and that knowledge is knowledge of objective reality, is, therefore, glossed over and denied by the "naturalistic" view of thinking.

5. THE EXISTENCE OF THE MATERIAL WORLD

Pragmatism has often been criticised. It has been sharply attacked, for example, by Bertrand Russell.(1) As regards Bertrand Russell's criticisms, the argument between him and Dewey is simply one between idealists who are in fundamental agreement but have fallen out as to the best way of making their idealism seem plausible. What I have written here is based on the idea that what is fundamental in a materialist criticism of pragmatism is not an abstract argument about "what we mean by truth and knowledge", but the criticism of the "naturalistic" approach.

A feature of this approach is that, starting from what superficially appears to be an objective, scientific and even materialist account of the nature of thinking, and a criticism of the views of both objective and subjective idealists of the traditional schools, it arrives at the idealist conclusion that the object of knowledge is somehow constructed in the process of knowing. How and why it arrives at such a conclusion I have tried to indicate. The result is a philosophy of extraordinary obscurity and inconsistency. For this account of the products of thinking—knowledge and truth—makes nonsense of the very "naturalism" on which it is based. This inconsistency, however, cannot be regarded as mere muddle. There is method in it. It is inconsistency consistently introduced in order to make subjective

(1) See Russell, *History of Western Philosophy*, Chaps. 29, 30.

idealism seem plausible by combining it with "naturalism".

Dewey speaks of the operations of thinking and knowing as amongst the natural operations of men, a certain species of living organism inhabiting the planet Earth. He speaks as if men and the earth and the whole material universe did really exist, and as if he were giving as objective an account as he is able of some of the things that actually happen.

In other words, he speaks as though this account of his did approximately correspond to what actually takes place, independently of his thinking about it and inquiring into it. In the next breath, however, he says that the products of inquiries—which must include his own inquiry about thinking—do not and cannot conform with "an antecedent reality", but that "known objects" only "exist" as the consequences of directed operations.

If one says, what I believe is perfectly correct, that thinking and knowing are "natural" operations of men, then one is bound to seek an account of thinking and knowing which will allow of our thoughts reflecting objective reality and of our inquiries producing knowledge which is knowledge of objective reality. Dewey gives no such materialist account, and the result is subjective idealism—but subjective idealism put forward with a maximum of obscurity in its formulation.

This obscurity is such that readers of Dewey's voluminous works are usually left in a state of bewilderment as to whether he supposes that the material universe which we inhabit does exist or not. In one passage he will speak as though it does exist, and then will go on to qualify its existence and what we know of it with an avalanche of phrases which lead to only one clear conclusion, and that is that in his opinion it does not exist after all.

In *Essays in Experimental Logic* he speaks of the world "as a logical problem".(1) He proceeds to say: "What is doubtful is not the existence of the world but the validity of certain customary yet inferential beliefs about things in it. It is not the common-sense *world* which is doubtful . . . but *common-sense* as a complex of beliefs about specific things. . . . Hence never in any actual procedure of inquiry do we throw the existence of the world into doubt, nor can we do so without self-contradiction. We doubt some received piece of 'knowledge' about some

(1) *Essays in Experimental Logic*, Chap. 11.

specific thing of that world, and then set to work, as best we can, to rectify it."(1)

According to this, the world does exist: there is no manner of doubt about it. However, when it comes to "the validity of certain customary yet inferential beliefs about things in it", then it is another story. And Dewey proceeds to qualify our "common-sense beliefs about specific things" to such effect that the very existence of "the common-sense world" is not merely placed in doubt but is very definitely denied.

The Determination of the Indeterminate

The first point to note about what Dewey has to say on the existence of the material world is that, according to him, the world is "indeterminate". Whatever kind of existence the world has, it is an "indeterminate" existence.

This reduction of the existence of real objects to a state of formless indeterminacy is connected with Dewey's view that "objects of knowledge" are in some way "constructed" by the operations of knowing. In several passages in his *Logic*, Dewey speaks as though this "construction" of the objects of knowledge were a process of the fashioning of some vague pre-existent material into new objects, and more definitely as though it were a making determinate of something which before was somehow formless and indeterminate. Objects and their properties become known to us, says Dewey, as a result of a procedure of "inquiry". And of this procedure of inquiry he has the following to say:

"Inquiry effects *existential* transformation and reconstruction of the material with which it deals; the result of the transformation . . . being conversion of an indeterminate problematic situation into a determinate resolved one."(2)

In accordance with this view, he gives the following definition of the procedure of "inquiry":

"Inquiry is the controlled or directed transformation of an indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole."(3)

And later: "Judgment is transformation of an antecedent existentially indeterminate or unsettled situation into a determinate one."(4)

(1) *Ibid*, p. 302.
(2) *Logic*, p. 159.
(3) *Ibid*, p. 105.
(4) *Ibid*, p. 220.

He insists that "inquiry effects existential transformation". There is, I think, a clear sense in which this statement is perfectly true, in contrast, for example, to those views which Dewey criticises, according to which the acquisition of knowledge consists in a mere "passive beholding".

"Existential transformation" is, in the first place, effected in inquiry in as much as there takes place a transformation in the existing relationships between ourselves and external objects. When we come to gain knowledge about an object, that object, which was unknown to us before, becomes known; its nature and properties, which before were indeterminate and problematic so far as we were concerned, are determined by us; in this way, as Engels once expressed it, a "thing-in-itself" is transformed into a "thing-for-us".

And, in the second place, this transformation involves our doing something with the thing in question.

For example, take an inquiry into the constituents of water, which consists in separating out the two components, oxygen and hydrogen. In this case we have changed water—we have in fact destroyed it, and in place of it there is left oxygen and hydrogen. Again, take an inquiry about the stars, carried out by means of astronomical instruments. In this case we do not change the stars, but we do perform operations with the light coming from them.

In all such cases an "existential transformation" is effected. And this transformation is of such a character that by means of it we have produced certain results which make determinate for us what was indeterminate for us before.—For example, we have determined that water is composed of oxygen and hydrogen, or that a given star is of such and such a size and so far away.

The "existential transformation", then, effected by inquiry involves the following features.

(1) We do certain things with the objects of inquiry, bring about certain changes, certain results.

(2) In consequence, a new relationship is established between ourselves and external objects, in virtue of which we know more about them. An indeterminate idea becomes transformed into a more determinate one, and along with this our practical helplessness or uncertainty in relation to certain objects and processes becomes transformed into confidence and knowing what to do and what to expect.

Dewey, however, writes as though when we produce certain

results through the operations performed in the process of inquiry, then we create something, an "object of knowledge", with certain determinate features, which did not exist before. He writes as though when we separate water into oxygen and hydrogen, then we create a situation in which water is composed of oxygen and hydrogen, whereas previously there was just water, indeterminate as to its composition.

But water was always composed of oxygen and hydrogen. What we have created is rather the situation in which we can ourselves separate out its two components and so come to know of what elements water is composed.

Dewey thus confuses the transformation of the relationship between us and an object, which takes place through our doing something with the object and which results in our having a more determinate idea of the object, expressed by us in terms of the results of our operations, with the creation of a new sort of object, an "object of knowledge". That an object becomes known involves, he seems to think, that a new object is created. The determination which we make of the properties of an object amounts, in his view, to creating a new object with those determinations. And those determinations did not exist at all in the "antecedent" situation, which was "existentially indeterminate".

Thus when Dewey speaks of "the existence of the world", which, he says, is "not in doubt", he is referring to the existence only of a quite "indeterminate" world. All determination, all distinction and composition is somehow introduced into the world by ourselves. We are in fact presented with something like a new version of the idealism of Kant.

"*Brute Existence*"

According to Dewey, then, the indeterminate world is determined by us in the process of inquiry, when we create determinate objects of knowledge. He adds that what we start with, before inquiry creates objects of knowledge, is simply "brute existence".

"Certain brute existences, detected or laid bare by thinking but in no way constituted out of thought or any mental process, set every problem for reflection and hence serve to test its otherwise speculative results," he writes. And he continues:

"It is simply insisted that as a matter of fact these brute existences are equivalent neither to the objective content of the

situations, technological, artistic or social, in which thinking originates, nor to the things to be known—the objects of knowledge."(1)

What he "insists" about these "brute existences" is that, while they constitute the starting point of knowledge, they are not the objects of knowledge; the objects of knowledge are created in the course of inquiry.

He goes on to say that these "brute existences" can be compared to the "raw ore" which is wrought into a manufactured article. They are merely "means" for making the useful finished product—the object of knowledge. What is more, they have their being only "in some particular coexistence in the situation where they originate and operate". Like the ore, they are "extracted" for use by us for certain purposes; but unlike the ore, they only come into being in the process of being extracted and used.(2)

In this obscure talk of "brute existences", Dewey is distinguishing between the finished or semi-finished product of knowledge—the object of knowledge, which is constructed and created by us in the process of inquiry—and the crude or brutish starting point of knowledge, which, whatever it may be, is not a determinate object of knowledge.

Dewey and his followers like to regard this as an "evolutionary" theory of knowledge. There is a "continuity of development", Dewey said, from "the biological" to "the logical". And those changes "which terminate in the things of human experience form a history, or a set of changes marked by development or growth".(3)

But what is this "history" of "development"? According to Dewey it is the process whereby, from the extraction of brutish raw material, which is simply possessed or "had" as a "means" or "instrumentality" for knowledge, we proceed, somehow or other, to construct from this raw material objects of knowledge. The "things of human experience" come to exist only at the termination of this process—they are the constructed objects of knowledge.

However Dewey may seek to embellish this "evolutionary" theory with statements about the interaction of the organism and the environment and about the development of the biological into the logical, it is and remains nothing but a form of subjective idealism.

(1) *Essays in Experimental Logic*, p. 35.

(2) *Ibid*, p. 38.

(3) *Problems of Men*, p. 198.

"All the choir of heaven and furniture of earth, in a word all those bodies which compose the mighty frame of the world, have not any subsistence without a mind", wrote Berkeley. "Their being is to be perceived or known."(1) Dewey agrees with him. The things of human experience, he says, exist only as the termination of a process of development or growth in the course of which they are constructed out of crude raw materials.

Dewey gives Berkeley's subjective idealism a typically Kantian twist. The objects of knowledge are not the crude data of sense, which are merely extracted and possessed as instrumentalities of knowledge; starting from such "brute existences", the objects of knowledge are constructed in the course of a process of development or growth which terminates in "the things of human experience".

Because he says that "certain brute existences" are the starting point of every inquiry, Dewey claims that "the position taken in the essays is frankly realistic".(2)

This claim should deceive no-one. If by "realism" is meant the recognition of the objective existence of the real material world, independent of its being known—and such realism is an indispensible component of a materialist position, and is a step towards materialism—then what Dewey says is certainly not "realistic". He says that knowledge has its starting point in "certain brute existences" which are "extracted" in the process of knowing and exist only as "means" in that process, and that knowledge issues in fashioning, out of the material of these brute existences, objects of knowledge which do not "exist antecedently" but are created in the process of knowing. This "position" is not realism. By whatever pragmatic, biological or behaviouristic terminology it may be disguised, it is idealism pure and simple.

Dewey's evolutionary theory is simply an imaginary idealistic scheme of the evolution of consciousness, severed from its material basis.

Writing of the real evolution of consciousness and knowledge, Marx and Engels said: "The premises from which we begin are . . . real premises from which abstraction can only be made in imagination. They are the real individuals, their activity and the material conditions under which they live, both

(1) Berkeley, *Principles of Human Knowledge*, 6.

(2) *Essays in Experimental Logic*, p. 35.

those which they find already existing and those produced by their activity."(1)

What Dewey does is precisely to make "abstraction in the imagination" from these "real premises". Instead of real individuals, their activity and the material conditions under which they live, we have "brute existences" and their transformation into "objects of knowledge". The former are supposed to be "extracted" and the latter "manufactured"; and the entire abstract account of this alleged ideal process of extraction and manufacture relegates the real material world, to which all activity belongs and to which all knowledge relates, to a state of "existential indeterminateness".

Dewey separates the evolution of consciousness from its real, material premises. And he separates our idea of an object, in which is expressed such knowledge of it as we have gained, from the real material object existing outside the mind, of which our idea is a partial and incomplete reflection.

We ourselves construct our own idea of an object, but we construct it as the image of an object which exists independently. All that is contained and involved in the actual existence of material objects surpasses at every stage of the development of knowledge that which we have come to know about them and to express in our ideas. The real object of knowledge always contains infinitely *more* than is expressed in our knowledge of it.

For Dewey, on the other hand, it contains infinitely *less*. For him the real object of knowledge, which exists independently of our knowing it, is nothing, a mere state of indeterminateness. All that he recognises is the process of the construction of our idea of an object. *He recognises that we can go on indefinitely adding fresh determination to our idea of an object. He does not recognise that these determinations constitute knowledge only in so far as they reflect the real and inexhaustible properties of the real object, which exists independently of our idea of it.*

"Nature is infinite," wrote Lenin, "but it infinitely *exists*. And it is this sole categorical, this sole unconditional recognition of nature's *existence* outside the mind and perceptions of man that distinguishes dialectical materialism from relativist agnosticism and idealism."(2)

And it is the non-recognition of nature's existence that con-

(1) Marx and Engels, *The German Ideology*, p. 6.

(2) Lenin, *Selected Works*, Vol. XI, p. 319.

stitutes Dewey's philosophy, and pragmatism in general, as a system of idealism.

Unknowability of the Real World

As for the "brute existences" which Dewey says "set every problem for reflection and hence serve to test its otherwise speculative results", and which constitute the raw material or ore out of which the manufactured "objects of knowledge" are fabricated—from what mysterious mine this ore is "extracted" by us in order to use it as an "instrumentality" of knowledge, he does not say and cannot say.

Like hundreds of other idealists he regards all the objects of knowledge, all the "things of human experience", as constructions of the mind. The real world remains for him utterly unknown and unknowable. It impinges on our consciousness only as "brute existence", which we fashion into objects of our own devising. Behind the manufactured object of knowledge and the extracted raw material for its manufacture, there lies the unknown and unknowable thing-in-itself.

Dewey said that the "brute existences" which constitute the starting point and also the test of every inquiry were not "equivalent to the objective content of the situations, technological, artistic or social, in which thinking orginates". They are not equivalent to the objective content of the situation in which a process of thinking or inquiry originates, but are something which we extract from that situation for our own purposes.

Thus he is saying that we find ourselves in a certain situation, "technological, artistic or social"; this situation has an objective content of its own; we extract from it "certain brute existences" which serve as instrumentalities for our constructing "objects of knowledge"; in constructing those objects of knowledge out of the brute existences we are changing the initial situation, and they serve us as means for changing it further in a controlled way in accordance with our desires. And he calls this a "frankly realistic position".

But if we look into it a little further we shall ask, what is the "objective content" of any situation in which thinking originates? If we begin to inquire into this, with a view to saying what the objective content is, then, of course, we must institute a process of inquiry to determine the objective content; and when we have determined it, then it is an "object of knowledge", and so, according to Dewey, not anything which "existed antecedently"

but something constructed in the course of the inquiry. Therefore for him to speak, as he does, of the objective content of the situation in which thinking originates, and from which the brute existences which set the problems for reflection were extracted, is a mere empty phrase. This objective content is unknown and unknowable, according to him. We may extract brute existences from it and go on to construct any number of objects of knowledge—but the "antecedent" objective situation from which these brute existences were extracted and from which the process of inquiry originated is unknowable and inexpressible.

Dewey's views about the existence of the material world are a tissue of idealist inconsistencies from start to finish.

"Never do we throw the existence of the world into doubt," he announces—and then explains that every known object exists only as a product of our own activity of thinking about it.

He speaks of thinking and knowledge as a process of nature—and then explains that this process of nature is a process of the manufacture in consciousness of natural objects themselves.

In so far as Dewey allows things to exist independently of their being objects of thought, he treats them as unknowable, or as mere indeterminate material awaiting determination; and whatever is known is always some object of our own construction, and its known determinations are fabricated by the human mind. These constructions or fabrications are made, he says, for the sake of practice, and are instrumentalities for the enriching of human life and the control of environment, of external nature; but he denies that the test of practice tests the correspondence between our ideas and objective reality.

In all this philosophising there is not a single clear idea, not a single statement which carries an unambiguous meaning. Yet a clear and unambiguous conclusion emerges from it. It is that Dewey's philosophy is a philosophy of subjective idealism, which holds that the world we know is a product of our own minds and has no objective existence independently of its being perceived and thought about. And that it is a philosophy of idealist relativism or irrationalism, which holds that while there is a process of continual shaping and reshaping of our ideas, according to circumstances and varying practical requirements, these ideas do not reflect objective reality and there is no test of their correspondence with objective reality.

Dewey's subjectivism and relativism is simply a product and a concomitant of the characteristic mechanism of his "naturalistic" view

of thinking. He regards thinking as nothing but the response to a stimulus. And so he fails to understand the material conditions in which thinking originates, the functions it serves, the way it develops, or the manner in which it reflects objective reality outside the mind. And so he is thrown back into an idealist view of thinking and its products.

This illustrates the general truth, that in contemporary philosophy the *mechanistic* approach, the use of the categories of mechanism—whether as applied to the processes of nature or to the activities of man—has become *an adjunct of idealism*, and has lost its connection with materialism, which demands a dialectical understanding of its subject matter.

6. THE ENTERPRISE OF SCIENCE

It remains briefly to examine what Dewey has to say on the subject of science, and then summarise some general conclusions about his philosophy as a whole.

He regards science as "a practical art". It is, he says, "a pursuit, an enterprise. . . ."(1) He describes it as "a highly specialised industry. . . . Such a specialised mode of practice that it does not appear to be a mode pf practice at all".(2) Science, he insists, is not just concerned with formulating generalisations, and we cannot separate "pure" from "applied" science—science as concerned with generalisations from science as applied to particular practical ends.(3) The "laws" formulated by science, which are "supposed to govern phenomena", are really "a way of transacting business effectively with concrete existences, a mode of regulation of our relations with them. . . .(4)

When this view of science is contrasted with the older positivist view that science is concerned with predicting the order of sense-data, or that science is concerned with formulating generalisations based on accepted protocal propositions, then it may be said that there is a great deal of truth in it. It is certainly true that science is not just "pure theory", that it is based on "highly specialised" techniques, and that it becomes "a mode of regulation" of our dealings with "concrete existences". Yet this truth is expressed from a most characteristic point of view. To call science "an enterprise", a "highly specialised industry" and "a way of transacting business effectively" is very obviously

(1) *Essays in Experimental Logic*, p. 413.
(2) *Ibid*, p. 436.
(3) *Logic*, Chap. 21.
(4) *Quest for Certainty*, p. 199.

to speak of science from the point of view of the modern "practical" business man, and this point of view gives to what is said about science a characteristic twist or distortion.

In stressing that science is "a mode of practice", Dewey proceeds to regard scientific results simply as indicative of "acts to be performed"—in pursuit of specific goals and in response to specific practical problems—and not at all as constituting scientific knowledge of objective "concrete existences" and their laws and interconnections. Scientific laws are only "supposed to govern phenomena": in reality they are nothing but "a way of transacting business effectively". Again and again, just like the other positivists with whose views of science he seeks to contrast his own, Dewey insists that science does not yield knowledge of the objective world "which has being prior to and independent of the operations of knowing".

This is shown, for example, in those passages—vague and confusing as they are—in which he speaks about *causality* and *causal laws*.

The "category of causality", he says, is "not an arbitrary logical postulate". It is not "arbitrary", because it has been developed, and is needed, for definite practical purposes.

But "the category is logical not ontological". "The category of causation accrues to existential subject-matter as a logical form when and because determinate problems about such subject-matter are present."(1) That is to say, it is *we* who introduce the "logical category" of causality into "existential subject-matter" for our own purposes. We introduce it; we do not discover it in the "existential subject-matter" itself. For nature does not "intrinsically" conform to causal laws. To wonder why it conforms to laws is like wondering why there are rivers where there are cities: we find cities on rivers because we build them there, and similarly we find the results of our scientific inquiries expressed in terms of causal laws because that is the way in which we express the results of our inquiries. Causal laws "are inherently conceptual in character".(2)

In general, Dewey's conception of science is that there is business to be transacted, and a scientific enterprise is undertaken to find out how best to transact it. Dewey persistently treats the development of science as if it consisted in a series of researches, each in response to the stimulus of a particular practical problem

(1) *Logic*, p. 459.

(2) *Quest for Certainty*, pp. 198–201.

and leading to practical results in the way of a solution to that problem.

Yet, while it is true that the whole development of science is conditioned by problems of practice, it is not true that science has developed, or can develop, simply by way of a series of solutions of particular practical problems. What is here overlooked is that *science is a development of knowledge of the interconnections and laws of motion of external reality.* The enterprise of science is not simply an enterprise of finding how to "transact business effectively" in relation to a series of situations which call for a businesslike response, but an enterprise of extending and unifying our knowledge of the world about us.

The limitations of Dewey's conception of science are vividly shown by contrasting this conception with the conception of science developed by dialectical materialism, which guides the planned development of science in the Soviet Union. Thus, for example, in connection with the Five-Year Plan (1946–50) of the Academy of Sciences of the U.S.S.R., S. I. Vavilov writes:

"Science, which arises out of the requirements of practice, and which justifies its existence by submitting findings that can be applied in practice, has at the same time its own logic of development. Sometimes scores of years may pass before a proper estimate can be made of a given scientific theory and before its practical applications are realised. Maxwell's theory of electro-magnetic waves was formulated in the 60's of last century, but radio did not come into existence until the end of the century. The idea of the atomic nucleus was advanced by Newton. Atomic fission was discovered by Bequerel fifty years ago, but it is only to-day that we have come to realise to the full the significance of atomic energy.

"This explains why our plan is determined by the requirements of the theoretical advance of science as well as by the problems presented to us by the Soviet State. The Academy's work is not divorced from practice and has its roots in practice; but at the same time it aspires to results far beyond present-day practice."(1)

Dewey's conception of science, on the other hand, is simply that there is business to be transacted, and a scientific enterprise is undertaken to show how to transact it. As a result of scientific

(1) *Soviet News*, No. 1542, Sept. 26, 1946.

operations, he says, "fruits remain, and these fruits are the abiding advance of knowledge".(1)

Science is an enterprise undertaken to do definite jobs, to achieve definite results, to attain definite "fruits". Its "abiding advance" consists in a series of successful business transactions. The abiding advance of knowlege is the successful transaction of business.

The source of this peculiarly limited conception of science is not far to seek.

Dewey's conception of science seems clearly to reflect the actual situation of scientific research in the United States, where it is largely conducted in research institutes (including the universities) controlled by powerful industrial corporations, and more recently by the military authorities, which impose definite tasks to be undertaken, definite results to be achieved. The most perfect example of this form of scientific enterprise to date is the atomic bomb project. But more and more all science in the U.S.A., and in Britain, too, tends to be cast into this mould.

This form of organisation of science has the undoubted advantage that powerful material means are placed at the disposal of the scientists.

It has the disadvantage, however, that research in different spheres is not easily co-ordinated; that attention becomes concentrated on certain lines of research demanded by particular interests, to the detriment of research which would better serve the general interests of humanity—as, for example, the concentration of atomic research on making bigger and better bombs, instead of on the peaceful uses of atomic energy; that discoveries often become the property of particular interests, who maintain secrecy about them, to the detriment of the general advance of scientific knowledge; and so in general that the interests of the enlargement and unification of scientific knowledge are subordinated to the narrow ends of monopoly groups, out for their own profit and their own dominance.

It is this form of organisation of science that is reflected in Dewey's view that science is a practical art, whose "fruits" are not knowledge of objective reality but the discovery of successful ways of transacting business.

7. AN "IDEALISM OF ACTION"

The results so far of this examination of pragmatism, as it is

(1) *Quest for Certainty*, p. 184.

expounded in the philosophy of John Dewey, may be summed up as follows:

(1) Dewey's philosophy, and pragmatist philosophy in general, is based on a "naturalistic" view of thinking. It denies that thinking is the function of "a mind", which transcends man's physical existence. Thinking is regarded as "wholly natural", as arising from man's interaction with his environment and as "instrumental to control of environment".

From this point of view, Dewey opposes the traditional positivist view that thinking takes its origin simply from the occurrence of data of sense, and is concerned with interpreting such data—correlating them, predicting their order, and so on. Observational data are not just "given", but are "taken" or "extracted" in the process of man's active interference with his environment. And thinking is not just concerned with correlating observations but with finding how to control and reshape the environment. The logical forms characteristic of thinking are not inherent in the nature of thought as such, but are evolved in the process of the natural history of thought.

According to Dewey, this "naturalistic" view of thinking reinstates the connections between human thought and human practice, which were neglected by other philosophies. But what this view itself neglects is the fact that human practice does not consist merely in a set of responses to stimuli, but is rooted in the social process of production. Human brains come to think because human hands are used for social labour. And thinking is not merely a mechanism for elaborating delayed responses to stimuli. In our thoughts there is elaborated a reflection or representation of the world of nature and human society.

(2) Dewey's naturalism, however, is combined with the denial of the basic position of materialism, that the source and original of thoughts is the objective, material world, which is reflected in thought. He treats thinking in a rigidly mechanist way, regarding processes of thinking only as responses to specific stimuli. The development of thought is externally motivated by tensions arising from factors in the environment, and thinking issues in the elaboration of patterns of behaviour to resolve such tensions. Therefore thought is not regarded as a mode of reflection of the external world, but exclusively as a preparation of delayed but more adequate responses to stimuli.

(3) On the basis of his mechanistic naturalism, Dewey maintains that the truth of an idea lies in the success of the

practice to which it leads. Roughly, ideas are true if they work. Because his naturalism denies that thoughts reflect objective reality, he denies that the truth of an idea depends on its correspondence with fact. He stresses that truth is established and tested in practice, but maintains that what is thereby established and tested is not the correspondence between the idea and the reality which it reflects, but only the correspondence between the plan of action suggested by the idea and the successful execution of that plan.

(4) Similarly, Dewey maintains that ideas rank as knowledge, not in so far as their correspondence with objective reality has been established, but in so far as their reliability and usefulness for specific practical ends has been established. To gain knowledge is not to gain a more accurate, complete and reliable picture of the world, of nature and mankind, on which to base our practice, but is to learn more successful ways of transacting business so as to secure desired "fruits" and "payments".

Just as Dewey denies that the test of practice tests the correspondence of our ideas with objective reality, so also he denies that the practical reliability of ideas is established only in so far as such correspondence is established. For him the object of knowledge is not the objective world, but " the consequences of directed operations".

(5) In relation to science, pragmatist philosophy rejects the traditional positivist view of scientific theory as a language for correlating observational data. Science is regarded as a highly specialised mode of practice, issuing in the discovery of techniques for "transacting business effectively with concrete existences". It develops through the solution of a series of practical problems.

This account applies in the case of science the general mechanist outlook of the "naturalistic" view of thinking. Scientific theory is seen as developing in response to a series of external stimuli, i.e. of practical problems posed for scientific solution. The internal logic of the development of scientific knowledge is left out of account. And scientific theory is interpreted exclusively as an apparatus of "rules of action", and not as expanding knowledge of the objective world.

(6) As is shown by its conclusions about truth, knowledge and science, pragmatist philosophy, while differing in its formulations from other brands of positivism, agrees with them in denying the very possibility of knowledge of the objective world.

Dewey maintains that all the determinations and relationships which we ascribe to material objects and processes are not discovered by us in the material world, but are invented in the process of our thinking itself. Our ideas are true if they work. We are not called upon to formulate ideas that correspond to objective reality—there is no possibility of doing this—but simply to invent ideas of practical utility.

Such is contemporary pragmatist philosophy. It remains to form some estimate of the social basis of this philosophy, and of its general tendency.

Idealism and Cash Values

Dewey calls pragmatism "an idealism of action". It leads, he says, to "an idealism of action that is devoted to creation of a future, instead of to staking itself upon propositions about the past". Such an idealism, he adds, "is invincible".(1)

He also informs us that: "A genuine idealism and one compatible with science will emerge as soon as philosophy accepts the teaching of science that ideas are statements not of what is or has been but of acts to be performed. For then mankind will learn that . . . ideas are worthless except as they pass into actions which rearrange and reconstruct in some way, be it little or large, the world in which we live."(2)

Thus Dewey announces that pragmatism is an "idealism of action", which considers itself "invincible", and which proceeds to "rearrange and reconstruct" the world, and to "create a future", without seeking any accurate knowledge of "what is or has been" and refusing "to stake itself upon propositions about the past".

Certain prominent features of this "idealism of action" may at once be noted.

(a) It is characterised by the central point of view, expressed by William James, that the "worth" of every idea is to be judged by the "payments" it brings.

In his *Pragmatism*, James complained of critics who had misrepresented the pragmatists' principle that "the true is that which works" as meaning "that we are persons who think that by saying whatever you find it pleasant to say and calling it truth you fulfil every pragmatistic requirement". And he

(1) *Quest for Certainty*, p. 289.
(2) *Ibid*, p. 133.

indignantly exclaimed: "I leave it to you to judge whether this be not an impudent slander."[1]

Of course it was a slander. James and the pragmatists never suggested that whatever one finds it pleasant to believe may be regarded as true. They said that whatever it *pays* to believe may be regarded as true. It is definite and tangible results that count, and results that have a "cash value". Thus the pragmatic "idealism of action" inculcates what James called "our general obligation to do what pays".

(b) In affirming this obligation, pragmatism betrays no awareness that what pays one set of people may not pay another. For example, following his "general obligation to do what pays" a capitalist may install some new machinery, with the result that a number of workers find themselves unemployed. This pays the capitalist, but it does not pay the workers. In fact, all that they secure from the transaction is a loss of payments.

Again, if we are to judge the "worth" of ideas by the way they "pass into actions which rearrange and reconstruct the world", then people with different interests—such as capitalists and workers—must often judge of their worth differently. For even on a question of reconstructing the world in a "little" way, class interests in fact diverge; and still more do they diverge on questions of reconstructing the world in a "large" way.

But this consideration never seems to occur to the pragmatists. Pragmatist philosophy always speaks from a point of view in which it is assumed that there is agreement as to what does or does not pay. When it says that "the true is that which works", it assumes agreement as to "that which works".

(c) In saying that every idea is to be regarded as a means or instrumentality for securing payments, and is to be judged by how well it works for such ends, pragmatism is extremely optimistic of the prospects for securing payments, and an indefinite continuation of payments, so long as one goes the right way about it. In this respect it stands in marked contrast to all those types of philosophy which preach the vanity of human efforts, or which represent man as facing a cosmos whose forces he cannot hope to master.

But this optimism is of a curious and irrational kind. On the one hand it is characterised by confidence that "we" can rearrange and reconstruct the world in whatever way suits "our" particular interests, and so can go on securing the kind

[1] W. James, *Pragmatism*, p. 233.

of payments in which "we" are interested. On the other hand it is characterised by an equal assurance that to achieve this it is not necessary to trouble overmuch about "what is or has been" or to learn the lessons of the past.

Thus this optimism is not based on any sober consideration of objective fact or study of the laws of historical development. It regards the objective world as something quite "indeterminate"—so much raw material waiting to be turned into cash values.

Do not stake yourself upon propositions about the past, for the past does not exist. Never mind about what is or has been. Go all out for future payments, create for yourself the conditions to secure them, and then you will be invincible.—That is the message of this "idealism of action".

Philosophy of Rising American Capitalism

Pragmatism is a philosophy created under the conditions of rising American capitalism. Its peculiar features can only be understood in the light of these conditions of its genesis and development. It well expressed the eager search for maximum profits, for ousting competitors, for opening our virgin territories, for continually revolutionising production technique, for overtaking and surpassing the "old world". It expressed the spirit of individual enterprise and initative. It expressed also the clamant optimism of a period when every citizen (except, of course, black ones) was supposed to be free and equal, and to have an equal opportunity for success and to set up and own his own business.

It was these conditions that brought it about that pragmatists could speak about "payments" and about "ideas that work" without any difficulty being felt by them or their audiences as to what was meant. A millionaire and a worker were both supposed to have the same conception of what constituted successful practice, i.e. the millionaire's conception. And if the worker's son went to a university, it was hoped that he would learn there the same ideas which helped the millionaire to be successful.

Pragmatism taught that ideas of that sort were the "true" ones, and all others were worthless. More, it taught that nothing else could be meant by "truth" than the quality of leading to success. To mean anything else was to be unpractical, to adopt a contemplative philosophy instead of a philosophy of action.

Thus William James, in his lectures on *Pragmatism*, poured scorn on the whole idea that truth consisted in correspondence with fact—that true ideas in some sense "copied" facts.

"I can indeed imagine what the copying might mean," he said, "but I can conjure up no motive." What difference does it make to "copy" reality? he asked; and answered, none at all. "When the Irishman's admirers ran him along to the place of banquet in a sedan chair with no bottom, he said, 'Faith, if it wasn't for the honour of the thing, I might as well have come on foot!' " So, "but for the honour of the thing," reality might just as well remain uncopied.(1)

What was wanted was not a passive, contemplative "copying" of reality in ideas, but ideas that showed the way to actions to change reality. True ideas were the ones that led to successful action, and we ourselves made our ideas true by carrying our actions through to success.

The pragmatist philosophy played an important rôle in American education. Dewey is as famous for his books on educational theory as for his books on philosophy. He insisted that education begins from birth, and that its purpose is to equip the individual for his practical life as a citizen. This practical side is the important thing, not to fill the youthful mind with "dead knowledge". He laid great stress on scientific education. No teaching is worth anything except in so far as it prepares those who are being taught to live successful lives and gives them knowledge which they can put to practical use.

The whole idea of "success" was the capitalist idea of success. The educational equipment of the individual for his practical life as a citizen was his equipment for individual success in competitive capitalist society. Above all in its educational theories, Dewey's philosophy revealed itself as a capitalist philosophy, and specifically the philosophy of the rising American bourgeois republic—training and moulding the whole outlook and activities of the individual in accordance with the aims and ideals of the so-called "American way of life".

The whole essence of the pragmatist idea of "success" was recently quite eloquently expressed by Professor Ralph Barton Perry, of Harvard University, in a contribution on *Is There a North American Philosophy?* at the Second Inter-American Congress of Philosophy (December, 1947). Some European readers may think the professor was trying to be funny; but

(1) *Ibid*, p. 235.

no, he was perfectly serious. He defined the conception of "success" and defended it from the charge of being "materialistic".

"It is a mistake to suppose that the American idea of success is limited to material success. That which is characteristically American is not the exclusion of art, literature, science and religion by the pursuit of wealth, but the *introduction into* art, literature, science and religion of something of the same spirit and attitude of which the pursuit of wealth affords the most notable or notorious manifestation: not the drowning of culture by the hum of industry, but the idea of making culture hum. And so material success, yes, but any kind of success, with no prejudice whatever against cultural attainment provided it can be recognised and measured as success. The standard is not essentially sordid or commercial, but it is essentially competitive, whether that consists in beating records or in beating other competitors."(1)

The pragmatist "idealism of action", this philosophy of success, had and continues to have the strongest appeal in the United States. It has never had the same appeal in Europe. Almost without exception the European bourgeois philosophers, whether "rationalist" or "empiricist", have found it hard to understand, unconvincing, and even shocking.

Russell, for instance, in his latest book, finds it decidedly shocking. Its general attitude to the universe he describes as "cosmic impiety". He calls it "a power philosophy" associated with "the age of industrialism", and even says that it expresses "an intoxication of power". "It is natural," he adds, "that its strongest appeal should be to Americans."(2)

Russell is ready enough now-a-days to accept the North Atlantic Treaty and the atomic bomb, but the "power philosophy" which goes with them hurts his intellectual susceptibilities; he is unwilling to give up the joys of "contemplation".

Pragmatism arose as the philosophy of very rapidly expanding capitalism, at a late stage of the development of the capitalist mode of production, when technique was already highly developed. It was born at that precise period in the historical development of the United States which followed the victory of the North over the South in the civil war. Hence the emphasis

(1) *Philosophy and Phenomenological Research*, Vol. IX, No. 3, March, 1949, p. 358.

(2) Russell, *History of Western Philosophy*, pp. 854-6.

on practice in this philosophy, its aggressiveness and its optimism.

In contrast, in England the successful capitalists had tended to imitate the way of life of the landed gentry. As Engels once put it, there was "a compromise between the rising middle-class and the ex-feudal landowners. . . . What should the English bourgeois do without his aristocracy, which taught him manners, such as they were, and invented fashions for him—which furnished officers for the army, which kept order at home, and the navy, which conquered colonial possessions and new markets abroad?"(1) Hence the persistent demand, still expressed at a high level in the universities, and expressed in the writings of Lord Russell and of a host of less exalted philosophers, for a philosophy adapted to the outlook of a leisure class. In England, and the same was true in other European countries, capitalist culture intermarried with the culture of the landed gentry. But in the United States there was no such marriage. There, the ideal was not leisured contemplation of the good, true and beautiful, but to "make culture hum". The American universities were financed by businessmen, run by businessmen and were intended to produce successful businessmen. Hence the origin of a truly businesslike philosophy—pragmatism. This philosophy is practical, optimistic, ready for rapid change; and its sole standard of values is that which works—which pays.

Pragmatism was, then, the intellectual product of the newest capitalist country, the U.S.A., and of the specific and new conditions of development of capitalist enterprise which obtained there.

It is just this, indeed, which gives it the advanced and go-ahead air which it assumes in comparison with most European bourgeois philosophy. Of all the philosophies of capitalist society, it is the most purely capitalist. More than any other brand of bourgeois or capitalist philosophy, it has emancipated itself from the scholasticism and mysticism dating from pre-capitalist conditions. It expresses a single-minded devotion to securing profits and payments, to scoring over competitors, to making good, to opening up new fields for business enterprise, to subordinating absolutely everything to that enterprise.

It is a philosophy of action completely brutal, cynical and ruthless in its expression of capitalist individualism. And at the

(1) Engels, Introduction to *Socialism, Utopian and Scientific.*

same time, as Dewey boasts, it is an "idealism of action". It succeeds in *idealising* as no other philosophy has done the capitalist scramble and fight for profits and competitive advantage under cover of high-sounding doctrines about knowledge and truth and human welfare.

It denounces "materialism", treats religion and morality with the greatest respect—and at the same time succeeds in combining this with a "naturalistic" view of human affairs by which it stakes its claim to be fully scientific, down to earth, free of illusions and idealistic fancies.

If once one grasps the capitalist nature of pragmatist philosophy, and concretely that it is the "idealism of action" of American capitalism, then all its seeming confusions and inconsistencies fall into place. As a logical system it altogether lacks consistency, as a class ideology it is strikingly consistent.

As I have tried to show, the entire pragmatist theory of knowledge and truth is idealist, and the narrow mechanism of its "naturalism" is nothing but a camouflage of subjective idealism. Its demand that theory shall serve the ends of practice, disguised as it often is by phrases about general "human welfare" —for the pragmatists are convinced that successful business enterprise is synonymous with human progress—amounts to the demand that theory shall serve the ends of capitalist practice, of business enterprise.

Now it is true that capitalism was everywhere, originally, in its beginnings a progressive force. And in particular, American capitalist development in its earlier stages in the late 19th and early 20th centuries, when it was opening up the American continent and had not yet become imperialist, was a progressive development.

In this sense it is possible to say that the pragmatist philosophy of American capitalism, too, did originally, in its beginnings play a certain progressive social rôle. It did play such a rôle in so far as it swept aside various antiquated and dead "systems," demanded the secularisation of education and taught that men must constantly move forward on the path of developing technique.

But this does not imply—as many nevertheless appear to think—that pragmatism is or ever was "a progressive philosophy", in the sense that any of its teachings are worth anything to people who are not interested in perpetuating

capitalist conditions but in doing away with them. On the contrary, such people can have no other concern with pragmatism than to expose its exclusively capitalist character and fight against it.

Pragmatism is and always was a capitalist philosophy, an *idealisation* of American capitalism and of its "way of life". And this means that just as it was associated with the epoch of expansion of capitalism within the United States, so it idealised all the brutality and injustice of that capitalism—its ruthless exploitation of labour, its spoliation of the land and of natural resources, its cut-throat competition, its driving of the weak to the wall, the expropriation of the small man by the big man, the domination of the whole of social life by the power of money.

As Lenin pointed out in his book *The Development of Capitalism in Russia*, "the progressive historical rôle of capitalism may be summed up in two brief postulates: increase in the productive forces of social labour and the socialisation of labour."(1)

Originating as the philosophy of rising American capitalism, pragmatism played a progressive social rôle just in so far as it was associated with the increase in the productive forces of social labour and the socialisation of labour brought about by American capitalism, and helped this process forward.

But in the same place Lenin also pointed out that the progressive historical rôle of capitalism "is quite compatible with the fullest admission of the negative and gloomy sides of capitalism".(2) For capitalism plays this progressive historical rôle precisely by means of such "negative and gloomy" features as have just been enumerated. And the chief rôle of pragmatism, as capitalist philosophy, is to idealise and justify such "negative and gloomy" features—to embellish them, to make them appear other than what they are, to cloak them in high-sounding phrases, and so to make them acceptable.

Thus, whoever is against capitalism must be against pragmatism. It is a subtle form of idealism in which was expressed the outlook and aspirations of the American capitalist class, their "idealism of action". And at the same time it is a system of social demagogy and deception. For the whole tendency of the spread and popularisation of pragmatist philosophy has been to help instil this same capitalist outlook in the minds of the

(1) Lenin, *Selected Works*, Vol. I, p. 381.

(2) *Ibid*, p. 380.

American people. It has glorified the ways of capitalism before the people, taught those who suffer exploitation to identify their own interests with those of their exploiters and to entertain illusory hopes for their own future within the framework of the capitalist social system.

Philosophy of American Imperialism

But to appreciate the contemporary social significance of pragmatism it is necessary to take into account the change in the character of American capitalism itself during the past decades.

The earlier period of rapid capitalist development on the American continent, which inspired the first pragmatist challenge to the "contemplative" philosophies of the past and of the old world, has given place to the phase of imperialism. Great business monopolies have been formed—embracing every aspect of economic and social life; dominating men's minds by their control of the press, the cinema, the radio, the schools and the universities; dictating internal politics and foreign policy; piling up vast armaments; actively seeking to extend their orbit to other countries and to dominate the whole world.

This fact gives new meaning to the pragmatist philosophy of "success".

In saying that the true is that which works, pragmatism says that ideas are worthless except in so far as they lead to actions, and that we ourselves, by our own efforts, make our ideas true by carrying through a course of action to success and reaping the ensuing fruits and payments. This doctrine always glorified capitalism and capitalist enterprise. Years ago it could be said that the capitalism it glorified was at least a progressive capitalism which was still increasing the productive forces of social labour. Now it expresses, not the aspirations of the pioneers of American capitalism, but of those forces which have gathered to themselves and monopolised all the "fruits and payments" accruing from the capitalist development—the aspirations of big business, of the billionaire trusts.

The destiny of pragmatism was to become the philosophy of American imperialism. And it is as such that it has been "developed", expanded and embellished by John Dewey after the death of William James.

Behind all Dewey's generalities about theory and practice, knowledge and truth, in which everything is subordinated to success measured by results and payments, lies the ruthless justification of the expansionist

policy of big business, which is idealised as "the creation of the future" and "the reconstruction of the world in which we live".

Taken at its face value, as a philosophical statement, the pragmatist principle that "the true is that which works" is an extremely confused and inaccurate theory about truth—a theory that, philosophically speaking, works very badly. But this theory becomes the perfect expression of the regard for truth of all the agents and hangers-on of the big business world. It is the "philosophy" of the sales expert, of the party boss, of the imperialist politician. All of them are purveyors of ideas who are interested in getting certain results, and the sole property of ideas which concerns them is the property of helping to get those results.

As regards pragmatist "naturalism", one point to note about it is that while it may, as Dewey says, "deny the supernatural", at the same time, and like all other forms of bourgeois empiricism, it sedulously steers clear of any conflict with existing religion—which is as necessary to businessmen as it was to feudal lords. As William James insisted long ago, religion, too, is true if it works, and it works very well. As I shall have occasion to point out in the next chapter, the latest excursion of pragmatist theory, undertaken by Professor Morris of Chicago, tells us that religion must be propagated along with science, in order to condition people to behave in ways considered socially desirable.

And allied with this is a more profound feature of this "naturalism", which links it with dominant trends in recent American sociology and psychology. It is associated with a view of people which, while professing the most humane regard for the individual and his personality, treats the individual and his personality as nothing but a system of inborn traits and acquired reaction patterns, to be "objectively" studied in order to be conditioned and adapted to required capitalist purposes—whether as contented factory worker, as loyal and efficient scientist, or as good soldier.

I have already pointed to the deceptive, demagogic character of pragmatist philosophy. In Dewey's philosophy this demagogy is carried to great lengths.

That is the real meaning of Dewey's extraordinary verbosity, of his way of covering up whatever he has to say with a curtain of vague, ambiguous and high-sounding phrases—a way of writing which has become more pronounced with every new book he has written in the course of his long career as a

philosopher of imperialism. Dewey's philosophy is subjective idealism, but he manages to present it as "naturalistic". Dewey's philosophy recognises no such thing as truth, but he manages to present it as a theory of truth.

Imperialism always has recourse to social demagogy. The American imperialists have nothing to learn in this respect from their junior partners, the British, or from the German fascists and Japanese militarists they have now taken under their wing. American imperialism has its own brand of demagogy, of which the pragmatist philosophy serves as one of the expressions. It calls big business monopolies "free enterprise" and their unrestricted rule "democracy". It seeks to extend its domination over other peoples under cover of opposing antiquated conceptions of nationalism and national sovereignty and to trample on human rights in the name of the defence of free enterprise. Dewey and the pragmatists are past masters of such demagogy in the sphere of philosophy.

Lastly, the significance of the pragmatist teachings about the existence of the objective world, and of the peculiar tone of optimism pervading the pragmatist philosophy needs to be appreciated.

The pragmatist "idealism of action" says that "ideas are statements, not of what is or has been, but of acts to be performed". It is "devoted to the creation of a future, instead of staking itself upon propositions about the past". This is the same attitude as was expressed more crudely by Henry Ford, when he said that "history is bunk". He was optimistic about the "invincibility" of Ford Motors, and that such an enterprise would not suffer the fate of various other enterprises of the past. Nevertheless Henry Ford was wrong, and so are the pragmatists.

Objective facts and the laws of history are inexorable. Capitalist "progress" inevitably leads to crises, poverty, wars and the destruction of the very means of production which capitalist enterprise creates. The system of business enterprise creates the conditions for its own decline and fall, and has already created them.

But such being the objective fact, pragmatism, as the philosophy of business enterprise, teaches that there is no objective fact, that the objective world is something indeterminate awaiting determination by enterprising practical men, and that we can go ahead to create a future without concern for the past.

This is a naïve and illusory optimism. But it has come to

constitute a perfect expression of the expansionist strivings of American big business. It expresses the blind determination to "create a future" and to stamp the pattern of that future upon any recalcitrant objective facts which get in the way. At the same time, it prepares men's minds to accept and applaud the ways of American imperialism as an "idealism of action", and to believe that such "idealism of action" is "invincible".

Pragmatism, then, particularly in the form which Dewey has given it, is the philosophy of American imperialism. It expresses the outlook and aspirations of American big business in philosophical form. That is its basis, the real content of all its doctrines.

From this source it derives its go-ahead appearance and its opposition to various "contemplative" forms of idealism, unsuited to the practical pursuit of maximum payments. But it is impossible not to see that it is itself a form of idealism, and that its real attack is spearheaded, not against idealism, but against materialism, and against Marxist materialism in particular. The pragmatists are least of all "ivory tower" philosophers, but militant partisans of the camp of imperialism against the camp of socialism. That is the meaning of their opposition to the "contemplative" forms of idealism.

And expressing the militant, class point of view of the most reactionary and aggressive section of monopoly capitalism, the American imperialists, pragmatism is at the same time a system of demagogy and deception addressed to the American people, seeking to mould their outlook to the outlook of imperialism, to delude them with false slogans about free enterprise and democracy, about creating a future and reconstructing the world, while inciting them against whatever is anti-imperialist and progressive.

Pragmatism and Marxism

In this connection it is instructive to contrast the philosophy of pragmatism with that of Marxism, especially as they are sometimes thought to bear a close resemblance.

Dewey said that "ideas are worthless except as they pass into actions which rearrange and reconstruct in some way, be it little or large, the world in which we live." Marx said that "philosophers have only interpreted the world, the task is to change it." Both, therefore, speak of "changing the world". Both teach that true ideas are produced in the activity of

"changing the world", serve the ends of practice, and are tested in practice. Both, too, are optimistic about the possibility of attaining true ideas and about mankind's power to "create a future".

Is there not, then, a very close resemblance? In fact this resemblance is superficial: the two philosophies are fundamentally antagonistic.

Marxism calls for a radical reconstruction of human society, ending the exploitation of man by man and instituting socialist planning in the interests of the working people. Marxism teaches that this reconstruction will unleash the fullest possibilities for developing man's dominion over nature and will lead to communist society, embodying the principle "from each according to his ability, to each according to his need".

For Marxism, this reconstruction must be guided by a scientific conception of "what is and has been", by a scientific conception of the world, of mankind and of history. And it is on this scientific materialistic conception that the practical strategy of "changing the world" is based.

For Marxism, true ideas faithfully reflect objective reality, and human practice needs the guidance of theory embodying such true ideas.

All this, however, is absolutely anathema to Dewey and the pragmatists. It stands in direct contradiction to everything they assert. That is why, severe as are their criticisms of various "contemplative" philosophies, these criticisms lack the quality of denunciation which is reserved for Marxist materialism and, still more, for its associated practice.

Marxism is the philosophy expressing the strivings of the working class to end capitalist exploitation and to build a classless society. It is the philosophy of the progressive class in the contemporary world, whose practice demands an objective conception of "what is and has been" to guide it in the fulfilment of its historical mission.

Pragmatism, on the other hand, is a philosophy of capitalism. Originating when American capitalism first embarked on its career of rapid expansion, expressing all the aggressive optimism of that period, it has become a philosophy of imperialism, expressing the point of view of a class which has ceased to play any progressive rôle, for which there is no future, and which inevitably, therefore, must base its practice on illusions and

deception. It now expresses nothing but the striving of business enterprise to go on seeking payments and to subordinate everything to that aim, its blind determination to maintain capitalism in existence, ignoring objective facts and ignoring history.

Such is, in essence, the contrast between pragmatism and Marxism, as two philosophies of practice. Two practices, two philosophies.

To conclude.

Pragmatism claims to be a practical idealism, integrating theory and practice and expressing the striving for human progress and well-being. But in fact it expresses the outlook of big business, striving to expand the sphere of its operations and to reap maximum profits. It is thus a philosophy profoundly hostile to human progress and well-being.

Pragmatism claims to be a philosophy supporting the fullest development of science and of free scientific inquiry. In fact it expresses and supports the subjugation of science to the economic and political interests of monopoly capitalism and, consequently, the frustration of science. It is thus a philosophy profoundly hostile to the all-round fruitful development of science and of a scientific conception of the world.

Pragmatism claims to be a philosophy teaching "devotion to the creation of a future". But it is a philosophy whose whole tendency is to hold back the future and to perpetuate the past. It has thus become one of the most reactionary of present-day philosophies.

CHAPTER 8

THE SEMANTICS OF THE DOG KENNEL

1. THE NEW "SCIENCE" OF "SEMIOTIC"

THE pragmatist-behaviourist view of thinking has been carried forward in a new work by C. W. Morris—*Signs, Language and Behaviour* (1946). This elaborate and wordy exercise demands attention here, in the first place because in many respects it represents a *reductio ad absurdum* of the mechanism which characterises the pragmatic view of thinking, and in the second place because it represents the joining together in the U.S.A. of the two parallel positivist-empiricist trends of pragmatism and of logical analysis and semantics.

Following the lead of semantics, Morris regards the use of signs, and more particularly of language, as the fundamental characteristic of thinking. And following the lead of pragmatism, he regards the control and organisation of practice, of behaviour, as the essential function of all statements and of all ideas. On this basis he has developed an elaborate theory about the way signs function.

He calls this theory the science of "semiotic", that is to say, the study of "semiosis", or of the functioning of signs. Here at the outset we are introduced to one of Professor Morris's outstanding peculiarities—the invention of new-fangled words. From the logical empiricists he has learned that the most important thing about science is "the language of science"; and he appears to think that the more new words it contains, the more "scientific" a "scientific language" becomes.

"This book aims to lay the foundations for a comprehensive and fruitful science of signs," he announces. And he proceeds to state his fundamental point of view as follows:

"The book is written from the point of view first expressed by Charles Peirce, that to determine the meaning of any sign 'we have . . . simply to determine what habits it produces'. Signs are therefore described and differentiated in terms of the dispositions to behaviour which they cause in their interpreters. The approach is, in a wide sense of the term, behavioural."(1)

(1) C. W. Morris, *Signs, Language and Behaviour*, p. v.

He seeks to develop a theory according to which all signs, from the buzzer which summons experimental dogs to their dinner to the utterances of scientists and philosophers, owe their significance simply to their functioning as organisers of behaviour, and according to which the whole process of knowledge consists in building up effective sign systems.

The main task of this new "science" is to "develop a language in which to talk about signs".(1)

This language turns out to be anything but a simple one, and it abounds in new technical terms.

Even quite familiar words are given new suffixes, to fit them into the framework of "semiotic": "grammar", for instance, becomes "grammatic"; and when we consider the behaviour of any animals, we are said to be studying "behaviouristic".

In the "behavioural" approach to the study of signs, less importance is attached to the three-fold division of the "science of signs" into syntactics, semantics and pragmatics than was attached in the *Encyclopædia of Unified Science*, and this division is less rigidly upheld. Morris writes:

". . . pragmatics, semantics and syntactics are all interpretable within a behaviorally oriented semiotic, syntactics studying the way in which signs are combined, semantics studying the signification of signs, and so the interpretant behaviour without which there is no signification, pragmatics studying the origin, uses and effects of signs within the total behaviour of the interpreters of signs. The difference lies not in the presence or absence of behaviour but in the sector of behaviour under consideration. The full account of signs will involve all three considerations. It is legitimate and often convenient to speak of a particular semiotical investigation as falling within pragmatics, semantics or syntactics. Nevertheless, in general it is more important to keep in mind the field of semiotic as a whole, and to bring to bear upon specific problems all that is relevant to their solution."(2)

The programme of semiotic, as a "behaviorally oriented science of signs" promises a systematic development of certain aspects of the pragmatist "naturalistic" conception of thinking. At the same time it promises a development of the "semantic" studies of the logical empiricist school.

Carnap was involved in metaphysical difficulties, for instance,

(1) *Ibid*, p. v.

(2) *Ibid*, p. 219.

in his studies in semantics, through the attempt to define meaning in terms of rules of designation. But now the "semiotician", who realises that he must "keep in mind the field of semiotic as a whole", hopes to avoid such difficulties by seeing how the rules of designation ultimately express "interpretant behaviour".

It is in this way that the new "science" represents a coming together and fusion of the two main currents of modern empiricist theory, both centred today in the United States—logical empiricism and pragmatism. It is a symptom of a marked consolidation of positivist philosophy taking place today in the U.S.A.

2. SIGNS AND THEIR SIGNIFICANCE

The chief premise of "semiotic" is the conception of "a sign", which is defined in terms of "goal-seeking behaviour".

"Signs", writes Morris, "are identified within goal-seeking behaviour."(1) The general idea is that, within goal-seeking behaviour, signs are used to control behaviour towards the goal in the absence of the direct stimulus of objects relevant to the goal.

For instance, the dinner-seeking behaviour of a dog (and it will be found that dogs and their behaviour when hungry are objects of great interest to the "semiotician") may be controlled by sounding a buzzer, which, in the absence of direct observation of food, diposes the dog to go to the place where his dinner is set down for him. Similarly, the behaviour of a motorist seeking to reach his destination is controlled by the spoken directions of people who tell him the way. Both the buzzer and the spoken words are, in these instances, signs.

The full definition of "sign" involves several technical terms, which it now becomes necessary to explain.

First of all, "a preparatory stimulus is any stimulus which influences a response to some other stimulus".(2) For instance, if you always ring a bell just before you give a rat an electric shock, then the bell is a "preparatory stimulus": it is found experimentally that a rat will jump more when it is given a shock after the bell is rung, than it will if it is just given the shock alone.

"A *stimulus*" is "any physical energy which acts upon a

(1) *Ibid*, p. 7.

(2) *Ibid*, p. 8.

receptor of a living organism". And "the source of this energy will be called the *stimulus-object*".(1)

Next comes "*a disposition to respond*", which is "a state of an organism at a given time which is such that under certain additional conditions the response in question takes place".(2)

"A *response-sequence* is any sequence of consecutive responses whose first member is initiated by a stimulus-object, and whose last member is a response to this stimulus-object as a goal-object. . . ."(3) For instance, the behaviour of a hungry dog which sees a rabbit, runs after it, kills it and eats it, is a response-sequence.

Lastly, "a *behaviour-family* is any set of response-sequences which are initiated by similar stimulus-objects and which terminate in these objects as similar goal-objects for similar needs".(4) For instance, "all the response-sequences which start from rabbits and eventuate as securing rabbits as food would constitute the rabbit-food behaviour family".

The definition of "a sign" is now as follows:

"If anything, A, is a preparatory-stimulus which in the absence of stimulus-objects initiating response-sequences of a certain behaviour-family causes a disposition in some organism to respond under certain conditions by response-sequences of this behaviour-family, than A is a sign."(5)

It is to be noted that a sign functions as a sign, not by causing a response, but by causing "a disposition . . . to respond under certain conditions". For instance, a dog might not respond to the dinner bell on a particular occasion, but the bell would still be a sign of dinner. In the same way, a motorist might ignore directions given to him, but the spoken words would still be signs indicating a route for him to take. It is for this reason that the "behavioural" account of signs cannot treat signs simply as stimuli causing responses, but has to define them rather as "preparatory-stimuli" causing a "disposition to response."

Having defined "a sign", the next thing is to define the significance of signs. This is achieved in a lightning campaign in which several new weapons are employed.

(1) *Ibid*, p. 8.
(2) *Ibid*, p. 9.
(3) *Ibid*, p. 9.
(4) *Ibid*, p. 10.
(5) *Ibid*, p. 10.

"Any organism for which something is a sign" is called an "*interpreter*". Its "disposition to respond" is called "an *interpretant*" Next, "anything which would permit the completion of the response-sequences to which the interpreter is disposed because of a sign will be called a *denotatum* of the sign. A sign will be said to *denote* a denotatum". Lastly, "those conditions which are such that whatever fulfils them is a denotatum will be called a *significatum* of the sign. A sign will be said to signify a significatum; the phrase 'to have significance' may be taken as synonymous with 'to signify'."(1)

By means of this pseudo-scientific jargon Morris is evidently trying to develop a theory of signs according to which every sign signifies, but not every sign denotes. For instance, if I tell my dog "dinner" when in fact there is no dinner, then the sign does not denote anything; but the dog interprets the sign and the sign has significance for him.

In these basic definitions of signs and the significance of signs, Morris is trying to formulate definitions applicable to all signs without exception, and not just to the special usages of signs involved in human language. In fact, he seems to be thinking much more of the sort of signs we use in controlling the behaviour of dogs than the signs we use in controlling our own behaviour. When he comes to language, he defines it as a special case of signs in general.

Morris's definition of "language" enriches the language of "semiotic" with two more outlandish terms. The first is "*comsign*" which is a "sign which has the same signification to the organism which produces it as it has to other organisms stimulated by it.(2) The second is "*plurisituational* sign", which is one "with a relative constancy of signification" in every situation in which it occurs.(3) So now "a language" is "simply" defined as follows:

"A language is a set of plurisituational comsigns restricted in the ways in which they may be combined."(4)

Morris announces that he will call a sign belonging to a language "a lansign", and a language "a lansign-system".(5) He also introduces three other new-fangled terms, which I omit.

(1) *Ibid*, p. 17.
(2) *Ibid*, p. 33.
(3) *Ibid*, p. 35.
(4) *Ibid*, p. 36.
(5) *Ibid*, p. 36.

But in general, I am quoting only a very small sample of the verbal hocus-pocus of Morris's "language in which to talk about signs".

3. MODES OF SIGNIFYING AND TYPES OF DISCOURSE

Having thus, as he puts it, laid "the foundations for semiotic within behaviouristic", Morris goes on to deal with "the central problem of the differentiation of the major modes of signifying".(1)

He insists that signs signify in other ways than as conveying information about matters of fact. Empiricists have often laid it down in the past that meaning belongs only to statements of matters of fact, and that meaningful statements in this sense must be distinguished from other statements, which express emotions rather than thoughts: Thus it has been asserted that, for instance, "This is a flower" is meaningful, but "This is beautiful" is merely an expression of emotion. Morris cannot accept such a point of view, and so proposes to distinguish several different "modes" in which signs and combinations of signs can signify.

He distinguishes four such "modes of signifying", which he calls respectively, "*designative*, *appraisive*, *prescriptive* and *formative*".

Roughly, a sign functions in the "designative" mode in so far as it serves to call attention to the presence of some object; in the "appraisive" mode in so far as it serves to appraise that object from the point of view of the interpreter; and in the "prescriptive" mode in so far as it serves to recommend some line of conduct in relation to that object. Morris endeavours to illustrate how signs may function in these three modes in relation to the procedure of giving a dog his dinner.

In the case of "lansigns", that is to say, in human speech, such a statement as "There is a flower" exemplifies the designative mode; "This flower is beautiful" exemplifies the appraisive mode; and "Look at that flower!" exemplifies the prescriptive mode.

The "formative" mode has a chapter to itself in Morris's book(2) and occasions him no little difficulty. It is illustrated in language by such signs as "or", "if," and so on, i.e. by what the logicians call "logical constants".

It is difficult to give a "behavioural" account of such signs.

(1) *Ibid*, Chapt. III.

(2) *Ibid*, Chapt. VI.

Morris endeavours to base an account of the formative mode "within behaviouristics" by imagining a case in which a sign in this mode is to be interpreted by a hungry dog.

A sign S_1 is used to inform the dog that his food is in one place. S_2 is used to inform him that his food is in another place. S_3 is used to inform him that his food is in a third place, and so on. A new sign, S_6, is now introduced (why the suffix "6" I do not know), which, when used along with, say, S_1 and S_2, is to inform the dog that he is to look for his food in either of the places indicated by S_1 and S_2 (but not by S_3) and if he does not find it in the one place then he is to proceed to look for it in the other. (Thus "S_1 S_2 S_6" is equivalent to the sentence "Food here or food there".) In this case, S_6 is a sign used in the formative mode, and Morris calls it a "formator".(1)

Morris does not say whether he has ever trained a dog to respond in this way. As a "semiotician" he has the advantage that he need not deal with real dogs, but only with imaginary ones. Later on he puts one of his dogs through its paces in relation to some more complicated "formative discourse", of the sort that is to be found in the opening chapters of *Principia Mathematica*—"all of which", as he truly remarks, "is rather hard on the dog".(2)

The conclusion of this doggy analysis is as follows: "Formators are signs which dispose their interpreters to modify in determinate ways the dispositions to response occasioned by other signs in the sign combinations in which the formator appears".(3)

In line with the differentiation of the designative, appraisive, prescriptive and formative modes of signifying, Morris further distinguishes four "primary sign usages", namely, the *informative*, *valuative*, *incitive* and *systemic*. Thus he lays it down that: "An individual may use signs to inform himself or others about what has been or is or will be. . . . He may use signs to confer for himself or others a preferential status upon something . . . he may use signs to incite a particular response in himself or others to objects or signs. . . . And he may use signs to further influence behaviour already called out by signs. . . "(4)

Corresponding to these four "sign usages", Morris distinguishes

(1) *Ibid*, p. 156.
(2) *Ibid*, p. 164.
(3) *Ibid*, p. 158.
(4) *Ibid*, p. 95.

four ways in which the use of signs can have the characteristic he calls "adequacy".

Thus signs are informatively adequate in so far as they cause the interpreters to act "as if something has certain characteristics"; they are valuatively adequate in so far as they cause the interpreters to give something a corresponding "preferential status"; they are incitively adequate in so far as they cause interpreters to "direct behaviour into definite channels"; and they are systemically adequate in so far as they cause interpreters to organise their responses to other signs".(1)

Of course, for a combination of signs to be informatively "adequate" is not the same as its being true. On the contrary, if one's intention is to mislead people, then the "adequate" use of signs in that context will be false.

The *truth* of sign combinations depends rather on the way they "denote", though Morris gives only a very brief and vague account of this.(2)

In general, he appears to be seeking some kind of combination of the James-Dewey pragmatic conception of truth, according to which statements are made true by the effects of the behaviour they elicit, and the more "common-sense" account of truth given in Carnap's *Studies in Semantics*. Roughly, a statement signifies by causing a disposition to respond, and it is true when that disposition to respond is more or less correctly adapted to what is actually the case. In a similar way, Morris allows that a kind of truth belongs to a valuative statement, namely, when the preference which such a statement arouses in the interpreter is in fact beneficial to him. And similarly with the other types of sign-usages.

In the light of the distinction of the four "modes of signifying" and the four "primary sign-usages", Morris finally arrives at a complete "semiotical" analysis of all the principal uses of signs and their function in human society.

Corresponding to the four modes of signifying and the four sign-usages, he distinguishes sixteen "major types of discourse", constituted by all possible combinations of modes of signifying and sign-usages. He then proceeds "to investigate the relation of these sixteen possibilities to the specialisations of language currently employed and distinguished".(3) Thus he finds that

(1) *Ibid*, p. 97 ff.

(2) *Ibid*, pp. 106–108.

(3) *Ibid*, p. 125.

one type of discourse predominates in science, another in politics, another in religion, another in law, and so on. What he calls the "approximation" which results (which he sets out in a table) is remarkable, if for nothing else, as an illustration of the lengths to which schematism can be carried by a determined "semiotician".

It would be too much even for the patience of those who have read thus far to analyse the table exhaustively, but a few of its "approximations" may be specially noted. Thus science is down as "designative-informative discourse"(1). Poetry is mainly "appraisive-evaluative": poets are engaged in picking out whatever they think is important and making an evaluation of it.(2) Legal discourse is "designative-incitive": it "designates the punishments which an organised community empowers itself to employ if certain actions are or are not performed".(3) Political discourse is "prescriptive-valuative"; it prescribes a course of action with the aim of "calling out approval" for it.(4) Religious discourse comes very close to political, as "incitive-valuative"; it selects "the mode of behaviour which is to be given precedence over all other behaviour" and aims "to incite such behaviour in its interpreters".(5)

While metaphysics is down as "formative-systemic" discourse, philosophy does not figure in the table at all. Morris reserves for it an honoured place of its own, outside the table. "The language of philosophy is made up of those types of discourse dominated by the systemic use of signs in its greatest comprehensiveness".(6) Thus philosophy aims in the most comprehensive way possible to modify our responses to all signs without exception.

"The philosopher," says Morris, "is an engine of symbolic synthesis." A "hot-air engine" might perhaps be another way of expressing the same concept.

4. THINKING AND BEHAVIOUR

I would not like to suggest that the behaviouristic account of the functioning of signs, despite its pedantry, was all labour

(1) *Ibid*, p. 126.
(2) *Ibid*, p. 136.
(3) *Ibid*, p. 130.
(4) *Ibid*, p. 145.
(5) *Ibid*, p. 146.
(6) *Ibid*, p. 234.

wasted, since it may at least provide a certain comic relief in the contemporary philosophical scene. But Morris's very abstract and speculative approach in constructing his "science of semiotic" out of a series of general definitions; his total disregard of evolutionary and historical considerations; and his excessive preoccupation with dogs, coupled with a tendency to construct purely hypothetical cases to illustrate his theories, instead of testing his theories in actual examples—all lead to his overlooking considerations highly relevant to the subject.

Signs occur amongst many different species of animals, occupying various stages in the evolutionary scale. For instance, it is reported that elaborate signs, in the form of dances, are employed by bees. One dance signifies the presence of nectar, another the presence of pollen, and by varying the dances the general direction in which the nectar or pollen is to be found can be indicated. Such signs—they might be said to constitute systems of signals—clearly function by arousing various appropriate patterns of response amongst the animals which interpret them—for instance, in response to the sign, bees will fly off in the indicated direction.

A similar use of signs is made by people when we employ red, amber and green lights as traffic signals, or ring a bell to summon dogs or philosophers to their dinner. And without doubt, the use of signs in human language must be connected with such more elementary uses of signs common amongst many species of animals.

At the same time, it is necessary to dwell upon the *difference* between such elementary usages of signs and the use of signs in human language. For human language does things and has characteristics which are unique, and are by no means to be found exemplified in the uses of signs by other animals. Morris's "behavioural" analysis of signs regards human language as a special case of signs in general. But it is by no means a special case, but a new, unique development—a new stage or level in the use of signs, involving new characteristics and new functions.

It is impossible to equate the uses of language, expressing the results of processes of human thinking and inquiry, with the dances of bees or the ringing of dinner bells. This is shown in innumerable examples. Morris can fail to appreciate this only because of his own very abstract and schematic approach, which buries the facts of the case under a mountain of phrases. I will select a single example—one which was used by Bertrand Russell

in his recent *History of Western Philosophy*, in criticism of James and Dewey. This is the example of the proposition: "Columbus crossed the Atlantic in 1492."

In Morris's terminology, this sentence is "designative-informative". The sign "Columbus", for example, "denotes"; for there actually was such a man, and he did cross the Atlantic in the year stated. So evidently Columbus, being the "denotatum" of the sign "Columbus", must "permit the completion of the response-sequences to which the interpreter is disposed" when he hears or reads the statement quoted. But here is a difficulty. For in fact Columbus can do nothing of the sort, because he is dead.

One has also to ask what exactly are the "response-sequences" supposed to be, which we are "disposed" to perform as a result of hearing or reading this statement, and which it "permits" us to "complete"? Here is another considerable difficulty. For it is hard to find any distinct "behaviour family" of responses set in motion by statements about Columbus. And it goes to show that an account of signs based on considerations of what happens when we ring bells to summon dogs to their dinner no longer applies when we consider many of the expressions used in human speech. The way in which such expressions function is not exemplified by even the most elaborate system of ringing dinner bells or performing nectar and pollen dances.

The statement that "Columbus crossed the Atlantic in 1492" is a historical statement. I think it is more helpful to call it this than to call it "designative-informative", because this brings out its nature and its connections with human practice far more clearly. It is a statement of what once happened, and it forms part of a historical narrative constructed by men's collective efforts to unravel and understand the story of the past. The significance of this narrative does not lie so much in the way it gives rise to all manner of "preparatory stimuli" and "causes dispositions to response", but in the way it provides us with historical knowledge, a reflection of the sequence and interconnection of past events, in the light of which we can, if we wish, form conclusions about the present, and guide our future conduct.

There is no basis for the formation and significance of such combinations of signs in the behaviour of dogs, or of any other animals, except man. To understand the way in which such speech expressions function, and their significance, it is necessary

to consider, not only what men have in common with other animals, but above all the ways in which men are different from all other animals.

In his analysis of the functioning of signs, Morris exemplifies in an exaggerated form the same failing as appeared in Dewey's "naturalistic" account of thinking. He has failed to notice what is unique about human behaviour, as compared with animal behaviour, and at the same time he has regarded our thinking, and the use of significant signs which is the product of our thinking, simply from the aspect of how it modifies behaviour, and not from the aspect of how it reflects material reality.

Morris, like James and Dewey, accepts the axiom of Charles Peirce, "that to determine the meaning of any sign we have simply to determine what habits it produces". This axiom may have a certain plausibility in the study of a vast range of signs used by animals. Even so, in the case of the dances of bees, for instance, it is impossible to give an account of the "meaning" of the sign exclusively in terms of the responses of the bees, without at the same time considering the way in which the objective facts of the location of the nectar or pollen are reflected in the performance of the dance. But the axiom certainly will not suffice for an account of all that is involved in human language and in human thinking, because there new factors come into operation.

Dewey stressed the "continuous development" from the "biological" to the "logical", and Morris treats the use of signs in human language as a special case and development of the use of signs exemplified throughout animal behaviour. No doubt there is such development. There is nothing in human thinking and language that has not developed from what existed at the pre-human stage. But this development is marked by a dialectical transformation, a qualitative leap.

If we consider, for example, a statement, such as "Columbus crossed the Atlantic in 1492", and compare it with, say, the dance performed by a returning bee at the entrance to the hive, then it may be acknowledged that both are sign usages, and both have, in the widest sense, connections with behaviour. But while the dance of the bee has a relatively simple connection with the nectar and pollen-seeking behaviour of bees—in the sense that (to try to give sense to Morris's jargon) it connects with a definite "behaviour family" of response-sequences, namely, the response-sequences of going out and looking for

nectar or pollen—the corresponding connection in the case of the statement of the historian is enormously more complicated. The statements of historians do have a significance for human behaviour, but the way they connect with our behaviour is enormously more complicated. In the case of the usages of human language, we are dealing with a new stage in sign behaviour, for which the concepts and principles applicable in the previous stages do not suffice, just as the social behaviour of men is different in kind from the social behaviour of bees.

In a similar way, for example, even the simplest proteins represent modes of chemical combination of a new order of complexity as compared with non-living substances, so that they constitute a new stage of the organisation of matter, manifesting the new properties and laws of life, of living matter, and require a special science for their study.

We need not doubt that, as John Dewey said and as Morris repeats, the "logical" is connected with the "biological" in a process of continuous development, any more than that the biological is connected with the physical and chemical in a process of continuous development. But nevertheless the emergence of life, whenever and however it happened, was undoubtedly the emergence of a new mode of existence, manifesting new qualities, new modes of interconnection and laws of motion. When living organisms begin to think, and to use language, this, too, is a qualitative leap—and thinking and language present new qualities as compared with other processes of life and modes of behaviour, just as life presents new qualities as compared with other physical-chemical processes.

To avoid misunderstanding, it must be stated that the uniqueness of life in no way contradicts the materialist postulate that life is a physical-chemical process, nor does the uniqueness of thought contradict the materialist postulate that thinking is a "natural" activity of certain living organisms and that language developed from pre-linguistic uses of signs. It can seem to do so only to a metaphysical materialism which regards all the qualities of matter as given once and for all and cannot understand the dialectic of the emergence of new qualities. Dewey's "naturalism" was entangled in such a metaphysics, and Morris's "semiotic" is the same. Both of them lack any dialectical conception.

The dance of a bee functions by setting in motion a certain "behaviour family" of responses. But the statement of a historian,

or even the simplest form of statement or generalisation, differs from it in being capable of an enormously complicated variety of connections with other statements and with human behaviour: it can function significantly in many and varied contexts, in which its influence on behaviour, immediate or remote, can be very varied.

I have stressed the great complexity of the behavioural significance of language, as compared with pre-linguistic signs. This complexity is such that it amounts to a different and new mode of functioning of signs. A quantitative difference—which I have indicated by referring to increased complexity—becomes a qualitative difference, the emergence of something new, with new qualities—thinking and speech.

The uniqueness of thinking and speech consists primarily in the fact that the thinking and speaking organism elaborates—in the exercise of the natural functions of its own highly-developed brain and arising out of its own material conditions of social life—a unique kind of representation of the world, a representation in terms of thought and language.

Characteristic of thought and of its instrument—language—are such facts as these:—that it operates with general ideas, general terms: that it effects an analysis and classification of the components of the world of man; that it can therefore effect a representation, not simply of immediate facts or presumed facts, to which an immediate response is required, but of facts which are merely possible or which are remote in time and space; that by this means thought can perform, as it were, ideal experiments, working out courses of action, histories, theories, fantasies in the course of the activity of thinking itself.

Of course, this is not the place even to begin to expound the materialist theory of the origin and nature of language and thought. I am not attempting that here. But the point is that it is because in language we have an instrument, a system of signs, capable of representing the world in ways not attainable by other animals, that what we say by means of language has such complicated and new modes of connection with behaviour.

I tried to indicate in the preceding chapter what it is which accounts for the formation of thinking and language. The key factor is that men, equipped with hands and brains, develop the social use of tools—the human use of tools. As Engels has said:

"First comes labour; after it, and then side by side with it, articulate speech."(1)

In speech there are developed modes of communication and of representing reality corresponding to the requirements of human society. To understand the significance of language it will not do simply to try to connect it with certain "response sequences". For what we think and what we say reflects, represents, models or copies reality in a unique way—and it is this which has to be studied and understood.

Social labour, the human use of tools, and the complex of social activities based on it, demands and gives rise to a unique "tool of human association", a tool of social organisation, of representation and communication—and this is language, the expression and vehicle of human thinking. Such communities as those of the bees and ants also perform complex social operations, and the individuals work and communicate with one another. But their work and communication is fundamentally different from that of man. Human labour, the human use of tools, generates speech, language, thinking, and is not possible without it. It is by the use of tools and speech that man first decisively separates himself from the animal kingdom and embarks on the course of human history.

The natural premises of thinking and speech pre-exist in the brain and hands and in the pre-linguistic uses of signs. But what emerges in the context of the development of human society is something which cannot be regarded simply as a continuation of what went before, but must be regarded as something new, with unique properties of its own. In so far as language takes its origin from pre-linguistic uses of signs, the study of such uses is relevant, and constitutes, indeed, an essential premise, to the study of the signifying function of language. But it is equally important to take into account what is new and different about language.

In this connection it may be noted that Morris's exposition achieves its maximum absurdity in connection with what he calls "the formative mode of signifying". He is unable to give a single genuine example of the use of "formators" in any other sphere except human language; and this is not accidental, because there are and can be no such examples to be found. What he calls "the formative mode of signifying", and the corresponding "systemic use of signs", does not arise simply "to further influence behaviour already called out by signs",

(1) Engels, *Dialectics of Nature*, p. 284.

but arises from the unique way men combine their signs into a thought-reflection of external reality.

Morris's whole method and outlook remains confined within the limits of pragmatism. True, he says that combinations of signs "denote", and he connects their "truth" with the way they denote. But this in the end amounts to no more than to distinguish "dispositions to response" which are more or less correctly adapted to actual circumstances from those which are not so adapted. It continues to substitute for the materialist conception of the correspondence of thinking with external reality the pragmatist conception of the correspondence of behaviour with the circumstances which elicit behaviour.

For the rest, it is a fitting commentary on the so-called humanism of the pragmatists that it issues in a crude, mechanistic view of human activities which fails to recognise that which is most distinctively human.

5. THE "SOCIAL PATHOLOGY" OF SIGNS

Taking a "behavioural" view of the functioning of signs, Morris sees signs as being used in human society, not only to control behaviour by imparting information, but also to control behaviour by suggesting various valuations and preferences and by modifying and organising responses to other signs. This determines the schematic account he gives of poetry, law, religion, politics, philosophy, and so on.

Morris is very insistent on the important part which signs play in social life.(1) And, of course, he is right; they clearly do play a very important part. He therefore thinks that the new "science of semiotic" is a socially highly significant science, because it enables us to give a scientific account of these signs and their uses. But what is the outcome of his own analysis?

It will be found that Morris gives a curious characterisation of the various forms of cultural activity which he attempts to describe.—But at the same time, this characterisation is no mere curiosity. For it does reflect the actual state of affairs which exists today in part of the world, namely, the capitalist part, and above all in the United States.

Thus, for example, he characterises politics as "prescriptive-valuative" discourse—prescribing a course of action with the aim of calling out approval for it. This description, which leaves out any reference to political principles or to any attempt at

(1) *Ibid*, p. 1.

scientific political analysis, quite accurately fits the "discourse" of the political hirelings of big business, whose conception of politics is that of concocting political catch-phrases and putting them across the electors.

His conception of law is on a level with this. He says that "legal discourse" is concerned with causing individuals to perform or not to perform certain actions by designating a system of punishments, and he expressly states that law has nothing to do with "appraising" such actions: that is a matter of some other form of discourse, for example, moral discourse.(1) This conception of law as entirely divorced from considerations of morality and justice certainly reflects the actual state of law under contemporary capitalist conditions.

In the matter of religion, Morris regards it as in essence "inciting the mode of behaviour which is to be given precedence over all other behaviour". He glosses over the question as to whether such "signs", commonly employed in "religious discourse", as God, the soul, the devil, hell, and so on, actually "denote" anything, and appears to justify their use by suggesting that they have a good effect on conduct. This certainly reflects the most cynical of all attitudes to religion—and one which is at least as old as Plato. It reflects the attitude of those who, indifferent to the truth or otherwise of religion, are fostering and subsidising it for political ends. And it receives its confirmation in the type of "religious discourse" exemplified, for example, in many of the Pope's encyclicals, which "incite" the faithful to respect existing property relations and to abjure the errors of socialism.

Poetry, for Morris, is "appraisive-valuative". This characterisation of poetry, which is certainly inadequate if applied, for example, to the works of Shakespeare, or Dante, or Milton, best fits the work of those modern and contemporary poets who are mainly concerned to express their own peculiar interests, associations and valuations.

Lastly, with regard to philosophy, which is "the systemic use of signs in its greatest comprehensiveness", Morris presents a picture of a great variety of schools of philosophy, each reflecting "differences in philosophers and in cultural traditions", and each peddling its own favourite "symbolic synthesis". This, again, corresponds to the contemporary scene, where positivists, pragmatists and absolute idealists, existentialists,

(1) *Ibid*, p. 131.

neo-Thomists and neo-Kantians, jostle one another in university class-rooms and philosophical reviews, without ever finding, or even expecting to find, an issue to their disputes, which in any case are largely verbal.

Since the "systemic use of signs" consists in seeking "to further influence behaviour already called out by signs", it is clear that there are many ways in which this can be done with "greatest comprehensiveness", and that one or another will be preferred simply according to one's interests and inclinations. Hence Morris regards the present chaos in the field of philosophy as constituting the natural, fitting and inevitable state of philosophical thought. It is, he says, "no more nor less than we should expect".(1)

Having presented his picture of the "types of discourse", Morris shows a certain uneasiness about it. Thus he finds it necessary to distinguish between what he calls "socially healthy sign-processes" and "socially pathic sign-processes", and to speak of "the social pathology of signs".(2)

The social pathology of signs is found in their "utilisation by individuals and groups for the control of other individuals and groups in terms of self-interest".(3) This is illustrated, he says, by the case where "the power of the community has fallen into the hands of a group of persons who exploit the community for their own ends". These persons propagate types of discourse to suit themselves; and in so far as the other people, who are exploited by them, are persuaded to accept such discourse, the situation is "socially pathic".(4)

Of this "social pathology", Morris writes: "We have witnessed this process in a startling form in the ideology of the Nazis and the Japanese. We are not so likely to recognise the extent to which in ourselves the germs of the same process exist in our religions, our politics, and our educational systems".(5)

Yet he need not look far to recognise much more than "the germs" of this process. What the science of semiotic has in fact achieved is to characterise the various "socially pathic sign-processes" which are exemplified in the politics, religion, art and philosophy of the U.S.A. and other capitalist countries.

(1) *Ibid*, p. 236.
(2) *Ibid*, p. 210.
(3) *Ibid*, p. 214.
(4) *Ibid*, p. 211.
(5) *Ibid*, p. 211.

And in so doing it has in effect produced an apology for them, by labelling them as permanent and universal types of human discourse.

What Morris's analysis of all these "types of discourse" has in fact achieved is to give a semiotical blessing to these various activities—political, religious, poetical, philosophical, and so on. They are all characterised as perfectly proper uses of signs, while their real nature is concealed behind a smoke-screen of new-fangled terminology and pseudo-scientific phrases.

This means that "*semiotic*", *as the latest product of the theorising of logical empiricism and pragmatism in the United States, has carried the "analysis" of language and thinking to the point where it explicitly recognises the legitimacy of every form of extra-scientific and anti-scientific ideology*. The phrase-mongering of politicians, the sermonising of priests, the sophistries of lawyers and the speculations of professors of metaphysics are all quite uncritically listed as legitimate and useful "types of discourse".

Such is the latest outcome of this "scientific" philosophy.

CHAPTER 9

FEATURES OF A REACTIONARY PHILOSOPHY

1. HAS MODERN EMPIRICISM CONTRIBUTED ANYTHING TO THE HERITAGE OF PROGRESSIVE THOUGHT?

THERE are some—friends of Marxist materialism—who say that the kind of estimate made of the value of contemporary positivist empiricism in the foregoing pages is a good deal too negative. They want to insist on due credit being given to the positive features which, according to them, are embodied in this philosophy. For they think that, despite its idealist and metaphysical character, this modern empiricism has nevertheless made a powerful contribution to progressive thought and has contributed ideas which must always belong to the heritage of progressive thought.

I do not agree with these friends of Marxist materialism. That they are friends, I do not deny. But there are friends who give good advice and friends who give bad advice.

What are the positive, progressive features of positivist empiricism supposed to be? Those who raise this question seem to have four main points in mind.

The first is that a very important contribution has been made to the science of formal logic and, arising from this, to the study of the foundations of mathematics; for modern developments of mathematics have been very intimately connected with the development of the technique of symbolic logic.

The second is that positivist empiricism has rendered great service to the development of philosophy by calling attention to the importance of a study of language and by opening up the systematic study of semantics, i.e. of the meaning function of language and of the linguistic aspects of science.

The third is that pragmatism has made an important contribution to philosophy by stressing the connection between theory and practice.

The fourth is that the empiricist schools have fought for clear thinking and a scientific approach to problems by their

insistence on the need for empirical definitions of terms and for an empirical and pragmatic test of all ideas.

Now as regards these points the following may immediately be stated.

It is undoubtedly the case that modern symbolic logic *has* made important advances in comparison with traditional Aristotelian and scholastic formal logic; that we *do* need to study language as the vehicle and instrument of thinking; that we *do* need to stress the connection between theory and practice; and that we *do* need to develop a logical technique of clear statement, ensuring that what we say can be tested in experience and practice and refers to things whose existence can be verified.

But what it is most important to say is that progress in each of these respects demands a decisive break with the whole approach and methodology of positivism. This approach and methodology cannot claim the credit for contributing anything new and positive to philosophy in these respects. The positive contributions and services claimed for it are non-existent. What it has contributed consists of new idealist confusions and metaphysical schemes, and its services consist in the placing of stumbling blocks and philosophical booby traps. This can be demonstrated in relation to each of the four claims which have been made for modern empiricism.

So far as formal logic and the foundations of mathematics are concerned, the advances which have been made in modern times in mathematical logic have their basis in the development of the physical sciences and of mathematics itself, and in the need for creating more adequate and exact symbolic tools for expressing and dealing with the space forms and quantity relations of the real world.(1)

These advances were not the handiwork of positivist philosophy but were rather made in spite of that philosophy than because of it. The contribution of logical idealism to the philosophy of mathematics has simply been to entangle it in a maze of metaphysics and to obscure and sever the connections of mathematics and mathematical logic with the material world. As Engels put it—and though he wrote this before the more recent developments of mathematical philosophy, what he wrote applies to them exactly: "The laws abstracted from the real world become divorced from the real world and are set over

(1) Engels, *Anti-Duhring*, p. 47 ff.

against it as something independent."(1) This has ended in the speculations of the formalists, who have represented both logic and mathematics as mere formal systems.

As for the critical study of language, the connecting of theory with practice and the demand for clear thinking and a scientific approach to problems—it was not the positivists who introduced these things into philosophy. They are all part of the heritage of materialism.

In philosophising about language, the logical empiricists, who have elaborated the theories of semantics, have done so on the barren assumption that philosophy consists of nothing else than the "analysis of language"—and of language in general, abstracted from all real language, its origin and development. They have treated language in false abstraction, attempting to work out the system of its semantical and syntactical rules in abstraction from its material, social existence. When semantics is turned into "semiotic", which is supposed to be a comprehensive science of the functioning of signs, then language is merely regarded as a mechanism mediating between stimuli and responses by controlling dispositions to respond to various stimuli. The entire study of language fails to study language, that is, to study how it really develops and functions. The result is that its sole contribution has been to elaborate idealist and metaphysical views about language.

When pragmatism stresses the unity of theory and practice, it does so only in order to make out that ideas are nothing but "instrumentalities" and that truth is simply that which "works" or "pays". In insisting on an empirical and pragmatic test of theory, the pragmatisists reduce theory to nothing but "rules for action". They leave out the fact that theory is a developing approximation to an adequate account of the objective material world, the arena of human action. They leave out and they deny the fact that ideas reflect objective reality, independent of the mind. Theory arises from practice and it is tested in practice. But pragmatism can give no coherent account of this. It can give no coherent account either of theory or practice or of the unity of theory and practice, because it denies the objectivity of the world in which practice operates and which theory reflects.

Lastly, in the absence of any adequate account either of language or of thought and knowledge, based on the study of

(1) *Ibid*, p. 48.

their real existence and development, the demand for clarity and for a scientific approach to problems in all these positivist philosophies finds actual expression in a mass of pseudo- scientific and scholastic terms and phrases—from the "elements", "sense-data" and "atomic facts" of logical analysis, to the "syntactical rules", "rules of designation" and "reduction basis of the language of science" of logical empiricism, and then to the "semiotical-behavioural" terminology of Professor Morris's "language in which to talk about signs".

It is not by appreciating and accepting the "achievements" and "contributions" of logical idealism and pragmatism that progress will be made in logic, linguistics, the theory of knowledge or the philosophy of science, but only by sharply criticising and rejecting these "achievements" and "contributions".

For this philosophy as a whole is but one of the symptoms of the general disintegration and degeneration of bourgeois thought characteristic of the last stages of capitalist society. It belongs to the sphere of what Professor Morris calls "social pathology". It is no more capable of contributing anything to the heritage of the progressive thought of mankind than was the degenerate scholasticism of the last stages of feudalism. Its *only* value is that we can make progress by opposing it, and proclaim the truth by exposing its perversion of truth.

2. EMPIRICISTS IN THE STRUGGLE AGAINST MATERIALISM

One feature of contemporary empiricism is that it propagates the illusion that it has found a "middle path", so to speak, in philosophy—to fight against materialism while at the same time criticising the open idealists. Such a path is supposed to be the correct path of scientific impartiality and objectivity.

This is undoubtedly one of the reasons why this philosophy has had and continues to have a strong appeal to sections of the middle-class intelligentsia. It appeals to the cautious middle-class intellectual, who genuinely wants as an individual to accept and use science, to adopt an impartial, objective and scientific outlook on every problem, and not to commit himself on fundamental issues or to be involved in great social controversies.

It appeals to him precisely because it expresses his illusions. He wants to accept and use science without taking the side of materialism against idealism. He wants to be progressive without taking the side of the working class against the imperialist

bourgeoisie. This cannot be done. Sooner or later a point is reached where a choice of sides is unavoidable. Such neutrality and non-partisanship is illusory.

In fact contemporary empiricism *does* commit itself on the fundamental issues and controversies of our time—and its commitment is on the side of reaction. It is not the case that it has established a position from which the whole philosophical controversy between materialism and idealism is rejected and superceded; *it is a partisan of idealism, propagating idealism under the guise of being neither idealist nor materialist.* It is not the case that it is a philosophy of social neutrality, expressing neither the point of view of capitalism against socialism nor of socialism against capitalism; *it is a philosophy of capitalism, propagating the ideas of the imperialist bourgeoisie under the guise of non-partisanship.*

At the conclusion of his *Materialism and Empirio-Criticism*—and by "empirio-criticism" he meant the positivist-empiricist trends of the day—Lenin wrote:

"Behind the epistemological scholasticism of empirio-criticism it is impossible not to see the struggle of parties in philosophy, a struggle which in the last analysis reflects the tendencies and ideology of the antagonistic classes in modern society. Recent philosophy is as partisan as was philosophy two thousand years ago. The contending parties essentially, though concealed by a pseudo-erudite quackery of new terms or by a feeble-minded non-partisanship, are materialism and idealism. The latter is merely a subtle, refined form of fideism, which stands fully armed, commands vast organisations and steadily continues to exercise influence on the masses, turning the slightest vaccilation in philosophical thought to its own advantage. The objective class rôle played by empirio-criticism entirely consists in rendering faithful service to the fideists in their struggle against materialism in general and historical materialism in particular".(1)

This judgment remains absolutely true of contemporary positivist empiricism. It is essentially a partisan of idealism against materialism, belonging to the same camp as other—and more open—idealist trends in contemporary thought. And this camp is the camp of reactionary, imperialist ideology.

One of the chief virtues of positivism is supposed to be that, whatever its shortcomings, it is at least fundamentally opposed to mystical, supernaturalist and irrationalist trends in philosophy.

(1) Lenin, *Selected Works*, Vol. XI, p. 406.

Those who believe this, point out that its demand is for scientific method, clear statement and empirical verification, as opposed to those philosophies which openly despise science, make use of vague analogies and allegories, appeal to intuitions and a-priori principles and plunge into supernaturalism and mysticism.

There are, of course, diverse trends in bourgeois philosophy today. The point is, however, that these diverse types of philosophy are allies rather than antagonists.

It may be suggested, for example, that there is a world of difference between the careful analytic studies in semantics and scientific method of the logical empiricists and the mystical ravings of, say, existentialism. Nevertheless, they are not fundamentally opposed, but both share the same fundamental outlook. For they both stem from a common ground in subjectivism and relativism, and they both reject objective scientific knowledge of the material world. The one proclaims a nihilism of the emotions and conduct, the other a nihilism of the intellect: that is the chief difference.

Again, it may be suggested that there is a world of difference between the "naturalistic" outlook of pragmatism and, say, the theology of neo-Thomism. Nevertheless the pragmatists themselves point out that their philosophy leaves plenty of room over for all kinds of religion, which, like science, are true if they work and which work in a different field of activity. And, indeed, the latest "science" of "semiotic" explicitly justifies "religious discourse" as one of the fundamental types of discourse.

Positivism is simply one of the trends of contemporary idealist philosophy—different from other trends, arguing with them, but not opposed to them.

Contemporary idealist philosophy is a complex organism, composed of diverse trends. There may be distinguished, for example, the philosophers of the Catholic camp, who draw their inspiration from the dogmas of the Middle Ages; other open obscurantists of a more "modern" variety, such as the protestant schools of Karl Barth and others, or such as the anti-religious existentialists; and then again the various empiricists who claim to be opposed to every sort of religious or metaphysical dogma and to take their stand on science, experience and logic.

All of these trends have today become centred in the United States of America, where, for all their differences, they coexist and work together in amity. And this is due to the fact that, for all their differences, there are certain fundamental features

which run through them all. They all converge on certain fundamental points.

First, they all deny the scope and power of human knowledge—affirming the limitations of science, the impotence of reason, the impossibility of a rational comprehension of objective reality, the illusoriness of social progress.

Second, they all join in a common propaganda of obscurantism—preaching the relativity of truth, the mysteriousness and incomprehensibility of the universe.

And third, they all express a common hostility to materialism. Some of them refute materialism on the grounds of its inconsistency with the dogmas of the Church; others because they say materialism is itself a dogma. Some of them refute materialism because it bases itself on natural science and rejects faith and intuition; others because they say materialism is itself unscientific. Some of them refute materialism because they say it undermines respect for established authority; others because they say it undermines respect for individual freedom and favours authoritarianism. Between them they have an argument to suit everyone, and all directed against the same enemy—materialism.

Contemporary empiricism is, indeed, characterised throughout by a profound hostility to materialism, which penetrates every aspect of empiricist "analysis". And the logic of this position has driven exponents of empiricism to drop even the pretence of social neutrality and to come out more and more openly on the side of reaction.

Thus at the present time, when an ideological crusade against communism is being whipped up throughout the world—in fact not a crusade against communism, but against the whole movement of peoples to win freedom and self-determination, to cast off the fetters of imperialism and frustrate the imperialist drive for world domination and a new world war—leading empiricists are to be found in the vanguard.

The general lines of their attack were well illustrated in the recent two-volume work by K. R. Popper, *The Open Society and its Enemies*. According to Popper, dialectical materialism is a typical example of philosophical dogmatism. The believers in such dogmatism, he says, are led to try to impose their own rigid ideas upon society. They seek to introduce a "totalitarian" régime by violent revolution and then to maintain it by force. Against what he regards as the dogmas of doctrinaire Marxism he counterposes the liberal "scientific" outlook of logical

empiricism; against the materialist conception of the application of science to human affairs he counterposes what he calls "social engineering", embodying the positivist conception of "scientific method"; and against "totalitarian" communism the "individual freedom" of the citizens of the "western democracies". The former he calls a "closed" society, while the latter is an "open" society. And he considers no sacrifice too great in the struggle to keep society "open".

In this way does contemporary positivism embrace the contemporary imperialist conception of the struggle to the death of "western democracy" versus "communist dictatorship".

The greatest zeal of all in this struggle is shown by Bertrand Russell. Of the numerous recent pronouncements of this philosopher, I quote an article in which he applies the method of logical analysis to the question of "the outlook for mankind".(1)

Analysing the world scene, Russell finds an irreconcilable conflict between America and Russia. The practical alternatives are "communist world empire" or "American world empire". The prospect is war, in which "utter ruin will overtake the whole territory from Calais to Vladivostok". But the only hope for mankind is that the Americans will win this war, and the best thing to do is to prepare for it with all speed. What we may look forward to is that "a White Terror will replace the Red Terror" and "a single military government will be established over the whole world". But as a result of this, "mankind may enter upon a period of unexampled peace and prosperity".

Russell's final message is to speed up the manufacture of the atom bomb for a war on the Soviet Union. His "analysis" well illustrates the unspeakable degradation of what now passes as philosophy.

But he has performed one service in this "analysis", and that is that he has blurted out what is really meant by the ideal of an "open society", that is, of a society kept "open" for the predatory activity of the capitalist class. It means "an American world empire", exercised through "a single military government over the whole world".

Positivist empiricism has developed a point of view according to which materialism is a dogma, the planning of science to serve the people's interests is ideological dictatorship, the people's democratic struggle to determine their own destinies for themselves is totalitarianism and planned socialist economy is

(1) Russell, *The Outlook for Mankind*: *Horizon*, April, 1948.

a "closed society". Just as this point of view is opposed to every effort to understand the world and human life materialistically, so it is opposed to every effort of peoples and nations to advance towards socialism. And in this way empiricists have not only placed themselves in the camp of reaction, but have assumed a leading rôle as ideologists of that camp.

The positivist philosophy has become today an integral part of the ideology of American imperialism. It claims to be an outlook of a perfectly open-minded kind; to be the expression of clear thinking applied to actual experience; to reject all dogmas; to stand for perfect freedom of individual action and individual thinking; to be free of any bias arising from either national or class interests. But this is all a fraud; it reveals itself as nothing but the ideology of aggressive American imperialism. A cosmopolitan philosophy, borrowing odds and ends from the philosophy of every European country, it is sedulously cultivated today in the United States, where it is combined with the native pragmatism and re-exported for the benefit of European peoples, who are scheduled to provide markets and spheres of investment for American capital, and bases and man-power for American imperialist adventures.

The real progress of science and culture does not find expression in any such cosmopolitan outlook, but is bound up with the struggle of the various peoples for self-determination, against both native and foreign masters—for co-operation between peoples based on equality and for socialism. The whole cosmopolitan outlook of empiricism ranges it to-day against this struggle of the peoples. As Russell has told us, what it prepares us for is an "American world empire", a "White Terror", a "single military government over the whole world"—and it is in these things that it sees the hope for future "unexampled peace and prosperity".

Men of good will can draw only one conclusion from this. It is to reject such an outlook, to expose it, to fight against it with all their power.

3. POSITIVISM AND CONTEMPORARY SCIENCE

The peculiarity of positivism, in its contrast to other forms of bourgeois idealism, is its claim to be scientific, to be above all the modern philosophy of science. The truth about its claim to be scientific is that it has succeeded in expressing a general attitude towards science corresponding to the tendencies of modern imperialism.

Positivism makes much of science, praises it and calls for its development. This corresponds to the fact that imperialism has need of science. The "scientific" philosophy of imperialism gives voice to imperialism's need for the cultivation of science. But it calls for the cultivation of just that science which imperialism needs.

Imperialist economy, the last and highest stage in the development of capitalism, is based on advanced science and technology. But it seeks to use science for amassing profits, for intensifying the exploitation of labour, for getting the better of trade rivals, for finding effective means of influencing public opinion, and for war.

By denying that science is a means of gaining unified knowledge of the objective world and man's place in it, positivist philosophy combats the materialist outlook in science, with its critical and revolutionary implications, stultifies science as a weapon for the enlightenment of the masses, and conceals the ways in which science can be applied for the true aims of human welfare. This is absolutely in accordance with what is required by its real masters, the imperialist bourgeoisie. And by maintaining that science serves simply to formulate and predict the results of certain technical operations, positivist philosophy uncritically accepts and thereby justifies the present position of science in the capitalist world, where it is more and more dominated and perverted in the interests of the great trusts and the war machine. This it does in the name of scientific method and of the freedom of science.

A long book could be written—in fact, several need to be written—about the frustration of science as a result of its subjection to the interests of monopoly capital. Briefly, some of the results most obvious on the surface are the following:

There is an accentuation of the unevenness and lack of balance in the development of the sciences, which has always been characteristic of bourgeois science—some branches of science developing in a one-sided way while others lag behind. Science is called upon to answer just those particular problems in which the capitalist monopolies are interested, which is by no means the same as answering the problems which are bound up with the future development of science and with the interests of the people.

There results a frustration of fundamental research in fields that are important for the all-round development of science and

for the ends of general human welfare, and a diversion of research into less useful fields or into directions that are harmful or anti-social. Emphasis is placed on this or that particular research desired by the monopolies for their own private gain, or for war preparations.

There results a narrow specialisation of scientists—the training of people who are supposed to be experts in some narrow field but whose outlook is completely unscientific outside that field, whatever it may be inside it.

There results the failure to relate the findings of one science with those of another, and in consequence the frustration of the building of a unified scientific picture of the world which could serve as a weapon in the struggle for enlightenment and progress. There are propagated in the name of science all kinds of idealist and obscurantist world views.

There results the use of science against the people and not to serve the interests of the people—in other words, the use of science for the ends of more efficient capitalist exploitation and war.

And there results the failure to use science to enlighten the people, to give them a new world outlook in the light of which men can understand the world which environs them and how to master the forces of nature so as to serve the ends of human well-being.(1)

Positivist philosophy is bound up with all these negative features of contemporary bourgeois science. Its view that the whole task of science is to base on particular observations predictions of the results of certain technical operations expresses and encourages precisely the features which have just been enumerated.

It may be added that for years bourgeois science has found itself in a state of chronic theoretical crisis, affecting not only the physical but also the biological sciences—a crisis of fundamental conceptions. This arises from the fact that the very discoveries of science, the deepening of knowledge of the laws of motion of matter, have proved incompatible with the metaphysical ways of thinking and mechanist categories which were the theoretical armoury of science at an earlier stage of its development.

Engels long ago realised that this could only mean that

(1) See J. D. Bernal and M. Cornforth, *Science for Peace and Socialism*.

"natural science has now advanced so far that it can no longer escape the dialectical synthesis" and must "rid itself . . . of its own limited mode of thought, which was its inheritance from English empiricism."(1)

However, to a very considerable extent bourgeois science continues to "escape the dialectical synthesis" and refuses to "rid itself of its inheritance from English empiricism". It pays for this by plunging deeper into its theoretical crisis with every new discovery that is made. On the theoretical side there occurs an obstinate hanging on to the methods of metaphysics and mechanism; and the ineffectiveness and breakdown of these methods is the occasion for a spate of idealist speculations.

By teaching the unknowability of the real world and that the most science can do is to correlate observations and propound theories of pragmatic value, empiricist philosophy joins hands with idealist theorising within the special sciences themselves. Its conception of methodology—of the statement of "laws", expressed in terms of a minimum number of "entities" and of external relations between those entities—arose from and carries on the traditional metaphysical mechanism of the past ; while its view that these "laws" simply correlate observations, and do not reflect the laws of motion and interconnection of the real external world, combines this metaphysical mechanism with idealist views of knowledge and of the known world.

Imperialism needs the services of its scientists, and it also needs the services of its priests. By its very limitation of the field of scientific knowledge—which it derives in a direct line from the philosophy of Bishop Berkeley—positivism so interprets the discoveries of science that they cannot conflict with or overset the essential teachings of religion.

But it does a great deal more than this. Various forms of religious obscurantism continue today to influence millions of people. But there are millions more over whom its influence is lapsing. Positivist philosophy not only disarms science in the fight against obscurantism, but it makes science itself preach obscurantism. The scientist becomes not only no opponent of the priest, but his auxiliary—and his substitute. In the name of science and scientific philosophy theories are put forward which essentially distort and mystify our conceptions of the world and of human relationships and activities.

This is exemplified in the physical sciences, where the stand-

(1) Engels, *Anti-Duhring*, p. 19.

point is adopted, not merely in philosophical writings about physics, but in text-books and treatises of physics itself, that the task of physics is merely to elaborate a mathematical formalism which will help calculate the results of experiments, and where this standpoint is combined with theories of the immateriality of matter and of the finite universe. It is equally exemplified in the biological sciences, which continue to be haunted by the metaphysical conception of the gene, and where the causes of heredity and its variability, and the causes of evolution, are assigned to chance or (which is the same thing) written off as unknowable, because the dialectical interconnection of organism and environment is neglected.

The discoveries of the sciences and the tools of scientific research themselves provide the means for finding the way out of the impasse of idealism and metaphysics in which the theories of the sciences have become entangled. That these means are not used is due to the fact that this idealism and metaphysics is inherent in the very methods of thought of bourgeois science, from which it can only escape by turning to the methods of dialectical materialism, that is, by ceasing to be bourgeois science, breaking with bourgeois ideology.

The positivist philosophy of science is closely connected with this penetration of scientific theory by metaphysical and idealist conceptions. Teaching the limitations of science and the unknowability of the objective world, it bids science be content with any *ad hoc* hypotheses, with any theory which with reasonable neatness correlates the observations, and not to expect to be able to discover the real causes of phenomena and the real laws of motion and interconnection of the objective world. The more we know, the less we know; the more we find out about the world, the more mysterious we find it to be; the more we investigate causes, the more we find ourselves to be impotently struggling at the mercy of chance and of blind forces we cannot understand or control—this is the message of this philosophy, and the message which is being put over by the reactionary exponents of bourgeois science.

All the live and progressive forces of the world of science are seeking to combat such pessimistic and obscurantist conclusions, just as they are seeking to combat the frustration and perversion of science by its subjection to the will of the capitalist monopolies and their drive to war. One of the conditions for success in this fight, one of the conditions for ensuring, indeed, the very

future of science, is to break with the positivist philosophy of science.

4. POSITIVIST PHILOSOPHY REFLECTS THE MORAL AND INTELLECTUAL DISINTEGRATION OF THE CAPITALIST WORLD

At the stage when capitalism was still a progressive force, the bourgeois philosophers, and above all the Cartesians and after them the French Encyclopædists, boldly asserted the possibility of the indefinite advancement of scientific knowledge of the objective world of nature and society. They believed in the power of human reason. They thought we could gain increasing and deeper understanding of the forces that environ us and of the conditions of our own lives, thus learning how to manage human affairs rationally and how to extend man's dominion over nature.

This rationalist humanistic spirit of classical bourgeois philosophy has since been inherited and carried forward by Marxism, which expresses the striving of the progressive class of today, the working class, for the goal of communism. But it has disappeared from bourgeois philosophy. In its place is to be found everywhere the assertion of the limitations of human knowledge, the limitations of science, the impotence of reasoned thought and the risk and uncertainty that attends every form of human endeavour.

This pervading scepticism is but the natural and inevitable concomitant of an economic system in full decay. Capitalist economy is in a state of general crisis, rent with insoluble contradictions, staggering from crisis to crisis, unable to satisfy the demands of the people. It is because within the limits of capitalism men are at the mercy of blind forces which they cannot understand or control and can find no path of progress, that capitalist philosophy has ceased to assert the power of the human mind to understand objective reality. That assertion now carries with it the realisation of the decadence of capitalism and the need to put an end to it.

Contemporary positivism is one of the aspects, and an important one, of the resulting general intellectual disintegration.

This disintegration is expressed in many ways. It is expressed, for example, in the openly anti-scientific philosophy of the existentialists. It is expressed in those theological outpourings now coming increasingly into vogue, which teach that man is

essentially wicked and that our only hope is complete submission to the will of God, as expressed by the instructions of whatever church the particular theologian happens to belong to. It is expressed by those popularisers of science who explain that the more science discovers, the more does it discover that the universe is essentially mysterious and unknowable.

For their part, the positivists are distinguished by preaching the renunciation of reason and science in the name of reason and science. All their leading doctrines amount to this—for example, that philosophy is reduced to the analysis of language, that logic is a formalistic play with symbols, that science is a language for writing down the results of operations, that truth does not reflect the objective world but consists of assertions that are found to work.

Nowhere is the fundamental negativity, scepticism and hopelessness of contemporary positivist philosophy better expressed than in the most recent writings of Bertrand Russell.

Thus on the second page of the Introduction to his *History of Western Philosophy* Russell announces: "Science tells us what we can know, but what we can know is little. . . . To teach how to live without certainty, and yet without being paralysed by hesitation, is perhaps the chief thing that philosophy, in our age, can still do for those who study it."(1)

At the very end he is led to "confess frankly that the human intellect is unable to find conclusive answers to many questions of profound importance to mankind".(2) The best that can be done, according to Russell, is contained in the very limited kinds of results achieved by the method of "logical analysis". And this is the hope of the world, of "the rationalistic reconquest of men's minds".(3) For "the habit of careful veracity acquired in the practice of this philosophical method can be extended to the whole sphere of human activity, producing, wherever it exists, a lessening of fanaticism with an increased capacity of sympathy and mutual understanding".(4)

What is above all important, Russell several times insists, is to renounce, along with inflated philosophical pretensions to knowledge of the objective world, the "sense of the collective power of human communities", the "intoxication of power,

(1) Russell, *History of Western Philosophy*, p. 11.
(2) *Ibid*, p. 864.
(3) *Ibid*, p. 818.
(4) *Ibid*, p. 864.

which . . . I am persuaded . . . is the greatest danger of our time,"(1) and which he finds exemplified in pragmatism. Russell cannot distinguish between an illusion of power and the real power of human communities, founded on knowledge and a rational form of social organisation. For him "the collective power of human communities" must always remain a vain illusion.

These quotations, it is worth adding, typically combine intellectual nihilism with a truly Pecksniffian hypocrisy. Russell, as other remarks of his show, does not allow his "uncertainty" to "paralyse" his advocacy of a new war; nor his "habit of careful veracity" to influence his public statements about the Soviet Union or the new democracies; nor his "capacity of sympathy and mutual understanding" to lead to any "hesitation" in calling for the use of atomic bombs against civilian populations; nor his horror of "intoxication of power" to damp his enthusiasm for an "American world empire".

The intellectual disintegration is accompanied by a moral disintegration. Just as bourgeois philosophy has become unable to offer any rational account of the world, so it finds itself unable to offer any rational standards of conduct. The bourgeoisie has in practice renounced all moral standards; they know no law but that of power politics and self-interest. And this moral disintegration, too, is vividly expressed in contemporary empiricism.

With the logical empiricist "analysis of language" became associated the view that moral and ethical statements of all kinds are strictly meaningless. They are unverifiable, have no sort of scientific basis and are susceptible to no sort of scientific test or criticism. Thus they are to be regarded as emotive noises, expressing personal or group moral sentiments and preferences; or perhaps as "imperatives", i.e. not grounded statements but arbitrary injunctions, intended to influence other people's behaviour in ways desired by a given individual or group. "A value statement," says Carnap, "is nothing else than a command in a misleading grammatical form . . . it does not assert anything and can neither be proved nor disproved".(2)

This position was forcibly expressed by Professor H. Dingle, in a lecture on *Science and Ethics* before the British Social Hygiene Council. The professor's contribution to the cause of social

(1) *Ibid*, pp. 855–6.

(2) Carnap, *Philosophy and Logical Syntax*, p. 24. The same ideas are expressed by A. J. Ayer in *Language, Truth and Logic*.

hygiene was to declare his agreement with the logical empiricists that ethical questions "stand right outside the scope of scientific investigation". There was, he said, "an insurmountable barrier" between science and ethics. For while science is based "on reason and experience", ethics "so far at least has not in general found any basis at all".

"At bottom," said Professor Dingle, "all systems of ethics and all exhortations to a particular kind of conduct must rest on a dogma which it is useless because impossible to justify." And he concluded: "The fact that morality cannot be based on experience or reason leaves open the question what its basis may be. We are still faced with the problem—How shall I choose? And I have no solution to offer. We do not without reluctance accept a conclusion which leaves the most fundamentally important thing in our lives a matter of caprice, and I do not offer it as a gospel but simply as an inescapable fact."(1)

It is because Dingle and the logical empiricists lack any scientific conception of society and its laws, and express the point of view of a class whose whole basis of existence must be condemned at the bar of reason because it has ceased to possess any historical justification, that they cannot see how science, reason or experience has any relevance to questions of conduct, of what to do, of what ends are worth striving for or what moral qualities of the individual are worth cultivating.

Clearly, here is a philosophy which explicitly denies the possibility of any rational or scientifically grounded human morality. It explicitly separates moral questions from any relationship with reason or science—a separation already carried out in practice in capitalist society.

The burden of the pragmatists' attitude to morality is the same. But whereas the logical empiricist "analysis of value judgments" gives expression to feelings of bewilderment and moral frustration—"I have no solution to offer"—pragmatism is made of sterner stuff. The tone was set by William James' book with the provocative title *The Will to Believe*. According to James, our beliefs cannot be based on scientific knowledge of objective reality, but the important thing is to have the will to assert those moral convictions which are found to "pay". If they work, then they are "true".

Pragmatism does not accept the view that "value judgments" are "meaningless". It sees all ideas as means to action, which

(1) *Nature*, Vol. 158, No. 4006, August 10, 1946.

become true in proportion as they yield "fruits" and "payments". It accordingly sees "valuation" as one of the functions of our ideas—in "semiotical" terminology, "valuative" and "incitive" discourse is set alongside "informative" discourse. And our "valuations", too, are justified simply in proportion as we make them work.

This view, like all positivism, denies the very possibility of an objective and rational basis for human morality. But while it denies any rational foundation for moral beliefs, it inculcates "the will to believe"—in effect, a blind affirmation of whatever one thinks will help fulfil what James called "our general obligation to do what pays".

I do not think that the moralising of the pragmatists can conceal the reality which lies behind their view of morality. The capitalist world is suffering complete moral collapse, a prelude to its final disappearance from the stage of history. But as part of its fight for survival goes the desperate affirmation of its so-called "values"—the "values" of "free enterprise" and of the scramble for maximum profits, decked up today as the "values of western civilisation". And these "values" are used as a rallying cry in the fight against socialism.

Capitalist society has long since ceased to have any historical justification, and its slogans have no rational or scientific basis. This is why the bourgeois ideologists have given up any pretence of seeking such a basis for their "valuations", which are simply asserted, and the louder the better, as requiring no justification.

This is the situation of which positivism and pragmatism in particular is the philosophical expression. It is a philosophy which calls for the acceptance of the cannibal morality of imperialism, and to make it work by imposing it upon the whole world.

5. CONCLUSIONS

The main conclusions about contemporary positivist philosophy which emerge from this entire study may now be summarised as follows:

(1) Contemporary positivist philosophy—logical analysis, logical empiricism and pragmatism—in all essentials continues the subjectivist-relativist tradition established two hundred years ago by Berkeley. Its latest phase is characterised by the bringing together of all the various strands of this type of idealism, and

their energetic development, by the cosmopolitan philosophers of the United States.

(2) Claiming to be a "scientific" philosophy, the positivist schools give interpretations of scientific methods and scientific results which deny the character of science as a weapon of enlightenment and progress and leave it virtually powerless to oppose current anti-scientific myths and dogmas. But more than that. Claiming to analyse and intepret the sciences, the positivists produce only new forms of barren scholasticism, and make science itself preach obscurantism. Claiming to show how the sciences may be unified and utilised for practical purposes, they produce an account of science which reflects the frustration and perversion of science in modern capitalist society.

(3) The positivist schools are characterised by their fundamental hostility to materialism. For materialism, the objective world exists and is knowable. Modern materialism has engendered the conception of materialist dialectics, as a generalisation of the process of development and as a methodology applicable in the scientific study and understanding of the laws of motion of nature and society. Positivism in all its forms consistently fights against the materialist conception of the world antl of knowledge, and opposes to materialist dialectics its own metaphysical and mechanist ideas.

(4) In its social significance, positivism reflects the intellectual and moral disintegration of capitalist society. It denies the power of the human mind to understand objective reality and thereby in effect renounces reason and science. It denies the very possibility of a rational and scientific basis of human action.

(5) The contemporary positivist teachings must therefore be judged as in their essence and outcome fundamentally hostile to science and hostile to progress. Today the positivist schools flourish most of all on the soil of the United States, where, and particularly in the form of pragmatism, they play a power rôle as a part of the ideology of American imperialism.

Many of those intellectuals who have embraced the positivist doctrines, or are influenced by them, are under the illusion that they can reject the whole basic philosophical controversy between materialism and idealism and can keep themselves clear of the social controversy which it reflects. But the illusory nature of this non-partisanship is increasingly shown up by leading positivist philosophers themselves, who are ranged under the standard of reaction as open partisans of American

imperialist expansion and of the fight against progress and socialism.

Those who are attracted to positivism because of its apparent concern for science and clear thinking cannot in the end escape from the necessity of breaking with positivism, if they want to practice science and clear thinking.

Today one cannot but take sides, and this is as true in science and philosophy as in every other sphere of human activity. The cause of progress and of the advancement of knowledge demands the development of the materialist outlook and conscious and uncompromising opposition to idealism in all its forms, of which contemporary positivism is one of the most influential and active.

The progress of philosophy, as understanding of the world and men's place in it, has always been based on and has served the material progress of mankind. But the contemporary schools have degraded philosophy into a specialised and abstract study of thinking and language, which denies knowledge of the objective world. Their outlook reflects the crisis of capitalism and they serve wholly the ends of a decaying social system. In opposition to this degraded philosophy stands dialectical materialism. It alone consistently represents the future of philosophy, because it alone is consistently based on and serves the struggle to end capitalism and for the emancipation of mankind.

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