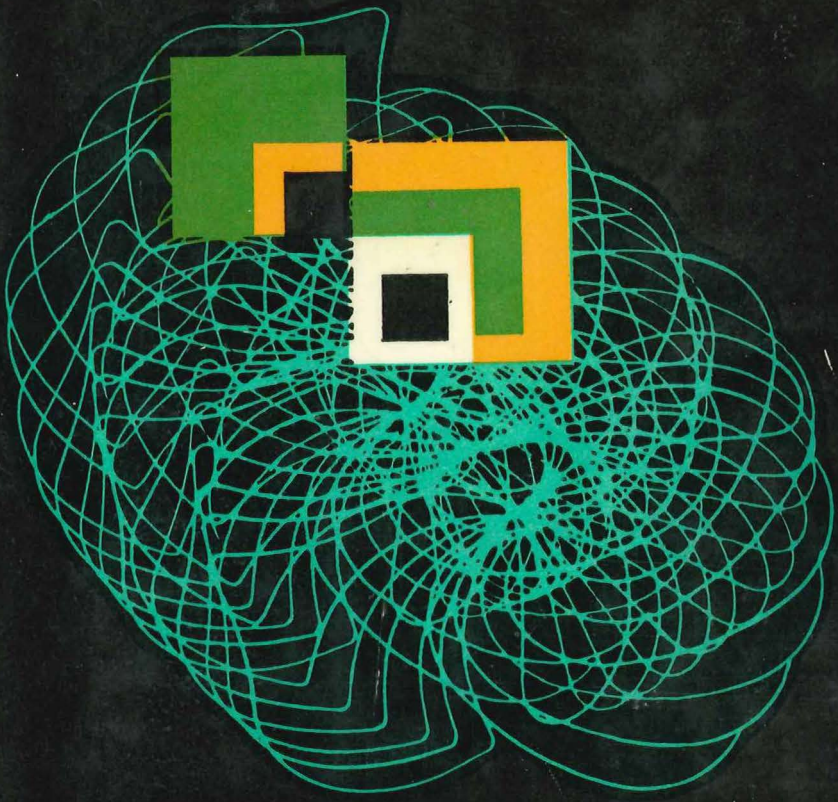
F. T. Mikhailov

The RIDDLE of the SELF



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Translated from the Russian by *Robert Daglish*
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Ф. Т. Михайлов

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FOREWORD

Man has lived a long time on earth and with the passing of centuries and epochs his notions of himself and his abilities to think have changed. At each new departure it seems to him that the time of real knowledge has come, and that people have till now roamed in the darkness of ignorance and superstition. But as a poet once said, superstitions are but the ruins of old truths! Everything that is new brings with it a new confidence in the idea that the time of superstition is past, and that we have now begun to penetrate the mysteries of existence and our own mysteriousness as thinking creatures.

And today, once again we seem to be on the threshold of the truest possible knowledge of the soul, of consciousness. Do not many people today believe that not the abstract speculations of philosophers but precise mathematical calculation based on cybernetics and information theory, electronics and the intricacies of integral circuits are about to show us that there is now a real possibility of constructing an artificial intellect? But to make a soul, to make a Reason, even an artificial one, we must first discover its nature and essence, the principle of a device that can think. From this standpoint all the truths discovered by philosophers must once again appear to be mere superstitions.

But do we really know the principles on which the reason works? There is no simple answer to this question.

Some natural scientists, unwittingly extending their professional methods of studying the spatial interaction of bodies to the study of man and his consciousness be-

lieve that this principle is already known and that only a few, albeit important particulars of its application and realisation in the machine called man have yet to be discovered. They take a very sceptical view of all forms of philosophising and are convinced that in this day and age the question of the soul, of consciousness, of the Self now falls within the domain of natural science. And even philosophy itself is regarded by such scientists as at best something derivative of "real, scientific knowledge", knowledge of phenomena and processes existing outside man and his consciousness. Philosophy, they believe, can develop only by generalising that which science discovers in the world of objects. Man and his consciousness are for them just as much an object as any others, and the same methods by which science today studies matter may be applied to them. If the mind in general and human consciousness in particular are a fit subject for scientific research, the riddle of consciousness will be solved by positive science, and philosophy will have nothing to do with it.

And "space-corporeal" reductionism in the theories of mind and consciousness are by no means a local phenomenon.

A survey of the latest works of some Western scientists who seek to research cerebral processes at the modern level (by means of cybernetics and information theory) and to present the task of creating an artificial intellect as the final solution to the riddle of the Self assures us that, one, the desire is definitely global, and two, it is based not simply on a certain group of facts, but on a certain way of theorising. It was this situation that prompted me to write the present book on the problems of consciousness. I wanted to draw attention to the actual way the problem of the human soul is being treated. And also I wanted to show that consciousness (like matter itself) is a philosophical category that requires above all philosophical knowledge for its interpretation.

In the time of Descartes it became clear to many philosophers and natural scientists that our Self, our Ego is something fundamentally different from the phenomena caused by the interaction of ready-made structures studied by ordinary methods, phenomena depending only on the structures themselves. The human mind can encompass in

thought millions of kilometres and years, but thought itself has no extension; it is not a body, it is part of the soul, the ideal. This is the fundamental difference between the "spiritual principle", human consciousness, and the mechanical interactions of bodies (physical, chemical and others that have spatial extent).

The question of consciousness, of its relation to being cannot in principle be reduced to a particular scientific problem of the correlation of mental and physiological processes or to a problem of the reception, processing and production of information. The essence of this problem is not what happens under my skull when I calculate the trajectory of a flight to the stars, but what in philosophy is called the question of the identity of thought and being. How is it possible that a person can mentally chart the road to the stars? How and why can he, in his thoughts, conceive of the existence of the Universe? How can the infinity of time and space be contained in the instant of their realisation in consciousness? This is the key question of the human ability to set goals. And unless one knows one's way through the two thousand years history of solutions to this question, one will have little chance of even framing a correct approach to any particular problem of the relation between mind and brain.

That is why I have called this book *The Riddle of the Self*. By suggesting that the Self, the Ego presents a riddle I imply that there may be many different ways of tackling it.

This book is not a calm and consistent academic exposition of compiled knowledge. It is more like a not very good transcript of a heated debate. And it is not in itself the answer to the riddle, but a discussion of how the problem should be stated. It is about the method that should be used in the search.

INTRODUCTION

1. Where Is the Self?

Before trying to solve any problem we must first make sure that the problem is properly stated. What are we actually trying to discover? What question do we wish to answer?

My inner world, my soul, my Self, my Ego is something so intimate, so personal, so much a part of me that it may seem strange to speak of it as a riddle. I am I, the Self is me. No wonder Descartes regarded the statement Cogito ergo sum (I think, therefore I am) as the first and basic element of knowledge, a proposition that was not to be doubted. The proposition is clear, definite and simple: I think, therefore I am, therefore I exist. How can such a clear and immediate piece of knowledge be the subject of a riddle? Well, we shall see.

When we acknowledge the intuitive clarity of the awareness of our consciousness, we establish only the fact of identity: I am I. But what does this mean? From the fact of self-awareness or, if you like, self-consciousness, we can deduce no definition of this "selfness", and certainly no definition of the consciousness.

Perhaps to be aware of oneself merely means to be able to see, to touch, to hear, to smell, to feel, to experience emotion and understand? But any ability must always be somebody's ability. It must always be, "I see", "I hear", and so on. Language itself brings out the fact that there must be someone who sees and hears. We could not express ourselves otherwise. "I" am the person who understands that this is a tree, and that is a book. A person is born and he becomes a person who calls

himself "I". He feels joy and pain, anger and admiration. He calls himself "I" because he is aware of his own presence in the world and because he sees the world as "not Self", as that which surrounds him. Now suppose we see this person walking past us, a person who with every justification calls himself "I". But just a minute. For us a person is a body that acts and thinks and is perceived by us.

Then perhaps, the Self is an "acting and thinking body"? Yes, we say, that's it. The body is so built that it can be aware of its environment. At school we used to look for the subject in a simple sentence such as "I see". And the answer was, of course, that the subject is "I". But what is it that sees? Well, the body, of course. So my body that can see and think is, in fact, the Self that we are looking for!

In other words, the body that becomes aware of itself as something different from other bodies (bodies that are external to it) thereby singles out from all other sensations the sensation of its own particularity, its self-awareness, that which we designate for the sake of brevity by the personal pronoun "I".

But if the body in its interconnections with other bodies is capable of perceiving them, of understanding them as *external* to itself, of distinguishing itself from them and thus understanding itself as what the philosophers call in their professional language an "entity", then perhaps the body is what we should study in order to understand this ability.

In that case the question of what the Self is, what our consciousness and self-consciousness are, would not come within the competence of philosophy and the only place for studying intellectual activity would be the laboratory.

Admittedly philosophers have always believed the solution of the problem of the consciousness to be their own special field and occupation. Many wise books have been written about what the consciousness is, what cognition is, and how knowledge is acquired. But in this day and age can such complex problems be solved merely on the basis of philosophical speculation?

Such doubts are all the more justified in view of the fact that some philosophers clearly follow in the footsteps

of physiology and, judging by the results, regard it as their task to translate the clear propositions of real science into "metaphysics", into the language of speculation, into world concepts.

If this is so, we shall leave it to the physiologists, psychologists, logicians, mathematicians and cyberneticists to solve any problems connected with human mental activity. For surely, when the exact methods of natural science, the rigorous experiments requiring complex apparatus have become an ordinary necessity for studying the phenomena of nature, it would be an anachronism to rely on speculative philosophical reasoning when considering the nature of mind, rather like relying on alchemy in the age of chemistry.

It is not my intention, however, to popularise the recent discoveries of physiology, or to discuss the gaps in that particular science. And if the reader is inclined to believe that the only mysterious thing about the study of the consciousness is that it has not yet been properly investigated by physiology, then he should lend an ear to the following argument between two convinced materialists.

First. The thing that thinks and is thus conscious of the world is obviously the body, our brain. But what is thought? What is a concept? What is knowledge? Can you explain that? It often seems to me that what a close physiological study could reveal in the brain, and what I experience, know and feel, in other words what constitutes my consciousness, are fundamentally different phenomena. After all, the brain is matter, but thought, feeling—can you really call thought matter? Can you actually say that the entirely material processes taking place in the cerebral cortex, the interactions of neurons and so on, are in fact thought?

Second. I agree with you that thinking is not matter, not brain. But thinking is a function of the brain. When we study the brain, we discover what this function is. After all, a function cannot be the thing of which it is a function.

First. But look here, that is not a serious statement at all! What do you mean by "a function of the brain"? When studying the brain, I study perfectly material neurons, their interactions, their complex functions—matter

acting upon matter. The function of a thing is material, a natural effect of its elements acting upon each other. The result of such influence must always be tangibly material.

Second. Not at all. A property, or quality of a thing is not the thing itself. Weight is not a stone, heat is not fire. And it is exactly the same with thinking, which, of course, is not the brain. If we want to know what heat is, we must discover the nature of fire.

First. I have heard such arguments before now. On this basis one argues that weight is not matter, but only a property of matter. As for thought or consciousness, the argument generally runs, "consciousness is non-material in the sense that it is not matter itself; but the fact that consciousness is a property of matter, of the brain just as weight is a property of stone does not make it non-material". As far as I can see, you are saying the same thing. Such logic, it seems to me, is so naive that one can scarcely take it seriously. Weight or heat, after all, do not exist in themselves. In practice weight is a heavy stone, heat is hot fire. The whole point is that the properties of things are essentially the thing itself. It is only our thinking that can "detach" weight from a heavy stone and regard it as something independent. Your logic is self-defeating. You are trying to prove that thought, consciousness, mental activity is not brain but a property of the brain, but the analogy of weight, heat, and so on, actually brings out the very opposite point. In reality, and not when one is arbitrarily playing with words, weight is a concrete and entirely individual stone under the influence of the earth's gravity. So thought is nothing else but the thinking brain, my consciousness is my body, and the mental function of the brain is its physiology.

Second. I don't see anything to be alarmed at in your statement. From one point of view, thinking actually is physiology, it actually is the thinking brain. But thought is not merely a physical property of the brain. Essentially it is reflection. By means of the sense organs the brain reflects the external world. The phenomena of the external world leave their mark on our brain by rearranging the processes that take place in it. The brain has the ability to actively process information coming from outside. It can integrate and analyse the impressions made upon

it by objects. And it is this ability that we call thinking. The important thing to remember here is that when we are talking about what is reflected in the matter of the brain we are talking about the mental, whereas if we are talking about how, in what way external influence is reflected, then we have to do with physiology, with matter. So the activity of the brain is a dialectical unity of the physiological and the mental. We define it as physiological (material), having the property of reflecting the objective world, while we call reflection itself mental (ideal). Or to put it another way, we define the activity of the brain as physiological when we study the functions of the matter of the brain, and as mental, when we study the images of objects generated in the process of this activity.

First. I think I would agree with that statement but there is one thing I would question. Some of the ancient philosophers thought that an object influenced the consciousness, the "psyche" ("soul") in the same way as a seal leaves its imprint on wax. Today, of course, we realise that the mark you have just been speaking of is not an imprint in the literal sense of the word. The nervous apparatus of perception turns the external quality of the object into specific physiological processes. It codifies the information received through the sense organs. This is why, when a person looks at a tree, no matter how closely we study the physiology of the brain at that moment we discover nothing resembling a tree in the specifically physiological processes that we find there. Isn't that so?

Second. Yes, I agree. It would be naive in this day and age to imagine that the external appearance of any object is literally imprinted on the brain from the matrix of the organs of reception. It's all much more complicated, of course. The process is more like this. Let us suppose, for example, that someone is observing a given object for a certain period of time. One could say that in doing so he is experiencing this visual image. A certain neurophysiological process takes place in his cerebral cortex. This process is sparked off by the effect of the object on the organs of vision. A certain neurodynamic system is formed that brings about visual perception, that is to say, gives rise to a visual, subjective image. This system and the subjective image conditioned by it are phenomena

taking place at the same time and having the same causes. One is inseparable from the other.

First. I still think your argument implies two processes, or two states. But the thing that matters is not whether they are separable or inseparable from each other. What worries me is something else. There is a neurodynamic system that is responsible for the image perceived or experienced. But at the same time there is also the subjective image itself. And where is it?

We must have a clear and unambiguous answer to this. Either the image is the "system" or the "system" creates it, brings it into being, conditions it, but it does exist as an image and not as a bunch of excited neurons.

Second. Well, you see, this is a special type of interconnection. If you like, this is the same relationship as we have between information and its material vehicle, an image is information about an external object and the neurodynamic system is its vehicle or carrier. Of course, physiology is still lacking in any close study of the question of how the given system presents information to the individual in its subjective form. But, in principle, the question can be answered as follows: a signal containing information about an external object occurs on the level of the retina of the eye. But subjectively this signal is not yet perceived as an image. For information to acquire the form of a subjective (conscious) experience the signal must be transformed not at the level of the retina but at the level of the cerebral cortex, and this is done by the neurodynamic system.

First. Now just wait a minute. What has come over you? You are getting so "terminological". Still, we shall have to put up with that, everybody talks about information nowadays. But you have not yet answered my question. The "signal at the level of the retina" is not a subjective image. To put it more simply, no one sees the impression of the object on the retina of the eye. What happens there is a biochemical process or reaction. And that is where the codifying of the information takes place. Is that how I am to understand you?

Second. Well, more or less. Only you mustn't separate the eye from the brain. The retina would not be able to receive the signal without the neurodynamic brain.

First. I'm not separating them. From me the eye is a

feeler for the brain, it is, to borrow a phrase, an "outboard brain". All I am doing is following you when you say there are two levels, the level of the retina and the level of the brain. At the retina level there is no image. None at all. So there is no one to see it. But then you go on to say literally this: at the level of the brain the neurodynamic systems present the information they carry to the individual. For me this implies a host of contradictions! In the first place, none of these explanations have any bearing on my question. The subjective image of the object has disappeared somewhere behind that little word of yours "information". Instead of an image we are left with a hieroglyph, a code, or a symbol. If the image is the state of the neurons in a person's brain or, to put it another way, your "system" itself, then you have at least answered my question quite unambiguously. But then why beat about the bush and discuss how the mental phenomenon is connected with objective cerebral processes? Obviously there is no connection. It is simply one and the same thing. The "subjective image" and the "neurodynamic system responsible for it" are two verbal designations of one and the same cerebral phenomenon. Admittedly it is now a complete mystery why any given neurodynamic system or rather a state of that system should be regarded by the person in question as something outside him (and outside his brain).

Second. But I am not saying anything of the kind! It looks as if you don't want to understand me! I said quite plainly that the neurodynamic system as a bearer or vehicle of information (not the information itself but only its vehicle, mind you) transforms the signal reaching the retina of the eye and presents this information in subjective form to the individual. The neurodynamic system is not an image but the code of the external object that is being reflected!

First. Now don't get angry. I was just going to mention the second way of interpreting your statement. I had the word "secondly" on the tip of my tongue.

So far then, the subjective image is not the neurodynamic system itself. The latter, in coded form, only presents the information for the individual. And information is that which rearranges the system that receives it. Isn't that what I heard you say?

Second. In general terms, yes. And I would emphasise that this often occurs independently of its material vehicle. For example, the mobile "system" of several lines of cars at a crossroads may be started by the green light of the traffic signal or by an appropriate gesture from a policeman. The information, the message, in this case is one and the same, although the material vehicles are different.

First. Splendid! So the signal from the retina converted "at the level of the cerebral cortex" (and at this point it is not yet an image, as we have agreed) has in the neurodynamic system become information of a special type that the individual must decodify and turn into an image? Is that it? And who is the individual? Perhaps it is another neurodynamic system converted by information received from the retina and processed in the first system? But in that case we have just another nerve code that someone has got to decodify and eventually see as a subjective image. And it turns out that someone calling himself "I" and located in his own body, as if in an auditorium, must "read" and convert into images all these pulsing curves that appear before him on the oscillographic screens of the neurodynamic systems. You can go on talking to me about codes, information and the neurodynamics of cerebral processes, but that is all just terminological description of the "transmission mechanisms" by which the existing object is turned into the subjective image of the object experienced by the individual. And this happens, mark you, outside the individual. Once again we have the subjective image of the object confronted with the object. The individual and that which is outside it, the subject and the object. When I close my eyes and remember what a triangle looks like, the image of a triangle arises before me and I see it. The brain is the body, the processes that occur in it are purely material, physiological processes. But an image like the objectively existing object itself must be seen by someone. Where then is the "auditorium" located? Where is the "audience" that admires the vistas revealed by the organs of perception? Where, finally, is the screen?

Second. The point is that the property of being aware of oneself, the property of seeing and perceiving the objects of the external world is a specific property of

the brain. I have already said that this is the mental side of the higher nervous activity and you are trying to interpret it purely from the standpoint of physiology. That's why the "audience" has disappeared from your argument.

First. Oh, come now! Merely repeating the words "specific property" ten times over won't help me to find out what this specific property is.

Well, it looks as if our two materialist philosophers are beginning to depart form the academic tone they maintained at first. We must admit, however, that the "specific property" did sound rather unconvincing. The question of the "audience" or "onlooker" still remains unanswered. And besides, merely to see is not enough. One can talk about consciousness only when what is seen is understood.

But here we come up against something rather strange. There is nothing beneath the human skull except a completely material brain and the material processes taking place inside it. Nature does not leave any room at all for an "audience" that could see the world and understand what it has seen. But human beings do both these things. And whereas we can still say that the images of objects of the external world are in some way "imprinted" on the receiving "apparatuses" of the body, to talk about the "location" of concepts in the brain—ideal copies of the invisible essence of things—sounds something completely mystical.

So the first advice of the common sense that natural science was guided by for many years while constantly warning of the dangers of philosophy, ran approximately as follows. If you want to know what consciousness is, study the brain. But we have considerable doubts on this very point.

Let us try to approach the question from another angle. Let us define what knowledge is and how we obtain it. Here, too, common sense suggests a line of investigation that generations of natural scientists have worn threadbare in their efforts to study the process of the human acquisition of knowledge without bothering about philosophy.

2. "I" See and "I" Understand

The notion of cognition usually adopted by the natural scientist who takes the common sense approach boils down to the following. The process of the acquisition of knowledge involves a reception of sensations, perceptions, representations, their comparison, analysis, synthesis, and other operations carried out by the brain. And it is this internal processing of sense perceptions that produces a person's concept of things. Thus knowledge is a result of sensuous reflection, and the sense organs are the key object that has to be studied. The eminent physiologist Johannes Müller set himself this task about 100 years ago. The task, incidentally, was to be purely physiological. But so much the better. From Müller's point of view in an experiment any phenomena should be studied on the basis of specific material and without any general arguments. Müller thought that the so-called philosophical problems would be solved at the same time. If by rigorous scientific experiment one could get to the bottom of how the sense organs worked, one would also answer the question of how man cognised the world.

The crude but persuasive belief that the key to reason lies in the sensations compels the physiologist to get rid of all "extraneous questions" and concentrate entirely on the sense organs. And what else can he do if all the rest (perceptions, conceptions, and the activity guided by concepts) depends on how effectively the organ reflects reality. Where does philosophy come into it? Not much philosophy is needed to make a concrete physiological study of the workings of the sense organs and generalise the facts thus accumulated. The main thing is the fact, positive knowledge, and all other general arguments are a mere waste of precious time. Facts are stubborn things and this is where one should begin.

Let us try to begin in this way. Here is the first fact. A source of light (in modern terminology, electromagnetic waves) exerts a momentary effect on the eye. What does a man feel? Light. So far so good. Here is the second fact. The eye is affected by a weak galvanic current (application of an electrode). What does a man feel then? Light. The same thing again? The irritant (cause) is different but the sensation (consequence) is the same.

How odd! And suppose we try a mechanical effect, suppose we strike the eye lightly? A light blow produces "sparks" on the eye thus tested. What then is the sensation experienced by the individual? Light. It may be a fainter light than in the second case but it is nevertheless a small flare of light. And there we have fact three. Perhaps that is enough?

Now let us try to operate on different sense organs with one and the same irritant. If we do so the sensations will be different. The eye will see, the ear will hear, the fingers will feel, and so on.

What conclusion can be drawn without any philosophy about the results of the experiment? The obvious conclusion is that the quality of the sensation does not depend on the quality of the irritant.

So facts lead us to the conclusion that the sensations experienced by the individual depend on the individual himself, on the specific energy with which the given sense organ functions. According to Müller's conceptions, the sensation reflects the internal state of the nerves and not the properties of external things. Strangely enough, "without any philosophy" we and Johannes Müller have reached a quite definite philosophical conclusion: the world is uncognisable, human reason in principle (science, physiology has proved it!) can never deal with the objective properties of things; its function is merely to register the "internal state of the nerves".

But the difficulties involved in the common sense approach to cognition do not end here. "Common sense" told us that to bring about cognition there must be direct sensuous contact between the individual and the objects of the natural and social environment. The sensations caused by the action of objects on the sense organs tell us about certain specific properties of things. Perceptions (combinations of sensations) tell us about the external appearance of a thing as a whole, and representations retain its image in the memory. Thus making it possible, without direct contact with the object itself, to analyse its external appearance, compare it with other images, notice the general recurrent features, discover the essential ones, and so on.

It works out that knowledge is contained in the very first sense perceptions, that to see is to know, to under-

stand what you see, because in the final analysis understanding itself boils down to our attitude to that which we see or feel, an attitude that depends on the comparison of what is perceived with what we have perceived before. If knowledge can come only from experience, if the source of knowledge is sensations, then the source itself, pure and unadulterated, should reveal to us what we call the content of our conceptions—the essence of things, objects, and so on.

Then it is enough for a person to see something to understand what it is? But wait a minute. When a person looks at a familiar object, he naturally sees and understands what he has seen. In this case it is not because he sees that he understands but because he sees an object as something that is known to him already. This is why he understands what the object is. The same is true of an unfamiliar thing in which understanding allows us to detect, to see something familiar and already known.

But supposing there is nothing familiar to us in the object. Suppose we have no knowledge that helps us to see something familiar in it, certain familiar features of a certain class of things? Can the mere contemplation of a thing, the seeing of it, tell us what it is?

Let us suppose, though this may be difficult, that we have before us an object without any features that are familiar to us. What will catch our eye? Such and such a thing may be black, something else may be round, something else soft, and so on. But what is it? As usual the eye seeks something familiar and understandable. "Black", "soft", "round", and so on, are not merely sensations in themselves. They mean something to us, they say something to our consciousness. And this is why the eye perceives even the object seen for the first time with some "foreknowledge". As long as we are talking about human beings we must reckon with the fact that they have consciousness, that at any given moment they treat what they see with understanding.

Now we find ourselves in a kind of vicious circle. In order to acquire knowledge we must see, perceive with our senses, the objects of our environment. But we can know only if we have preknowledge, if we can see something familiar, understandable, known in the things we see. So

before we see we must know something. We don't seem to be getting very far!

But the argument does not end here. It is said that man acquires knowledge from experience. But from the standpoint of common sense experience is primarily action in relation to things, in the process of which a person senses or perceives them. So it seems quite impossible to explain how even the most ordinary concept of an object arises? After all, a concept always contains knowledge of something fundamental, essential, and any sense impression registers only the external appearance of individual objects, a set of their individual and often accidental properties. Every concept comprises something that we cannot acquire by the personal experience of contemplating an object, namely: generality, necessity, and essence.

Normally this does not worry "common sense". What is so difficult about cognition? In the first place, I know quite a lot already and my knowledge seldom lets me down. Therefore cognition is quite possible and I cognise correctly. But what about the concepts in which my knowledge is contained? No problem here either. I see, hear, perceive, imagine things. For convenience I call the things thus represented by different names. And I put these names in two groups, to which I again give various names. Naturally, there are several states and transitions in the naming of things that are far removed from the external image of the thing and I cannot always remember or imagine the individual objects that were given the primary names. When I say "furniture", I cannot always imagine all the types of chairs, tables and so on. But in general terms I am fairly well oriented. My brain associates the term "furniture" with all these images and I know what I am talking about. It is rather more complicated with the abstract concepts of science, but here too the same principle applies. Somewhere at the bottom of the pyramid whose summit is the scientific concept lies the image of the thing, then its name, and then the name of the name, and so on.

It is quite true that the usual concept of cognition, of the structure of acquired knowledge resembles a pyramid. At the base of the pyramid there is a broad platform of all kinds of impressions and sense perceptions. Fleeting, accidental, they constantly supply us with know-

ledge about the transitory phenomena of the reality we perceive. There are huge numbers of them. Throughout our lives they accumulate and form the basis of our emotions, feelings and thoughts. Memory sorts out what is similar and repetitive into types, kinds, and classes, thus forming a new step in cognition, and a new layer of knowledge about the world. And because these generalised notions embrace a huge number of individual impressions, the new layer is both higher and much less extensive than the first. So the pyramid of knowledge grows. The next layer consists of names designating the generalised types, kinds, classes and notions. Above that there is a layer of more general names, and because these are naturally fewer in number, this layer forms a new tier in the pyramid. And so it goes on to the very top, which has the one all-embracing name of "being", a name that also seems to radiate the concept of consciousness.

In the course of our argument we shall constantly use the simile of the pyramid of knowledge. But the attempts already made to assess man's path in the acquisition of knowledge put us into a difficult position. The very foundation of the pyramid has been shaken! It turns out that it rested on the unstated assumption: "I see" means that I already understand something. But if this is not so, if in order to understand we must do more than perceive and name the images of perception, must the pyramid of knowledge then collapse? As a rule, common sense will not hear of any such thing. "That is all philosophy! Useless speculation! Knowing means knowing and I have no doubt as to what I know."

But while common sense amuses itself by contemplating the splendid pyramids beneath which the "insoluble riddles of cognition" are entombed, the philosophy that is referred to so disparagingly by "common sense" has never stopped trying to find a way of solving those riddles. The philosophical schools, from ancient times to the present day, are tunnels dug by science and forming a labyrinth of wise and sometimes brilliant conjectures, of misleading sidetracks, and agnostic dead-ends.

And the philosopher who first found "Ariadne's thread" and followed it deep into the foundations of the pyramid, to its very heart, and there solved the riddle, was Karl Marx.

CHAPTER ONE

CLEAR APPROACHES AND DEAD-ENDS

1. What Is Knowledge

Philosophical problems are not generated in the quiet and cosy studies of thinkers who shun all contact with the world. Strange though it may seem, the question of what knowledge is and how it is acquired is a most practical question, which constantly arises in every concrete experiment, every step forward in scientific knowledge.

But could man always ask himself, how is it that I know? Not simply see, but know that this is a stone, and this is an apple-tree? I know that I am a human being and that we are all human beings, and not bears or kangaroos?

Such a question implies the ability to look at one's own activity from the side, to consider the object before one and what it will become when one does this or that with it. And only when my Self and my ability to do something are not one and the same thing, that is, when I can treat my activity as something ahead of me, as a future process that can be adjusted or changed in accordance with a prearranged and not yet executed (therefore still existing outside me in nature) ideal plan of an action, only then can I and should I consider the question of the ability to know, to be aware of nature in its most hidden essence, to know what it is capable of, but has not yet performed and never will perform without my intervention.

Aristotle would, of course, have been unemployed in the age of the primitive-communal system, when consciousness, as Marx put it, was still directly interwoven with practice, with the language of real life, when the

"word" was as yet not objectively contrasted with the "act". In those days people were not worried by the "accursed" problems concerning the relation between knowledge comprising the "pure" essence of things and knowledge of sensuous individual images that seem to directly reflect the passing, transitory phenomena of being. But with the emergence of theoretical activity as such, there also emerges the problem of consciousness (soul), the problem of cognition, and of the role that the senses and reason play in the process. On this point Aristotle had every reason to write, "...The knowledge of the soul admittedly contributed greatly to the advance of truth in general, and, above all, to our understanding of Nature." [1]

But even in the field of theory the question did not arise at once so directly. We did not immediately become aware of the need to understand ourselves, our ability to conceive and cognise the world, the means and methods of cognition and of testing knowledge. According to legend, the early philosophers were mainly interested in the causes of the flooding of the Nile and the solar eclipses, the height of the pyramids, and ways of calculating area. But the very diversity of their specific interests presupposed a certain relationship to the world as a whole. What did all this—the pyramids, rivers, stars, and so on—add up to?

And the interesting point is this, when trying to define the single essence of the whole diversity of things, objects and phenomena the first philosophers, without actually intending to, immediately posed all the questions of cognition that were later to be studied for thousands of years. It is a fact that the Milesians—Thales, Anaximander, Anaximenes—proposed hypotheses about the nature of the material of which all the visible diversity of world is composed that triggered off the long argument about cognition and consciousness.

Take the "water" theory of Thales. The first Milesian saw the primary element of being in that which was most widespread, in the world ocean surrounding the earth, in

[1] *The Works of Aristotle,* Vol. I, "On the Soul", Encyclopaedia Britannica, Inc. William Benton, Publisher; in the series Great Books of the Western World, Vol. 8, 9, Chicago, London, 1952, p. 631.

the moistness of the air, the moisture that saturates the earth, and its being necessarily connected with the very source of life—the seeds of plants and animals. [1]

However, it was not the omnipresence of water, but its role as an all-uniting stream that made Thales look upon it as the common root of the diversity of individual things. Water, however, is still water, something separate and apart, one of many things that can be sensed and perceived by man. And at the same time, as Hegel noted, the "water" of Thales, when treated as a universal essence, becomes something formless and different from the specific sensation that we have when we are in contact with real water. "Water", as the fundamental principle, is something "purely general", which simultaneously remains individual.

Evidently this contradiction was sensed by Anaximander. Realising that "primordial matter" could be only something that was not reducible to one of its definite states, Anaximander speaks of the arche [2] as matter that has no limits and cannot be defined, as matter that has no special features because everything special about it would be one of its states, its individual, particular phenomena which are not eternal but disappear. According to Anaximander, "primordial matter" is the essence that inheres in all objects and its fundamental significance lies only in the fact of its being the basis of all individual objects and irreducible to any one of them. This philosopher, who lived 2,500 years ago, stated that the foundation of everything is unlimited, undefinable matter having no qualities that can be perceived by the senses—the apeiron (the unlimited).

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[1] This is what Aristotle wrote on the subject: "...Thales, the founder of this type of philosophy, says the principle is water (for which reason he declared that the earth rests on water), getting the notion perhaps from seeing that the nutriment of all things is moist, and that heat itself is generated from the moist and kept alive by it (and that from which they come to be is a principle of all things). He got his notion from this fact, and from the fact that the seeds of all things have the moist nature, and that water is the origin of the nature of moist things." (*The Works of Aristotle,* Vol. I, "Metaphysics", Op. cit., pp. 501-502).

[2] The term, meaning primary element, was introduced by Aristotle in his expounding of the theories of the "first" philosophers.

The search for arche—the one primordial essence of the universe—was carried on by the Milesians in nature itself, almost "naturalistically". Traditionally these philosophers from the city of Miletus are regarded as the pre-Socratic school of ancient natural philosophers. It is said that Thales was able to calculate the dates of solar eclipses (astronomer), the height of the pyramids by the lengths of their shadows (geometrician), predicted a good harvest of olives and correctly determined the causes of the flooding of the river Nile (naturalist and geographer), and so on. Anaximander's cosmological notions are far closer to those of modern times than the later Ptolemaic theories. Why then do we usually refer to them as philosophers and not geometricians, astronomers, physicists, and so on?

If one simply projects modern thinking on to ancient times and treats the culture of those days and of the Middle Ages as stages leading up to "us" (the point of view of the bourgeois enlighteners), then the ancient natural philosophers were also mathematicians, although they knew only the rudiments of mathematical science, and also naturalists, although their observations and generalisations never went further than the elementary, and astronomers, but without telescopes, computers, Einstein's theory, and so on.

Taking this "single-channel" approach to the development of civilisation with its forms arranged by centuries and millennia according to the amount of useful knowledge produced, the ancient natural philosophers do indeed appear to be highly versatile specialists capable of embracing many professions because the amount of activity required in each one was still extremely small.

But Greek antiquity implies a special way of life on the part of the peoples who lived in the city states.

The history of the millennia of culture of this small people follows a special, rather unusual, pattern. At the crossroads of the trade routes and military routes connecting and confronting the great Asiatic despotisms of ancient times and the Egyptian kingdom of the Pharaohs there grew up small settlements inhabited by farmers, artisans and traders who were often highly versatile because their main concern was political and

commercial mediation, which in turn demanded the preservation of their political independence and sovereignty. These were the free cities in which the Greek tribes acquired and developed the features of a new community and grew into a people united by language, identity of their political and economic interests, and culture, and who absorbed and digested on their own basis the ancient cultures of their great neighbours. In other words, the ways of development of the Greek people were very different from those of the huge agrarian despotisms of those days.

In the Greek settlements slavery had not yet emerged beyond the limits of the patriarchal, family forms of exploiting the labour of a "captive tribe" and may be regarded rather as a borrowing from the despotic neighbouring regimes than the result of the disintegration of the original Greek tribes. The free citizen of the Greek city state was part of a harmoniously organised whole. His personal aims, needs and abilities were still directly connected with the common interests of his fellow citizens. The class stratification of the Greek people, which was most evident in the fierce struggle between the aristocracy and the demos for full political power, was to come later and in an ideological form that was foreshadowed by the history of the city states. The Greeks themselves would view it as a struggle for the common good, for unity and integrity of the city state.

Their ideological consciousness comprised all the forms that later developed more or less independently. Their perception of the world, fed and moulded by mythology, also came to maturity in the integrated political thinking of the founders (demiurges) of their city. A harmoniously integrated world surrounded them in its plastically perfect, sensuously corporeal forms. It was a world of harmony and order—the Cosmos that had emerged from primeval Chaos. [1] When he admires the splendour of the world, the Greek does not break it

[1] According to the Greeks, the Cosmos is the world that has emerged, that has become, and is therefore in a state of order, governed by laws, and integrated into a single whole. The Cosmos arose from primeval Chaos where there was no order, no measures and no law.

down into separate parts, does not investigate its individual properties. He is not a scientific experimenter, but a wise observer, a man of imagination and a poet. In his awareness of the origin of this perfect whole he exalts even himself as a harmonious body, a splendid instrument in the hands of the demiurges of cosmic harmony. He is a microcosm in whose flesh live all the forces of the great Cosmos. If he spends nearly all his time in affairs of state, it is because his aim is to create at home, in his city state, the same order that, according to his view, reigns as the supreme good throughout the Cosmos. When looking for the causes of certain diseases he seeks them in the violation of cosmic harmony.

What is he then? A physician? An astronomer? A philosopher? No, he is mainly a theoretician and, because of his liking for practical activities, an empiricist. Some writers, who are carried away by the standards of our own age and reduce all history to a succession of forms which, however underdeveloped, are nevertheless our own forms, say, for example, that the medical men of the past understood the need for an alliance with the philosophers. But the ancient "medicine" of the Greeks had no need of any such alliance with philosophy because it was itself a part of the undivided world-view, the non-derivative theoretical mythology of the living body, which philosophically generalised the habitual remedies that had been in use for thousands of years. The very title of "physician" had an empirical ring (for example the physician Sextus was nicknamed Empiricus).

No, the ancient natural philosophers did not become astronomers and physicists by combining their professions. It was they who pioneered the integrated *theoretical* form of comprehension of the world and tried to understand how to express all the endless diversity of the Cosmos in integrated one thought, one word.

The "water" of Thales and Anaximander's apeiron are integrated, essential definitions of this diversity. It is difficult to say what made the third Milesian—Anaximenes—reject such an indefinite universal principle of all things as the apeiron. He could have conceded that the apeiron was at least a reasonable conjecture

because no one has any direct awareness of "the unlimited" and therefore knowledge of it is not real knowledge. But no, the arche must be a single root, the source of all the diversity of the universe and should explain its existence in the infinite diversity of its states and phenomena. For example, why does a human being live? Why does an animal live? They breathe. They absorb something without which they could not exist for five minutes. So what they absorb, what they inhale is the basis of breathing and life. It is in breathing that life (real active being) realises itself and its strength. The provider of this life is air, the vivifying principle of being. But the Cosmos itself is an integrated and living being. All Greeks believed that. So would it not be reasonable to assume that air is the life-giving integrated principle of all that exists. It is almost bodiless, a breath of air is present in all places at all times, the Cosmos breathes and lives by air, and this is what brings being into existence out of not-being.

So according to Anaximenes the arche is air.

We have now summarised the teaching of the three first philosophers of ancient Greece. And although no direct statements by them about consciousness and cognition have come down to us their very positing of the problem of arche and materia prima (primordial matter) foreshadows the problem. I know what I see, what I hear, and so on, that is, I perceive with the help of my sense organs. [1] This is what Thales seems to say in choosing water as the arche. And Anaximander's apeiron implies the objection that the visible, the sensually perceived can never be anything but some specific state of the universal principle of being, while only the eternal, never ageing and integrated principle of all principles, which is inaccessible to the senses and known by the reason only in the process of reasoning, is the sole essence of the universe. Nothing that is determined, limited can be such a principle. And finally, what can reason know about something that has never been perceived by the sense organs, exclaims Anaximenes, who substitutes air for the apeiron.

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[1] According to Simplicius, Thales took water for his foundation of all things because he "began from sensuous vision".

I hope no one will imagine that I am trying to present Thales and Anaximenes as the founders of the famous school of the sensualist-empiricists,[1] and Anaximander as the first of the no less famous school of rationalists.[2] Incidentally, we should remember that in speaking of the ancient philosophers whose works contain all the later types of philosophical schools "in embryo, in the nascent state"[3], one should not apply the rigid definitions of the various "isms" that became established only in later times.

The purpose of our digression about the Milesian philosophers was to show that the solution of the problem of the relationship between consciousness and being has always been concerned with both aspects of this relationship and the problem of being is at the same time the problem of consciousness. The Milesians did not pose epistemological problems in the manner of Kant. But we can see that even a purely ontological statement presupposes a certain appraisal of man's place in the world, of the ways and means of understanding existence. The ancient natural philosophers with their superb gift of clarity immediately took the bull by the horns and in the very definition of primordial matter contrasted the diversity of the particular, perceived by the sense organs, with the universal that was to be understood as a unique concept only by reason.

After the Milesians came their Ionian fellow countryman, Heraclitus, the Ephesian, who showed that it was possible to take yet another approach to the same contradiction. The transient nature, the inconstancy, the disappearance and birth of the countless individual ob-

[1] Empiricism is a school of philosophy that regards experience as having all the elements necessary for cognition while consciousness, reason is capable only of evaluating and processing that which is given by experience. The empiricists hold that man can grasp the essence of things, general and essential knowledge, from the individual impressions of sensuous experience. Sensualism stresses the notion that all human knowledge springs basically from sensation.

[2] Rationalism is a philosophical school which views the process of cognition as activity by reason. Thanks to its special qualities reason can penetrate the essence of things despite the fact that the senses give an often deceptive and always subjective definition of the world.

[3] Frederick Engels, *Dialectics of Nature,* Moscow, 1974, p. 46.

jects that are brought to our notice by the sense organs is only a form of the one *measure* of the one *law* (Logos). Arche, the primordial essence of the universe, lies in the constant passing from being to not-being, and from not-being into being, in the constant transition of opposites into each other. In Heraclitian dialectics the unity of the world is the unity of opposites, and its motion is a "single flow" containing the essence of being which although beyond the bounds of our immediate perception, at the same time exists and appears in diversified forms in the sensuously concrete universe which "always was and is and shall be: an everliving fire, kindling in measures and going out in measures".[1] This brilliant notion was the abstract universal beginning of dialectics and it contains, in embryo, all the further incursions of theoretical research into the human consciousness.

Heraclitus declared that motion itself, the struggle and replacement of opposites, is truth and essence. "It is impossible to step twice into the same river," he stated, because he had noticed that the person who washed a second time in one river was washed by different waters. Here Solomon's "everything passes" is caught at the moment when that which becomes is that which has already passed. Heraclitus sees the basis of the diverse phenomena of the universe in the constant and eternal passing of "what is" into "what is not", in the unity of opposites. For him the river is always the same and yet not the same. This is its essence, its measure, its limit and definition. You always enter it and yet never enter it because it is a stream that cannot be entered twice as something unchanged and immutable. But whereas this universal definition of the one contains diversity itself—waves, splashes, gleams of light on the surface (this is what we see), the very definition itself is the fruit of reason, the speculatively discovered word (logos), rule, law, measure.

Other Greek philosophers also treated the everyday notion of knowledge ("To see is to know") with some suspicion. The great atomist Democritus clearly divides the cognition of the world into two types: the dark

[1] Heraclitus, *The Cosmic Fragments*, Fragm. 30, Cambridge, At the University Press, 1962, p. 307.

(sensuous) and the true (knowledge gained with the help of reason). This theoretical-cognitive guideline, as we should call it today, is directly connected with the atomic theory of being.

The world is infinite in its diversity. It is *visibly* discrete. Its knowable essence is assumed to be primary and basic. It is not perceived by the senses but it is equally natural, and corporeal, like water, air, fire, therefore in principle it is an eternal state. But the teaching of Anaxagoras and Empedocles paved the way for a turn in Greek thought towards acknowledging the diversity of even primary states. And this also involved an attempt to explain the unity of the diversity of discrete images by the discreteness of the initial principles themselves. However great the diversity, that which was eternal and immutable would explain this diversity that rose and disappeared, changed and passed away, existed and did not exist. The logic of discreteness was most apparent in the theories of Leucippus and his follower Democritus.

Being and not-being . . . Visible being is a mere fluttering of transitory images. There is nothing stable about it. Eternal and immobile being is only a speculative supposition that in no way explains the nature of visible being. And all the more so, if we deny not-being. No, we cannot associate all that surrounds us with one kind of being (one notion, one word embracing the essence of all diversity). Not-being, must also exist. Without it there would be no motion. It exists and it is a vacuum, emptiness, a real "physical" emptiness. And there is also eternal, immutable being. But it does not exist alone. Primordial being is also discrete, "broken down" into immutable and eternal pieces which, when put together, make up all that exists. These pieces are also the apeiron but they are indefinable in depth, so to speak. They are indivisible (atoms).

This idea of Leucippus and Democritus—everything that exists consists of atoms constantly moving in a vacuum—gets them into difficulties. After all, it must be perfectly clear that human beings have never been directly aware either of atoms or of a vacuum. We can acquire our knowledge of atoms only by means of purely logical reasoning and reasoning based on such

an abstract property of things as divisibility: all things are divisible but things cannot be divided to infinity; therefore things consist of particles that cannot be divided any further. But in that case the true and universal essence will be the indivisible particles themselves—the atoms. And their properties, such as weight (they must weigh something, however small), shape (there is no such thing as a shapeless quantity), order and arrangement (also quite natural: since we have assumed the existence of particles they must be arranged together in some sort of order and definite position), cannot be perceived by the senses! Reason comes independently to the conclusion that atoms have these properties. As for the properties perceived by the sense organs, Democritus says that it is only the general opinion that decides what is sweet, what is bitter, what is warm, what is cold, what is colour, while in reality the only thing that exists is atoms and vacuum.

The pure existence of the atoms is discovered by reason, which gives us a clear and definite knowledge of the very essence of things. But although he was far from being a sceptic in relation to the authenticity of knowledge, Democritus also regarded the dark (sensuous) knowledge as an extremely important element providing the reason with all its arguments. In fact he even described reason that believed itself to be capable of understanding the essence of things without the help of the sense organs as a wretched thing. Nevertheless, Democritus was unable to explain how the sensations help the reason to discover the essence of things, and the philosophers of ancient times who describe his philosophy from a good knowledge of his works either note the contradictoriness of his theories or give contradictory estimations of his views of knowledge. According to Democritus, the properties of things perceived by the senses exist "only in opinion", and yet reason that relies on their evidence (that is, on perceptions that ultimately depend on the condition of our body) is capable of understanding what exists in reality and is not perceived by the sense organs. Of course, it is rather difficult to judge the views of a philosopher after a lapse of 2,000 years, especially as we have only a few fragments of his opinions and he is often expound-

ed by his later critics. But it is important for us to note that Democritus not only did not believe that "seeing is knowing" but was actually compelled to treat the sensuously perceived diversity of properties as something secondary, as a result of a "clash" between human corporeality and the images that came from other bodies.

The name of Socrates marks a new era in the development of Greek theoretical thought. Here it seems that the problem of the primordial essence of all things has been left aside. Man and his place and role in the human world, his merits and moral qualities occupy the mind of the philosopher whom Marx called the "demiurge of philosophy" and "philosophy personified". But it is Socrates who first poses the problem of the universal as a direct question concerning the nature of human knowledge, as a question of the meaning of words, in which in some marvellous way truth is revealed. Let us turn to one of the fundamental works of Plato (Socrates's pupil)—*Theaetetus.* Virtually the first question that Socrates asks the young man Theaetetus, the main character in Plato's dialogues, is our own fundamental question: What is knowledge? [1]

In his conversation with Socrates the young man advances the proposition that to know is to perceive something with the senses. Knowledge is sensuous perception. And the interesting thing is that, at least 2,000 years before Johannes Müller, Plato in his detailed investigation of this thesis utterly explodes the conclusions reached by the 19th-century physiologist on the basis of his experiment. Now listen to what Plato's hero Socrates says to his young friend.

Socrates. Then now apply this doctrine to perception, my good friend, and first of all to vision; that which you call white colour is not in your eyes, and is not a distinct thing which exists out of them. And you must not assign any place to it: for if it had position it would be, and be at rest, and there would be no process of becoming.

Theaetetus. Then what is colour?

[1] Plato, *Theaetetus.* From *The Dialogues of Plato.* William Benton, Publ. Encyclopaedia Britannica, Inc. In the series Great Books of the Western World, Chicago, London, 1952, p. 514.

Socrates. Let us carry out a principle which has just been affirmed, that nothing is self-existent, and then we shall see that white, black and every other colour, arises out of the eye meeting the appropriate motion, and that what we call a colour is in each case neither the active nor passive element, but something which passes between them, and is peculiar to each percipient; are you quite certain that the several colours appear to a dog or to any animal whatever as they appear to you?

Theaetetus. Far from it. [1]

Müller regards sensation as being produced by the specific "energy of the given sense organ", that is, to use the words of Plato, "being at rest and not becoming". A property of the eye. Admittedly, as Plato has just noted, it is no better to consider it a property of the object itself.

A person who did not know the history of philosophy (or knew it only from hearsay) but wanted to popularise the ideas of modern physiology might decide that the question of the correspondence between subjective sensation and the object perceived was posed on the basis of experiments pioneered by Müller. He would then consider himself justified in reproaching modern philosophers for "divorcing themselves" from real science and floating about in the empyrean instead of generalising the results of the specific research of the present day. And all the time he would be quite unaware that the logic of many modern experiments in the given field (which he believed should be generalised in order to achieve new philosophical thought) had not even gone as far as that of the ancient philosophers. Nor would he be aware that this logic, having fallen victim to the primitive, one-sided idea of the interaction of bodies (structures), encourages the researcher to take an absolutely abstract line in his research and at best merely illustrates the abstract conjecture that the external object is imprinted in the brain by means of the sense organs. But let us return to Plato.

The conclusions drawn from Müller's experiments, experiments guided by the logic of the interaction of

[1] Ibid., p. 518.

ready-made structures, were splendidly formulated by Plato, who then proposed, as a counterblast to this logic, the idea of becoming. For Plato, as we have seen, sensation is a process in which the percipient reproduces the motion of the object by his own "means". This is a purely logical solution to the problem. But it still does not allow us to regard knowledge as equivalent to sensation. Plato's Socrates in his dialogue with Theaetetus considers this proposition in scrupulous detail.

It is soon made clear to us that, despite Theaetetus's assumption, knowledge is by no means equivalent to sensory perception. The repository of knowledge is our souls. The soul that sees with the help of the eyes, and hears with the help of the ears, etc. [1] But what can be sensed by means of one organ is not necessarily perceived by another. The soul, however, sees colour and shape with the eyes, hears sounds with the ears, finds out whether something is salted or not with the tongue, and so on. But with what organs does the soul have the sensation of being and not-being, of similarity and dissimilarity, of identity and difference? [2] In other words, has the soul any specific organs for knowing the properties of things that are common to them all and are not perceived by the eyes, the ears, or any other organ of the senses?

It is quite clear that the soul (consciousness) has knowledge of the universal, essential, and necessary, that this knowledge contains ideas (concepts, categories) such as the beautiful and the ugly, good and evil, quality and quantity, relation, cause, consequence and so on. And it is equally clear that by means of the sense organs we can apprehend shape, sound, the salty, the sour and so on, but cannot apprehend good, quality, cause, etc. And so for perceiving general ideas the soul has no helpers. "...The soul, so it seems to me, contemplates the universal in all things." [3] And it is

[1] *Socrates.* ...for which is more correct, to say what we see or hear with the eyes and with the ears, or through the eyes and through the ears?

Theaetetus. I should say "through", Socrates, rather than "with". (Ibid., p. 534).

[2] See Ibid., p. 535.

[3] Ibid., p. 535. Cf. "...the soul views some things by herself and others through the bodily organs...". (Ibid.)

the essence of things that the soul perceives by itself, abstracting it from the immediate specific things that it learns from the sense organs.

So to know an object means knowing its essence. Essence is a general feature that must be inherent in objects that may outwardly be dissimilar from one another. For example, kindness (as essence) inheres in a kind man, a kind woman and a kind child. The beautiful is common to a beautiful landscape, a handsome young man, a beautiful thought, and so on. In exactly the same way we know that all that exists must have a cause, but no matter how long we examine by experiment the separate properties of the Moon, which does not exist without a cause, not one of these properties would be its cause or show us the necessity of the consequences that the Moon itself may bring about. At every step man is concerned with the concepts of cause and effect. Then how does man's consciousness acquire the categories, the ideas of reason, which contain knowledge of the general and the necessary, but are not given to the reason by the organs of sense?

Plato was not the only philosopher who proved unable to answer this question. It remained a riddle for all the philosophers of the New Age and it is still a riddle for many of our contemporaries. For the contemporary "philosopher of science" the "contradictions of cognition" that Plato revealed in his time still remain insoluble. "...Plato's doctrine of ideas contains a number of obvious errors.... Something remains of what Plato had to say, even after all necessary corrections have been made. The absolute minimum of what remains, even in the view of those most hostile to Plato, is this: that we cannot express ourselves in a language composed wholly of proper names. But must have also general words such as 'man', 'dog', 'cat'; or, if not these then relational words such as 'similar', 'before', and so on. Such words are not meaningless noises, but it is difficult to see how they can have meaning if the world consists entirely of particular things, such as are designated by proper names." [1] This was the opinion of our contemporary,

[1] Bertrand Russell, *History of Western Philosophy*, London, George Allen and Unwin Ltd., 1948, p. 148.

Bertrand Russell. And he is right about one thing: yes, it was Plato who first stated this problem.

The fact that there is in the meaning of a word something not given directly to us through observation, something that distinguishes the knowledge expressed in a word from perception, and the fact that this something expresses the very essence of the object [1] led Plato himself to the conclusion that knowledge of the universal essence of many individual things is not merely different from sense impressions. It is nearer to their objective essence than to their external features. Knowledge of a thing is its unique idea, but this idea is not the sum total of the various properties that the sense organs tell us about. It is the idea of their essence that is not perceived by the eyes, ears and so on. What then is this essence that exists externally to human beings? How does it exist in the things themselves?

Remember the question: "Does the soul cotemplate this by itself?" Democritus would have said that this is light, true knowledge, and not opinion. So there is something to contemplate. What is it then? Like Democritus, Plato is helped by the logic of representing the object as something discrete. The essence of diverse objects that are moreover related to diverse forms (images) cannot be explained on the basis of one principle. The soul (by itself) cannot "see" something (a horse or the sea, for instance) and know at the same time why the horse is a horse, or the sea is the sea. All horses, all leaves, and so on, however different, have their own unique archetype, or pattern, according to which all the countless individual, transitory copies are made. Before all the separate leaves that appear on trees, turn green, yellow, fall and disappear foreover there exists in the "centre of the mind" an archetype leaf. It

[1] On this point Lenin writes in his conspectus of Hegel's book *Lectures on the History of Philosophy* (section, the Philosophy of Plato): "The concept is not something immediate (although the concept is a 'simple' thing, but this simplicity is 'spiritual', the simplicity of the Idea)—what is immediate is only the sensation of 'red' ('this is red'), etc. The concept is not 'merely the thing of consciousness'; but is the essence of the object (gegenständliches .Wesen), it is something An sich, 'in itself'" (V. I. Lenin, *Collected Works,* Vol. 38, p. 281).

is imperishable, it is eternal, it is the actually existing truth of all untrue, temporary, disappearing leaves.[1] And for Plato this archetype acquires independent, separate existence, and any human word ("horse", for example) therefore carries knowledge of necessity, universality, essence, because it signifies not so much the separate objects (not the animals that we meet here on earth) as their imperishable, eternal essence (the idea of "horsiness"). Our word, our understanding of the horse relates to the numerous terrestrial animals of this species in that they themselves are the transitory, ephemeral embodiment of the archetype of "horsiness", miserable copies of it that remind us of their one unique original.

The world existing outside us is thus doubled: the multiplicity of the objects we perceived has been supplemented by the multiplicity of their archetypes, their ideas. The first world is still unstable and liable to disappear. The second is eternal, true. The second, the world of ideas is proportionate and harmonious in contrast to the world of objects that we perceive. A strict hierarchy reigns in that "centre of the mind" where the ideas are concentrated. The idea of the horse (idea of all terrestrial horses) is dependent on, derives from the idea of the animal, the idea of the leaf from the idea of plant, and both from the idea of existence, and this latter, like all other ideas, from the idea of good. In Plato's philosophy the discrete "principles" of the various ultimate objects merge together in the primeval idea of being, which is good.

But the basic distinction between Plato's conception and the conception of the Greek atomists lies in the duplication of the world that we mentioned earlier. Democritus sometimes called his atoms ideas because they had an eternal immutable form that was peculiar to

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[1] Incidentally, the reader will note yet again that in dealing with the question of the relation of thought to being it is impossible to regard them in isolation from one another. The pre-Socratic natural philosophers seemed only to be talking about the essence of being but they arrived in this way at the problem of Logos, mind, soul, and the study of man's subjective abilities (Socrates' question, What is knowledge?) leads them to a definition of the world itself.

themselves; Plato does not strip his ideas of flesh and they are therefore also indestructible, eternal "particles" of true being that cannot be further divided. For Democritus, however, the world around us is made up of combinations of atoms; essentially it is nothing but atoms and vacuum. A man's soul may primarily be concerned with knowledge of temporary combinations of atoms (dark knowledge), but he may also penetrate to the true essence and come to understand that everything is ultimately reducible to combinations of forms, to the patterns and positions of indivisible particles. However, the "world of opinion" and the "world of truth" are only two levels of knowledge of the world. The world itself is one and possesses in itself its own cause and essence. This is why Democritus is generally regarded as the herald of the materialist line in philosophy.

Plato's two worlds, on the other hand, are two objectively existing worlds, one of which is the explanation, the cause and essence of the other. The world of objects that surrounds us is derivative, secondary in relation to the world of ideas, the world of imperishable archetypes of all things and phenomena, properties and qualities. According to Plato, this knowable and comprehensible world of ideas exists objectively, but it can be nothing else than the pure essence of things. This eternal and imperishable idea of the object detached from the object itself and bearing its "pure" essence is, in fact, the objectivisation of knowledge about that object.

So it was that not only knowledge of the world but the world itself and even man himself became divided into two. The human body belonging to the world of objects and possessing sense organs is, indeed, like everything else in the world, perishable and temporary. And it detects in the infinity of objective qualities that which only outwardly and transiently denotes the essence, but not the essence itself. The soul is quite a different matter! The soul is associated with the imperishable essences (ideas) and is itself the primary idea of our personal existence. The scalpel of Plato's thought, dividing everything that exists in the world into the world of ideas and the world of objects, also dissected man and placed the soul in one half and the body

in the other. (Compare this with Democritus's monistic understanding of the soul: globular atoms of the soul permeating all the pores and serving as the source of self-motion).[1]

Plato with his Greek love for the beauty of bodily forms, the harmony of the sensuously perceptible world, endowed his ideas (and soul!) with a special imperishable flesh. The contradiction between the incorporeality of the soul and corporeality of the organism would not arise as a problem very soon. And the inevitable had happened. A philosophical conception diametrically opposed to that of Democritus had come into being. Knowledge (or rather its objectivised content) had acquired the status not only of independent existence but of primordial existence determining the existence of the whole diversity of objects in which human beings lived and moved. In Plato it is not the world of objects that figures as knowledge. On the contrary, ideas, that is the objective content of our knowledge about objects, are credited with real existence.

Plato thus became the harbinger and founder of the idealist line in philosophy.

But even this treatment of the question "What is knowledge?", which makes knowledge of the essence of things synonymous with their objectively existing essence did not help to solve the question.

A fresh search for a solution to the riddle of knowledge and consciousness was launched by Plato's pupil, the great Aristotle. In his titanic work that embraced and reconsidered everything that had been begun by Greek thought Aristotle was unable to accept Plato's fairy-tale world of ideas. His criticism of "Plato's ideas" is devastating, and, as Lenin stressed, it "...is a criticism of *idealism as idealism in general*: for whence concepts, abstractions, are derived, thence come also 'law' and 'necessity', etc..." [2]

So as not to turn my freely ranging review into a series of lectures on the history of philosophy, I shall not quote Aristotle's criticism in detail. Any systemat-

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[1] This question is discussed in detail by S. Y. Luriye, *Democritus*, Leningrad, 1970, pp. 314-18 (in Russian).

[2] V. I. Lenin, *Collected Works*, Vol. 38, p. 283.

ic course on the history of philosophy will provide the reader with appropriate extracts from his "Metaphysics". But the characteristic thing is that in his argument against Plato Aristotle himself ultimately doubled the world because along with that "from which it is formed" (according to Aristotle, this is at the same time the passive possibility of being something), along with matter, he saw that which actively forms, that which realises the material possibility of being something, thus turning it into the reality of that "something". In other words he arrived at form.

How did this come about? For the same reasons as in Plato's philosophy, which he criticised. In a society in which thought and work, word and deed are divided, the constant dependence of every step forward in theory on practice is hidden from everyone, including the philosophers. And Aristotle, like his predecessor and teacher, sharply delimits knowledge as understanding (inherent only in creators, in the free "inventors" and "discoverers of art") and as sense perceptions (that is, the knowledge of individual things possessed by people engaged in practical affairs).[1] And once again we hear the familiar theme, "...we do not regard any of the senses as Wisdom; yet surely these give the most authoritative knowledge of particulars. But they do not tell us the 'why' of anything."[2]

So our problem crops up again on the pages of the "Metaphysics". Sense perceptions and reason, the general and the individual, phenomenon and essence fell apart and were frozen at opposite poles under the sway of social forces. The great Aristotle, whom Engels called, "the most universal brain of the ancient world" and Marx, "the Alexander the Great of Greek philosophy", did all he could to find ways of uniting the two poles, bridging the gap between them. And we are not surpris-

[1] "...But yet we think that *knowledge* and *understanding* belong to us rather than to experience and we suppose artists to be wiser than men of experience.... And this because the former know the cause, but the latter do not. For men of experience know that the thing is so, but do not know why, while the others know the 'why' and the cause..." (*The Works of Aristotle*, Vol. 1, "Metaphysics", op. cit., p. 499.)

[2] Ibid., pp. 499-500.

ed to find Lenin remarking, "Highly characteristic in general, throughout the whole book, passim, are the living germs of dialectics *and inquiries* about it . . . There is a naive faith in the power of reason, in the force, power, objective truth of cognition." But at this point he has to add, "And a naive *confusion*, a helplessly pitiful confusion in the *dialectics* of the universal and the particular—of the concept and the sensuously perceptible reality of individual objects, things, phenomena." [1]

The result of cognition is knowledge of the universal, the necessary. There must be universals in the world and in things, they must appear as their definition, their essence, what makes them what they are and not something else. The essence of things is not reducible to their tangibility, to the mere repetition of certain external features and certainly not just to one of them. Only the passive materiality of the world acts directly, like an imprint on wax [2], on our sense organs. But why then does man's soul recognise in this imprint the features of the universal? Why does essence show through phenomena?

Plato's answer, as we have seen, did not satisfy Aristotle. He tries to take the matter further. Is not the essence of the thing discovered by reason precisely that which makes it different from other things and able to act in accordance with its own nature? What is it, for instance, that makes a dagger a dagger or a globe a globe? It is not the material from which they are made (they could be made of the same thing) and it is not their various accidental, sensuously perceptible properties. It is their form. That is the answer. But not their external form; it is the structure, the organisation that enables them to be either a dagger or a globe. The human soul knows the essence in the imprint perceived by the sense organs precisely because that imprint contains the eternal idea of the thing which has been specifically built for the purpose for which it ex-

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[1] V. I. Lenin, *Collected Works*, Vol, 38, p. 369.

[2] *The Works of Aristotle*, Vol. I, "On the soul", op. cit., p. 656. Here Aristotle stresses that "by a 'sense' is meant what has the power of receiving into itself the sensible forms of things without the matter . . . in a way in which a piece of wax takes on the impress of a signet ring without the iron or gold."

ists. The imprint preserving the indication of form is only the beginning of knowledge. The work of the mind goes beyond the external qualities of a thing, which contain a mixture of the accidental and the necessary, the material and the formal (essential), and seeks to find the eternal, universal and necessary (form as such).

But form is essence only if it is the cause of all generation and destruction. "... However true it may be that all generation and destruction proceed from some one or (for that matter) from more elements, why does this happen and what is the cause? (Here Aristotle is criticising the pre-Socratic natural philosophers for their attempt to limit whole existence to material causes —*F. M.)*. For at least the substratum itself does not make itself change, e.g. neither the wood nor the bronze causes the change of either of them, nor does the wood manufacture a bed and the bronze, a statue, but something else is the cause of the change...." [1] The logic here is rigorous. Since the form is the essence, principle and aim, since the passive corporeality of matter is subordinate to it, form cannot be an internal property of matter itself.

Once again the world is doubled, but how much better than Plato's this new doubling is, let the specialists decide. The point I want to make is that the mysticism of the Aristotlian "form" sprang from what would seem to be the quite natural and ordinary contrasting of word and deed, and that it becomes established in the constant confronting of the particular (experience, sense impression, phenomena) and the general (reason, theory, essence).

Now Aristotle is able to answer the question put by Plato's Socrates: knowledge is cognition of the form of things. But in that case, as with Plato, consciousness (the soul) must itself be the form: like is known by like. But what is it that the soul must be the form of? "... Hence the soul must be a substance in the sense of the form of a natural body having life potentially within it. But substance is actuality, and thus soul is the actuality of a body as above characterised." [2]

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[1] *The Works of Aristotle*, "On the soul", op. cit., p. 502.
[2] Ibid., p. 642.

As a non-material form, the substance of body, the soul is concerned with the forms of things, with the universal that we seek and that exists "apart from individual things" but also "in them", making them the things that they are. The soul "... must be either the things themselves or their forms. The former alternative is, of course, impossible: it is not the stone which is present in the soul, but its form. It follows that the soul is analogous to the hand; for as the hand is the tool of tools, so the mind is the form of forms, and sense, the form of sensible things..." [1] This is a splendid passage. Take, for instance that "the hand is the tool of tools"! All tools are made by the hand, all tools are for the hand and the hand is for them. Here we are at one pole. Here there is no knowledge, theory, or intellect. Here there is experience based on sensation, on the impress of perceived qualities. At the other pole is the soul, the intellect. "Analogous to the hand", the soul exists for forms, and all forms are embraced by it. Intellect, soul are the tool of cognition working with the forms of things, as the hand works with their matter. Everything has a dual nature: it is *form-given matter*. Thus the objects of the objective world contain two elements. They are, as it were, a combination of the universal (form) and the individual (the matter from which form moulds the object).

But if we take a closer look at this "fusion" of matter and form we find that there is still no dialectical identity of the general and the particular. Form simply "endows sensuous things with eternal qualities". These words of Aristotle's about Plato's "ideas" may be used to characterise the doctrine of "forms". Nearly all Aristotle's arguments against Plato's "doubling" of the world are applicable to Aristotle himself. But he does not notice this. It seems to him that by uniting matter and form in the object itself he gets rid of the dualism of essence and phenomenon, the general and the particular, necessity and accident, the rational and the sensuous. But when it has to do with the forms of things, the form of the human body, the soul objectively finds

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[1] Ibid., p. 644.

itself in the same difficult position as Plato's "idea of man" recalling the "ideas" of things.

All that the soul can do now is strive to know the most general "forms", and Aristotle regards this purely philosophical cognition as the "most enjoyable and the best". It is just as difficult for the soul to sort out an infinite number of "concrete forms" defined by general "forms" as it is to deal with an infinite number of sensuously perceived qualities. And finally the existence of the "form"—the independent element driving and guiding matter—forces Aristotle to detach "form" from particular things, to turn the most general "form of forms" into the demiurge, the creator, the god, having an existence of its own, apart from matter. "And life also belongs to God; for the actuality of thought is life, and God is that actuality; and God's self-dependent actuality is life most good and eternal. We say therefore that God is a living being, eternal, most good, so that life and duration continuous and eternal belong to God; for this is God . . ." [1]

This is the point where Aristotle ceases to be a philosopher of ancient Greece and becomes the theological authority of the Middle Ages, created and supported for centuries by the fathers of the Christian church and the schoolmen.

2. Something about "Something"

But even in the "Dark Ages" (and they must have seemed very dark to the enlighteners of the Renaissance) the flame of philosophical enquiry was kept alive beneath the ashes of theological scholastics. The same "accursed" questions of knowledge and soul continued to confront those who pondered upon the meaning of the world, the meaning of God, on what we know about both of them.

Porphyry, a commentator on Aristotle, who showed a keen sense of the basic contradiction in knowledge, posed the following questions (1) do kinds and species exist independently or only in thought? (2) if they

[1] *The Works of Aristotle,* "Metaphysics", op. cit., p. 603.

exist, are they bodies or bodiless things? and (3) have they a separate being or do they exist in sensuous objects as well as outside them?

These questions certainly go to the heart of the matter. Where and how do the kinds and species (universals) exist? Answers to this question (we have examined them in outline) were given by those who believed that universals have real existence either as certain ideal elements preceding particular things (extreme "realism") or as forms of the things themselves existing within them (moderate "realism"). Many people regard the answer of the former as a return to Plato's "ideas" and that of the latter as a revival of Aristotle's contradictory attempt to combine the general and the particular.

But there is another possible answer to Porphyry's questions. Kinds and species, the universal as such, do not exist in reality. There is nothing general in heaven or earth, in things or before things, or apart from things. There are only particulars, things that are unique in themselves. Only the consciousness of man contains the general names that people give to various groups of particular things. If we give this answer to Porphyry's first question, we don't have to answer the other two. The nominalists (from the Latin *nomina*—name) thus open up a new path of investigation. We can leave aside the "extreme" nominalists, who denied all possibility of existence of the general in objective reality, but we should say something about the "moderate" nominalists, the conceptualists (from the Latin conceptus—concept).

In the introduction we were considering their point of view when we erected the pyramid of knowledge. The conceptualists were its first builders. Their logic, which established itself so firmly that to this day many materialists will acknowledge no other, is based on the "granite foundation" of contemplative philosophy. Its first and fundamental principle is that the world consists only of particulars. To them it is quite absurd to imagine that alongside the actual, particular, real cats in the world there is yet another "cat in general". But all cats possess general, repetitive features, properties, qualities. Our sense organs perceive this visible rep-

etition and give it the first name that comes to hand. The generality of the qualities in particular things is not "generality as such". It always exists as something particular. All cats have tails but there is a particular tail for every cat and not some tail "in general". The universals therefore exist only in consciousness, as the name with which the memory of the repetitive features of things is associated.

But we are quite justified in asking whether the conceptualists ever answer the question: "What is a concept?" Did they or did they not tell us how it appeared in our heads? Unfortunately the reply must be that having built their pyramid the nominalists merely buried the problem of the emergence of knowledge beneath it, and this constantly gave rise to intense controversies that inevitably involved the question of world-view. The whole history of the fight between empiricism and rationalism and even the fact that the principles of nominalism are used by the modern idealist semantic school bears this out.

Space does not permit me to trace the development of this struggle throughout the history of philosophy. But one can hardly imagine that nothing has changed since ancient times with regard to solutions of the problem with which this book is concerned. One often speaks of the New Age, and it was new not only because it superseded an older age. A new mode of activity and a corresponding new style of thinking became established in history. What brought about this change?

In the old days, theoretical knowledge of particulars and processes came about as an accident of knowledge of the world as a whole and there were good historical reasons for this in the mode of activity of the ancients. In the Middle Ages, too, the general principles explaining the world were also determined by specific interpretations of observed phenomena. Admittedly the principles themselves were different. The hierarchy of the feudal system, the political organisation of society found its ideological, illusory reflection in the hierarchy of the "celestial powers", in religion, and in its principles and dogmata. To the philosopher-theologians of the Middle Ages the world appeared to be a divine creation, the realisation of some supreme purpose. Its or-

ganic integrity lay in the fact that every separate "creation" seemed to embody divine providence, the striving towards the ultimate goal. Alchemists, doctors, astrologists, magicians, all proceeded from a speculatively assumed general to the real diversity of particular states. The very manner of such theorising left no room for experience, even in the experiments carried out by the alchemists.

What mattered to the theologians of the Middle Ages was not the *created* world as such, not its present qualities, but its universal basis—the purpose of creation which could be discovered only through divine revelation. For the medieval theologians the authority of the universal knowledge comprising the inviolable laws of being was reinforced by a way of writing comprehensible only to the initiated. And the predominant logical method of theorising was to proceed from this universal knowledge to definitions of particular phenomena.

But in the 15th century trade and industry began to have a decisive influence on the feudal organisation of society. Artisan work spread and manufacturing arose. The previous domination of agriculture over industry (country over town) was broken and manufacturing became the predominant material activity in the general system. The division, specialisation and cooperation of production lifted sensuous-objective, "experimental" activity out of the control of guild traditions.

The new structure of the social division of labour representing the developing forces of production of a new socio-economic formation destroyed the closed guild principle of activity with its supremacy of living labour over objectified labour, its mystique of the universal "formula" empirically discovered and preserved often as a secret of craftsmanship. And it was this new structure that made a knowledge of the "algorithms" of natural processes an essential condition of production itself. "The inherent development of manufacturing is the d i v i s i o n o f l a b o u r." [1] "The developed principle of capital lies precisely in making superfluous the special skill and manual labour, immediate physical la-

[1] Karl Marx. *Grundrisse der Kritik der Politischen Öconomie,* Heft VI, Dietz Verlag, Berlin, 1953, S. 480.

bour in general, in making superfluous both particularly skilled labour and labour based on muscular exertion; on the contrary special skill is to be instilled in the dead (inanimate) forces of nature." [1] The latter operate in the process of production as a system of machines and "... now, on the contrary, the machine that possesses skill and strength instead of the worker is now the virtuoso that has its own soul in the form of the laws of mechanics operating in the machine." [2]

So the cooperation that was characteristic of the newly developing industry and the division of labour that went with it naturally led to the algorithmising of each separate operation, now based mainly on the laws of mechanics. Marx noted that science, in becoming a productive force structured according to the current social division of labour and turning the dead forces of nature into means of production, evolved the aims and method of a theoretical approach to any object of cognition.

The method was spatial representation of the interaction of bodies and substances and investigation of the constant, invariant forms of this interaction. Mechanics was therefore the first and most general form of theory. Time itself—the content of the process—was the fourth coordinate of space, the measure for dividing spatial interaction. Engels wrote that this method, which Bacon and Locke had borrowed from natural science and applied to philosophy, became the specific limitation of subsequent centuries, the so-called metaphysical, i.e., anti-dialectical method of thought, and the empirical sciences of the New Age do, in fact, develop as a compendium of knowledge about separate mechanical, separate physical, separate chemical, biological and other constant properties (regular features) of the most diverse integral processes of development.

Clearly the predominant medieval method of thinking had offered no scope for the development of the experimental sciences. And those who undertook to study nature had first of all to evolve a method of approach. So, from the very start the science of nature (particularly mechanics) was confronted with the need to

[1] Ibid., S. 428.
[2] Ibid., S. 584.

study not only bodies and their interactions but also itself, its own method of investigating objects, and by criticising the logic of the Middle Ages that was of no use for its purposes, to create its own new method, new logic, a logic of deducing the general from the particular, experimental data.

This new method is full of surprises. It pushes the idea of an integrated scheme of knowledge of the world into the background. In fact, it ignores it. How could there be such a scheme? Where would it come from? Experimental science has a boundless field of as yet uninvestigated separate objects and their properties to research. The universal can obviously only emerge later by generalising all the conclusions from these separate researches. The main thing is to be able to make the primary generalisations from observations and experiment.

Experiment offers an infinity of interacting facts. The task is to find their point of contact in space among their countless "collisions", those that are necessarily repeated. These constant interactions (connections) of bodies are bound to reveal their essence, their essential nature. And this is the law of their being, a law which determines the properties that may and should serve humanity. The "dead forces of nature" can only come to life in the machine, when the machine by its action reproduces the laws (stable repetitive connections) of nature. How do bodies interact? On what does their interaction depend? On the bodies themselves, of course. The scientist has nothing else in view, so it must depend on their structure. The body thus confronts the researcher as a definite structure in space. So the only way of describing, defining, revealing the principle of action of this structure is to investigate its parts and their interaction.

Why do animals breathe? Because they are built that way, replies the science of those days. Here are the "parts" of their organisms and their interaction explains breathing as a process of interaction of their bodies with an external body (air). Why does a man see? Study the structure of the eyes, comes the answer from the science of the Renaissance. Why does he think? Study the way his head is made, and so on. Every ob-

ject of investigation, from boulder to brain, is thus treated like a piece of clockwork. The universe is a gigantic mechanism whose parts interact in infinite space in a certain way because they in their turn consist of parts interacting in a certain way because these too, consist of parts, and so on to—to what? Perhaps, to infinity? Perhaps this chain has no end? But, surely, there must be! The method of theorising itself pressuposes the existence of primary initial elements out of which the infinite universe is built.

Now we can begin to see how our "riddle" is interpreted in these forms of theory. We shall naturally pay our first visit to the philosopher, who, in the words of Marx, was the progenitor of "*English materialism* and all *modern experimental* science..." [1], to Francis Bacon.

It is at once apparent to us that Bacon is interested in the same question as we are. How does man acquire knowledge? What Bacon wants is a method of thinking that establishes a correct combination of experiment and reason, the separation of which has led to general confusion in the family of men. He wants a method laying down certain laws that we can use to correct the mistakes of the senses and experience and to acquire correct notions of things. Bacon provides a detailed set of such rules in an attempt to equip scientific research with the ability to move on from experimental study of particular phenomena, particular things, to general reliable knowledge about it.

No less clearly than the ancients he saw the contradictions in knowledge understood as contemplation of the objective world: the "deceptive light" of the emotions cannot serve as a source of true knowledge of "forms" (according to Bacon, the objective inherent laws of being). The "great restoration of science" that he undertook was designed to solve the contradiction between knowledge of the particular fact and knowledge of the general, knowledge of law. Here we have the classical formulation of a problem that split empiricism and rationalism right down the middle over the principles of logic.

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[1] Karl Marx, Frederick Engels, *Collected Works*, Vol. 4, p. 128.

But the logical principles of inductive research that Bacon evolved rest on the unstated assumption: to see is to know. Whatever mistakes a person may make in assessing particulars, he knows or understands something even when perceiving things by the "false light of emotion". But how? With the solid tradition of conceptualism behind him Bacon fully shared its epistemological credo. One sees what certain animals have in common and what distinguishes them from others. And this means that one has acquired some knowledge. The name given to the sensuous image embracing the similar allows us to discuss and think and have a sufficiently generalised picture before our eyes. So this is not the problem. The problem lies in the fact that people simply do not know how to use words. "Vicious and unskilful abstractions" are the main target of Bacon's indignation. "The idols of the market" [1], the most troublesome of all the idols that obstruct knowledge, is his way of describing people's inability to name things properly and to use names correctly. It is not difficult to see that, although the main urge behind the "restoration of science" is to find a method of proceeding from empirical knowledge to theoretical generalisations, the initial problem of primary knowledge, the relation between name and thing, while not stated explicitly, also worries the founder of English materialism.

"... Words are generally formed in a popular sense, and define things by those broad lines which are most obvious to the vulgar mind," [2] Bacon observes. The "vulgar mind" naturally does not follow the strict scientific rules of abstraction of which the philosopher dreams and which he strives to formulate. It relies on its own direct opinions, on what it sees and hears, on what it feels. "But by far the greatest impediment and aberration of the human understanding proceeds from the dullness, incompetence, and errors of the senses; since whatever strikes the senses preponderates over everything, however superior, which does not immediately strike them ... The senses are weak and erring, nor can

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[1] Lord Bacon, *Novum Organum*, P.F. Collier and Son, New York, 1905, p. 31.

[2] Ibid.

instruments be of great use in extending their sphere or acuteness." [1]

So, according to Bacon, the meaning of the words used by conscious beings depends on the various ways of generalising the outward attributes of things. Sense impressions in themselves are dull, deceptive and too weak for us to catch the true essence of things. The whole problem is how to "divide things", that is, how to classify them into kinds and species, so that things are given the most appropriate names. Before Bacon's time this had been done spontaneously, following the opinion of the "vulgar mind". Bacon's idea is to draw up clear tables of examples dealt with by reason and methodically compare what features are always present in certain things and what are absent, thus noting the different degrees to which a property manifests itself in them. This would ultimately yield strict scientific knowledge about this property in general, and its classification, as a form, law or necessity. Knowledge, he says, arises as a result of comparison, generalisation, elimination of the properties of things sensuously observed in experience. So the whole point is to produce a strict scientific system of generalisation and abstraction.

So far so good! But we still have our doubts. Can even the simplest knowledge of things emerge as the generalisation of their sensuously perceived properties. Having refused to accept the opinion of the "vulgar mind", Bacon tries to arrive at true knowledge of heat, for instance, to find a "form", a law of heat. In doing so he assumes that knowledge (opinion, notion, concept) is a simple combination of the sensation gained from contact with frequently repeated properties plus the word that designates it. But is this assumption correct? Another look at what Bacon has to say tells us that the meaning of even the simplest word cannot be reduced to the retention in the memory of common sensu-

[1] Ibid., pp. 26, 27. Bacon clearly sees both the lack of coincidence between the property of a thing observed by contemplation and its essence, its form, and also the impossibility of expressing this essence through empirical reasoning. "But it is only for God (the bestower and creator of forms), and perhaps for angels and intelligences, at once to recognise forms affirmatively at the first glance of contemplation: man, at least, is unable to do so" (Ibid., pp. 146-47).

ously perceived properties. "Take some word, for instance, as moist, and let us examine how far the different significations of this word are consistent. It will be found that the word moist is nothing but a confused sign of different actions admitted of no settled and defined uniformity." [1] To Bacon it seems that "... it is quite clear that this notion is hastily abstracted from water only, and common ordinary liquors, without any due verification of it".[2]

The methods he proposes for more precise "abstraction" demand a clear knowledge of far more abstract concepts than that of moistness. And even if we assume that common concepts are simply sense perceptions and notions that have been given names for convenience of intercourse, the problem is still not where Bacon hopes to find it.

The common concept (sensation, image plus word) of, say, heat allows us to express the thought: this thing is warm. But how are we to know what law ("form", "essence", the term doesn't much matter) always evokes one and the same (or differing in degree) sensation of warmth? I can analyse, compare, "eliminate", generalise, and so on, all the possible cases of heat sensation only to the extent that I have a notion of "abstraction", "comparison", "analysis", "cause", "phenomenon", "essence", and so on. One can scarcely define these concepts as sensuously perceived properties, sensations or images that have merely had words attached to them. They could only arise through exceptionally complex cognitive effort. So before he even begins to investigate what is given in the experience of the senses, the individual must have a massive arsenal of logical weaponry. And where can he get it?

Bacon complains that simple words such as "moisture" and "heat" are incorrectly abstracted from things and proposes the method of induction as a means of correcting the error. But where and how does he obtain the logical rules and methods of induction? Every step in inductive research rests on the granite foundation of already existing general concepts. Bacon himself sees

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[1] Ibid., p. 32.
[2] Ibid., p. 33.

as well as we do that the word moist is nothing but a confused sign of different actions admitted of no settled and defined uniformity.

Then how is it that people understand each other when they use this word? Even in the commonest word, or rather in its meaning there must be something that cannot be reduced to separate sensations or images, that is understood even when a person has no time or is unable in principle to remember his sense perceptions, something that reflects not so much the outward appearance of things and their separate properties as that which is hidden from the senses, a certain significance of the object or its properties. What is this Something that makes the words we use comprehensible, and that often refers to completely dissimilar things and cannot be reduced to sense impressions?

The philosopher Thomas Hobbes also sought a mathematically exact method of ensuring the authenticity of common ideas and relying on experience. Hobbes reasoned that since people have no difficulty in noticing the connection between things that follow one upon another, one phenomena could act as a mark to remind us of another. The sight of a cloud, for instance, warns us of the approach of rain, a cloud is the mark of rain. And such marks can be used not only for memory's sake, but to inform other people. In this case Hobbes thinks that it is better to call such marks "signs". A mark is the information that people receive about the objects themselves, whereas a sign is a special mark, used for the exchange of information. A sign is the mark of marks (the signal of signals). If you simply say "rain", that is simply a mark-name that people give to an atmospheric phenomenon. But if you use a number of names in a definite order: "we had some rain last night", you are using names as signs because you are conveying a certain message and not simply naming a phenomenon. And here we come to Hobbes's categorical definition: "Words so connected as that they become signs of our thoughts, are called SPEECH, of which every part is a *name*."[1]

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[1] Hobbes, *Selections*, Charles Scribner's Sons, New York, 1930, pp. 14-15.

Now we must examine Hobbes's basic idea. The sounds made by human beings are the marks of their thoughts, notions, and sensations. We use them to remind ourselves and tell others what we perceive, experience and think. But since "the causes of names are the same as the causes of our ideas", the real properties of things, we relate the names to the things themselves. This is where we see the actual logic used in conceptualism, a logic that, on the one hand, has been convincing enough to satisfy all the demands of common sense for centuries and, on the other, a logic whose initial proposition comes into insoluble contradiction with the further course of the argument.

When a person directly perceives something, an object or phenomenon, he has no need of signs. The object speaks for itself and is clear enough for the individual contemplating it. The whole point is not to forget one's impressions, to keep them in the memory.[1] This is why Hobbes himself gave marks to his impressions and thoughts about them. So that all his knowledge should not die when he died, these marks were communicated to other people, thus becoming signs and, when correlated to the specific impression of the specific object, names.

But is that the whole argument? Surely every word registers not so much the external repetitive sensuously perceptible properties as the general meaning of phenomena. But how? Why can the essence of sensuously perceived phenomena be described only by names indicating not separate, "clearly perceived" things, but whole groups of primary names (kinds, species)? After all, according to the logic of conceptualism the impression of separate sensuously perceived cows should constitute a piece of knowledge to which the name "cow" adds nothing. When he gets to know about an individual cow a man knows that it feeds its young on milk. What new knowledge is contained in this statement: "The cow is a mammal"? "Mammal" is simply another name indicating something we know already (and nothing more!).

This is just what Hobbes says: the sentence "man is a living being" is true only because somebody at some time had the idea of giving these two names to one

[1] See Ibid., p. 15.

and the same thing. Their connection in a statement by means of the copula "is" adds nothing to our knowledge of man. But if this is so why do we try to define (by comparison with related types or species, for example) our terms and concepts? Why is science not satisfied with something that appears to be obvious? Why does it try to get to the bottom of things, to understand something that is not to be seen at first glance? Again we are up against the same "fateful" questions.

And now we come to the most difficult question for conceptualism: what real thing is signified by the names "essence", "cause", "necessity", and so on? We use these names to build scientific knowledge. Hobbes himself uses them to find a mathematically exact method of cognition. But they do not signify, and by their very nature cannot signify, any sense impressions or objects. Then what do they signify? "... The first beginning, therefore, of knowledge, are the phantasms of sense and imagination...." [1] writes Hobbes; man gives them names. And is that all there is to it? In all history up to the time of Hobbes, was philosophy just fighting the windmills in trying to find out how man discovers the hidden essence of things and what that essence is?

No, it was not such a useless process as that. In Hobbes's own philosophy "phantasms" of sense and imagination are ultimately not those things that are "more known to nature". "...By those things that are more known to us we are to understand things we take notice of by our senses, and by more known to nature, those we acquire the knowledge of by reason". [2] But how do we acquire the knowledge of them? That is the question. And the nominal theory does not answer it. The objects "more known to nature" and cognised by reason, that is, the essences, the causes of things, the necessity of their being, are from the point of view of nominal theory only signs indicating our thought about specific objects. That is why, according to Hobbes, both space and time cannot be things themselves. Although our spatial notions arise as a result of the action of things, space, like nearly all the other accidents

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[1] Hobbes, *Selections,* op. cit., p. 44.
[2] Ibid., p. 45.

(that is, the forms in which we conceive of the body) exists as such only in the consciousness. Here, for example, is what Hobbes writes about people's notion of time: "... they must needs confess it to be, not in the things without us, but only in the thought of the mind." [1]

As the reader has probably noticed, the things "more known to nature", those we acquire knowledge of by reason, are in fact our "Something". Hobbes was unable to answer the question of how "things more known to nature" become known to the mind. It is this question that occupies the attention of Descartes. But he too regards cognition primarily as contemplation. In his view what we have to do is to work out a method by which the human mind can reach a reliable judgement about the "objects we encounter". But neither the senses themselves nor the generalisation of repeated sensations of the properties of things can be fully trusted. Even the sensation of one's own body is at times deceptive. It is no accident that people who have lost a leg tell us that they sometimes feel a pain in the toe of the missing leg. On the contrary, this something that seems to be so comprehensible at the mere mention of its name cannot be merely the sensuous, external image of an object, its individual, accidental property. This cognisable Something is the clear, necessary essence that is not veiled by the "deceptive light of the feelings".

It would appear that to discover how the reason can grasp the essence of things one must question all the forms and means of cognition, everything that man considers sufficient for acquiring knowledge until in the end one comes to the something that cannot be judged, that must by its very nature be trusted. The conclusion reached by Descartes needs no detailed commentary: I may doubt everything, even the fact that I actually have a body, that I feel, but I cannot doubt that I doubt, therefore I think, and since I think, I must exist. Cogito ergo sum (I think, therefore I am). Does this knowledge require any proof? It is given to me with the fact of my existence. It is clear, definite knowledge, something I know intuitively. I come into the world with it,

[1] Ibid., p. 70.

as it were, and together with me come this knowledge and all similar innate ideas. Yes, in my soul there is Something that is revealed to me not through the contemplation of things, something that is true not just because I see it. To illustrate this, here is yet another quotation.

"...Let us take, for example, this piece of wax: it has been taken quite freshly from the hive, and it has not yet lost the sweetness of the honey which it contains; it still retains somewhat of the odour of the flowers from which it has been culled; its colour, its figure, its size are apparent; it is hard, cold, easily handled, and if you strike it with the finger, it will emit a sound. Finally, all the things which are requisite to cause us distinctly to recognise a body, are met with in it. But notice that while I speak and approach the fire what remained of the taste is exhaled, the smell evaporates, the colour alters, the figure is destroyed, the size increases, it becomes liquid, it heats, scarcely can one handle it, and when one strikes it, no sound is emitted. Does the same wax remain after this change? We must confess that it remains; none would judge otherwise. What then did I know so distinctly in this piece of wax? (that is, what tells us that this changed wax is still wax?—*F. M.*). It could certainly be nothing of all that the senses brought to my notice, since all these things which fall under taste, smell, sight, touch, and hearing, are found to be changed and yet the same wax remains..." And directly after this comes the conclusion. "...But what must particularly be observed is that its perception in neither an act of vision, nor of touch, nor of imagination, and has never been such although it may have appeared formerly to be so, but only an intuition of the mind...." [1]

Here is our Something once again. Everything that can be sensuously perceived in the wax has changed, but the Something remains—the wax is still wax. It is clear to Descartes that in the process of contemplation it is impossible to abstract this simple but essentially necessary property from the sensuously given thing.

[1] René Descartes, *Meditations,* Encyclopaedia Britannica Inc., William Benton, Publisher, Chicago, London, 1952, p. 80.

This is known to us because certain ideas by means of which our reason understands the essence of things are born along with reason itself, by the will of the benevolent creator who made us. [1]

Descartes maintains that the soul (intellect, mind, consciousness) has the ability to perceive the everlasting essence through the changeable appearance of things thanks to certain general ideas that are given to us by God. The individual's consciousness is endowed with a "natural light", that is independent of the individual himself or his experience—a property or ability that in those days would have been hard to explain without resorting to the help of God.

But here we come to the heart of the matter. I am, of course, tracing the development of Descartes's thought, but this is no substitute for the original. And if you read Descartes not merely for the sake of classifying his knowledge, if you can get away from specific comparisons of what Descartes knew about physiology and what we know about it today, you will see how much deeper than many of our contemporaries the great philosopher felt and understood how to state the problem of the soul, its abilities and passions.

The greatness of Descartes lies in the fact that, although obliged to use the method of theorising described above (and Descartes was one of its founders), he did not allow himself to be lulled by the optimism that this method evoked. No, he says, within the framework of the mechanistic interpretation of the world as an infinite assembly of interacting structures the problem of consciousness is insoluble.

Judge for yourself. The first and main definitive property of the body, so Descartes assumes, is extension. Everything we can say about corporeal substance is ex-

[1] It would be exceptionally interesting to study the role played in philosophy by the Cartesian god, and also Spinoza's god, and any other "philosophical god". Such research would be an extremely important contribution to our goal. But since only a few words may be said about it here, we must stress that the universal, the impersonal that exists in relation to each individual personality as something objective, consciousness (god), endowing human reason with special knowledge that does not depend on individual experience, is nothing else but the social consciousness mystically interpreted by contemplative epistemology.

pressed in terms of space, or "physical" time. But none of these concepts are any help at all when we come to defining the state and "passion" of the soul. It is impossible to compare the movement of a body covering a certain extent or distance, with the extra-spatial movement of thought. This is not a question of speaking or writing in signs expressing thought. In that case the only problem would be the distance covered by the tongue in the mouth or the pen on paper. These movements are corporeal and my thought can become known to other people with their help. But try to indicate the distance that thought covers when originating in my consciousness. Admittedly, such attempts are being made to this day. What people discuss nowadays is not the amplitude of the motions of the tongue in the mouth or the course of the pen on paper, but the motion of nerve impulses along the neuron "chains". Descartes would probably have said that there is no fundamental difference between all these measurements of the movement of corporeal intermediaries, that the whole problem consists in the fact that thought is only a spiritual phenomenon and only deserves the name of "thought" when it is about *something*, when we are concerned with its content. This is what is meant by the Cartesian proposition that the movement of the soul cannot be conveyed by means of concepts that are necessarily used to define the movement of corporeal substances. And, vice versa, everything that we can say about the "passions of the soul" is inapplicable to extensive substance.

The problem was what essentially determines the difference between space and thought and it took the philosophical wisdom and methodological insight of Descartes to find another solution to the problem, a solution that did not involve the invention of a "spiritual fluid", some kind of "philogen" or "spiritogen" (by analogy with "calorigen") that was "responsible" for thought. Although there would seem to be nothing simpler than to find a corresponding corporeal structure for the properties of human thought (soul) because every property is determined by a corporeal structure.

Descartes was convinced (and I am almost quoting him) that to understand the life of any organism, including that of man, there was no need to know any oth-

er laws except the laws of mechanics. In his assiduous study of the corporeal mechanisms of life, he regarded even the most complex behavioural acts of animals and human beings as reflexes, as combined reactions of a complex body to external influences. Even tears and the expressions of pain, satisfied grunting and human laughter are nothing more than the reflex action of the mechanism of the living body. But for Descartes a "thought body" would be a hot ice-cream. He could see that the incompatibility of the two substances—extensive (corporeal) and spiritual (thought)—lay in the fact that no structure of the body could in itself account for what we call thought. Descartes—one of the creators of the mechanical picture of the world—was enough of a philosopher to exclude thinking from the mechanics of bodily interaction. Nevertheless, even three hundred years after his death some natural scientists and some philosophers who follow them in every respect are engaged in the detailed description of a specific body whose physical structure, so they imagine, engenders all mental functions as such.

In his mechanical picture of the world Descartes could find no place for thought. And since the prevailing method of theorising could not even presuppose any other picture, he was compelled to regard thinking as the action of a special spiritual substance differing from the extensional. In this way Descartes posed the famous "mind-body problem", the problem of the causal connection between the soul (psyche, consciousness) and the body (primarily the brain). Only in the logic of mechanicism is it formulated as a problem.

Descartes expressed the contradiction between the "spirit" and "body" as something truly dialectical. The high tension between its two poles had to be relaxed. Attempts to reduce one pole to the other could serve only as an apparent relaxation. This is the subtlety of Descartes's position. While staying within the framework of mechanicism, he is nevertheless clearly aware of its narrowness. This is the only way we can understand the ambivalence of his position. He seeks a causal dependence between thought and corporeal substances and at the same time clearly demonstrates the futility of any such search. So this "ambivalence" is nothing more than an

expression of the internal contradictions of mechanicism. Descartes is therefore a dualist. And this dualism (or it may also be called "mind-body parallelism") at least clearly portrays both "poles" of the problem. But if this is so there must be some mediation between the poles, there must be a go-between, some third party in which both opposites are joined. For Descartes the go-between is God, with whose help one is ultimately able to ensure the interaction of the two substances.

But was there any other way? Yes, there was. Spinoza found another mediator, although, as tradition demanded, he called it God. But this god turned out to be so "unreligious" that its inventor was anathematised by the church and black-listed forever as an atheist.

Spinoza found his god "intuitively", that is, by a method not envisaged in any of the rules of formal logic. He found it because he clearly saw the impossibility of reducing "thought" to "body" or "body" to "thought". Spinoza's answer was truly dialectical. The third element, he said, was the integral, general foundation of the two opposites. This was the one universal substance, God, Nature. And the interesting thing is that Spinoza virtually eliminated the Cartesian mind-body problem by arguing that the spatial motion of certain "modes" of this substance reproduced the properties of other "modes", and always reproduced them on the basis of the general universal principles of the integral Nature-God, which turns spatial motion into the mediated relationship of nature to itself, into its self-reflection, into thought. This argument does not, of course, solve the difficult mind-body problem, but Spinoza is not really concerned with it. Why should he try to solve it if it is a problem only when theoretical thought becomes hopelessly lost amidst countless numbers of separate facts and is unable to rely on its own general forms! The problem of the responsibility (as a modern author would have put it) of the corporeal structures for producing incorporeal ideas becomes a problem only when the thought of the natural scientist is focussed on ready-made, completely formed things in their direct, present existence. Only then can the question arise: "How can spiritual, ideal thought emerge directly from the spatial interaction of soulless material bodies?"

The method of natural scientific theorising about things is in itself designed to build the *whole* (general picture of the world) from the separate *parts* (particular knowledge of the properties of separate things). Spinoza goes beyond this method because it is his philosophical aim to understand the place and role of every part, "mode", in the general plan of the whole, to understand the part as a separate *manifestation* of universal, integral Nature. The whole, in Spinoza's philosophy, is more than the sum of its parts, because it is present wholly in each one of its parts and creates the parts that are lacking. Therefore, extensional, corporeal substance which reflects on itself as a whole in each of its "modes" —particularly in man—correlates any spatial change with its universal essence and sees itself as its own reflected, mediated *definition.*

The spatial corporeality of substance thus not only does not exclude thought, but on the contrary is its essential condition. The movement of the hand that describes a circle does not require that there should be something in the hand itself, in the body in general, or in the brain as such, that would take the form of a circle as a "codified" image of an external circular object. The image of the circular object is created by the movement of the hand according to the logic of the object itself. The hand's spatial movement builds its form, coordinating itself with the form and reproducing its *objectivity.* A "mode" of substance—in this case, a human body—must be built so that its motion can reproduce the external, objective properties of other "modes". In his spatial actions a human being is capable of reproducing any properties of any "modes". In this he is helped by the tools that he creates. But his thought is nothing else than reproduction correlated with the unified essence of all substance in the modes of his corporeal activity, of properties of the substances of nature that are external to him, i.e., objective.

Spinoza's discovery was not, alas, appreciated as it deserved to be either at the time or later. Developing scientific knowledge did not find it satisfactory. Science was faced with the task of understanding how the individual facts observed in experience become a general concept that illuminates our life with the light of reason.

After Descartes the great English materialist John Locke has to begin all over again. Locke's classical work *An Essay Concerning Human Understanding* starts with a clear statement of "our" problem: how do ideas (concepts) come into the mind.[1] And the point here is that they come and are not already present there from birth, Locke is firmly convinced on that score. He methodically examines all the arguments in defence of innate ideas and rejects them one by one as unfounded. All knowledge lies in experience and comes only through experience; there is nothing in the reason that has not been in the sensations, in the direct experience of the individual. Individual consciousness (and can there be any other?) is filled with knowledge in the course of personal, individual experience by means of the "contact" of our sense organs with the objects of the external world.

Locke gives a classical description of the pyramid that we already know so well.[2] But from its summit one still cannot see the Something that exists in every name, in every idea, in every term. The Cartesian experiment with wax cannot be ignored because the logic of rationalism contains a "grain of reason". The contradictions in the philosophy of Locke's predecessors—Bacon and Hobbes—also demand a solution. And Locke explains the ability of the mind to understand the general, necessary, essential properties of things that cannot be perceived by the sense organs in the following way: the mind, which receives all information about things from the sense organs, has the inner ability to evaluate its sensations, to register and classify them. The relation of the mind to this ability is, in fact, reflection, which enables us to acquire ideas that we have not gained from experience. The thing that made Hobbes regard accidents not as the properties of substance but as the properties of our mind, makes Locke deduce ideas that by virtue of their universality and necessity organise and guide the experience of the individual, directly from the mind's cognition of its own abilities.

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[1] See John Locke, *An Essay Concerning Human Understanding,* Meridian Books, Cleveland and New York, 1964, pp. 66-67.
[2] See Ibid., p. 129.

A son of the 1688 class compromise in politics, Locke as a philosopher allowed himself to arrive at a compromise with rationalism under the influence of the logic of scientific research. With the inexorability of an internal law this logic forces the scientist to pass some judgement on the fact that the activity of the individual consciousness is guided, organised by ideas that cannot be explained by analysis of his personal sensuous experience. For anyone who regards consciousness as a natural gift to the individual it is impossible to explain the extrasensuous and relative independence from experience of a number of "abilities of the mind" otherwise than as the "discovery" of innate, immanent, a priori properties in the mind itself.

The fact that Locke's concept of reflection is an attempt to explain the presence of the ideas in the mind not acquired directly through the individual's sense experience was duly appreciated by all his critics, and particularly his main opponent—Leibnitz. Defending the Cartesian thesis on the existence of innate ideas in our consciousness and asserting that the human consciousness cannot be a tabula rasa from birth, Leibnitz writes that Locke's reflection "is nothing but attention to what is given in us and it is certainly not the senses that give us what we bring ourselves. If this is so, it can scarcely be denied that there is much that is innate in our minds because we are, so to speak, innate in ourselves, or that in us there are existence, unity, substance, duration, change, activity, perception, pleasure and other objects of our intellectual ideas.[1] "So," Leibnitz continues, "I am inclined to think that essentially the view of our author (Locke—*F. M.*) on this question, does not differ from my own views or rather from the general views since he acknowledges two sources of our knowledge—senses and reflection." [2]

The great sensualist materialist did not arrive at the idea of reflection by chance. The literature on Locke often suggests that he was inconsistent. Although a materialist in his understanding of the origin of knowledge from sensation, Locke spoke of the observation of the self-

[1] G. W. Leibnitz, *Neue Abhandlungen über den menschlichen Verstand.* I Band. Insel-Verlag, Frankfurt am Main, 1961, S. XVII.
[2] Ibid., S. XVII-XXI.

activity of our soul—and this is, in fact, reflection—which thus acquires ideas that are not given in the sensation. But how can one be consistent when standing "on the granite foundation" of the conceptualist pyramid? Perhaps, having once allowed himself to be beguiled by the arguments of "common sense", Locke should simply have taken refuge behind the pyramid and not seen all the difficulties that beset Bacon and Hobbes? Perhaps he should not have felt that there was something in Cartesian logic and should simply have claimed that there is nothing in the reason that was not previously in the sensations? If this is how Locke's consistency should have demonstrated itself, then one must not forget the "consistency" of Berkeley, who "proceeded" from Locke and rejected his reflection, arguing that if it relied only on reflection the intellect would indeed have no other knowledge except knowledge of our own sensations. This "iron logic" of contemplative materialism should be recalled by those who even today share Locke's sensualist and conceptualist principles, even if they do reject the inconsistently introduced reflection as a concession to idealism. (Here, of course, it would be more exact to say rationalism, but for those who consider that materialism is conceptualism, any deviation from the latter is a turn towards idealism). The reader must forgive me for the paradox but how much more consistent is Locke's inconsistency than the usual idea that "seeing is knowing"!

What I have been saying up to now is an introduction to the idea that the contradiction in Locke's *Essay* is the basic internal contradiction in the pre-Marxist theory of knowledge, and thus the inconsistency of Locke's epistemological doctrine as an individual philosophy turns out to be the consistency of the objective development of philosophy as a science.

Not only philosophy, but natural science itself constantly revealed the limitations of empirical notions at every stage of its development. Mechanics clearly demonstrated that its general principles (laws) are not generated by the method of generalisation from the "particulars" of objects studied through experiment. On the contrary, if theory blindly followed what was observed in experience we should arrive at a contradiction. For example, why and in what case do bodies move

steadily and in a straight line? If we judge on the basis of experience, it is because and when an external force is applied to them: horse and cart, man and wheelbarrow, and so on. In all other cases the body moves either with acceleration (downhill) under the influence of gravity, or (in the two other cases, on the level or uphill) slowing down its movement. But Galileo drew a conclusion directly opposite to that which is required by empirical generalisation: a body moves straight and steadily only when *no* external force is applied to it.

One only had to interpret certain experimental data by applying certain principles not deduced from these data, one had only to rely on the abstract-logical thinking with universal forms of thought and the conclusion became a law explaining experimental data. But how? In contrast to what was sensuously perceived.

Today such theoretical conclusions seem quite obvious, almost directly observed facts. But we have only to recall the desperate resistance put up against them by "ordinary common sense", based on thousands of years of the experience of perception, to understand the revolutionising role that the general forms of our thought played for theory, and this is not to mention the notions of modern physics constructed by the imagination on the basis of the semantic, physical interpretation of purely mathematical operations.

As Kant wrote in his time (the example, incidentally, is taken from him), "...natural philosophers ... learned that reason only perceives that which it produces after its own design; that it must not be content to follow, as it were, in the leading strings of nature, but must proceed in advance with principles of judgement (general forms of thought—*F. M.*) according to unvarying laws, and compel *nature to reply to its question*.... Reason must approach nature with the view, indeed, of receiving information from it, not, however, in the character of a pupil, who listens to all that his master chooses to tell him, but in that of judge, who compels the witnesses to reply to those questions which he himself thinks fit to propose...." [1] Admittedly Kant credits natural philo-

[1] Immanuel Kant, *The Critique of Pure Reason,* Encyclopaedia Britannica, Inc., William Benton, Publisher, Chicago, London, 1952, p. 6.

sophers with a methodological insight that, as a rule, they do not possess. The natural philosophers of the time had not as yet quite "understood" how reason should deal with nature. But Kant did note the fact that this question had objectively become highly important for natural philosophy and was able to refer to the "thorough thought" in the experiments of Galileo and Torricelli.

Consequently the development of natural science also demanded an answer to the question of the origin and essence of the general forms of thought, which plays such an essential role in the cognition of nature.

3. When Is Kant Right?

What are these general forms of thought and what are we to do about our Something that, although present in every concept, is fundamentally irreducible to the sensuously perceived external appearance of the object? It cannot be inferred necessarily from individual experience and yet it is extremely active in determining this experience.

Now we see why we have had to make this historical excursion. It **has** helped us to note two extremely important points.

First, in the history of philosophical thought the process of acquiring knowledge is indeed regarded as an individual process of reflection of the mind's cognition of an infinite variety of sensuously given individual things.

And, second, we have seen that this notion of the process of cognition encounters an insoluble contradiction: sensuous experience is always concerned with the separate and accidental, while consciousness operates with something extra-sensuous, a Something comprising only the general, the necessary, the essential knowledge of the most diverse and sometimes externally dissimilar separate things and phenomena.

These contradictions revealed themselves to the full in the philosophy of Immanuel Kant. We must note from the start that for him, too, experience is only the individual intelligence's treatment of external sensuous impressions. In experience man has to face nature alone, and it is only thanks to his natural abilities that

he can pass any judgements about his environment. Man, the subject of cognition, the knower, contemplates in his experience the diverse world of separate phenomena and this "contemplative" experience awakens his cognitive ability. This is Kant's initial epistemological position.

No wonder, then, that this German philosopher had to remark: "... experience, no doubt, teaches us that this or that object is constituted in such and such a manner, but not that it could not possibly exist otherwise". [1]

What then is the solution? Kant's predecessor, the English philosopher David Hume, found a solution, although it was rather a strange one. Experience is the source of our knowledge, he reasons. But what are we to do if experience does not guarantee the truth of universal necessary judgements? Hume decides simply to reject the faith in the authenticity and necessity of such judgements. Who can really say whether all changes have a cause? No one can test this by experience because it is obvious that he cannot come into contact with all the changes that have occurred, are occurring and will occur .... In his experience he sees that something repeats itself and apparently without exception. From this he draws the conclusion that this is how it should be, that the repetition is not accidental, and that here we have a law. That is how it always has been and how it always will be. And suddenly in some new experience it is discovered that it does not and will not always occur like this. Then of what value is the previous judgement?

In its time the classical example of authenticity, universality, necessity was the conclusion reached from experience that "all swans are white". And it seemed to be quite true that no matter what swans we happened to see they were all white. So here is a law, true of both the past and the future, was the hasty conclusion that people drew from their empirical observations. But it turned out that in Australia there were black swans.

In the same way people insisted that every change has a cause. But, in Hume's view, where is the guaran-

[1] Kant, op. cit., p. 14.

tee that somewhere, if not in Australia, then on some other planet or in the microworld there are not some changes that occur without cause? But in that case the very concept of "cause" is placed in doubt. Perhaps there are in fact no causes and man has just become accustomed to thinking on the principle post hoc, ergo propter hoc (after this, therefore because of it). Who can tell? Doubt everything — that is the only correct position for scientists if experience is insufficient grounds for the necessary conclusions. This was the conclusion reached by Hume who, as Kant aptly put it, steered his ship of knowledge on to the sandbank of scepticism and left it there to rot. This was obviously not a solution but a dead-end.

So the problem still remains unsolved. We have not moved an inch forward in solving it if along with Kant we merely scold Hume for scepticism. But the analysis of experience does not help us. Kant realises, if anybody does, that sensuous experience is possible only thanks to the fact that we are guided by general necessary knowledge that is not derived directly from experience. It is this knowledge that gives experience its form. For Kant this is so clear that he regards it from the start as an axiomatic proposition: a necessary judgement, something that is affirmed or denied as a necessary attribute of the object of our thought, something that in all cases must be present (or absent) in the given object, such a judgement cannot be based on experience, does not follow from experience, but precedes it. The judgements of necessity are a priori (before experience) judgements.

So, according to Kant, the necessity and universality inherent in our knowledge are not drawn from experience. But where are they drawn from then? Perhaps they are put into our consciousness by God in the form of innate ideas? No, God does not intervene directly in the specific business of cognition. A priori knowledge is not congenital. As knowledge of something it does not exist in the consciousness at the moment of birth. According to Kant, a person is born with a certain capacity to perceive and know, with the ready-made abilities to see, hear, smell, and so on. The perceptive abilities thus emerge as something that is formed before experience,

that is given in man a priori. This, according to Kant, immanently inherent ability has its own organisation, its own peculiarities, and limits. It can be investigated, man's thought constantly rests upon it either consciously or unconsciously, and finally, it arises before our mental vision as a field of pure contemplation, as pure space and pure time, stripped of all objective attributes.

Try for a minute to close your eyes and see absolutely nothing. The sensuous expectation of an image unfolds before you like an empty screen. The pure ideal subjective space of this empty screen is ready to accept the image of any object, but it can also exist before our mental eye without anything on it. And it is on this screen, according to Kant, that thought draws the ideal "line in general", the "ideal circumference", the "ideal triangle", and similar objects of pure contemplation that we never encounter in experience, that are not abstracted from individual objects and that possess the true merit of universality and necessity. Here "triangularity" turns into a visible triangle, right-angled or acute-angled, equilateral or isosceles, and so on. But all these properties, unobscured by the deceptive light of the feelings, are revealed to our astonished gaze as purely necessary, as purely universal properties, as the necessary and universal law of angles and sides.

In order to reflect the external world, says Kant, we need a special screen provided by nature for projecting the impressions received from the contemplation of the external world. This screen is pure space; the duration of the events that occur upon it is pure time. Time and space therefore are the subjective sensuous receptacle of the future impressions of experience. If man concentrates his attention on the necessary properties of the "screen" and on the laws of the "projection", then he will be concerned with the unvarying, the eternal, the strictly necessary and the universal. Judgements revealing the necessary properties of space and time possess unconditional authenticity and universality because they do not register any accidental, external experience data. Their particular virtue lies in the fact that they are capable of expanding our knowledge and adding something new to what is there already without relying on experience as such.

Note the fact that true universality is achieved not by examining many individual cases. This is what is known by relying not on experience but on the subjective forms in which man perceives the world! Now we see why Galileo arrived at the true universality of the conclusion concerning straight and steady motion without going through all the cases known in his experience of such motion, but by mentally drawing on the pure spatial field of his imagination the line of movement at various angles to the horizon. And then it turned out that the required motion could only be obtained when the angle was zero. So Galileo simply resorted to the universal properties of the "space" of perception waiting to receive individual impressions, and not to experience.

If he had generalised empirical facts, then, first of all, as we remember, he would have had to draw an opposite conclusion and, second, this conclusion could not have been truly universal; in certain conditions of experience it is obviously not enough for there to be a force applied from without in order to make a body move straight and steadily. It may be "bumped" on a pothole or thrown aside in some way. But now after consulting the universal forms of perception, the universal rules of reason (logical rules and devices inherent in man) one can explain every single experimental fact from the standpoint of the conclusion drawn. So, according to Kant, the theoretical thought that takes place in inherent forms not drawn from experience establishes universal laws for the content of our experimental perception as well.

Admittedly, you may ask Kant, but do these laws operate outside theoretical thought itself? If they are not derived from experience, then what guarantee have we that they are objective, that is, that really existing things and not merely our impressions of things actually obey them? Kant gives no such guarantees. And why should he? Man can create symmetrical, uncontradictory theories based on extra-experimental forms of perception and on the operations of thought. The order of the impressions of experience exactly accords with these theories. What more do we want?! But does the order of things themselves correspond to these laws —

that is not for us to know in principle. Things themselves, or, as the philosophers say, "things in themselves", things outside and apart from man are not given to him in any form and he therefore knows nothing about them. This was how Kant reached the conclusion that "things in themselves" are unknowable.

If a person tries to use the universal forms of reason not for interpreting his experience and rational generalisation, but for passing judgement about "things in themselves" that are beyond experience, the reason at once encounters insoluble contradictions (antinomies). Kant avoids contradiction in logical thought by abandoning the attempt to cognise the contradictions of reality itself.

And the main thing is that the question of the origin and essence of knowledge remains unsolved. Neither "pure" nor experimental contemplation enables us to understand the nature of the leap from the external image to the concept! The apparent explanation that Kant offers is that in the images of "pure" contemplation that gives them their system the a priori form is expressed directly, leaps to the eye, exists in pure form. So the proposition runs something like this: what is perceived in experience is in fact external, transient, individual, accidental. The a priori forms of contemplation are something quite different! They exist in the soul and the soul understands everything "at a glance". So Kant's apriorism does not save us from the necessity of the assumption, "seeing is knowing". Again there is no explanation. We have only the assertion that this has been so throughout the ages, such is the soul and such is substance, God, and so on. To assert that the "pure contemplation" of a priori forms allows the soul to understand at a glance is a piece of intellectual sleight of hand. One simply dismisses the living contemplation of actual things and presents the "pure" contemplation of the a priori forms eternally inherent in the soul in such a way that there is no need to explain how it is that one glance is enough for us to see, understand and give a name to the essence of what is seen.

Perhaps then the very concept existing in my soul was given at birth! Then Descartes is right, then there

must be a God. But in that case where does science come in? What is the theory of knowledge for? Scientific theory has to be replaced by faith. And then we see why Kant said that he had to restrict (aufheben) *knowledge* in order to make room for *faith.*

But one is justified in asking when is Kant right? Must one really pay such a high price as the abandoning of cognition for the pleasure of seeing that scientific conclusions are truly necessary and universal in character? And besides, it would appear that Kant did not prove even this. The reader may well say it would be better to declare straight out that we do not know why judgements come to have a strictly universal and necessary character rather than to regard them as a priori.

But the whole logic of the history of philosophical thought makes us think that something resembling Kant's a priori exists in the consciousness and in cognition. And if we abandon our epistemological Robinsonade, there will be no need for that something to lead us to agnosticism, to mysticism, to God. But why? Because along with Plato and Aristotle, Hobbes and Descartes, Locke and Kant, we are convinced at least of the following: in order to know, it is not enough merely to see; in order to see and understand what we see, we must know something already; from individual sense experience one cannot deduce something that is necessary, general, essential, that is contained in every word, in every concept.

When Kant assures us of the limitations of experience, of the fact that a man is bound to rely in his individual sense experience on something that is given to him beforehand, that has the nature of a law of necessity, of universality, and without which individual experience is impossible, Kant is completely right. But the methodology of the Robinsonade, with its search of individual man for the principles organising experience in "man in general" turns Kant's right into a wrong.

Kant's story has led us to the idea that something similar to Kantian a priori forms of the activity of intelligence must be given, as it were, in the consciousness of the individual because our Something is certainly not to be derived from his individual sense experience.

However, despite all the reservations such a rehabilitation of apriority may evoke protest. In order to explain our conclusion, which may seem rather unusual to the materialist who rejects all apriority out of hand, I would like to draw attention to what may seem at first to be a specialised question. Is it possible to produce a mathematical concept from experience? Where does everything, including the mathematical concept, come from, if not from experience? From our schooldays we remember that geometry, for example, the science of measuring the earth, was derived directly from the experience of measuring plots of land. Its concepts — the point, the straight line, the triangle, and so on — are undoubtedly abstractions from sensually perceived properties of objects. When they looked at triangular objects people registered their triangular form in their memories and then gave it a corresponding name and this was the concept of the triangle. (Familiar logic! This is once again the pyramid and we shall not refrain from returning to its sharp corners from which the old philosophy always began, until we see quite clearly a logic of a different kind.)

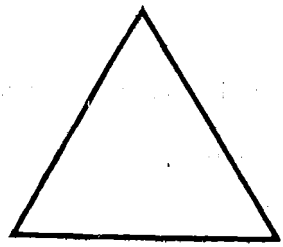
So the concept of the triangle is an image that applies to all triangular things called by a name-word. But during a certain highly scientific argument we heard a familiar question: Is it possible to imagine a triangle in general? The question is not a new one. It was posed by Berkeley and in fact it was suggested much earlier.

The reader must now pay special attention to this question that has always arisen, and has always had to arise, in the history of philosophical thought. Can one, in fact, imagine a triangle, an axe, a tree, a pomegranate, a man, a cat, and so on? You may think that nothing could be easier.

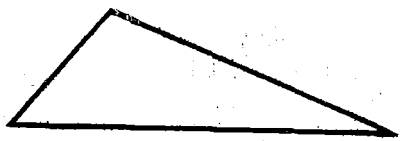
But think of the logic behind it! Any image that arises in our memory is always a sensuous image, that is, an external form of a phenomenon. But the external form can never be universal, can never include all the diverse external peculiarities of the countless numbers of similar phenomena around us.

Suppose we use the word "axe". But wait a minute. Think of all the things a person may mean by this word. It may mean the stone axe of our ancestors and

the medieval axe of the executioner or the axe of the woodsman and thousands of other cutting tools that may not be outwardly similar to each other. Imagine an axe. Even the vaguest image will clearly differ from the image of some other type of axe. The same thing happens with the triangle. Here are the clearest outlines that arise in my consciousness when I try to imagine "a triangle in general":



But what I was thinking of in reality was a particular kind of triangle, differing from this one:



The question we are discussing takes us back to Plato and Aristotle, to Bacon and Hobbes, to Descartes and Kant. The universal, i.e. the necessary, the idea, the form, the universalia, our Something, contained in every concept and not having any adequate sensuously perceptible equivalent — this is what cannot be imagined, what cannot be fully expressed by an image!

One cannot imagine a "triangle" in general. Nor can one imagine the meaning of the words man, axe, and so on. The man we draw in our memory on the principle of three circles and four strokes will, of course, be a general image of the external features of all people without distinction of race or class. That is to say, a general notion is not difficult to evoke in the memory. But this is a generalised image of only the external appearance of the object, and we were asked, as you remember, to imagine the Something that is inherent in

all similar phenomena and cannot in principle be reduced to their outward appearance. And in the question of the triangle we were also asked to imagine the meaning of the word "triangle".

The image of the object's appearance may be generalised, may retain only its functionally significant details, but it will never completely convey the whole meaning implied in the word. Moreover, a person retains in his memory only the idea that, as Wallon puts it, "is named by the word", which is in some way embraced by the system of semantic, linguistic associations. So once again we find that a concept cannot arise and exist as a generalised notion named by a definite word-name. The very idea of the external features of phenomena is retained in the memory with the help of a word, which always carries with it our Something — a meaning stripped of all imagery.

The question of the triangle is a deliberately provocative question. It cannot be answered by anyone who consciously or almost consciously proceeds from the conceptualist notion of cognition, who from the height of the pyramid surveys the process of man's cognition of the general, the necessary and the essential in phenomena. In fact, if we believe that cognition begins from simple contemplation of individual things, the sensuous copies of which are converted into "general notions" subsequently called words, just that one question as to why it is impossible to imagine a "triangle in general" topples the pyramid and puts common sense at a loss. It sets other problems that have to be solved. Where did the unimaginable concept of the triangle come from in the first place? How does it exist if in fact there is no such thing as a "triangle in general", if in our consciousness we can only imagine some definite kind of triangle? But the most interesting thing here is that the person who asks the question himself stands on the granite foundation of our pyramid.

In full accord with the logic of classical nominalism the questioner believes that a sensuous image cannot be general, that the general is only the name, the concept. Who is closer to the truth in this argument? Both sides are far enough away from it for us to follow the logic of their reasoning a little further.

However, the question of the triangle has shown us that one cannot regard the geometrical concept of the triangle as an abstracted general idea named by this word. And if this is so, one is led to doubt whether the concept of the triangle actually did arise as an abstraction from triangular objects contemplated in experience.

When uttering the word triangle, I cannot imagine a triangle in general. Consequently the general concept is either only a general name given to specific things (nominalism) or else it is the unimaginable "triangularity" that appeared in our consciousness not as a consistent generalisation of external properties, but in some other way.

We have to reject the first alternative. The "general name" is itself an empty phrase. According to the logic of the pyramid it can have meaning only as the designation of what is seen. However, we have gradually come to realise that, in the first place, our Something is far more understandable to us than the external appearance of the phenomenon, no matter how generalised a notion we have of it and, secondly, no notional image fully corresponds to the Something. We are left with the second alternative. The concept cannot be a simple designation of the general abstracted in experience. So now the situation is this. If we understand the experimental source of knowledge as it has been understood in the history of philosophy, and in the history of any specific science, that is, as the immediate sensuous reflection of the phenomena of the external world, then mathematical concepts did not arise from experience.

4. Towards a Solution

The impasse we have been brought to by Kant only goes to show once again that even theoretical philosophy, when based entirely on "common sense", does not solve the problem of the essence and nature of knowledge and consciousness. Admittedly, philosophy is better than the common sense approach in that it *states* the question correctly. Man's conscious life is presented to us as a clearly formulated riddle, which is an achievement in itself.

Kant himself, the founder of German classical philosophy, who better than anyone else exposed all the flaws in contemplative epistemology, began to grope for solutions beyond its framework. I have in mind his urge to understand man's active role in the process of cognition. It is man himself, Kant assumed, who organises and guides his experience, the objects of cognition being formed in the movement of his thought. At some point man ceased to be a passive side of the interrelationship with nature and became an active element operating according to its own inner laws. Kant failed to reveal the true source of human activity, and he was looking for it, as we say, in the wrong place — in man himself, in the properties of his consciousness. But the idea was not lost. The activeness of human consciousness contrasted to and divorced from passive nature, gave rise to a new theoretical contradiction that occupied the minds of Fichte, Schelling and Hegel.

Historical events made this problem particularly urgent. Philosophy was confronted with the world of real history, a world that was not sleepily inert but in a process of destruction and creation by human beings themselves. Revolution is an act of historical, popular creation. It demonstrates clearly enough man's ability to actively change the world in which he lives. In this case it was a world that was considered to be in accord with man's essential nature. But history itself stood on the threshold of the quiet and cosy studies of the philosophers, and Hegel, the great German idealist philosopher, opened the doors wide to welcome it.

As a student, the young Hegel, and his friends, greeted the French revolution with the greatest enthusiasm. Hegel studied events in France and envisaged the future of his native Germany as a bourgeois-democratic republic cloaked in an Athenian toga. During the restoration, some fundamental changes were to take place in the philosopher's view of the world. He became reconciled to the "objective course of history" and accepted the Prussian constitutional monarchy as the highest manifestation of the idea of the state, but what matters to us at the moment is this great and direct interest in social history, the history of the state, law and religion which Hegel showed in building his phi-

losophical conception. He also made a serious study of political economy. And in investigating the complex logical and epistemological problems posed by Kant, Fichte and Schelling he found himself face to face with man, the maker of history, the active transformer of life.

For Hegel the active nature of the consciousness was from the very first related to man's social essence, but on the other hand this social essence itself, man's social history, was seen as a result of human activity.

German classical philosophy, which embraced not simply "man in general", but a historically active man, regarded his activity primarily as something spiritual, as the self-development of the consciousness. The need for social reforms on German soil produced not specific political slogans indicating the goals of specific actions, but general definitions of man, which had to be studied by the means and methods of philosophy. German history demanded active struggle, but the incapable cowardly German burghers produced their own peculiar historical paradox. The more thoroughly the theoreticians of the German bourgeoisie studied activity in the idea, the more incapable they proved to be in politics and practice.

For history as a whole, however, the German immersion in the theory of human activity ultimately turned out to be something of great revolutionary significance. True, if we are concerned directly with German classical philosophy (Kant, Fichte, Schelling, Hegel), it must be emphasised that this "immersion in the theory of activity" did not bring them down to bedrock. It was a deep submersion in the waves of theory and theory alone (ideas), and for this reason even the reality that these philosophers studied remained for them only a sphere of the spirit. And this in its turn prevented them from overcoming the idealist interpretation of history.

Before Hegel (with the exception of Fichte and Schelling) philosophers had tried to understand the human consciousness by studying the role of sensations, representations, will, imagination, speech, thought, and so on, in man's *effective* activity. Attention was focussed on the universal forms in which thought "processed" the data of direct sensuous experience. But the question

of the origin of consciousness and its forms was not even posed. Man with all his various attributes was regarded as something given, ready-made — whether by nature or God, it didn't matter. Such in general was the logic of empirical science: take the ready-made facts without their history, just as they are given in experience, and establish their general features, their constantly repeated connections (laws). But study of the ready-made mental "elements" of consciousness in their constant regular interaction could at best answer the question "how" and not "why". How a person thinks, but not why he is capable of thinking.

The most surprising and, from the empiricists' point of view, inexplicable thing was that a different logic, a logic enabling us to see the object of investigation not as something static, not only ready-made, but also in its dynamics, in the process of formation, was born in hazy, purely philosophical contrasts that seemed to be far removed from direct experience — the Ego and not-Ego of Fichte, and Schelling's mysterious reasoning about their "absolute identity". What of any real value could a natural scientist gain from discussing how the Ego (and not just my, individual, personal Ego, my consciousness, but some general, spirit of the race), presupposes not-Ego (what may be called Nature), how the Ego releases the not-Ego, turns it round in front of itself and finds there — its own Ego? What was all this? It sounded like pure fantasy, the ramblings of a mind remote from life and reality. Both the method of thought and the language, and even the concepts were alien to common sense and the usual concrete notions of empirical science.

But the serious and attentive reader who knows the history of philosophy finds nothing fantastic in this statement. He will study Fichte with delight and see how the Ego (in which Fichte envisages the whole sphere of the spirit, consciousness, the mysterious active force transforming the world) presupposes a not-Ego (with which he identifies the resistance to the spirit offered by inert matter). Knowing Kant, he will be interested to watch Fichte's attempt to find in the movement of the spirit the answer to the question of how universal forms of reason are related to the particular

phenomena of experience. And his interest will grow as he finds that these universal forms are presented not as empty envelopes into which the facts of experience are forced, but as stages or moments in the active motion of the spirit in its relation to not-spirit, to external nature, that is opposed to spirit.

The thoughtful reader of Fichte will be unable to dismiss as a myth or a fairy-tale what seems absurd to common sense: the notion of external nature, opposed to the spirit, as a kind of "mirror" of the spirit, and produced by the spirit itself. This means that nature itself is spirit, a moment of its motion, a result of its "self-dichotomy"? You say this is absurd? This is mythology? Science will have none of such tricks! But just a minute, our perceptive reader retorts, natural science itself abounds in all kinds of mythology, such as Cuvier's "species", created by a series of acts of divine creation. One may disagree with Fichte, but he is undoubtedly right about one thing: knowledge (including natural scientific) about the external world is a form of the activity of the spirit (consciousness) and nature presents itself to the reason in the forms of the reason's own activity, in the forms of its motion. This is an important idea, even though Fichte may find no source of its activity or the logic of its motion except in the "dichotomy" of the spirit itself (reason, consciousness). But he has no other means of explaining the fact that any knowledge is a form of the activity and existence of man himself. So he deduces the not-Ego (nature) from the Ego (consciousness).

Of course, this is arrant idealism. The Ego (human consciousness) has swallowed everything: the thoughts and feelings of individuals, all objects, all nature as a whole. But it is not enough merely to record this fact. We must look for a correct explanation of the activity of consciousness. Let us see where Hegel leads us on from Fichte.

Yes, it's time we got back to Hegel. Our digression on Fichte was needed to illustrate the highly important proposition that the new (not empirical) logic, the logic of studying objects not statically but in their motion, their development, was born in the idealist conceptions of Kant, Fichte, Schelling and Hegel, "vague", "dis-

torted", "mad" (as the physicists since Niels Bohr like to say) though these conceptions appeared to honoured common sense. It was not for nothing that Lenin, when making his conspectus of Hegel's *Science of Logic*, noted the aphorism: "It is impossible completely to understand Marx's *Capital,* and especially its first chapter, without having thoroughly studied and understood the *whole* of Hegel's *Logic.* Consequently, half a century later none of the Marxists understood Marx!!" [1]

And it is also worth recalling that Lenin's philosophical legacy includes the article *On the Significance of Militant Materialism,* where he writes: "Modern natural scientists (if they know how to seek, and if we learn to help them) will find in the Hegelian dialectics, materialistically interpreted a series of answers to the philosophical problems which are being raised by the revolution in natural science . . . " [2]. In the same article he writes of the need to organise "a kind of 'Society of Materialist Friends of Hegelian Dialectics' ".

Basing himself on the solid national tradition (the German enlightenment, Kant, Fichte, Schelling), Hegel from the outset links the activeness of human consciousness not with the peculiarities of man's bodily, natural organisation, but with the process of each individual's active assimilation of the spiritual wealth accumulated by previous history, and with the realisation of what he has assimilated in his own activity that overcomes the resistance of object. For Hegel, it is not man's bodily organisation that forms the basis of how and why he acts. On the contrary, even the peculiarities of bodily organisation are in a certain sense both a premise and a result of his activity. This is what Hegel writes on the subject: "The individual . . . has an *original* determinate *being* of his own . . . . This *being,* the *'body'* of the determinate individuality, is its *original* source, that in the making of which it has had nothing to do (ihr Nichtgetanhaben). But since the individual at the same time merely is what he has done, his body is also an 'expression' of himself which he has brought about; a sign and indication as well, which has not remained

[1] V. I. Lenin, *Collected Works,* Vol. 38, p. 180.
[2] Ibid., Vol. 33, p. 234.

a bare immediate fact, but through which the individual makes known what is actually implied by his setting his original nature to work . . . ." [1]

For Hegel "the true being of a man is . . . his act". [2] And the individual's actions are connected in their motivation (their cause) with the purpose and destination of the surrounding objects, which the individual masters in the process of training (education).

If we try to present in the most general and popular form the propositions from which Hegel builds his grandiose system, we arrive at the following.

Hegel does not question the everyday fact that every concrete individual human action is evoked by thought, by the conscious setting of an aim. Before acting, a person makes a decision in his mind and the future result of the action presents itself as an ideal idea or image. The will mobilises the "forces of the body" and the person overcomes the resistance of external objects and achieves his aim. Thus he converts his ideal idea into a perfectly tangible material fact (object, and so on). Now that fact or object itself confronts the person as an external object, an objectified idea, an idea that has become a thing and is according to Hegel, his own spirit alienated from him and opposed to him. For example, the motor-car is above all a thing, and sometimes a thing highly inimical to man, if the latter happens to be a forgetful pedestrian or a careless driver. But this same car is also a person's objectified desire to get about quickly and comfortably. It is a dream turned into a thing, a will placed on four entirely material wheels. The motor-car is theory, logic, and calculation driving about the streets.

The human being lives in the world of things. He is directly surrounded by things created by previous generations. Consider the matter carefully. Man's every movement, every action is an action involving a thing that has previously been created by people. The sum total of these things makes up the grandiose "body of human civilization"; it is the result of the activity of

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[1] Hegel, *The Phenomenology of Mind,* London, George Allen and Unwin Ltd., New York, The MacMillan Company, 1931, p. 338.
[2] Ibid., p. 349.

many generations, humanity's objectified history. And since every thing, being a particle, a cell of the whole material body of history, was created in order to satisfy certain desires, needs, fantasies, and finally since each thing is man's own spirit objectified and alienated from man, this must mean that the world of the objects of civilisation as a whole is the ideal world of the spirit, of the consciousness, inert and settled in its material embodiment.

And it is this "world" that the individual's consciousness encounters (as something external to it). Encounters? No, not simply encounters or meets as a fully developed individual. The individual himself, his needs and his ways of satisfying them, that is, the modes of his life-activity, his interaction with other individuals and with the whole world of things are not given, not ready-made. They appear, take shape and develop in the process of mastering the objective existing "body of civilisation". Thus, for Hegel the consciousness is not a gift from the gods or from nature, not the point of departure of philosophy, not the beginning, but always, at every instant, the result and continuation of the process of assimilating the object world, the world of things created by humanity in the whole period of human history. The consciousness itself is thus seen by Hegel as a process.

So, on the one hand, we have the history of humankind, constantly enshrining its achievements in the form of an unencompassable sea of objects of material and spiritual culture. This, according to Hegel, is the history of the human spirit, the history of the development of human consciousness. History and its material embodiment — the "body of civilisation" — is a process of unfolding all the potentialities of the human spirit. On the other hand, according to Hegel, the individual consciousness of each separate person appears and takes shape in his individual history. This is also a process. Moreover, Hegel notes that the developing consciousness of the individual (since his development is the constant assimilation of the gifts of social history, from the simplest, most rudimentary to the latest and most complex) repeats all the basic stages of the development of general human culture.

The development of the individual consciousness represents the gradual drawing of the individual into the spiritual treasure-house of humanity as a whole: the individual's consciousness may make its contribution to that treasure but only if, first, it acquires sufficient mastery of the amassed riches and, second, if it is able itself to resolve the contradictions that have accumulated there—the contradictions of social history. It is not difficult to see that the individual consciousness thus becomes only a part of the grandiose whole, a part in which this whole finds its one-sided expression.

What is this whole? It is easy to write "the whole is the consciousness of all humankind", the "spirit of the history of society", and so on. But how does this spirit exist in reality? Society as a whole has no special head differing from our (yours and mine) individual heads. Then perhaps it is the aims, desires, will and ideas of each individual taken in sum that are this famous "spirit of history"?

And here we again run up against the "universal forms" of consciousness, which were always a stumbling block to the philosophers of the past. Both the empiricists and the rationalists regarded them as forms inherent specifically in the consciousness of the individual. For Hegel, on the other hand, individual consciousness—both it forms and content—develops in the process of mastering the "spirit" of human history. Consequently, even the universal forms of consciousness are represented mainly in the objective structure of the very "body of civilisation". Hegel cannot regard them as congenital or even taking shape repeatedly in the head of the individual merely because his head is "built that way". If the individual's consciousness is primarily a process of being drawn into the "whole", which repeats in the history of the individual the basic stages of the history of society, the universal forms in which this process takes place must also be forms of the flow of this social history itself. So the law-governed development of universal forms of people's historical activity is the "whole" we are looking for — the logic of history, its spiritual foundation. It is not the consciousness of the individual and not the sum of all the individual's thoughts, emotions, knowledge, desires and so on, but

something higher and greater, something clearly supra-individual, something that has its own internal logic of development, that does not depend on the will and desire of individuals.

We have only to consider the history of science. In his youth every future scientist studiously "chews its granite", masters the system of knowledge in which the laws of nature are strictly and consistently recorded. Now note the following: the orderly scientific theory preserves in the very consistency of its principles the history of their discoveries. Admittedly, later discoveries throw new light on those that preceded them, we often rethink them and come to a deeper understanding of their essence. But all previous discoveries themselves remain intact and in principle preserve their internal logic. What is embodied in this logic? The desires and aspirations of the individuals creating science? To some degree, perhaps. But only to the degree to which their desires and aspirations coincide with the internal logic of the discoveries themselves, which they have mastered. The immediate content of these discoveries and, hence, their continuity do not depend on the will and desire of the scientists. This content is made up of essential definitions of phenomena of the objective world, and the continuity is the logic of the connection of these definitions, the logic of the development of their historical cognition (from the relatively simple to the more complex). The law of gravity cannot be formulated while there is no concept of centrifugal and centripetal forces. One cannot arrive at the formula $E = mc^2$ if mathematics has not yet emerged from Euclidean space, and so on. Science [1] thus reveals itself to us (as it did to Hegel) as a process, whose source and "regulator" are just as objective in relation to each individual as to all individuals taken as a whole.

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[1] We have taken science as an example. But one could equally well consider other forms of socio-historical activity: political—the history of the state and law; religious—the church and its history; aesthetic—art and the development of the social aesthetic ideal, and so on. A more detailed account is to be found in *Analiz razvivayushchegosya ponyatiya* (Analysis of the Developing Concept) by A. S. Arsenyev, V. S. Bibler, and B. M. Kedrov, Moscow, 1967.

Science as a whole, as a process with its internal logic of development is a supra-individual phenomenon, although it is always realised by the actions of individuals. Thus the whole question centres on what or who, if not the individual, fulfils the role of the source and regulator of historical motion? The individual cannot claim to play this lofty role. He is himself a part, a partial embodiment of historical motion. The individual possesses consciousness (spirit) insofar as the spirit of history has possessed him, insofar as history acts in him and through him. He is a scientist (in our example) and this merely means that the objective development of science has caught him up in its mighty stream. He has mastered the history that passes without him and apart from his will, he has become privy to its secrets, and permeated with its logic. Science as the individual spiritual heritage of society has become the instrument and field of his activity: its notions are his personal view of the world, its knowledge is his personal means of communicating with the world. Through becoming involved in science he has taken shape as an individual, and in the process of his individual development the basic stages of the development of science as a whole have been repeated in abbreviated form. In this way Hegel gave an explanation of something that had appeared to be utterly inexplicable before him: the origin and role of the universal forms of individual human thought that guide experience but are not to be deduced from individual experience.

The universal forms of thought turned out to be nothing else but the supra-individual historical "stages" or forms assumed by the tempestuous flow of human history only to burst out again in a welter of human passions and then flow back into the new forms it had created.[1] These are, in fact, the *categories* — the universal forms of man's activity and relationship to the

[1] It was the French revolution that gave Hegel this idea and we clearly see how in his writing human reason is transformed from a peaceful recorder and classifier of the sense impressions into a warrior and builder endowed with the strength of history, just as Antaeus was endowed with the strength of his mother the Earth.

world as a whole, the forms in which thought is actually realised and which guide (determine) the "course" of our experience. And since the individual in the process of his social training and education absorbs human history precisely in the forms in which it was realised, they become the forms of his reason, the forms (and framework) in which his thinking and sensuous empirical activity take place. Though not generated in the experience of the individual as such, they are generated in the "experience of history" and are its forms, and only for this reason, forms of the individual history of each of us.

This was a colossal scientific discovery, which provided a fruitful summing-up of the intense efforts of the philosophers of the New Age.

And yet "revolving of consciousness in itself" on the level of the extra-individual world spirit is no more productive than its isolation, its hopeless languishing in the individual framework set by Kant. The impasse of subjective idealism was replaced by the impasse of objective idealism. Merely calling consciousness God does not bring us any nearer to understanding its essence. But here again we are more concerned with judging the way the search was conducted than with its ultimate result. Hegel was the first philosopher to draw attention to the role of material, productive activity and the instruments of labour in the process of development of knowledge. He clearly enunciated the theory that individual consciousness is formed under the influence of knowledge accumulated by society and demonstrated the narrowness and inadequacy of the definition of consciousness as nature's gift to the individual. His study of the objectively developing institutions and forms of the intellectual life of society underlined the need to solve the problem of the relationship between social and individual consciousness. But the honour of solving the problems posed by the history of philosophy was to fall to Karl Marx.

Since the remaining chapters of this book will be devoted to an account of how the riddle of the Self is solved from Marxist positions, there is no need to dwell on the road Marx travelled to reach the scientific solution of the basic question of philosophy. For the reader

with a knowledge of Russian there are some interesting books on this subject. [1]

However, despite the fundamental solution Marx offered to the riddle of the Self, it still remains a riddle to those who try to approach it from non-Marxist positions. The next chapter deals with certain questions that are bound to arise in this connection.

[1] See T. I. Oiserman, *Formirovaniye filosofii marksizma* (Formation of the Philosophy of Marxism), Moscow, 1974; N. I. Lapin, *Molodoi Marks* (The Young Marx), Moscow, 1968.

CHAPTER TWO

SOCIAL AND INDIVIDUAL CONSCIOUSNESS

1. Bertrand Russell's Mistake

Many centuries have passed since Plato's attempt to discover what knowledge is. Humanity has learned much since those days. But there is still food for thought in what Bertrand Russell said about its still being unclear, after all the amendments made to Plato's philosophy in the past two thousand years, how we understand each other and ourselves by using names referring to whole classes when in the real world there exist only individual things. And since the nature, the essence of the concept ultimately determine the nature and essence of consciousness as a whole, the question of the human consciousness in Russell's opinion still remains an open one. One is tempted to ask whether the approach to its solution has changed at all in philosophy that does not share the Marxist point of view. For the moment we shall note only the obvious points. It is generally admitted for instance, that to make any philosophical analysis of the process of the acquisition of knowledge one has to investigate social phenomena.

Present-day philosophers looking for a solution to the riddle of the Self simply cannot avoid considering social relations, the independent life of social institutions and, above all, the specific laws of linguistic communication, which do not depend on the individual. The work of the philosophical school that Bertrand Russell himself helped to found has something to tell us in this respect.

Many philosophers of the past devoted a lot of attention to the study of language. But when considering its role in the formation of consciousness they quite of-

ten abstracted themselves from the fact that language is a social phenomenon. "Language as a means of expressing thought", "language as the invention of men of distinguished intellect who desired that their thoughts should not disappear along with them", "language as the result of a contract between individuals to call things that they understood without language by certain names in communicating with each other" — such, in general outline are the old notions of the origin, essence and function of language. The individual is central. He invents the language and with its help conveys his thoughts.

And nearly always in the works of the old philosophers language led a strange double life. On the one hand, it is a means of communication and, as such, a social phenomenon. But the thoughts conveyed by means of language, the feelings we express in words, and so on, are profoundly individual, personal mental states and processes. The "sociality" of language is reduced in practice only to the collective use of its external envelope. Acoustic vibrations become the birthright of the whole of society, but the semantic side of language, that which makes it possible for us to understand speech, remains purely personal and peculiar to the individual as such.

Modern Western philosophers would appear to give a totally different assessment of the nature and essence of language. The neo-positivists, for example, are led by the logic of science to believe that the social character of language is a fact requiring no proof.

We shall try to sketch out how this happened. The social division of labour, particularly in its present stage, makes it obvious that scientific theory plays a part in social production and no less clearly indicates the degree to which social production participates in the advance of scientific knowledge. Science itself is converted into one of society's productive forces, and this demonstrates the social character of the process of cognition in the clearest possible way.

Moreover, knowledge serves automated production primarily as a formalised, deductive system amenable to mathematical treatment. No wonder that the advance of scientific theory today involves the active elabo-

ration of methods of quantitative analysis. The mathematics that always impressed the philosophers by the strict necessity and universality of its judgements, by the fact that the perfectly proportioned edifice of its conclusions rests not on separate experimental observations, not on the sense impressions of the individual, but on intuitively clear premises is becoming and in many cases has already become an indispensable tool of theoretical cognition in the most diverse branches of science.

All this suggested the feasibility of studying epistemological functions regardless of individual experience of the content of mathematical knowledge, a subject that had caused much debate among the earlier philosophers. The mathematisation of physics of which Lenin wrote in *Materialism and Empirio-Criticism* as a fact of truly revolutionary significance in the history of that science simply would not fit into the accepted framework of the old empirical theory of knowledge. The question was urgent, for individual experience, beyond which the theoreticians of "physical cognition" had no intention of venturing, could not remain purely a subject for philosophy.

The new physics of the microcosm was being born inside-out, so to speak, before the very eyes of the astounded scientists. Almost entirely on the basis of pure mathematics one had, first, to draw conclusions about the behaviour of physical reality with which not a single experimenter had ever had any dealings and, second, one had to put forward ideas that could not be made to correspond with classical mechanics. The position became all the more desperate because of the dilemma: either one must give a vote of no-confidence to the most exact of the sciences — mathematics, or one had to admit that the path of knowledge did not consist of two stages (a) the sensuously direct experience of the individual subject and (b) the rational explanation of it (which would have social significance going beyond the individual).

The natural scientist's usual notion of the process of cognition was threatened by the mathematisation of physics. Doubts about the reliability of all that had been learned from the hard work of experimenters in the

course of centuries, doubts as to the truth of classical physics brought some physicists to the point of scepticism, agnosticism and subjective idealism not because the new discoveries contradicted the picture of the world drawn by Galileo and Newton. At the end of the 19th century there were plenty of contradictory notions in the air and a healthy scepticism concerning the immutability of the pillars of science had always been characteristic of the true scientist. But this was a much more serious matter. Behind the obvious incompatibility between the emerging physical hypotheses and the classical notions lay the crisis of the empirical conception of knowledge.

What had seemed to be the one and only possible notion of the process of cognition had been shaken.

And it was not merely because mathematics "had got slightly ahead of experiment". The unexpected disturber of the natural scientists' dogmatic philosophical slumber was something quite different. Mathematics refuted conclusions that had been reached as it then seemed, by purely empirical means. Now it was rational, a priori science against empiricism!

Here we must recall Lobachevsky's geometry. The interesting point is this. The Euclidean postulate on parallel straight lines is simple, clear and exactly corresponds to our experience. And all Euclidean geometry is similarly clear and apparently self-evident. But the great Russian mathematician Lobachevsky "quite wittingly" and seemingly in the teeth of experience gave us a different postulate: not one (as in Euclid) but at least two (or even more!) lines parallel to the given line may be drawn through a point not lying on the given line and in the same plane. And on the basis of this postulate he built the splendid mathematically exact edifice of the new geometry. The new postulate on parallel lines sounded like a mockery of common sense, like an obvious absurdity. Perhaps all Lobachevsky's geometry was simply an amusing toy, rather like one of those specially invented languages that could not be used in real life? It certainly should have been from the standpoint of the purely empirical theory of knowledge. And many of Lobachevsky's contemporaries did, as we know, take just this view of his geometry.

But the years went by and, all of a sudden, it turned out that the properties of space described by Lobachevsky exist in reality, and that his geometry provides a true picture of reality. Today the new geometry faithfully serves practice, and movement that is close to the speed of light is calculated on its basis.

But let us return to physics. Here, too, fundamental conclusions of a most revolutionary kind, which overturned the usual notions of the universe, were born in "purely" mathematical researches and the mathematical formulas were arrived at not through generalisation of the data of experience. Formulas instead of directly observed matter! That was enough to reduce common sense to despair.[1] Who could really tell whether there was any objective content behind the formulae? Equations have to be interpreted in a certain way, the scientists' notions of physical reality were shaped accordingly, but (from the standpoint of empiricism) these notions were supposed to emerge only on the basis of perceptions. How could notions generated on the basis of the "conjectures of mathematics" reflect the real world? They depended not on the sensuously observed fact, but on thought, on the general rational propositions of the mind, that is, on the subject.

The spontaneous materialist was brought up short by this unexpected turn in the road of knowledge. He may even have been rather frightened at the prospect of further studies taking the new and strange line of mathematical prognostication, interpretation by physics, and only after that, experiment.

So a problem that philosophers had been wrestling with for centuries was brought to a head by the development of natural science. *Natural science* now had to face up to the question of the role of experience in cognition, the limited nature of experience, and its subordination to the general, necessary and essential. The

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[1] Experience and physical experiment also helped to break down the claims of classical mechanics that its conclusions were universal. We have only to recall the Michelson-Morley experiment. But the empirical notion of the theory of knowledge was exploded by mathematical physics, which Lenin regarded as one of the causes of the methodological crisis in physics (see V. I. Lenin, *Collected Works*, Vol. 14, pp. 307-08).

usual notion of cognition was crumbling but its ruins only covered the base of the pyramid. For the pyramid itself to be demolished there had to be a fundamental rethinking of man's place in the world.

There was no lack of "revolutionaries" claiming the laurels of Copernicus, who had shown that man was by no means the centre of the Universe. But to paraphrase a witty remark of Russell's about Kant, all such "Copernican revolutions" turned out to be typical "Ptolemaic counter-revolutions". The focus of the initial premises and methodological principles was still natural, eternal "man in general". He could be called an animal, a plaything of elemental forces of fear, or anything. But in all such theories it was man, "as nature made him", understood anthropologically, who remained unchanged, given once and for all, identical with himself. To understand man as a world of developing culture would mean breaking out of the framework of the usual empirical attitude to man as one of many other objects of study. It would mean understanding man as a subject, a maker of history. And for this there would have to be a different logic, a different historico-political orientation.

This was why the foundation of the Babylonian tower of empirical cognition held out so long, even after the collapse of some of the illusions of the epistemological Robinsonade.

Philosophical thinking was in a difficult spot. On the one hand, the philosophers' ideological and methodological orientation that rejected the very possibility of serious comprehension of the role of man's objective practical activity in history kept the Robinsonian theory intact, while on the other, the very logic of the development of science brought them face to face with the problem of the social nature of cognition.

Mathematics had played a crucial role in smashing the illusions of empiricism, which had for centuries dominated natural science—the branch of learning that had most clearly demonstrated its general necessary character. So it was natural that mathematics now attracted the philosophers who wanted to find out what had happened to cognition and how man did in fact reach the peaks of universal knowledge. One of the first

to master the new field of knowledge in the 20th century was Bertrand Russell, who produced the critical study of the logic of mathematics of which it was now deeply in need. And as the specific logical problems confronting this science were solved, a clear idea emerged. Mathematics and, even more so, logic are founded on certain laws of thinking in general, laws of the universal "language of science", which enable us to draw conclusions essential to the given logical structure.

The researches by Russell and other logicians and philosophers showed the independent nature of logical and also linguistic constructions and incisively posed the question of the domination of social language over the experience of the individual. It became a truism that in human knowledge there is something that is of primary importance for its whole system and that belongs, so to speak, to society as a whole. This impersonal, social foundation of knowledge is above all the logic of thought, enshrined in the rules of language. The language of scientific research (as a set of terms, each of which acquires a definite meaning given certain rules, principles, laws regulating their interrelationship) constitutes a system that is above the individual and therefore, so it seemed to the empiricists, above experience. It was imposible to get away from this fact and hide in the shade of our pyramid. Today it seems incontrovertible that the forms of thought, that were once a stumbling block to the classical empiricists, the forms giving a definite direction to experience itself, do nevertheless exist. They exist as supra-individual forms, independent of any individual experience. In language their existence is quite obvious.

For more than half a century philosophers and logicians have been studying the objective structural laws of the language of science and the language of the people. Ignoring for a moment the positive results of their researches, let us note merely that for more than half a century they have been confronted with this "accursed" question: why does every word generalise, why is it comprehensible? If only one could answer this question one would have the answer to the riddle of the Self.

It is interesting that in their attempts to answer it Western philosophers come very close to seeing social

production as the source of linguistic communication, but then they stumble over the fact of individual action and fail to grasp the essential problem. One of the founders of pragmatism Charles Peirce believed that the meanings of words are the habits and consequences of action, preserved by words. The operationalist Percy Bridgeman was convinced that the meaning of a word was determined by the sum total of operations needed to obtain a certain result. Every word, he maintained, represents a set of operations with an object and its meaning is to be sought not in speech but in action. Modern neo-positivism holds that the meanings of words stem from logical or linguistic operations. And in all cases the meaning of a word is seen no longer as the relatedness of some chance name to this or that object, but as a result of an active historical process of relating the habits and methods of an action to its result. The trouble is that action is still treated as the activity of the individual or a group of individuals in the framework of the sensuous experience that the old empiricism knew so well. So the contradiction between the social and the individual, the personal and the impersonal reaches its highest culmination.

This contradiction appears most clearly in the work of Russell himself. One of his books (*Human Knowledge. Its Scope and Limits*) begins with a chapter that is actually called "Individual and Social Knowledge". It contains the methodological key to the whole book, the philosopher's whole conception. An analysis of Russell's views will once more compel us to "try" the road of classical philosophy in its studies of the "impersonal" social language and attempts "without Marx" and "against Marx" to solve the problems of human knowledge and consciousness.

Russell's brief chapter on individual and social knowledge is highly characteristic and revealing. It begins by stating a very important fact: "Scientific knowledge aims at being wholly impersonal and tries to state what has been discovered by the collective intellect of mankind." [1] As we have already noted, it is now quite im-

[1] Bertrand Russell, *Human Knowledge. Its Scope and Limits*, London, George Allen and Unwin Ltd., 1948, p. 17.

possible not to take cognisance of the social, "impersonal" character of scientific knowledge. Russell, of all people, knew perfectly well that "... Language, our sole means of communicating *scientific* knowledge, is essentially social in its origin and in its main functions...." And further: "...The chief purpose of language is communication, and to serve this purpose it must be public, not a private dialect invented by the speaker...." [1]

But here one runs into the basic contradiction of cognition and consciousness. Only knowledge of a personal nature can be true because there is no such thing as consciousness in general; consciousness in general is Platonism or Hegelianism. No one has any doubts on that score. But actually we are not on the edge of a precipice at all. Today it is not enough to formulate an antinomy, one must be able to find the third term, that in which the impersonal is personal and the personal is.... But we are perhaps running too far ahead. We shall return to this point later on. For the moment let us follow Russell.

Impersonal knowledge expressed in the dry protocol terms of science exists only in the head of the feeling and thinking individual. And he believes it or disbelieves it, considers it to be knowledge or nonsense, depending on his individual and, in the final analysis, sensuous experience. A person lives, feels, sees, hears, experiences the world around him. What else can lay claim to truth, to knowledge of the consciousness, but this "inner world"? What is collective knowledge in comparison with that of the individual? "... The community knows both more and less than the individual: it knows, in its collective capacity, all the contents of the Encyclopaedia and all the contributions to the Proceedings of learned bodies, but it does not know the warm and intimate things that make up the colour and texture of an individual life." [2] Need it be said that collective knowledge only acquires meaning thanks to the colour of individual life. Russell writes cogently and clearly on the contradiction between man's intimate world and its expression by linguistic means: "...This is easily

[1] Ibid.
[2] **Ibid.**

proved by considering the process of learning to understand language. There are two ways of getting to know what a word means: one is by a definition in terms of other words, which is called *verbal* definition, the other is by frequently hearing the word when the object which it denotes is present, which is called *ostensive* definition. It is obvious that ostensive definition is alone possible in the beginning, since verbal definition presupposes a knowledge of the words used in the definiens. You can learn by a verbal definition that a pentagon is a plane figure with five sides, but a child does not learn in this way the meaning of everyday words such as 'rain', 'sun', 'dinner', or 'bed'. These are taught by using the appropriate word emphatically while the child is noticing the object concerned. Consequently the meaning that the child comes to attach to the word is a product of his personal experience, and varies according to his circumstances and his sensorium. A child who frequently experiences a mild drizzle will attach a different idea to the word 'rain' from that formed by a child who has only experienced tropical torrents. A short-sighted and long-sighted child will connect different images with the word 'bed'. . . ." [1] "It is true," the author notes with sad irony, "that education tries to depersonalise language, and with a certain measure of success." [2] As a result, you ". . .become completely a public character, and even your inmost thoughts are suitable for the encyclopaedia. But you can no longer hope to be a poet, and if you try to be a lover you will find your depersonalised language not very successful in generating the desired emotions." [3]

To become a completely public character is, alas, a rather sad fate. But Russell's main idea, I think, is that even the most abstract knowledge is impossible without purely personal verification (testing by experience) of the meanings of impersonal words and scientific definitions. Try though it may, knowledge cannot get away from the subjectivity of our perceptions of

[1] Bertrand Russell, op. cit., p. 18. Clearly Russell is here describing the formation of the concept in full conformity with the conceptualist tradition.

[2] Ibid.

[3] Ibid., pp. 18-19.

the world. And individual sensuous perception is always there at the bottom of it. "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." [1] So ends the book's first chapter.

And so there begins, for the nth time, the Odyssey of reason trying to infer from, or at least associate with, individual, accidental, sensuous perceptions the necessity, universality and authenticity of scientific knowledge. Naturally the well-worn path of scepticism taken by so many philosophers from this point of departure is the one that Russell follows in his quest. He writes: "But there is one thing that is obvious from the start: only in so far as the initial perceptual datum is trustworthy can there be any reason for accepting the vast cosmic edifice of inference which is based upon it. . . ." [2]

Russell's whole book seeks to show that there is no very good reason for trusting our perceptions. So the inevitable conclusion for him is doubt and scepticism, which, elegant though it may be, still remains scepticism. Not creative doubt, the enemy of all dogmatism, or the healthy scepticism of the tireless seeker after truth. Scepticism here is the summing up, the conclusion, the position. It can be proclaimed as a merit of the wise contemplative standing "above the struggle", but it is hard to recommend it as a point of departure for the methodology of science, particularly in the age of a rapidly advancing scientific revolution.

But, the reader may still ask, what was Bertrand Russell's mistake? And the answer will be that it lay in his preservation of the opposition between the social and the individual in consciousness. At this point we shall leave Russell for a moment. It is time we looked at the individual and social consciousness from another angle. If it is true that the uniquely personal and intimate in each individual comes first, while second place belongs to the impersonal or, as Russell put it, "all the contents of the Encyclopaedia", a kind of unified world repository spread out before individuals in imagined space,

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[1] Ibid., p. 22.
[2] Ibid.

then the so-called social consciousness is no more than a designation of a given external environment in which an individual lives. He absorbs and assimilates it. And only when it has been assimilated by the individual, only when it has become the content of his mental processes does it really deserve the name of "consciousness". But according to this logic the so-called "social consciousness" must be recognised as an object world of culture, which is external to the individual and to which he adapts himself. One sometimes hears it said that "unlike the animal, man adapts to the social as well as the natural environment". Then history, the process of building this special external world in which man has to live is not the personal biography of each of us, but rather the geography of the impersonal body of an objectified culture, a geography that becomes more and more complex every year. And such an attitude to history is by no means peculiar to Russell. It is a sign of the times, which makes it all the more interesting for us to know that the attitude to history is *directly* related to the answer to the question that interests us: how does the individual become a conscious being possessing the power of Reason?

2. Individual and Social (Hegel versus Russell)

It may appear that we are back where we started from: consciousness as an attribute of the individual. Admittedly, after our brief survey of the concepts evolved by several famous philosophers we should be able to offer a fuller description of this attribute. Consciousness now seems to be a set of mental processes occurring in the individual's body, reflecting the world and making judgements about it with the help of the objective forms of mankind's historical culture assimilated in the course of individual experience. The main role here is played by the means of social communication (above all, language). Only this proviso [1] keeps the ini-

[1] The above "definition" should not be taken as anyone's definition and certainly not mine.

tial formulation of the problem intact: it is the body that thinks and is conscious of the world, the body entering into direct sensuous contact with the objects of its life activity, which include objects of human culture. Since Hegel it has been these objects which give man's mind its most essential features, its conscious relationship to all external objects. But in the context of today's problems it was Russell who brought us back from the cloudy philosophical heights of Hegel's *Phenomenology of the Mind* to what appeared to be the obvious fact that man assimilates impersonal social forms of culture in ontogenesis, that is in the course of the development of the individual, in the unique experience of his one, unique life.

In view of the as yet unsolved contradiction between the individual sensuous fabric of the individual mind and the social (impersonal) forms of culture, we can now go on to formulate the question raised by Russell about the "names" by means of which we understand each other and ourselves.

There is no way of avoiding this problem. As we have seen, it always confronted the philosophers who studied the nature of knowledge and how man acquires it. The point is that even a person's most personal, most intimate attitude to the objects he sensuously perceives is only a conscious attitude because his dealings with them *involve knowledge* of them.[1] But knowledge expressed in a word (name) relates to whole classes, although in the objective world itself there are only separate, singular objects, and it is these with which our sense perception is concerned. The social (non-personal) language, which operates with names containing knowledge of the properties essentially inherent in a whole class of objects (or the majority of them), is absorbed by the individual but is not his production, is not, so to speak, a function of his unique structure. In other words, from this standpoint language for each of us is a component element of the cultural "environment",

[1] Marx and Engels use the etymology of the German Bewusstsein (consciousness) to bring out this point: Consciousness [*das Bewusstsein*] can never be anything else than conscious being [das bewusste Sein] ... Karl Marx, Frederick Engels, *Collected Works,* Vol. 5, p. 36.

which we use as a means of communicating with other people. And not only communicating. It is already clear to us that words denoting the attributes of a whole class of objects help us to see something in an unfamiliar object.

So now the question arises: how do the uniquely personal contacts with a set of unique, special objects, which constitutes the basis of all knowledge, accord with the general, the supra-personal, which constitutes the content of words and all the other means of expression of social culture? And since it was Hegel who considered the general (supra-personal) meaning of words and other forms of historical culture as the cause and secret of the spiritualisation of the individual, it would now appear to be a most opportune moment to return to Hegel.

To resolve the contradictions between the social and the individual, Hegel appealed to history and showed that a contradiction is not a confrontation between certain eternal attributes (functions) of objects (structures) that have been formed once and for all, but an integral process of the constant interdetermination of some individuals by others. According to Hegel, the social forms of culture (including language) are not an environment external to each individual. They are the real, living biography of previously existing individuals, embodied (objectified) in their works, in the means of the intercourse that took place between them. The education (which Russell speaks of as leading, with some success, to the depersonalisation of language) was for Hegel the only way of spiritualising each new individual, the only way of awakening his individual consciousness. And this aim is achieved when the already educated present the individual who is entering life, with the forms of culture that provided the ways and means of intercourse of those who lived before them. Consequently, education is an integral process of human intercourse spread out in real historical time (and not only in the space of school premises).

For Hegel the forms of historical culture (of social consciousness) are never impersonal. They can and should be objectified in the means and results of human activity and intercourse (otherwise they could never be

passed on to the corporeal individual sensuously perceiving the world. But even in this apparently alienated form they serve to develop the human spirit, participating as the media of people's active intercourse, changing and becoming more perfect in accordance with new aims generated by the spiritual creation of individuals. Thus the entirely objective means and results of activity and communication in the living forms of human interaction are deobjectified and generate conscious needs, develop people's abilities, endow them with knowledge, skills and abilities, that is, all the cultural and spiritual determinates of consciousness.

As we see, there is nothing mystical in this most fundamental idea of Hegel's.[1] What is more the notion of education as a process unfolding in time is to this day crucial to the correct understanding of the formation of the human personality. We shall deal with Hegel's mysticism a little later on. The main thing we should appreciate at the moment is that for Hegel the social is not an indifferent environment to which the individual, possessed of all his eternal attributes, adapts himself, but the mode, means and forms of the intercourse of individuals, which constitutes the essence, the content of their individual spirituality. Thus, according to Hegel, the development of consciousness is a historical process, the real time of history, that is to say, the content of human activity,

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[1] Incidentally, it is Russell, in describing Hegel's philosophy, who constantly emphasises his mysticism. Hegel, he writes, had "...from his early interest in mysticism ... retained a belief in the unreality of separateness" (*History of Western Philosophy*, op. cit., p. 757). And on the same page Russell cites one of Hegel's central ideas, which in Hegel's own eyes provides sufficient grounds for acknowledging both the essential definition of reality and the reality of the individual, the singular. For Hegel the reality of the individual object is not merely the fact of its presence. (Incidentally, Russell himself admits to having no means of distinguishing the real existence of an object of perception from the chimera of dreams). According to Hegel, the reality of the individual object may be determined only through the relatedness of this object to the basis (or essence) of the process which in its development gave birth to this object. The real existence of the object, understood as its reality, is always realised in real action (See Hegel, *Science of Logic*, pp. 160, 191). Russell treats

and not the spatial interaction of the individual, as born, with his natural and social environment.

Now compare the two "logics" used to characterise the development of the individual consciousness: the "logic" of the temporal, historical unfolding of the process of human intercourse and the "logic" of the spatial interaction of man and nature, man and man, man and the "social environment" that takes place here and now. In the first case, the social is the determining of the attributes of individuals by their actual modes of living, their intercourse; in the second, it is the determining of the supra-individual (external to individuals) structure of the established forms of intercourse. In the first case, the individual is the embodiment of the historical process in the life-activity of the separate person, in the facts of his personal intercourse with other people, in his needs and abilities; in the second, it is the enumeration of his needs, abilities in themselves, the characterisation of the individual by means of the qualities, functions to be observed in him as such. In the first case, the social and the individual reveal universal and particular forms of people's historically developing consciousness. In the second, the social and the individual are opposed to each other as a ready-made social structure (environment) and an individual of the species Homo sapiens, who is included in this environ-

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Hegel's analysis of the reality of an object based on the assumption of the object's essence, as a banal, humdrum faith in "revelation" enabling one to become mystically aware of the whole before its parts are known (See Bertrand Russell, *History of Western Philosophy,* p. 770). Such a reproach would be relevant only if the whole is understood as the sum of ready-made elements, and each of these, in its turn, as an integral whole for other, "smaller" parts. This "regress into bad infinity" can have no other outcome but doubt as to the grounds and objectivity of all our knowledge. And mysticism is indeed the alternative to such boundless scepticism. But for Hegel the whole is an integral self-developing process generating its own organs—parts. If a person "grasps", intuitively perceives or logically arrives at a comprehension of this process, he is capable of foreseeing those of its "parts", those missing organs, as Marx called them, that have still to be developed by the process (Karl Marx, *Grundrisse der Kritik der Politischen Ökonomie,* Heft II. Dietz Verlag, Berlin, 1953, S. 189). This is the essence of man's ability to set goals and to predict, in which there is not the slightest mysticism.

ment but nevertheless remains an entirely independent structure.

However, the second "logic" has its own historical foundation, which even Hegel's conception of the historical development of consciousness cannot demolish. This comes to light when Hegel embarks on his study of the question of the source, the essence of history itself.

For Hegel, as we have seen, the universal historical forms of consciousness are the living forms of the spiritual intercourse of individuals occurring in real historical time. The complementary, interlocking and mutually exclusive cultures of nations in the epochs of the rise and decline of these cultures are not a "social backdrop" against which people enact their little individual dramas, they are not the external, transient circumstances to which they are compelled to adapt themselves, but the actual content of their life. The meaning of their own, personal needs and aims is predetermined by the very form of their spiritual intercourse, its historical content.

For Hegel, the universal historical forms of intercourse are therefore not a collection of all the encyclopaedias, not the sum of knowledge, not the sum of wills, not the sum of all the desires people have experienced throughout their history, not the supra- and extra-personal structure of the facts of culture (logic, language, and so on), but the changing forms of the consistent, stage-by-stage development of the spirit, realising itself and existing in the consciousness of people who have actually lived and are living. The objective spirit (Russell would have called it the logic of language and scientific knowledge) realises itself in the earthly history of humanity in the form of the "subjective" spirit (consciousness) of individuals.

However, individuals are engaged in differing pursuits. They themselves are different. The consciousness is not an impress taken from some universal model. Each one becomes involved in the historical time of culture in its own way, and in its own way, in its own unique form becomes aware of that time. We encounter the infinite shades of the universal that has taken the form of the culture of a given people in a given epoch, as the modes and standards of the intercourse and activity of individuals, and in each there are certain dominating shades of the

universal. Sometimes they are repeated in hundreds of thousands of people, as though according to a standard pattern; sometimes they are truly unique and distinguish the given individual from all others. But a person's spiritual potentials always develop in the process of his becoming involved in historical forms of spiritual activity, in the process of mastering the means and modes of that activity.

Here there would appear to be no opposition between the social (objectively universal) and the individual. This is the pure dialectics of the identity of opposites. Admittedly, one is entitled to ask: but why are they opposites? And the answer is: because the logic of the origin, development, transformation and clashing of cultures—the universal Logic of Human History—although it occurs always in the specific, individual desires, passions, hopes and thoughts of living people, nevertheless differs from the logic of the individual life of the private person. And where there is a difference, as Hegel said, there must also be a contradiction.

What is it that gives rise to the dichotomy and opposition between the universal (social) and the particular (individual)? In other words, what was there to begin with? How did history begin? Here, according to the rules of logic evolved by Hegel, one ought to be able to find some third term (not social and not individual, perhaps not even consciousness) that in its development generates both the "iron march" of the logical categories assuming the form of the various cultures that supersede one another and the sensuous directness of the immediate contact of the living, thinking body with the countless varieties of the individual.

But here another problem arises. The universal, the necessary cannot be inferred from the limited sensuous experience of "partial" individuals. This was proved by Hume, and Kant's whole conception is based on this conclusion. For both Fichte and Schelling it was axiomatic. Hegel also clearly saw that the universal forms of culture (thought and activity) determine the character of the particular experience of individuals; and even sensuousness itself (sensations, perceptions, representations, etc.) Hegel regarded as a stage in the development and realisation of the universal spirit embodied in the life-activity of the

human organism. The person who is used to thinking in terms of value definitions without paying attention either to the contradictions or logic of the conception he is attempting to assess, will at once be able to write off the above proposition as an example of idealism. And snre enough, it is an example of objective idealism.

However, in Hegel's idea that the sensuous forms of perception (in the broad sense of the term) are moments in the self-development of the spirit one can also find a "grain of reason": a person's feelings are spiritualised by the socially relevant meaning and significance of the objects and their qualities that are perceived. A person's feelings are moments in the integral acts of people's conscious life-activity.

But we must stress once again that for Hegel (as for Kant, Fichte and Schelling) the universal and necessary cannot be empirically inferred from the sensuous experience of individuals. The universal is objectified, materialised in forms, means and modes of active human intercourse. On the other hand, the assimilation of these objective objects of culture in the course of individual life-activity is the deobjectifying, dematerialisation of the universal meaning contained in them and thus the process of the spiritualisation of the individuals themselves.

Admittedly, the individuals, for Hegel, are dependent, mere executors of an externally given role. They act consciously according to the logic of the universal, changing the world around them, but their activity is essentially reproductive. Its productive part—creative thinking—takes place in its own sphere, in the sphere of the universal, of pure thought. So, according to Hegel, there is no movement either in the sensuous immediacy of perception or in objective actions; there is only its embodiment and realisation. The whole creative and goal-setting essence of human development is assigned to the spiritual world of thought.

Hegel was thus able to solve the problem of the *beginning* of history quite unambiguously: in the beginning was the word and the word was with God. Not literally, of course. Not exactly as the Bible put it. But if the creative work of history is purely spiritual activity and is objectified in human actions, the laws of "spiritual production" are primary in relation to material activity. And in that

case the Spirit is the root and essence of all that exists. Then it embodies itself in nature and is also for nature the prime source and secret of its intrinsic activity. And this is how Hegel's system of objective idealism is built up.

But what mainly interests us is that the universal in this system (and in Hegel the universal is a synonym for the social) acquires the status of independent existence. In the opposition between the universal and the individual spirit it is the universal that turns out to be the side of the contradiction to which in its origin and essence the second side, the consciousness of the real individual, is reduced. Hegel never did find a "third term", despite his own logic, despite dialectics—because he "found" in one of the sides of the contradiction the basis for the identity of opposites. And the result, as Russell put it, was mysticism, idealism, although Hegel's mysticism did not lie where Russell saw it. In Hegel the source and root of people's sensuous, bodily activity are the spirituality of the Universal Reason standing above this activity, above individuals, above nature and opposed to them.

Hegel beats Russell by proposing (long before the latter was born) the highly constructive idea of the unity of the individual and social consciousness. As we have seen, Russell never escaped from the empiricists' customary vicious circle: everything begins from sensuous experience and reaches the universal through generalisation of its facts, but experience itself is from the start regulated and guided by universal forms of thinking. Hegel, on the other hand, found a fundamentally new way of stating the problem: for man the universal is the historically developing forms and modes of his own life-activity and thinking. In every individual they merge into the integral whole of his consciousness because with all his faculties he absorbs the universal forms of historical culture, and thus history becomes his personal spiritual biography.

But by uncritically accepting the gap which in class society polarises spiritual and material activity as such, Hegel was compelled to see precisely in spiritual creativity the root and source of real human history and ultimately to oppose the sphere of the universal (social) to the partial consciousness of separate individuals. So while "beating" Russell on one point he "concedes" to him on

another, and precisely the point that interests us most of all: in both Hegel and Russell the social and the individual are independently existing determinates of consciousness. In both cases the Self and the impersonal social culture turn out to be realities opposed to each other, except that Hegel enslaves our Self by giving it in bondage to the universal (Universal Spirit), while Russell appears to grant it an almost independent status, the status of a natural "light" directed upon the natural and social environment. And yet even in Russell the independence is apparent rather than real, for social education somehow deprives the natural light of reason of its colour; its personal inimitability gradually fades and the narrowness of the sense-experience basis of knowledge condemns it to interminable doubts regarding its own nature.

3. The End of the Mind-Body Problem

Hegel's "dispute" with Russell still leaves many problems unsolved. Of course, the thesis that all the specific features, the very essence of the human mind are determined by the social forms of culture seems quite reasonable. But, for one thing, we see where such reasoning may lead us. Hegel postulated an all-generating spirit as something primordial and without any genesis of its own. The riddle of the human Self does not cease to be a riddle if we simply deduce that Self from the no less mysterious Universal Spirit. And secondly it is, after all, the individual that possesses consciousness, and what we have to understand is how precisely does the body acquire the ability to comprehend the world, to think, to know? Yes, the body, because the individual is born into the world as a body, as an organism. So how is the corporeal, organic physiological "transformed" into the mental?

In this turn of thought one sees not only the persistence of common sense, but also the natural urge to oppose the mysticism of Hegelianism with the facts of direct sensuous contact between the human body and the objective environment, facts that can be investigated by strict scientific means. So again we are faced with the mind-body (or mind-body-logic) problem.

In my introduction I suggested that the very principle of relating the mental to the physiology of the brain is not a very fruitful one. Of course, if certain physiological processes did not take place in the brain I could not acquire knowledge, I could not think or comprehend. But the content of my knowledge, what I think, feel and comprehend, that is, the content of my mental activity, in no way reflects what happens in my brain.

Thought is not the contacts of electrical impulses in the nerve centres, not the surges on the screen of an electroencephallograph. It is always about something. Mental facts can therefore only be compared and correlated with that which they reflect, with the objective world itself. The relation between thinking and being, the reflection and what is reflected—this is what concerns philosophers when they try to define the content of such a philosophical category as consciousness.

On the other hand, attempts to consider the mental as a state of the nervous system on the same plane as purely physiological conditions is no better than their plain and simple identification. The comparison, identification and opposing of the mental to the physiological are in fact attempts to "solve" the mind-body problem.

One may study physiological processes, but the content of the sensation will be the very thing that is not covered in such a study. The organism sees no physiology, no nerve pathways. I have a constant sensation of something (which means that it is already not-I) and all the time my sensation is something external, something I experience.

All past experience, all past states of the organism, all ideas and feelings, sensations and emotions are constantly merging and are present, exist and determine the direct experience of the present moment. One could even say that it is not the body (as such, taken without reference to the objects of its life-activity), but the external world as retained in the memory, perceived and experienced, that reacts at any given moment to new impressions. The new idea is tested by the habitual, the customary; emotions control emotions, and all former sensations evaluate that which my senses are experiencing at the present moment.

If I wish to study the patterns of my changing mood,

the causes of sorrow or joy, I must refer to the world of my life, to the world of my intercourse with other people and nature. The mind is opposed to the objective world because it is *my* way of treating the world determined by *my* biography. But the physiology of the senses and the nervous system is one (though by no means the only one!) of the mechanisms of life with which the organism becomes the body of a human being living and acting in a human way.

What was it that compelled scientists to contrast the mental to the physiological so persistently? What made them look for the causes of this or that emotion in the physiology of the nervous system? The same thing as in the case of Descartes. Man was a corporeal being and was surrounded by other corporeal beings, and there were no other facts in the field of empirical experience. So either they had to follow Descartes in declaring thought (which apparently turns human mind into an integral consciousness) a special substance, or else devote all their energies to looking for the mechanisms of the interaction of bodies that "produce" thought from themselves.

This approach confused the whole issue. Unversed in the subtleties of philosophy, the natural scientists (and some philosophers who preferred to follow them rather than trust philosophy, and who saw their task as "drawing philosophical conclusions from the discoveries of real science") thought that the basic question of philosophy—the relation of consciousness to being, to matter—should be treated exclusively as a question of the relationship between soul and body, the mental and the physiological. The philosophical problem was thus quietly replaced by a question that did not go beyond the specific positive interests of natural science.

The study of the physiological mechanisms of reflection is important in the sense that it does a great deal to dispel the mystical fog surrounding the fact of man's having a consciousness. A certain physiological organisation, the laws of the higher nervous activity are a most essential condition of mental life, they form the material substratum of the mind. The proof of the fact that it is the body that experiences sensations, feelings, emotions is a vitally important scientific illustration of the views of the pre-Marxist materialist philosophers, who believed that

it was not the divine soul independent of matter, but matter itself, organised in a certain way and entering into certain relations with the rest of the material world that acquired the ability to sense, feel and later to think. The mind was a product of the development of matter, one of its properties. Every new discovery in physiology confirmed this fact and showed that no state of mind was possible without the regular functioning of the nervous system.

The person who sees in the solution of the mind-body problem the possibility of discovering the essential nature of mind and thus solving the basic problem of philosophy forgets Lenin's profound philosophical warning: "These views do not consist in deriving sensation from the movement of matter or in reducing sensation to the movement of matter, but in recognising sensation as one of the properties of matter in motion." [1]

No, materialism certainly does not consist in deriving sensation from matter or reducing it to matter. Nor, of course, does it lie in closing one's eyes to the specific nature of the mental. All the questions that confronted the materialists in pre-Marxist philosophy hinged in some way or another on the one problem of how to build a bridge from insensible to sensible matter. How did such a divinely spiritual quality as sensation, and then thought, arise from the dead and insensible? The natural scientist tended to seek the answer to this question in the study of the material properties of matter. One had to find the something in matter that enabled it to think. Some special force or other property. Hence the attempts, on the one hand, to spiritualise all matter and, on the other, to treat the fact of sensation, of sensuous experience as the only thing that really exists, that is, to exclude from science the question of the correspondence between knowledge and reality.

Only one question of natural science was meaningfully formulated and it was not even a philosophical question (although it did have philosophical significance). The question was, what kind of organisation must living matter have and what kind of life must it lead for the

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[1] V. I. Lenin, *Collected Works,* Vol. 14, p. 47.

organism to be able to sense external objects and experience its state and life-activity?

"Without the participation of motion our sensations and perceptions would not possess the quality of objectivity, that is, *relatedness to the objects of the external world* (emphasis added—*F. M.*), which is the *only* thing that makes them *mental* phenomena." [1] So the mental is not the stimulation of neurons, not the physiological activity of the matter of the brain as such.

The key to the mind lies in the relation of behaviour (motion) of an animal to the objects of the external world, in the constant assessment of the images of things by the behaviour, motion and needs of the organism.

Even from the purely psychological point of view one can understand why the mental stands in opposition not to the physiological, but to the objective world, although every movement of an animal obeys the laws of physiology. When we speak of the mental and the physiological, we are speaking of different things. I feel means I record, I reflect some external object, but the sensation itself is not the imprint of a seal on wax, not what happens in the neurons of the analyser under pressure from the object. Sensation is a need multiplied by the action of the whole organism, which actively seeks an external object and records that object in the seeking movement.

Even the most subtle investigators of the physiological substratum and its "mechanics" will never be able to explain the mysteries of the simplest mental act because physiological processes are not equivalent to even an elementary sensation or perception. The physiologist has studied the mechanism of temporary nerve connections, the processes of excitation, inhibition, and so on. He has explained how perception takes place physiologically, but his explanation does not cover the mental phenomenon itself. It does not explain the individual's vision of that which is perceived. The psychologist speaks of perception in quite a different key. For the psychologist perception takes place not "inside", not in the nervous apparatus, but, strange though it may seem, "outside" it. Marx wrote: "The light from an object is perceived by us

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[1] A. N. Leontyev, *Problemy razvitiya psikhiki* (Problems of the Development of Mind), Moscow, 1972, p. 159.

not as the subjective excitation of our optic nerve (physiological—*F. M.*), but as the objective form of something outside the eye itself (mental—*F. M.*)." [1]

Mentally, perception is always, as it were, taken out of the confines of the organism; it is always an idea or image presenting itself to the consciousness. The mental is in the external world lying before me, in the images I see, and in my emotional judgements and understanding of images. Naturally the psychologist does not identify the "outside" image with the objective thing that is actually outside my consciousness. That is why we speak of the mind when we evaluate the objective world that presents itself to us as a world we have perceived.

Yes, image of perception—that is what we have to think about now! If the process of perception consists in the passive reflection by the brain of the effect of external objects and phenomena on the organism, the situation would appear to be as follows. Before us we have an object (let us say, a lighted candle) and the brain with its plenipotentiary—the eye. What we have to find out is the location of that internal image of the candle that appeared when the retina of the eye was affected by light rays reflected by the candle and transmitted directly to the eye by its flame.

Why is it so important to locate this subjective image? Because the whole world of the mind is composed of such images. They are the meshes in the network of mental phenomena. So how and where is the image of the lighted candle to be found in the brain?

The ordinary notion of the process of mental reflection as a passive, contemplative act suggests something resembling the exposure of a photographic plate by the movement of a camera shutter. In strict accordance with the laws of optics the light rays reflected by the surface of the candle and radiating from the flame focus on the optical centre of the eye and project an inverted image (candle flame downwards) on to the retina of the eye. Then somewhere in the brain the image is again inverted and this is what we see, this is the image of the lighted candle. Where it is located and by what laws its original position is restored—all such questions will one day be

[1] Karl Marx, *Capital,* Vol. I, Moscow, 1975, p. 77.

answered by physiology. For the time being we simply have to believe that the image arises somewhere in the brain. As for the restoration of the object's normal position, it has been suggested by specialists that no "second" inversion takes place at all. This is done by the mind itself. The new-born child at first sees everything upside down and perceives the world as such until he begins to orientate his body in space. Corrected by the true positions of things, the inverted image on the retina suddenly ceases to prevent correct perception. The child becomes accustomed, as it were, to seeing everything "upside down" and thus begins to perceive the world correctly. I remember how astonished I was at school by the explanation of this upside down "trick". And it was a lasting impression. "So the eye really sees everything the other way up and I simply get used to it! That's fine!" I thought then. "Fine it may be, but who is the 'I' that sees what he does not see, who sees everything the other way up?"

There is a great deal that we don't understand in the simple everyday act of seeing. But anyway sensation and perception from the point of view I have just expounded are a photograph developed on nerve tissue, it is the material trace of the effect of external objects.

But as one might expect, the more closely the process of perception was studied, the less hope remained of eventually discovering somewhere in the nervous system the imprint of the lighted candle. The first thing that emerged was that the eye cannot be compared to an optical instrument. As the physiologists sometimes say, it is a "bit of outboard cortex". The light-sensitive nerve formations of the outer layer of the retina instantly transform the streams of light into purely physiological processes, into the excitation of neurons without giving them any opportunity to "imprint themselves" anywhere in the form of a picture. In other words, electromagnetic waves are turned into nerve impulses.

The eye is more like a television set, which turns the light streams from the object into the complex functioning of the radioelectronic apparatus of the receiver. And just as there is not a hint of a picture in all the complex processes in the television set, there is nothing of the kind in the head either. Admittedly the TV receiver is able

to reproduce in its electron-ray tube changes in the distribution of bright or a luminescent layer which, when our vision is adjusted accordingly, we perceive as a repetition of the external attributes of the distant object from which the light was reflected. Has the brain any such capability? The excitation caused in the photosensitive nerve formations of the outer layer of the retina is transmitted to the central nerve cells. Simultaneously other sections of the retina receive impulses that come from the visual centres of the cortex, regulating by a feedback process the excitability of the various parts of the retina. We are thus confronted with the peculiar life of the nervous system, a mosaic of excitation and inhibition, irradiation, concentration, the mutual induction of nervous processes. Mysterious biochemical changes take place in the nervous system and not one of them or all of them together reproduce the image of the lighted candle in the head or in the visual receptor.

If we persist in believing that cognition is the mirror-like reflection of external objects in the head, in the brain, on the retina, then the physiological investigation of the processes taking place in the brain at the moment of perception provides the strongest argument in favour of the unknowability of the world. You can't get away from it! If there is nothing in the head but the specific life of the nerve cells, the biochemistry of nervous processes and no images whatever, then the mind is indeed only experience of the state of one's own neurons.

We are now faced with a choice. Either we continue to maintain that cognition is the reflection of the external features of objects in the brain and muts go on looking for their subjective images in the brain, ignoring the authoritative testimony of present-day neurophysiology. Or else we take the side of physiology and have to discard the view of cognition as passive reflection of the effects of external objects. That is the alternative. And where there is an alternative there is bound to be an argument. Such an argument would probably run something like this.

"What do you mean by 'take the side of physiology'? The view of cognition as passive contemplation may not be scientifically rigorous, it may not explain the way the mental image is obtained very accurately. But after all,

I do see an image! How does it arise before me? Where is it?"

"Where does it arise? In other words, where at the moment is the visible lighted candle that you perceive? That's a strange question! Where else could it be but on the table!"

"Are you making fun of me? You know perfectly well that I'm talking not about the real candle, but about the mental image of it. I see perfectly well that there's a real candle on the table. But where, in me, is its image?"

"Just a minute. You've just said, 'I see there's a real candle on the table.' What other candle do you want? What is this strange desire you have to duplicate the world at all costs—one candle in your head, the other on the table. Don't you realise that there never has been any 'second' candle! There is only the one perfectly real, objective candle. And that's what you see. That is what you call your visual image."

"Are you serious?"

"Absolutely."

"I don't believe it. That's pure subjective idealism! Listen to him—my visual image is the actual object itself. That's what you said, isn't it, I'm only repeating your own words."

"More or less."

"And will I be saying the same thing if I reverse the subject and predicate of your statement: the actual object is my visual image?"

"No, formal logic deplores such operations. By no means every object is my visual image. They don't all come into my field of vision. But those that I see or have seen exist independently of my perception and for me to see an object it has to exist. But I repeat that the object of my perception is the external form of the given object. There is no other image."

"Very well. Let's leave formal logic alone. Your idea leads to subjective idealism in substance if not in form. My formal (and I would emphasise the formal) mistake in formulating the statement has allowed you to demonstrate an eclectic combination of faith in the real existence of objects with Berkeleian subjective idealism. Your inconsistency does not surprise me. George Berkeley was not consistent either when he asserted that to exist is to

be perceived. And aren't you saying exactly the same thing? I'm quite prepared to believe that you have no doubts at the moment as to the real existence of objects. But in what you just said about perception you practically identified the image of perception with the object perceived. In fact, you got quite emotional when you asked me why the world had to be duplicated. If there is no other candle but the one we perceive, then to exist is to be perceived! Long live Berkeley!

"It was this so-called 'doubling' that gave rise to the main question of philosophy: which is primary—reality or its ideal image in the consciousness? If, as you maintain, the mental image is the object itself, you repeat the well-known error of Joseph Dietzgen, having previously turned his argument inside out. Yes, Dietzgen did say that if the fact of consciousness (say, the mental image of the object we have been discussing) exists, it is just as real and objective as a table. [1] You believe that a table is a fact of my consciousness. Dietzgen, the tannery worker who independently arrived at the basic positions of dialectical materialism but went wrong over some of his formulations, was mistaken in saying that thought is material. And Lenin's comment was that to call thought material was one false step towards confusing materialism and idealism. [2] At best you are making the same mistake when you take the object as the visual image that we have in the process of perception."

"You've accused me of all the mortal sins but your charges are quite unjustified, I assure you. Now if you will consent to hear me out, I think we shall be able to avoid any further misunderstandings.

"I shall start from the point that prompted your accusations. When we look at an object, we see the object and not some other 'second' object that has taken shape in our heads. Of course, we don't see everything in the object and perhaps we don't see it as it is in reality. What I see in the object, and the object itself, are not one and the same thing. So I, like you, think it necessary to stress

[1] Dietzgen wrote: "...the non-sensible idea is also sensible, material, that is, real... The mind differs no more from the table, light, or sound than these things differ from each other..." (quoted by V. I. Lenin, *Collected Works*, Vol. 14, p. 244.)

[2] See V. I. Lenin, *Collected Works*, Vol. 14, p. 244.

that the visual image of the object, and the object itself, differ fundamentally from each other on the philosophical plane, are epistemologically opposed to each other, and any attempt to merge them may mislead you into confusing idealism and materialism.

"The only thing I don't agree with is the presence of some 'second' objective image in my head."

"I don't understand a thing! You've only just admitted that a visual image that differs from the object itself does exist! Well, that is the 'second' image. It can't be the 'first', the object itself! If it's not in the head, where is it?"

"It's just where the 'first' is, on the table... Now wait a minute, let me finish! But perhaps the best thing we can do is to open this book I have here and read it together."

The main obstacle to the correct understanding of the cerebral mechanisms of visual perception ... was the *"receptor" theory of sensation and perception* that held almost undivided sway over psychology and neurology in the 19th and beginning of the 20th centuries.

According to this theory ... sensation is a passive process caused by stimulation of the sense organs by external agents. The responses from the retina pass to the receptor centres of the cerebral cortex, where they become sensations; only later are these sensations united in perceptions, which in their turn are converted into more complex units of cognitive activity.

"You see what a specific scientific form the theory of knowledge that regards the acquisition of knowledge as a passive act of contemplation acquired in physiology and neurology. Having adopted these positions, even the physiologists were compelled to assume that sensations, perceptions and representations take shape as 'secondary' images in the receptor centres of the cortex. Note that the author calls this standpoint 'the main obstacle to the correct understanding of cerebral mechanisms'. This is yet another example of how contemplation, the notion of the process of cognition that we have been calling the 'pyramid', acted as a hindrance to scientific research. But let us read on.

The "receptor" theory of sensations tended to regard the first stages of this complex path as the elementary and passive physiological processes and the later stages as complex and active mental forms of activity. This theory inevitably caused ...

a gap between elementary and higher forms of cognitive activity....

A different approach to many of these phenomena is taken by the *reflex concept of perception*, founded by I. M. Sechenov and experimentally demonstrated by I. P. Pavlov....

The reflex theory treats sensations and perceptions as active processes distinguished by a certain degree of selectivity and including efferent motor elements. Sechenov pointed out that every act of visual perception comprised both centripetal (afferent) and centrifugal (efferent) mechanisms. In perceiving the objects of the surrounding world the eye actively "gropes" for them and these "groping" movements along with the signals from the eye motor muscles are elements of visual perception... So the investigation of visual perception under laboratory conditions shows that it has a complex structure, similar in principle to that of tactile perception, where the groping hand identifies a succession of attributes that only gradually unite into one contemporaneous whole (A. I. Kotlyarova, 1948; B. G. Ananyev, 1959). Genetic studies (Piaget, 1935; A. V. Zaporozhets, 1960; V. P. Zinchenko, 1958, and others) showed that the development of visual perception in the child also passes through the corresponding stages, first, the overall "groping" of the object by the hand and eye and only after this, the concentrated forms of perception. If the conditions of visual perception are made more complex, the process of orientation amid the separate attributes of the perceived object, and particularly the imagining of it, again broadens out and observation becomes a long "feeling" of the object by the moving eye. [1]

"Well, there is no need for us to go any deeper into the neurophysiological and psychological subtleties of the various stages of visual perception, but I hope you have grasped the main point: in its active seeking movements the eye 'feels' the object. Yes, our organ of vision is more like a hand than the lens of a camera. Incidentally, you wouldn't think of asking me such questions as: where is the weight or where is the firmness, warmth, shape and other attributes of an object that can be sensed by movements of the hand? Here you will say exactly what I said about visual perception: the hand senses the real shape of the object, finds it by feeling or groping. So why did you react so violently when I said that the shape of the object discovered by the eye belongs to the object itself? Yes, the eye 'feels' the object, gropes over it like a hand (not literally, of course, but I am deliberately

[1] A. R. Luria, *Visshiye korkoviye funktsii cheloveka i ikh narusheniya pri lokalnykh porazheniyakh mozga* (Higher Cortical Functions of Man and their Disturbance by Local Injuries to the Brain), Moscow, 1962, pp. 109-115.

using a well-known analogy) and in its movement reproduces the shape of the object. Where, then, is the shape, the visual image? In the head? No, obediently obeying the orders coming from the cortex, the nervous apparatus of vision detects at a distance, by means of electromagnetic, light waves the actually existing objects, glides over, scans their surface and, as it were, reproduces their shape in the course of its extremely complex movement. So the visual image is the movement of the eye over the object. It is just as much in me as outside me, and without the external object, without its real shape detected by the sense organs there can be no special 'second' object existing only in me.

"Our candle that was standing on the table has not jumped into our heads because my hand found it in the darkness and lighted it and my eyes at once 'fixed' on it and saw it. This is what I meant when I said that the candle I see is on the table. Where is the subjective idealism in this? Won't you admit that you were too quick with your accusations."

"Yes, I do admit that, particularly as I have only just properly understood how strong the influence of the traditional notion of cognition as contemplation is. I really did expect to be able to find some independently existing image in the brain, a kind of photograph of our candle. But what about the images of memory? What about dreams? In such cases I see with closed eyes an object that is not present. Where is the image of my memory or of a dream? That must be in me surely? But if it is possible for a memory image to exist in me, then. . ."

"No, strange though it may seem! When a person has a dream, his whole visual apparatus is in motion. The eye works and moves even under the closed lids, once again obeying the impulses from the cortex. And in this movement it repeats, as it were, the 'groping' that it did in a state of wakefulness when 'feeling' the surface of a real object. Similarly with memory. When we try hard to remember what an object looks like, we conscientiously move our eyes in the effort to reproduce its shape."

But at this point we shall leave the two disputants.

Even the memory of an absent object brings it before us, as it were. And only subjective idealism, making capital out of the fact that the mental (sensation, percep-

tion, representation) exists as a projection of the image outside us, as experience of the images before us, identifies man's mental world with the real, objective world. Not for nothing do many of the arguments of past and present begin with the indignant exclamation: how can one distinguish the image of the real, existing and perceived object from the image that one sees in hallucinations or dreams? This question was asked not only in 1710 but even 300 years B. C. And here we have a quotation from Bertrand Russell's book written in 1948: "It may be said that, though when dreaming I may *think* that I am awake, when I wake up I *know* that I am awake (that is, perceive actually existing objects and not merely experience the chimera of dreams created by my imagination—*F. M.*). But I do not see how we are to have any such certainty; I have frequently dreamt that I woke up; in fact once, after ether, I dreamt it about a hundred times in the course of one dream. We condemn dreams, in fact, because they do not fit into a proper context, but this argument can be made inconclusive, as in Calderon's play, *La Vida es Sueño* (Life Is a Dream). I do not believe that I am now dreaming, but I cannot prove that I am not. I am, however, quite certain that I am having certain experiences, whether they be those of a dream or those of waking life . . ." [1]

We shall have more to say about dreams later. And then, perhaps, we shall return to the question of the possibility of distinguishing dream from reality. At the moment Russell's doubts interest us only in relation to the fact that we see the object "in its absence" (in dreams, hallucinations, and so on) also outside ourselves, that is, exactly as we see an object that is before us in reality. The mental image of perception (representation, and so on) "merges" with the objective external object. On this point Lenin wrote: "One asks, how can sane people having a sound mind and good memory assert that 'sense-perception [within what limits is not important] is the reality existing outside us'?" [2] The real philosophical problem lies in finding the correct relation of consciousness, the mind (including "sensory representation") to the

[1] Bertrand Russell, *Human Knowledge. Its Scope and Limits,* op. cit., p. 186.

[2] V. I. Lenin, *Collected Works,* Vol. 14, p. 115.

"reality existing outside us", and not in reducing sensation to the physiological or in finding direct relations between the state of the neurons and the images of the objective world. The latter is obviously not a problem but a pseudo-problem, generated by the thinking of those who can see only spatial interaction of ready-made structures where it is really a question of a "self-developing organic system", the substratum of which is neither body nor environment taken separately, but the objective life-activity of the organism reproducing in its movements the objective peculiarities of external objects.

The basic defect of all materialism before Marxism was, as Marx said, its contemplativeness. The rigid and one-sided line taken by contemplative materialism compels the scientist to view the subject as something passive, responding to the stimulus of external objects. The object is the seal and the brain is the wax. To examine the properties and attributes of the imprint one must naturally study the wax, which, of course, merely copies the shape of the seal. This is the logic of the inventors of the notorious mind-body problem!

But the brain is not wax and the organism is not a lump of matter on which the external world leaves its imprints. And not just because of the different scales of their material and structural organisation. What matters is the way in which the problem is theoretically formulated.

One has read plenty of science-fiction stories about people from Earth meeting beings from the civilisations of other planets. Authors have imagined any number of forms of "thought substance"—an "ocean" covering the whole surface of the planet, a fungus or moss growing on rocks and plants, and so on. But what feature have they in common? Probably only the authors' profound conviction that consciousness is a direct function of a corporeal structure organised in a certain way. The structure, of course, has to be highly complex, no less complex than the human brain. But if a body and its elements are organised for receiving, processing and producing information, that body can also begin to think by itself. Computers are not yet very complicated, but the principle of their organisation is cerebral, so to speak, almost the same as that of the brain. Of course, we don't have to

rely on science-fiction to tell us about computers. There is plenty of ordinary scientific literature about them. Here is an extract from a book on the subject.

"...What, then, if a creature of similar behaviour (to that of a human being—*F. M.*) and intelligence were to be fabricated from components of quite a different kind with a nervous system and brain based on electronic components instead of neurons, for example? Would it too possess consciousness and the subjective feelings that go along with it? For all we know today, surely this has to be considered to be a possibility. And how about existing electronic digital computers? Is it possible that, somewhere among their wires and transistors, there already stirs the dim glimmering of the same kind of sense of awareness that has become, for man, his most personal and precious possession? Fantastic? Perhaps..." [1] Perhaps it is fantastic as yet. But if we consider the proposition in principle, if we adopt Wooldridge's position, we can envisage the possibility of the rudiments of subjective, mental states even in modern computers. And if they become more and more sophisticated until they reach the physiological level, one day their cybernetic poet will be writing about them that they "make haste to live and cannot wait to feel."

A scientist's belief is not only an indicator of his erudition and the depth of his positive knowledge. Like his knowledge itself, it tells us in concentrated form the direction of his theoretical researches, his fidelity to a certain logic, and his method of hypothesis about the target of his research. Dean Wooldridge is a well-known physicist.[2] And he does not conceal his dedication to his chosen method of studying man as an object of scientific research. I will quote almost without comment several excerpts from his book which testify eloquently enough to the author's opinion of his own method of theorising.

"In interpreting consciousness as a physical property of matter, we do not really need to go back 300 years to the time of Spinoza. We have no reason to associate

[1] Dean E. Wooldridge, *The Machinery of the Brain,* McGraw-Hill Book Company, New York, 1963, pp. 238-39.

[2] A review of his book on neurophysiology defines it as an introductory course on the physiology of the nervous system containing the latest results of research in recent years.

consciousness with all matter—only with the brain. And only with part of the brain, part of the time." [1]

"As the deepest penetration into the field of mental phenomena that we will make, let us see how far the *mechanistic point of view* that characterizes our approach to all such matters can carry us toward an understanding of the simplest type of concept formation—the establishment in the mind of a list of properties that together define a class of objects." [2]

The author goes on faithfully to reproduce the conceptualist notion of concept formation that we are already familiar with, and sums up as follows: "On our theory, the concept consists physically of a set of memory traces, in different and perhaps widely separated regions of the brain, one for each sensory modality that has been repetitively present during the learning experience..." [3]

The idea that a concept consists of frequently repeated sensations of the common properties of objects of a certain class was well known to the medieval conceptualist nominalists and much discussed by them in their own way. Here our author obviously goes back quite a lot more than 300 years; a thousand would be nearer the mark. As I pointed out in my first chapter, the simple repetition of the same set of sensory impressions evoked by objects of one and the same class does not constitute a concept of that class. This is as true today as it was 700 or 800 years ago. One has only to look again at the works of Abelard, Roger Bacon, Duns Scotus, Occam or some of the other medieval philosophers to realise how much more primitive our contemporary physicist's view of the "mechanistic" concept is than their concepts were.

[1] Dean E. Wooldridge, op. cit., p. 240.

[2] Ibid., p. 224. In another passage the author just as precisely describes his method of theorising: "The underlying thesis throughout has been, in essence, 'The brain is a machine'." (p. 230). And, even more specifically, on the consciousness: "But we are now about to concern ourselves directly with some of the phenomena of conscious mental processes and also with speculation on the kinds of purely mechanistic schemes of brain function that might underlie these processes..." (p. 219).

[3] Ibid., p. 225. Or even more explicitly: "In our terms, the resulting 'thought' consists simply of the subjective conscious effect produced by the simultaneous activation of the whole package of stored memory traces constituting the child's concept of 'apple...'" (Ibid.).

Today when we know that in the argument between the realists and nominalists the victor, historically speaking, was reflection—the profound self-consciousness of the reason, its critical and self-critical nature—we understand the agonising uncertainty that both schools must have experienced in trying to understand how "Something" that could not be reduced to external appearance suddenly spoke out proudly in the name-word and sign-word, revealing the single essence (universalia!) of a whole class of objects. The rationalistic ordinary notions of Reason and its concepts, far removed from any reflectional worries, are not helped out even by the reference to the latest findings of neurophysiology, since they too do not exist in themselves but are given meaning either by a reflective, self-critical reason or by an intelligence that is uncritical of itself.

So Dean Wooldridge's book attracted my attention for a very good reason. Its author, unlike some philosophers writing about the problems of neurophysiology, himself states quite precisely the main principle of his method of studying the object—the mechanism, the mechanistic standpoint. He is quite frankly interested in finding in purely spatial models of the interaction of elements of the nervous system and the cerebral cortex the mechanisms that generate mental processes as a direct function of these interactions. This is what his whole book is about. Following his own deliberately chosen logic, he (like Descartes 300 years ago) fully realises that "...the subjective phenomenon of consciousness—the sense of awareness that is more real to the individual than anything else (the Cartesian Cogito ergo sum—*F. M.*) has qualitative attributes that render it completely incapable of being derived from or accounted for by any combination of physical principles known today." [1] Only the faint hope that something of the kind may become possible in the future distinguishes Wooldridge's precise formulation from the Cartesian statement of the mind-body problem.

And here is yet another quotation from Wooldridge: "...This inadequacy of currently available physical science to explain consciousness can be either catastrophic (for hopes of deducing mind from 'physical pro-

[1] Dean E. Wooldridge, op. cit., p. 219.

cesses'—*F. M.*) or relatively insignificant in its implications as to the probable pertinence of mechanistic models of brain function. If the phenomenon of consciousness is an active and directly controlling part of the brain process under investigation, then mechanistic explanations are not likely to be in accordance with the observed facts of behaviour. If, on the other hand, consciousness is purely a passive property, a kind of window through which we can observe a small part of the workings of the brain without interfering with the orderly operation of the machinery we are watching, then we can hope for pertinence of our theoretical models to conscious as well as to unconscious activity.

"It is doubtless clear to the reader that we have been implicitly subscribing to the passive theory of consciousness. We shall continue to do so." [1] And further: "In what has preceded, and in what follows, we are considering consciousness in a similar way—as a sort of display device of unspecified calibration and distortion-producing characteristics, which is connected in an unknown way into the complicated circuit we are trying to understand, but which nevertheless provides clues that may help us find solutions to some of the mysteries with which we must deal. In the upcoming considerations, therefore, our concern with consciousness will reduce to the necessity of recognising its display-device features." [2]

Now that really can be called a consistent and honest position! The author realises that his method of approach to the phenomenon of consciousness is as inadequate to the phenomenon as the research media at his disposal. With Cartesian precision he places the mechanisms of the brain and the "subjective phenomenon of consciousness" on different and incompatible planes. Admittedly he hopes that in the course of time it will somehow become possible to align them. But in his present work he makes no attempt to hide their "incompatibility" and clearly limits the field of his research to the scope of natural science, and the consistently mechanistic method of this attempt to solve the mind-body problem (despite a clear awareness of the inexplicable yet fatal impossibility of

[1] Ibid., pp. 219-20.
[2] Ibid., p. 220.

such a solution) brings him to definitions dating back at least 330 years.

For Wooldridge now, just as it was for Descartes in his day, it is very convenient to consider animals as simple "natural machines" and confidently attribute all the peculiarities of their life-activity to the way their bodies are made. After all, Descartes said that to explain life he needed no other laws but those of mechanics. Judging by Wooldridge's book, the 19th and even the 20th centuries have introduced only one amendment to this statement. Namely, that the purely mechanical interactions are now supplemented by other spatial forms of interaction of "elements" of the living body--chemical reactions, electric currents, and so on. But the logic of treating the subject of study—in this case, man—has not changed one little bit. The whole field of our experience is confined to the structure of the body as such, as something with extent, and the other bodies with which it interacts in space. Whatever one says about the human body bearing the traces of previous "social" millennia and its being surrounded today by "culturally" organised objects, the logic of the investigation inevitably retains the principles evolved by Descartes. This is the logic of the analysis of the spatial interactions of the elements of a "mechanical system".

So the argument as to the possibility or impossibility of physiological (as well as physical, chemical, genetic, mechanical, etc.) interpretation of the "subjective phenomenon of consciousness" involves a clash not between certain natural scientific hypotheses or conceptions but between the ways of theoretically presenting the object of study. The fundamental point at issue is not whether physiological research into all these "mechanisms" of the higher nervous activity are necessary to explain how the conscious life-activity of the human body takes place, but whether the consciousness of human life-activity can be explained by any of the results obtained from the study of these mechanisms as such.

In 17th- and 18th-century metaphysics (that is, in the philosophy of the New Age) the mind-body problem formulated by Descartes states the question firmly and unambiguously, leaving no opportunity for sophistical manipulation of its essence. If the field of experience

comprises only "ready-made" bodies having extent and spatial organisation and their interactions, then human thought is either one of such interactions or something beyond the reach of experience and hence non-corporeal, something that can neither be reduced to the interaction of bodies or deduced from them as such.

As we have seen, Descartes chose the second alternative because he fully understood the incompatibility between all possible definitions of thought and the definitions of bodily extension that follow from its spatial organisation (structure). Moreover, it is possible, once again according to Descartes, to allow the entirely independent existence of two first principles, two substances—extensional and thought. There was, admittedly, a third alternative: to treat thought, spiritual substance as the prime element and to regard the corporeal as something passive, as the material of the active workings of the spirit. This alternative was elaborated by the idealist philosophy of the New Age.

As for the first alternative, its propositions were elaborated by metaphysical materialism. What had this materialism to say about thought?

Thought as part of a reflex arc, thought as electrical contacts in neuron circuits, thought as a process of the decoding, by special neurodynamic system, of external effects coded by the sense organs, thought as a secretory emission of the brain, and so on and so forth, or, to generalise, thought as the organism's experience of the states of its own nerves.

Feuerbach aptly described one such theory when he called it vulgar materialism. The word "vulgar" usually suggests something crude, ignorant and unschooled. But Engels wrote of those whose views aroused Feuerbach's irate reaction—Vogt, Büchner, Moleschott—that they never went beyond the bounds set by their teachers,[1] having in mind mainly the French 18th-century materialists. The vulgarity of pre-Marxist materialism, of metaphysical materialism, lies in its uncritical acceptance of the uninspired empiricism of purely experimental sci-

[1] See Karl Marx, Frederick Engels, *Collected Works*, Vol. 3, pp. 348-49.

ence,[1] which made do with the crudest kind of common sense, which sometimes serves us well enough in our domestic affairs but in matters of theory never rises beyond the simple devices of generalising and classifying objects as such.[2]

So the mind-body problem is the problem of how thought is generated by an extensional, spatially organised physical body. And the question it asks—can an extensional body possess in itself the ability to think depending on some principle of interaction of its elements, or can it not?—has not changed since the time of Descartes. Behind it there looms a deeper problem, the problem of the theoretical presentation of man as the subject of cognition. And there is no way (even on the basis of the latest data of natural science) of avoiding the choice:

either man is an object, a body on whose structural peculiarities all its functions depend,

or man is the subject of historical action, a history-maker, a being who lives in time and not merely in space and who realises in his personal bodily life-activity the universal forms of historical development of the means of people's objective action, and who only for this reason is capable of setting goals, of thinking.[3]

If, however, we take the second approach to man, then the mind-body problem simply does not arise. The

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[1] Where this leads was shown by Engels in his brilliant article *Die Naturforschung in der Geisterwelt* (Natural Science In a World of Spirits).

[2] See V. V. Davydov, *Vidy obobshcheniya i obucheniya* (Forms of Generalisation and Learning), Moscow, 1972.

[3] For example, the problem of the possible correlation of certain acts of behaviour (and the subjective awareness of them) with the neurophysiological mechanisms involved in their performance may be a very interesting and relevant problem of natural science. It will however, be a mind-body problem (even in the 21st century) in one and only one case: if the "correlation" is purely verbal while what is really being discussed is the "responsibility" of the neurophysiological systems for the subjective phenomena of consciousness, that is, the inferring of thought from the spatial mechanisms of the brain. And then Descartes, not to mention Spinoza or Feuerbach (who dubbed such operations as vulgar materialism) will again be more modern thinkers than all the contemporary exponents of mechanicism taken together.

new, essentially dialectical method of theorising removes it. But why? How? This we shall discuss in our next chapter.

Here I wanted to demonstrate that with a purely empirical approach to man as a body organised in a certain way both the alternative solutions are unworkable. And the example of Dean Wooldridge has already partially shown us that natural scientists capable of considering their work philosophically fully understand this. Let us conclude this section with some quotations from a book by the well-known neuropsychologist José M. Delgado. After what would seem to be every possible attempt to examine the causal connections between man's body and his behaviour, the author shows how deeply impressed he is by the argument that "human behaviour is oriented toward future goals and is not determined by past facts as in the physical sciences. . . ." [1] He is no less concerned by the following fact, ". . .the gap between neuronal physiology and mental activities is still immense. How can we relate electrical spikes or ionic changes in the cells with the reality of enjoying music, being in love, or writing a book? Are mental activities and neuronal physiology as unrelated to each other as the message of a painting and the chemical structure of colors and canvas?. . ." [2] And again, "Even if our methodology for recording electrical codes of transmitted signals were highly sophisticated, we would only be able to detect the carrier (of the information—*F. M.*), and not the meaning." [3] And finally, "The human newborn brain has, among other qualities, the capacity to *learn* languages, abstract thinking, and moral judgement, but *not to create them.*" [4]

What conclusions may be drawn from our criticism of the mind-body problem? Philosophically, the psychological theories of man's subjective world followed the empirical and rationalist definitions of human conscious activity. It is not hard to see that both these trends arose from a fixed idea about the "set of attributes" that man is sup-

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[1] José M. R. Delgado, M. D., *Physical Control of the Mind. Toward a Psychocivilised Society,* Harper and Row, New York, 1969, pp. 224-25.

[2] Ibid., p. 225.

[3] Ibid., p. 227.

[4] Ibid., p. 228.

posedly born with. The empiricists, however, tried [1] to present these congenital attributes directly as the individual's natural abilities, his ability to see, hear, feel, smell, taste, and also to generalise all that he perceives, while the rationalists, though recognising the need for sensuous contact between the individual and the external world, looked to the reason for some special attribute [2] associated with the laws of the external world of being that would account for the logical consistency and universality of the conclusions drawn by the individual. Both empiricists and rationalists, however, acknowledged the "natural light of reason" as an every-present instrument of internal mental activity, sent by God or nature to assist in man's existence.

In other words, both schools proceeded from the one principle that there is an internal world, a world of knowledge and experience, feelings and representations, desires and will, which constitutes the spiritual element in man, his soul, consciousness, "Ego", the Self, and that there is also an external world, the world of things, objects, phenomena, the world of spatially extensional bodies. Between these two worlds there is only the relation which man with the help of his sense organs (but still only thanks to the power of his internal natural light, his reason) can and does have in himself, in his internal world in the shape of the images of external things, and also knowledge of their nature or essence. Ideas, knowledge belong to man himself, they are his birthright, they are in him or rather in his soul, in his consciousness, in his mind. They are the content of the mind, its essential characteristic. And this characteristic does not include extent, corporeality, or any of the other attributes of the materiality of the external world of things. The external world is the world of things, which has no mind, no feelings, no desires, no sensations, in short, none of the attributes that constitute the spirituality of the Self. So psychological research was orientated on the spirituality, the special nature of the inner world of

[1] "Tried" because it didn't work, as the teaching of John Locke, the classical empiricist, on reflection illustrates.

[2] An attribute expressing the predetermined harmony of thought and being.

the mind, on its being unidentifiable with and even opposed to the external, material world.

But what in that case is a mental image, the image of the external thing in my mind? How does it arise and exist there? What actually does psychology study? Perhaps, it studies images and feelings, will and knowledge, emotions and thoughts, the aesthetic and moral qualities of the soul—the beautiful and the ugly, good and evil? But where and how are they represented as objects of study? In the external object there is neither good nor evil, nor sensation, nor will, nor thought. And psychology then draws a clear line between the field of its research and the field of the sciences studying the external world: Render unto Caesar that which is Caesar's, and to God, that which is God's. And this is where the unexpected happens.

Introspection—in this case the only logical method of describing and studying the internal world of the mind—turns out to be a quite simple and strictly logical manifestation of the vicious circle: what is to be investigated (my inner state) must at the same time emerge as the result of the investigation. In all the other possible cases (if we stick to the principle of "to God that which is God's") the internal world of the mind, if it cannot be conceived in its natural form, is expressed only in its external manifestations, as the behaviour of an individual possessing a mind, as his bodily reactions to external stimuli, as the "state of his own nerves".

And all these cases of reduction of the mental to the external, physical fact banish from existence the ephemeral spiritual quality, the internal subjectivity that forced us in the first place (along with Descartes and following him) to distinguish this internal world as a special world, fundamentally distinct from the physical world, as a target of purely psychological investigation.

But the individual's "inner world" is, in fact, the external world of spatially extensional objects detected by his organic "feelers", his sensory organs moving over the physical exterior of the object; a world inwardly recorded precisely as the external world of his own life-activity; a world discovered and represented (placed before me) by my own life-activity. And no other inner world (acting out of itself) exists. The image of the

thing is a thing outside me but perceived (taken into me) by me. Taken into me in so far as my life is not a separate relation with the given object taking place here and now, but a continuous, uninterrupted perception of the external world, that is, a perception that takes place in time.

Or to put it differently, every given moment of this continuity is a moment that lasts and preserves the past, a moment of discovering outside oneself the integral objective continuity of the external world.

So the "movement" [1] of the sense organs, their "external life", does not bring the image of the external object into the organism, but presents, as it were, this object to the organism (the integrality of its life). The objectivity of the image is literally the image of the object itself, detected and described by movements or vital actions of the sense organs. Of course, it is not an object as such, existing somewhere outside and independently of the organism, which is able to find, grope for, "feel" it with the feelers of its sensory organs. It is precisely "a subjective image of the objective world". And for this there is sufficient reason in the fact that this is a found, "groped for", felt world.

Here is a simple comparison. When an artist sketches an object, he reproduces its external appearance with, say, pencil, ink or water colour. It is "just the same" object that appears on the paper, but in colour it will nevertheless be different from what it is in pencil. And in the same way nature has given us its definite (limited) means of "drawing" the images of the external world. And the visible spectrum of electromagnetic oscillations is our seven-colour pencil which admittedly does not draw on paper or on any special "copying material", but in immediate contact with the object itself. The objectively existing (only outlined by our movement) object is illuminated by the Sun's rays, its surface receives waves, infra-red, ultra-violet, even X-rays. How should we see it if our eyes could also cope with such waves! But we

[1] I mean not only their motor movements over the external outlines of the object. The vital actions of the sense organs in their biochemical and other processes also use the energy of the active environment to detect and record outside themselves the objects of the external world.

draw it for ourselves, gliding over its surface with only seven waves. And even in this subjective light we see not an image of the object somewhere inside us, but the object itself. And in the light of our "perceiving" movement over its surface it is already subjective, an object perceived by us.

Doctors sometimes use the expression "probing sense". When probing the surface of the internal organs, the doctor uses a probe and his fingers to detect the resistance of invisible tissue. The intermediary, the probe, disappears, as it were, from the act of perception. The oscillations of the air or an electromagnetic field are the natural intermediaries of our audio and visual "probing" of external objects. With their help, but not feeling them as such, I present to the memory of experience (the integrality and continuity of memory that stores all my vital functions, all the movements I make in relation to the objects of the external world) yet another object that I have "groped for", "probed" at this given moment. I thus present to the external world itself which I perceive and experience yet another of its objects. And the external world that I have already perceived as a whole "assesses" this new object belonging to it in my act of relating it to this external world. And since the "assessment" involves representing the perceived objects by means of universal (historically evolved, common to all people) definitions of their meaning, the perceived (externally "found") objects acquire meaning, are perceived as something essentially meaningful, and thus become facts of ideal existence—cognised objects. Now they are a part, an element, a moment of the integral logic of the world of culture; they are fragments of the forms of truth, good and beauty that are inherent only in human beings.

Consequently the mind is certainly not what happens inside me and to me under the influence of external stimuli, but without them as such. Without them, that is, without correlation at every instant of my life-activity with the objectively existing world, my "inner world" cannot exist. That which happens inside me but has no objective representation outside me is not the mind. It is physiology, biochemistry, anything you like, but not my inner mental world! My "mental world" is above all the world of culture in which I live and act; it is the real

existence of nature assimilated by man, every detail of which signifies for me that which it objectively represents. In other words, my mental world is, in fact, the being, the existence of which I am aware. And now let us return to the difficulty that Bertrand Russell experienced in finding a criterion for distinguishing dream from reality.

4. Dreams of the Kurshskaya Sand Bar

So many things happen to us in dreams! Their capricious "logic" gets us into incredible situations, reunites us with half-forgotten childhood friends, with the dead, with members of our family in quite a different guise from what we are used to. We may think we are flying or, even without flying, land up in extraordinary places. But the most astonishing dreams I ever had—real full-length adventure films or brief but impressive short stories—were those I had on the Kurshskaya Sand Bar.

It's one of the most wonderful places in the world. From Kaliningrad to Klaipeda a narrow strip of sand (not more than half an hour's walk across) stretches for over a hundred kilometres with a ridge of dunes all the way along it, thickly wooded with short fluffy pine-trees. Only the high dunes beyond Nida are bare. The fine sand—one would think all the sand clocks in the world had been spilled out here—of this whitish yellow bar divides the water of the Kurshskaya Gulf and the Baltic Sea. The shore of the gulf is fringed with a mixed forest and along the sea coast much taller pines lean back slightly towards the dunes, as though tired of hearing the constant noisy sighs of the surf.

We have some good friends who live in Preiļi, a small fishing village that is now also a resort. How well we sleep when we stay there! We don't just go to sleep, we fall into nothingness. But then another life begins, a life quite different from the every day—far more dynamic, exciting.

One is always reading in popular literature on the subject about the "neurophysiological mechanisms" of dreams that the reason cannot control or correct, about "centres of wakefullness", about the chaotic mosaic of

"nodes of excitation" that switch on now one, now another image from past experience. This, so we are told, is what makes our dreams so fantastic and illogical. This is how events that have really been experienced are suddenly transferred to the illusory space and time of the dream world.

But the vivid and very logically developing dreams of the Kurshskaya Sand Bar could hardly be called spontaneous or chaotic. When I recall them I also start thinking about the logic of quite ordinary dreams. And that, of course, reminds me that I am not the first person to take notice of them. Take, for example, Sigmund Freud's *General Introduction to Psychoanalysis* and *The Psychopathology of Everyday Life.* Leaving aside his one-sidedly symbolic method of "interpreting" dreams and with it the whole pansexual conception, let us note only the fact that Freud regarded the development of events in a dream as being clearly motivated by their own content, even if their meaning was often not clear to the dreamer himself. In other words Freud categorically rejected the idea that the images and experiences arising in dreams were due to the dreamer's position, the state of his internal organs, and so on. Of course, physical factors (internal and external) affecting the sleeper may influence the images seen in dreams. But the logic of the development of the dream image is that of the meaning contained in this or that image, the meaning for the person who is dreaming. Freud rightly regarded the "physiological" theory of the causes of dreams as the dominant theory of his time, and it was this theory he opposed. He insisted that "dreams are not a somatic, but a mental, phenomenon". [1] In other words, "the external and internal stimuli operating upon the sleeper are merely the occasion of the dream and afford us no insight into its true nature. . . ." [2]

What led Freud to such categorical conclusions? The absence of semantic chaos in the mosaic of dream imagery. A dream is in its own way very consistent, as I can illustrate by telling you about the particularly clear and

[1] Sigmund Freud, *A General Introduction to Psychoanalysis,* Garden City Publishing Company, Inc., Garden City, New York, 1943, p. 90.

[2] Ibid., p. 86.

emotional dreams I *had myself* on the Kurshskaya Sand Bar.

One Kurshskaya dream made a special impression, so special that the following morning on the way to the sea, I related it in detail to my friends, pretending that it was a story I had read some time before.

"...But I've forgotten who it's by. Can't you tell me the author? The subject and general mood are very familiar."

"Green. Yes, I'm sure, it's Alexander Green," said one of my companions. "It's just like him. I think I remember one of his stories...."

But it was not a story by Green. I had experienced it all myself. This was certainly not a dream arising from a chaotic flow of memory images.

I dreamed that I was paying a visit to an old and very good friend. As I approached the house a wave of affection in me seemed to herald the joy of meeting. But the interesting point is that I was going to see a friend I had never known in "real" life. I had never seen him before for the simple reason that no such person exists. In my dream I had no notion of his face or figure. I did not even try to recall them. I didn't know why we had not met for so long. I couldn't remember what ties there had been between us in the past. It didn't matter. He was there, he was waiting for me. What more did I need?

One thing I did know was that my friend had some time ago suddenly become a very rich man. He must have been left a legacy or something—I don't know, but a great fortune had come to him all of a sudden. I also knew that the house I was approaching amid the bare fields under a grey lowering sky, a strange massive building with two round towers at the corners, had been built with this money. He had built himself a castle, where he wanted to live for the rest of his life in solitude.

The time and place, though apparently indeterminate, were nevertheless determinate in that it was not my country and not the present day. So according to the logic of events even the person whose life I was living in my dream was not quite me. Probably it was a character in some short story that had come back to me in dream form. However, it was I who was approaching

the house and I who could clearly see this absurd edifice and the slightly stooped figure of my friend coming to meet me up the slope.

Before this my friend had lost someone who had been very dear to him. I knew who it was and how it had happened, and so well that there was no need to ask about it or even go over it in my own mind. My friend was in a very bad state. For a long time he had lived in the deepest despair, then had come this unexpected legacy. So he had decided to build himself this shell, this tomb, and withdraw from life behind its walls, abandoning everything that might remind him of the past. This was also part of the emotional feeling I had about what would happen. I knew all about it and there would be no need for him to tell me again.

We met in silence, although we had obviously both been waiting impatiently for this meeting. At last he spoke. Yes, he was in a bad way. Very bad.

"This damned house . . . this tomb . . . It's choking me. It was inevitable, you know. It'll drive me mad. I think I'm slightly mad already. I'm sure it'll affect you too. There's something about it that leads to madness. You'll see."

Even now I clearly remember all the nooks and crannies of that strange mansion. Only two or three stories high, it looked low and sprawling from outside. But inside—br-r-rh! In each of the round towers a flight of broad steps led down into a deep crypt. Underground there were endless vaulted chambers, all of them dark and empty. I became forcibly aware that this house was my friend's morbid soul, suddenly embodied in spatial stone. And my head swam at the thought of approaching insanity.

Most of the time in the dream was spent touring the house. Then I advised my friend to go away for a day—to collect my luggage from the station, if for no other reason. And immediately after that came the scene of his return. During his absence (and evidently thanks to my efforts, though they were not included in the dream) certain changes, imperceptible from outside, had taken place in the house.

Excitedly but holding myself in check, I led my friend down the broad staircase into the crypt. And what

a scene of merriment confronted us there! The vaults of those once dark and deserted chambers were echoing with songs and the talk of young voices. There were flowers everywhere, a band was playing cheerfully, but not too loud. And I could hardly keep up with my friend. Astonished and joyfully confused, he was greeting the cheerful young guests at the tables.

As for me, I felt calm, light at heart and confident that everything would be all right and as it should be.

And now I come to the most difficult point—to convince the reader that nothing has been added or embellished in the story of my dream. On the contrary, the account I have just given is a very pale reflection of the feelings and sensations I experienced and to which I shall for a long time to come, perhaps all my life, return as though to perfectly real events of the past. The "past" that lives within us at any given moment of the present, that keeps absorbing new impressions and reacting sensitively to their meaning. Does the Self, the Ego ever really forget all the dreams that we find it impossible to remember when we wake up?

After all, we are not talking about an ordinary, daily awakening. If the whole "cosmic edifice of deduction", that is, all our notions of the world, is built on individual perceptions and their illusory nature is demonstrated by the fact that our dreams are sometimes more vivid, consistent and significant than many of the ordinary events of waking life, the question of distinguishing dream from reality becomes fundamentally important. What is more, for those who go along with all empirical philosophy in regarding the psychological characteristics of the individual's immediate sensuous contact with the surrounding world as a necessary and sufficient description of the source of man's cognitive activity, this question raises a fundamental issue. And if we agree for even a minute with the empirical approach to man and to human consciousness, my account of the dreams I had on the Kurshskaya Sand Bar inevitably becomes a weighty argument in favour of Bertrand Russell's thesis. Who then will prove to us that our waking life, obedient to our intelligence, is more significant for our soul, our mind, our vision of the world, than the vivid and powerful experience of dream images freely moulded from the mater-

ials of the subconscious by the productive force of creative intuition? After all, it's a fact. In a state of wakefulness I would never have thought of anything resembling the adventure tale of the Kurshskaya dream, never arouse in myself the "Alexander Green" who made me one of the characters in the story I have recounted above.

One can recall many examples of real scientific and artistic creativity in dreams. After long efforts to classify the elements, Mendeleyev suddenly saw his famous table in a dream. Mayakovsky thought of an extraordinarily powerful simile while asleep. He had been searching for a way of expressing his feelings that would not sound hackneyed. How would he, a poet, care for his love? Not like the "apple of his eye" surely! So many things had been cared for like that—in words! So he went to sleep on it. And suddenly he heard the words, "As a war-hacked soldier, without help or home, cares for his only leg." No machine flipping through all the possible variants could have produced that "bit of information". Only the great and easily wounded heart of the poet could pour such ardent human feeling into a line of poetry. So, perhaps, Bertrand Russell is right at least in suggesting that even a dream is Life, Life with a capital letter, forgettable, disappearing just as inevitably as all individual life that is born and dies on our planet?

But life, whether in dream or in our waking hours, is permeated by the bright light of consciousness. The question of the distinction between the "perceptions" in dreams and the perceptions of the waking brain becomes a primary and fundamental problem only on one assumption—that man builds all his knowledge of the world and himself from a mosaic of mental experiences of direct external influences. "Life is like a dream," says Russell in his book *Human Knowledge* using Calderon's phrase to discuss the fundamental theoretical impossibility of distinguishing dream from reality. A dream is like life is what anyone who had experienced the happy moments of creative inspiration in his dreams would say. Dreams are life, an inseparable part of it, determined by the same foundation as all man's conscious activity. Consequently, much depends on how that foundation is theoretically explained. This will form the subject of our last chapter.

But our discussion of dreams is bound up with what we have been saying throughout this chapter. The particular, taken as the beginning of a system of coordinates describing the whole conscious life-activity of the individual, automatically transforms the social into the environment of his activity. In both the logic of Russell and in the methodological assumptions of Delgado's and Wooldridge's researches the particular is understood unreflectionally, that is, as something directly and empirically given. The individual exists. Now let us see what his abilities are. And his abilities did not come with his genes. He became an individual long after he was born. The biography that shaped him as an individual lies not in the structure of DNA molecules or the "external social structure".[1] His biography begins not from the moment of his birth. He can become an individual (become the subject of his own life-activity) only by absorbing mankind's experience of the "nodal points" of human history. No, not simply by learning or memorising why Caesar crossed the Rubicon or when and how Russia adopted Christianity. We are not talking about school learning or about the assimilation of any ready-made tools, knowledge or skills. We are concerned with his

[1] One of my opponents, namely D. I. Dubrovsky, has twice acknowledged in his writings that "the conception defended by F. T. Mikhailov has a good many supporters and some rather impressive philosophical arguments have been marshalled to substantiate it". (D. I. Dubrovsky, *Psikhicheskiye yavleniya i mozg* (Mental Phenomena and the Brain), Moscow 1971, p. 51; see also his "Mozg i psikhika" (The Brain and Mentality), *Voprosy filosofii,* (Problems of Philosophy) 1968, No. 8, p. 128 But Dubrovsky himself understands these arguments in his own peculiar way. In the conception he criticises he sees an example of very primitive Lamarckian mechanicism. One would readily agree with him if one argued only according to the logic of generalising the facts of the spatial interaction of brain and environment: either the individual's brain, processing the external influences of the natural and social environment, is responsible for mental phenomena or the social environment wholly determines all mental phenomena, in which case the brain is only a passive instrument for transmitting and storing the images of the external world.

But the point is that for the human organism the social ways and means of human life-activity are not factors of the external environment, but the internal needs and abilities of the organism itself. So it works out that without deducing any philo-

living and direct participation in the historically evolved modes of human intercourse that shape both his body (even in the brain the migration of cells stops at the age of about ten), his needs and abilities.

Understanding the real living, individual not as a "point of departure" but as the result of all world history up to the present means individualising the social and understanding individuality as a social phenomenon. Perhaps this is the only way we can more or less imagine the individual's consciousness as the ability not only to perceive but also to know the surrounding world, and not only to know but to create a new world that does not yet exist, and create it not only in his waking hours but in dreams as well.

Any attempt to define consciousness in the narrow limits of the mind-body problem runs into the insoluble problem of creativity. The information reaching the brain and then floating to the surface in the images of memory, in the chaotic flashes of dreams—all this in some way or another fits into the spatial-structural explanation of the interaction of neurons, and so on. But no matter which of the two positions suggested by the logic of the mind-body problem you accept, whether you agree with the

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sophical arguments or, to put it another way, logico-theoretical definitions of the real time of the social history of natural man, by the purely spatial opposition of the human body to the "body" of the environment (let it be three times as social as it is) one cannot in principle see the strange fact (strange for Lamarckism and its neurodynamic opposition, to which the critic restricts himself) that this social "environment", that is, seriously speaking, the historical ways and means of human intercourse, took shape and will go on taking shape only together with all the organic attributes of the human being and therefore never was and never will be the environment that shapes him. That is why for Marx the essence of man is not an abstract inherent in the individual (for example, a special ability to adapt to the social environment or the ability of the brain to "codify" and decode information), but the real sum total of social relations. Marx warned: "Above all we must avoid postulating 'society' again as an abstraction vis-á-vis the individual." (Karl Marx, *Economic and Philosophic Manuscripts of 1844,* Marx, Engels, *Collected Works,* Vol. 3, p. 299). But Dubrovsky simply ignores the historical opposition between "illusory collectivity"—political organisation of class society—and the individual (and the dependence of the "partial" person on this objective abstraction of man's social essence). Consequently, he is left with the purely verbal abstractions: "social environment", and so on.

notion that the mental (consciousness) is the organism's experience of its own nerve processes, or whether you maintain that the mental is the external world itself imprinted in the brain in the form of "nerve copies", you will have to declare man's creative abilities a "special gift of nature", "the reflex of creativity that appeared in man in the process of his philogenesis", or some other reflex with a wordy designation that explains nothing. Consciousness is not the processing, storing and emission of information. Consciousness is only real when a person sees in the world that which does not exist and will never exist there without strenuous human activity, but which can be created in the world and according to its laws (knowledge!).

Even the dreams we have are not memories, not deliberate combinations of past images. In dreams our consciousness, having escaped the control of rational judgement that checks our every step against the perceived world of things, has free play and creates people, characters, circumstances, moods, feelings and sometimes even new ideas, new music, new poetry. And the real riddle of the human Self lies here in the riddle of the creative abilities of the consciousness.

And now to close the chapter I will tell you about just one more of my "dreams". Admittedly I sometimes have it in my waking hours, and not only on the Kurshskaya Sand Bar. But in any case I could have dreamed it. After all it is conceivable that in reply to my "attacks" and in accordance with the beliefs he expounded in several of his works, Bertrand Russell might have joined in the dialogue and offered some criticism of the basic ideas of the "Riddle". So I often dream not of Lord Bertrand Russell, but of one of his pupils, who agrees with his views, taking up the argument with me, the Author.

Pupil. Your book didn't strike me as at all convincing.

Author. So you must have some objections. I should like to hear them.

Pupil. As far as I can judge, your conception of knowledge is the traditional utilitarian scheme of reflectivity illuminated by some striking ideas from the creative evolution of Bergsonism, plus a pretty good share of Hegelian mysticism. Quite an original mixture and, in my view, extremely amusing.

Author. So far I have heard only your appraisal. And the implied reproach of eclecticism, of mixing the unmixable. Well, I am not surprised to hear you speak of the utilitarianism of our school. Your teacher, Bertrand Russell, passed the same judgement on the philosophy of Marx. Remember the *History of Western Philosophy* (pp. 782-90), where he treats Marx practically as the founder of pragmatism and associates him with John Dewey. He is no less "amusing" in what he writes about Bergson. Let me remind you of a passage from the chapter on Bergson in the same book. "As intellect is connected with space, so instinct or intuition is connected with time. It is one of the noteworthy features of Bergson's philosophy that, unlike most writers, he regards time and space as profoundly dissimilar. Space, the characteristic of matter, arises from a dissection of the flux which is really illusory, useful, up to a certain point, in practice, but utterly misleading in theory. Time, on the contrary, is the essential characteristic of life or mind. . . ." [1]

I must also remind you in view of the large share of Hegelian mysticism you find in my conception that in the same book Russell himself reproached Hegel for mysticism, for disbelief in the reality of individual things.[2] But Hegel, incidentally on the same grounds as Bergson, regarded the spatially formed thing as only a moment of reality, and a moment which outside the flux (in Hegel, "process") was deprived of its own essence. As a Marxist philosopher, I feel flattered to be included in such company.

Hegel calls purely spatial "determinations" (definitions) outside the real process, outside time mechanisms. In this case, as Hegel wrote, "the distinct terms are *complete* and *independent* Objects, which consequently, when they are related, are related only as *independent*, and in every connexion remain *external* to one another. . . ." [3] And further, these mechanistic "Objects are indifferent to this unity and preserve themselves

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[1] Bertrand Russell, *History of Western Philosophy,* p. 823.
[2] Ibid., p. 770.
[3] *Hegel's Science of Logic,* Vol. II, George Allen and Unwin Ltd, London, 1929, p. 350.

against it".[1] Not so in Time. Unity in the historical process is unity of the root, the unity of belonging to the whole, the unity of diverse forms of development of the one foundation. This is where the essence and dynamics that cause the transformation of objects, their development as self-development is revealed. Here is Bergson's "flux" for you! Here is the definition of life and reason as a process! Neither Hegel nor Bergson took this splendid idea of "Time" as far as conjunction with the "inner" determination of spatial bodies. For Hegel, nature remained the extensional corporeal embodiment and stopping of time—logic of the development of the Idea. For Bergson the gap between space and time is even more fatal and cosmic. Space and time do not even transmute into each other (as the Idea necessarily regresses into matter in Hegel), but simply clash and fight like two mutually exclusive principles.

Your Teacher singles out some of the profound thoughts of these philosophers, such as the idea that reason (consciousness) is congenial precisely to the wholeness of the process developing in time. That was a very acute summing up and it showed Russell's profound philosophical intuition. Marx, too, whose point of view I have been trying to popularise in this book, saw the world not as an unencompassable sea, not as a conglomerate of things that remained indifferent to each other in all forms of their mechanical, spatial interactions. He envisaged our world as a flux, a process of self-development bringing to life the organs that are lacking.

Pupil. I didn't mean just the idea of Time as a meaningful definition of the process of self-development. Taking for your point of departure the naive dogmatic scheme of reflection, which requires a strict delimitation of images and things, you then proceed in the spirit of Bergson to identify the act of cognition with the cognised object, thus smothering the contradiction thus caused with the Hegelian logic of predetermination. The result of this symbiosis is a very weird conception of the world and thought. When we are told that thought is simply a means of action, simply an impulse to avoid obstacles we are inclined to think of a cavalry officer rather than

[1] *Hegel's Science of Logic,* op. cit., p. 355.

a philosopher, who should be engaged in calm and thorough thought.

Author. I find that difficult to understand. What did you see as the starting-point of the conception presented in this book? The strict delimitation of images and things? But open your Teacher's book. All the obstacles to cognition arise from the demand for a strict distinction between images and things. One should not confuse the problem with the attempt to describe its final solution. When your teacher writes that the vast cosmic edifice of inference relies on immediate sensory images of perception ("the initial perceptual datum"), he simultaneously expresses doubt in the correspondence between these images and real objects. And in general, he says, life is perhaps only a dream. He thus distinguishes images and things in a way that no advocate of the naive dogmatic scheme of reflection ever did.

The question of cognition is primarily a question of the correspondence between our knowledge, our notions and the images of things. In the naive dogmatic scheme of reflection (my name for it is the empirical scheme of knowledge) the whole task boils down, first, to finding these images somewhere in the brain, and then checking to see whether they exactly resemble the things. This proves to be impossible, if only because no images have yet been found in the brain, and if they were found, they would have to be compared again with images; according to this conception, when I look at a sheet of paper, my reason records its image in the consciousness, and I can compare the image only with what I see. And then we are told there is no way of distinguishing the image of perception from the things themselves. It was your Teacher who wrote that, not me. And it is this point of view that I call the result of the naive dogmatic notion of cognition.

I have already spoken of Bergsonism, and its "spirit" does not strike me as in any way contradictory to calm and thorough thought. The fact that the "substance" of a thing, when perceived, does not move into the body of the knower was known to the ancients. Both Democritus and Aristotle (at a different level) believed that it is the form of things that is reproduced in the knower. Spinoza and Bergson, each in his own way, developed

this idea; the form of things is developed in motion, in the process of man's life-activity. It does not move into the body of the knower and is not imprinted on it; man by the motion of his body (and intellect, according to Bergson) "flows" over the form of the thing and thus registers the thing itself outside himself, and not some "image" inside him. All this demands strict distinction between the subjective motion of the vital organs over the object and the object itself, which exists outside and independently of the individual. The whole point is how deeply and comprehensively we reproduce in our life-activity, in our active relations with each other, the objective properties of objects.

Yes, we—you, me, Russell, everyone—do have to "circumvent obstacles", and if only for this purpose we must be able to determine their actual nature in the process of calm and thorough thought. And since the obstacles are not only of the kind that the cavalry officer usually has to deal with, but also of the kind, for example, that prevent peace from being finally and firmly established on earth, and against which your late teacher took his stand, we have to learn theoretically, by thought, to distinguish words from deeds, conceptions from propaganda, and again in the process of the most calm and thorough thought we have to reconstruct in the motion of subjective thought the objective causes that are leading the world to the brink of suicidal war.

Yes, thought is a means of action, if only because it produces the goals. A person cannot live without goals, any more than he can live without a future. And without goals he certainly cannot calmly contemplate the world.

Pupil. But when you criticised Russell's doubt as to whether it is possible to prove the distinction between a dream and the sensation of the real object, you had evidently accepted the picturesque myth that in our behaviour we are condemned to be the slaves of instinct, while the life force drives us constantly and incessantly forward, and had decided that this myth offers a far more convincing picture of the world than a healthy and reasonable scepticism. Your conception has no room for the moments of contemplative insight into the essence of things, when we rise above animality and begin to

comprehend the more important goals that free man from animality.

Author. A picturesque myth, you say? But surely that assessment is already an example of scepticism. Healthy scepticism? Perhaps. Reasonable? No, more likely, emotional. Your reproach is emotional, you are bitter about the way people are doomed to be the slaves of instinct, of the incessant urge to move forward. "Stop!" you want to shout. "Look around you! There is something eternal in this world, there are the stars that have been shining above the earth for millions of years. Here is the true scale of human thought!" And your feeling stirs and worries me, as it does any thinking person. But surely your healthy and reasonable scepticism is an assertion of that very same myth and a convenient choice of position for contemplation. If the world is an endless steeplechase, the place for the sceptical philosopher is in the stands. But perhaps it is time to take a broader view of the whole scene and look at it not from the stands or from the horse's back, not with the eyes of the sceptical onlooker or cavalry officer intent on winning the prize? Perhaps it is time we understood that in simply contrasting their one-sided views we lost both the capacity for truly wise contemplation and the capacity to avoid obstacles and reach our goals?

Pupil. Now, of course, you will start quoting Marx. Philosophers have only explained the world, but the point is to change it. But one can change the world only according to the highest goals, whose cognition and discovery demands...

Author... calm and thorough thought. That's true, very true indeed. But what is thought? If it is only a process of inference from individual sensuous images, then we really have no other means but the passive contemplation of these images. I'm afraid that in this case no other goal may appear.

Pupil. Do you know what thought is?

Author. Thought is not contemplation but creativity. And to give ourselves a better idea of what that means let us try to imagine a substance capable of generating thought.

5. The Substance of History

A vast number of diverse sciences are today engaged in studying man and his life-activity. It is hoped that a summing up of the knowledge gathered by these sciences will yield an integral picture. The general scheme of the argument runs something like this. Physiology will help us to establish the vital functions of the organism and its separate organs, genetics will tell us the laws by which they are passed on from generation to generation, medicine will explain the main causes of disease and the inevitability of death, psychology, the general features and peculiarities of the mind, sociology, the established relationships forming the social conditions of human life, political economy, the prerequisites, means and modes of production and distribution of goods, and philosophy, the pathways to knowledge of the most general laws of nature, society and thought. Linguistics, logic, aesthetics, ethics, pedagogics and many other sciences will in their turn, and each in its own way, show us how the human consciousness is shaped. And after that we shall probably be able to choose from the whole ensemble of information certain fundamental facts whose enumeration will provide us with a definition of human essence.

This approach to the human being as the target of overall cognition may look very promising. Man will be represented as a whole set of problems that can be solved by gathering a corresponding set of objective information about his life-activity. Naturally we must proceed from the notion that human life is built up out of different, relatively independent processes. For example, the organic life of the body is part of the set. In order to live, a human being must breathe, so like all other mammals he must have lungs. He must eat and drink, so again he must have the corresponding organs and mechanisms. Every organic function of the body implies its own set of organs. And the sum total of all these functions should constitute the actual process of human life.

Besides all this, a human being must with other human beings produce the material conditions for living: food, clothing, a place to live, and so on. Joint activity and the forms of intercourse are not bodily inherent in him and cannot therefore be studied by physiology. So

in the set of processes comprising human life there is yet another, relatively independent process—that of the development of the forms of human intercourse. The mental functions, oral communication, thought, morality, aesthetics, the pedagogical process, technology of production and so on can be singled out and studied as special subjects ad infinitum. These subjects themselves can be further broken down (for instance, the physiology of nutrition, the psychology of perception, folk art or language, the art of education, language learning, etc.). Human life is thus presented still as a vast mass of diverse and—with every fresh attempt at research—increasingly diversified processes. How then is one to select from the sum of all these researches the main inferences and definitions that determine the very essence of man? How can one coordinate medical recommendations with discoveries in linguistics, physiological descriptions of the functioning of the organism with the theory of surplus value, the theory of free will with genetic determination of types of higher nervous system, and so on?

In short, how is one to put together the chaotic whole that emerges in the processes of research?

To do this, one must find (or have) a base. The base could be, for example, the belief that the human being is a highly developed animal, who in the process of his biological adaptation (and according to its laws) has "built up" the animal's inherent capacity for signalling other animals to the point of articulate speech, the animal's inherent ability to deal with natural objects to the point of producing tools, and its orienting, tracking, "searching" ability[1] to the ability of creative thought, of goal-setting (reason).

In that case our belief becomes the basis for uniting all the results of the specific studies into a complete and integral set of knowledge about man. Then, for example, we shall explain human creative abilities as a developed "creative instinct" or as sublimation of the sexual attraction. Intellectual genius will be due to mutation, the class struggle will follow the laws of the struggle between

[1] An ability that allowed Engels to speak of the link between the rational activity of the higher animals and man, and that the famous French psychologist Henri Wallon called the animal's "situational intellect".

species for survival, and so on. The general theory of man built on this foundation will in its own way be consistent and free of internal contradictions. But the trouble is that each of the specific lines of research (even the physiological, not to mention the general biological) could claim the right to become the foundation for uniting all the others.

The linguistics expert who actually uses the data of physiology (e.g., to explain certain features of pronunciation by the anatomical and physiological structure of the human articulatory apparatus) will nevertheless regard speech communication from the standpoint of the "symbol system" and its laws as the essence he seeks, in which case he may interpret physiological processes as necessary and subordinate mechanisms controlling the whole life of man. Man, he will say, lives according to the laws of speech communication and wholly depends on its internal laws, expressed in the structure of language. The economic structure of society, the class differences and antagonisms, political forms and functions will all be given their "semantic" explanation. And on this foundation internally non-contradictory conceptions of the essential nature of man can be and actually have been built.

The same may be said of cybernetics, which arrived a little late on the scene but immediately moved up front thanks to the very general nature of the categories of "information", "code", "bit", "feedback", "control", and so on.

So which of the specialised lines of research into the various processes that comprise the whole process of human life-activity is one to choose as the basic? They nearly all claim this role. But can anyone of them provide the key, the *foundation* for all the other specific manifestations of human life-activity? Or perhaps the answer lies in generalising the basic conclusions from all these specific studies?

The trouble is, however, that each of these conclusions must in its turn be the ultimate generalisation of all the data gathered in that particular field regarding the independent processes of human life-activity. These summary conclusions, detached from their detailed basis as a result of maximum generalisation, are bound to be

abstract. And this means that we are forced to adopt definitions such as "man is an animal living and acting only in intercourse with its own kind, producing tools, possessing speech and the ability to think, moral consciousness, aesthetic perception", and so on.

Having started from these simple and abstract notions of man, we then proceed to generalise the results of the specialised studies of each of the relatively independent processes "responsible" for each of the above-mentioned qualities and once again arrive at the same (at best amended, made more specific) simple and abstract notions. Admittedly, when we can at any moment refer to the data of specialised studies, they do look fairly well grounded. And for this reason, following Marx, we call them not merely initial notions but elementary definitions.

So the method of generalising specialised, independent studies of the specific features of human life-activity that are necessarily recurrent in every human being may be logically expressed as follows: from the chaotically presented whole that we see before us—the sensuously concrete community of actual, living individuals acting together—we begin, on the basis of the available set of most general, initial empirical notions of society itself, of the organisms of individuals, of their consciousness, etc., to study the separate processes that condition the qualities noted in the initial notion. This is the first stage of the method. Then comes the generalisation of conclusions based on these studies. And thus we arrive at a set or ensemble of abstract, elementary definitions.

This method of research is usually known as the path from the sensuously concrete (chaotically presented to us) to its abstract, simplest definitions.

But we still shall not find either in the elementary definitions, or in their simple sum total, the one foundation (essence) that would unite them all as specific manifestations of itself.

Having analysed this path in detail, Marx considered the right scientific approach to be the movement of cognition from the abstract to the concrete, from the abstract universal definition of the one foundation to the developed concept of the integral process of development and formation of the object as a whole in all its concrete diversity.

Concrete knowledge is, in fact, knowledge of an object as unity of diversity. This is possible if the object studied is presented theoretically not only in space (as structure), but also, and mainly, in time (as a process). In this sense "man as a complex problem" means not the sum of information about man, no matter how outwardly well trimmed this sum may appear to be, how well all the different bits of information have been dovetailed. "Man as a complex problem" is knowledge of man's essential nature that holds good for his whole history and generates all the innumerable and diverse manifestations of human activity.

Such is the second path, the path of discovering the essence. So the path from the abstract to the concrete, the correct path from the scientific point of view, lies in the logical reconstruction of the process that leads to the given result. Here we are confronted with the process itself, understood as the way of solving the initial contradictions, as a process of self-development of an integral organic system.

In abstraction from the universal nature of the laws of development of social forms (forms of intercourse in activity or, to be more exact, forms of activity realised in intercourse), both *nature* and *man* are presented as "abstract objects", as ensembles of things taken ready-made, without reference to their own history and entirely determined by the present, given *corporeal* organisation.

In this case there is no alternative but to describe the available facts of the interaction between the organic "structure" of the human body and the "external environment", whose definitions include society itself as a pure abstraction opposed to the individual.[1]

And the individual consciousness, considered in isolation from the actual history of the shaping of the forms of human intercourse, turns out to be only a "function" of the human *organism* and can be examined only as the *ensemble* of the mental abilities inherent in the organism: thought, will, emotions, sensory perception, and so on.

[1] In such cases one gets people writing this kind of thing: "Unlike the animal, man *adapts* not only to the natural but also to the social environment."

So when we ask how can the human consciousness be developed into a comprehensively developed personality, the answer naturally seems to lie in plain extrapolation of the professionally limited notions of man in general that have emerged from studies of his abstractly considered abilities.

For example, if a geneticist abstracts himself "professionally" from the real *process* of objective human activity, which is always structured in the historical forms of intercourse (and the human individual can develop only in the latter), he can give us only a purely abstract *projection* of the ideal man, and propose "scientific" methods of eugenics for its realisation. What else? Here the logic is unshakeable.

We already know that judgements concerning the "essential forces" of human life-activity that crown such studies quite unexpectedly and with enviable precision repeat the original chaotic notion of the whole or, at best, the initial empirical sorting out of materials — the scanty abstractions, as Marx called them.

Let us assume further that someone is studying the "mechanisms" of the *understanding* of human speech. Here the experimental field consists, on the one hand, of the human brain with its "information sensors" (sense organs) and, on the other, living speech, its separate semantic elements. One can use the methods and apparatus of the latest most sophisticated kind: microelectrodes planted in the brain, electroencephalographs, and so on. But what is actually being studied by such apparatus has already been *identified,* pinpointed, targeted not by the apparatus, but by the initial belief that language itself, man's means of speaking and thinking, carries *in itself* certain adequate and necessary information (meaning of words and other elements of speech), and that the human brain as such is capable of coding, storing, collating and decoding, in other words, *understanding* the given information. This somewhat "chaotic notion" is, as we know, generated by the empiricist principle that science studies ready-made objects in their interaction by establishing the invariants of the latter, by throwing out everything that is accidental, non-repetitive, unalgorithmic. The limitations of these principles were brilliantly exposed by He-

gel, who qualified such "interaction" of ready-made objects in isolation from their history, their genesis by the precise and absolutely justified term "mechanism", and regarded this as a way of characterising interacting objects that was *external and indifferent* to their essence. Marx fully agreed with the criticism of the empirical way of studying "objects" isolated from the process of their development and thus turned into abstractions. And for the same reason Engels held that the natural scientist who wanted to come to grips with concrete reality should study the *history of theoretical thought.*

The research scientist's spontaneously empirical orientation, his isolation from the history of theoretical thought and hence the isolation of his *object* and its *process* of development, all these forms of abstraction are simply specific forms of the universal "abstraction" — the social division of labour, the fragmentariness of people's modes of activity under this system.

The result is that in our example, too, just as in Marx's example of the economists of the 17th century, the scientist seems to begin his experiment from a "living whole", from a human being with microelectrodes planted in his brain, with living conversational speech and its shades of meaning. But strange though it may seem at first glance, the natural result is the emergence, as Marx writes, of "scanty abstractions", of certain "abstract universal relations", that is, the same old "coding", "decoding", "collating of the perceived verbal information with what is stored in the memory", and so on. Moreover, some of these "scanty abstractions" (of the "*word* in the brain" kind) turn out to be meaningless precisely because of their uncritical, hasty association, which is always possible owing to the *indifference* to the *essence* of the object that was pointed out by Hegel.

What can our hypothetical researcher tell us about the person of the future, about his consciousness, about the ways and means of shaping his communist consciousness?

Well, he may say, for example, that this person will be somewhat cleverer if the processes by which his brain decodes the growing flood of information are intensified,

optimised and so on. And, of course, genetics and eugenics must lend a hand in his training and education.

We must trace this argument to its logical conclusion. Since this ominously growing flood of information is itself always professionally oriented and requires increasing initial preparation of the brain, the brain itself must become professionally oriented (and thus limited in its abilities). Genetics will help (pedagogics is already helping) to breed professionally oriented populations, and eugenics will perfect its work by artificial *selection of the fittest. Fittest to occupy,* we must add, the place assigned to the given individual before birth in the profoundly specialised mechanism of the socium, the "surrogate collectivity". But how little this individual resembles the comprehensively developed personality!

This is how "pure", objectively specific research, free of any orientation on the logic of social development and stripped of any terms or other means of "contacting" social concepts, historical activity, may and quite frequently does turn out to be a social theory in the original sense of the word, that is, a theory proposing a model of a future society and the means of achieving it. This is yet another paradox of the narrow professionalism of human activity in the conditions of the social division of labour.

Definition and generalisation of the constant functions of the crystallised "ready-made" person *in isolation* from the whole process of historical formation inevitably makes him a rank-and-file participant in the spatial interconnections of natural bodies. The human being is merely an element in the mechanical picture of the world, and to educate him, to achieve any goal-oriented change in him must mean one of two things: either changing his external "environment" with which he interacts, or changing his internal structure and thus, the mode of his interaction with the environment.

In both cases the trainee is viewed as a programmable "machine". In the capitalist system of social division of labour, which sharply contrasts activity with material objects (bodies) to actually productive, creative intellectual production, the method of analysis of *mechanical systems* has become the dominant method

of theorising. This method was born along with machine production as a method classifying purely "objective" knowledge, in other words, natural science. It produced the mechanical picture of the world in which the human being appears to us not as the result of his history, but as its ready-made and eternally given premise (Marx). He could only fit into the mechanical picture of the world as a body participating in certain interaction with other bodies. And it was in this mechanical sense that man was defined by Descartes as a living mechanism, whose principles of existence were the laws of mechanics (see above). And to this day in natural science with its own restricted "objective" methods of research man continues to remain an object essentially summed up by all his constant interactions with other objects (natural and social) permitted by his internal "structure". Even today some natural scientists are either still hoping to find answers to the problem of man in the spatial bodily functions of the human organism or else they realise the futility of their efforts and adopt idealist religious moral positions. Such is the outcome of the mechanical purview.

The prevalence of empirical methods of scientific research and thought produced a stereotype definition of the terms "individual", "individuality" and "personality". The empirical generalisation is based on abstraction from the particulars offered by single phenomena and therefore establishes only the general, that is, the repetitive in phenomena, classifying them according to species, genus, class, and so on. The definition of genus precludes so-called "peculiarities of species", the definition of "class" precludes genus characteristics. Such a "logical construction" ignores the genetic (and hence causal) link between genus and species, which lies in the fact that the initial "species" that later generates a whole *genus* of its own varieties (species) does not stand side by side with them but represents the initial cell of a species-forming process, a cell that carries *all* the determinants of its genus.

Such logic began to reveal its weakness in the biological classifications. But it is still used, strangely enough, in some psychological and pedagogical studies.

It also appears in "definitions" of the individual of

the human race. For example, human *individuality* is defined in the Soviet *Pedagogical Encyclopaedia* as follows: "Individuality is the sum total of attributes inherent in a separate organism and characteristically distinguishing it from other organisms belonging to the same species. Unlike the concept "personality", the concept of "individuality" refers not only to human beings. Individuality may manifest itself in any structural or functional, congenital or acquired feature of an organism.... When one speaks of a person's striking individuality one usually has in mind the essential originality of his intellectual or moral qualities, unusual will power, or other features that distinguish him from other people." [1] This "essential originality" is then stated to be dependent on the individual construction of the organism. This shows once again that the logic of empirical generalisation is compelled to "infer" all general and special functions directly from the structure of the "individuals" in question or, to be more exact, to reduce the human essence to the elementary spatial relations of the organs of his body.

So we have a list of attributes of the genus, we have the peculiarities of the species and finally, we have the inimitable originality of those same attributes in separate individuals. Any fostering of individuality, thus defined, involves planned influencing of the emotional (separately!), intellectual (separately!), moral (separately!), and volitional (separately!) "spheres" of the person in question. There is no system-building, integrating principle. Here we have only a conglomerate of abstractly defined "qualities".

So the general name given to the recurrent "attributes", "functions", "properties", etc. of individuals denotes species attributes, while the individual is defined as an empirically given separate being possessing these attributes, whose individuality is summed up by stating the peculiar way in which they are combined or manifested. To put it more simply, all individuals of a given species would be exactly similar if their similar properties did not in some way differ. The causes of these dif-

[1] *Pedagogicheskaya entsiklopediya,* Vol. 2, Moscow, 1965, pp. 208-09.

ferences for their genus and species essence are external and accidental.

It is according to this logic that the human individual is said to possess a whole range of organs, functions and properties that are standard for "man in general". The list includes: specific organisation of the body (upright gait, developed larynx, and other organs needed for articulate speech such as ear lobes), reason, will power, emotions, moral consciousness and a more or less stable set of physical needs and abilities. We are speaking of individuality when we note that a certain individual's nose is longer than the average, his brain quicker, his head balder, his will weaker, and so on. How characteristic is that expressive comparative "er", denoting only a quantitative change of the same quality!

The essence of empirical generalisation lies precisely in the fact that actual development — the process of the forming of a *new* quality — remains outside its frame of reference. So the cause of development, change, isolation, individualisation is for this logic always accidental and to be found *outside* the process itself. [1]

In genetic logic the generating system-building factor — the initial contradiction — turns out to be the integral foundation of the whole process. Taking place in time and space, endlessly varying its forms, identifying the different, and setting the similar poles apart, this process remains itself in all its forms until the initial contradiction is resolved, while the *basis* of all its creations survives. The given basis is in fact the genetic (literally birth-giving) essence of all the individual manifestations of the process. So the universal here is not a general term denoting only similar properties characteristic of all the units of the given set. (Incidentally, they are similar only if one abstracts from peculiarities! But peculiarities are steps in development, stages in fundamental qualitative change, historical variants of the ways of resolving the initial contradiction! [2] Here the

[1] See V. I. Lenin, *Collected Works,* Vol. 38, pp. 359-60.

[2] Marx proved that the method of empirical generalisation or the abstracting from a set (conglomerate) of individuals their recurrent "qualities" is merely an uncritical "transformation" of the available one-sided facts of historical development into a general name.

universal is the root, the initial definition, the original conflict containing in itself as its own future the fundamental inevitability of its solution. And every creation of the universal is its own motion in space and time, is its new place, its new "geometry", its particular individual realisation. And now the initial contradiction lies wholly in the process of its own resolution, knowing no other existence but the medium of its unique, peculiar individual realisations.

In order to be, to become unique one therefore has to travel the whole path of individualisation, one's own particular path, the path of transformation of the particular into the unique, where the particular develops into the inimitably unique realisation of the universal.

The relationship between the individual, individuality and the human personality is built objectively on the genetic principle of the unity and integrality of human life-activity. And this means that only in society, in a community and with the help of historically evolved cultural media can man become an individual. Even to exist as a given unique individual body, as an individual "human being", he must be individualised by his own, personal biography in living, minute-to-minute relations with other people. A relationship is mediation and the mediating factor in human relationship is their common historical biography—the history of the development of culture. Therefore in definitions of man, the individual and individuality are in a special relationship of "intertransition".

Human individuality is the inimitable originality of each individual Homo sapiens, realising his life-activity as a subject of socio-historical development. The inimitability, the uniqueness of the individual is determined by the organic unity and integrality of the process of development of his needs and abilities, which are formed in active intercourse with living, inimitable bearers of social culture. The essential media of this intercourse are the objective forms, ways and means of culture: the instruments and products of all forms of socio-historical activity (labour), language, knowledge, skills, abilities, and so on.

Living, active intercourse realised through socially significant (universal) media and therefore goal-orient-

ed, shaping a person's needs and abilities, has determined in philogenesis and determines in ontogenesis for example, the formation of the cerebral structures that continues up to the age of 10 to 11 in the life of a child) the somatic and functional organs of these needs. The natural premise of human philogenesis (or, to be more exact, anthroposociogenesis) is the biological organisation of the life-activity of man's animal ancestor, whereas the premise of the ontogenetic development of the human being's needs and abilities (including their unique features) is the genetically determined somatic organisation (organism) and its uterine development. But even in this latter case one must bear in mind that the premise itself is at the same time the result of anthroposociogenesis, which comprises additionally the somatic forms of inheritance of the experience of human intercourse realised in previous generations. In other words, the morphological unity of the organism characteristic of the species Homo sapiens is the premise of its being only because it is a result of historical development of the forms and modes of human activity. Marx wrote that even "the forming of the five senses is a labour of the entire history of the world down to the present." [1] So the definition of human individuality is fundamentally different from that of the individual in biology. The biological individual belonging to a certain population is only an "instrument" (medium) for the adaptation of the species. The programme of activity specific to the species—its needs and "abilities", along with all the basic means of its realisation — are determined by philogenesis and fully represented by the specific features of its organism. (The "external" means are also conditioned by the inherited programme of the life-activity of the species). The individual (inherent in the given organism) particulars of this programme do not go beyond the frame of the species. Individual departures from the genetic basis of the species programme are a departure from the framework of the species, which may in certain circumstances originate another species.

The medium between man and nature is not so much

[1] Karl Marx, Frederick Engels, *Collected Works*, Vol. 3, p. 302.

the morphophysiological particulars of the organism as the objective forms of civilisation, above all the instruments of labour. Man finds his basic "programme" (life goals) and all the means of its realisation not in the "structure" of his organism, not in his organic functions and structures as such, but in the objective forms of culture, in the ways and means of intercourse that he encounters at birth. Only in the process of his own life-activity taking place in intercourse, does he realise all the functions of his own organic body transformed and reformed by the history of society.

Of course, what is born is not a "body in general" but a baby boy or a baby girl, each with its own innate qualities. They thus have the potential for intercourse with other people, becoming individuals of the species Homo sapiens and further developing their individuality. Outside the historically shaped forms of intercourse they do not usually survive. The rare exceptions ("fostering" of children by animals) only confirm the rule and the brief life of such a child least of all resembles that of a human being. It is the same with pathology which makes the organism incapable of intercourse and thus of individualisation, condemning the very existence of such an organism (incidentally, always artificially supported by other people) to purely physiological functioning. Such an organism can be described as an "individual" only in formal terms, i.e., only on account of its having certain physiomorphological features that are essential but not sufficient for real human development.

From this comes the important conclusion that each individualised Homo sapiens is an individuality only insofar as the process of individualisation itself is the goal-oriented realisation of his social relations, his own unique biography created by him—the history of his life. The individual of the species Homo sapiens either develops as an individuality or does not exist even as an individual.

Now let us go back to the definition from the *Pedagogical Encyclopaedia.* In point of fact it obscures a problem of great importance in pedagogics and psychology, the problem of genesis arising in the activity of the developed individuality (and hence in the means of

education adequate to the process). "The essential originality of his intellectual or moral qualities", "unusual will power", and so on. Where do they come from? The implied answer is that he was born like it or certain fortunate circumstances brought them about. And to turn each person into a striking individuality one must go in for genetic engineering or take a chance amid countless "accidental" circumstances, recommending the "favourable" ones and regretting that the recommendations are hindered by the unfavourable, the ineffectiveness of pedagogical means in both cases being due to the way in which people's "distinctive features" are understood.

The link between pedagogics and the genetic theory of social development also arms pedagogical theory with the concept that only by changing circumstances purposively can man himself be changed, that the fostering of individuality lies in serious and vivid (i.e. creative) activity together with the pupil, activity in which the pupil is not "the object of the pedagogical process" but an equal subject of it. But to achieve this the activity itself must be understood in real historical definitions. And in this latter case it turns out that in the historically developed system of the social division of labour, which has relegated most of humanity to machine-like reproductive functions and artificially restricted the range of their intercourse, thus depriving them of direct and varied contact with the history of culture, in this system of "alienation of the human essence from man himself", people's individuality is considerably restricted in its development.

But in this same system of the division of labour social privileges arise that allow other individuals to rise above the average social-cultural largely standardised level and oppose themselves to it as "striking personalities".

These circumstances are graphically demonstrated in *The German Ideology*. On the one hand, "... the individual as such, regarded by himself, is subordinated to division of labour, which makes him one-sided, cripples and determines him"; and on the other, "Even that which constitutes the advantage of an individual as such over other individuals, is in our day at the same

time a product of society and in its realisation is bound to assert itself as privilege. . . ." [1] So the question as to whether the newborn human organism that is genetically capable of intercourse and activity is to be or not to be an individual of the species Homo sapiens is answered not by his (organism's) morphophysiological "structure" but by a quite different *substance*. The real human being is a historical being. And his birth is a historical fact. In this very fact, in its fortuity lies the further realisation of the life of preceding generations, which transmit to the newborn the system-organising mode of his life-activity, the mode (and thus the ability) of purposeful interaction. Analogy will help to explain this idea. In seeking the initial causes and vital forces of the organism developing as yet in its mother's womb it is impossible to isolate oneself from the fact that *its* vital forces and the causes of *its* development are nothing else but the life-activity of the maternal organism. Similarly it is impossible to speak of the initial "system-forming" powers of the newborn child in abstraction from the modes of life (and their history) of the people around him. Even after birth the child lives in the "maternal lap" of the living history of human relations.

But to understand the basis of his existence one must discover the "motor springs" of human activity spread out in historical time, and not only in the lifetime of those who directly surround the infant. Outside the organic link with the life of preceding generations there is no finding even its own initial vital forces. And the "organic nature" of its connection with human history bears a direct relation even to its individualised organism, which carries in itself the "recorded image" of the human life activity of its ancestors.

Human life-activity spread out in historical time in all the specific wealth of its most diverse forms, modes and manifestations is above all the *process* of man's birth by his labour. Only the "narrowest" specialists studying certain particular manifestations of human life-activity as separate and entirely independent disciplines

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[1] Karl Marx, Frederick Engels, *Collected Works*, Vol. 5, p. 437.

can abstract themselves from this fact. Such treatment is sometimes accorded even to morality in studies that build up their own terminological arsenal (their "language") consisting of verbally defined abstracts regarded as inherent in the individual: conscience, behaviour, motives, moral ideal, good, evil, principles of morality, and so on. "Systems analysis", mathematical logic, cybernetics and any other formalised metatheory can all be marshalled to give the manipulations with these abstractions an appearance of deductive harmony. But with all the force of natural law the researcher who abstracts himself from the universal essence of human life ultimately arrives at the same abstract definitions from which he started. Another "discipline" that may be accorded such treatment is the natural form of human life itself. In this case, after much clever systemic and metasystemic manipulations with initial abstract definitions such as the "social" and "biological" the researchers end up with one of the usual passages of refined rhetoric about the mutual determination of the biological and the social....

In *Capital* Marx repeatedly and in almost the same words defines the simple abstract elements of labour, which he regards not as the eternal natural condition of human life independent of any of the forms of this life but, on the contrary, as equally general for all its social forms. These elements, to quote Marx, are: the object of labour, the means of labour and purposeful activity (or labour itself).[1] Purposeful activity for creating consumer values, in the process of which natural phenomena (nature itself!) become an object and means of labour that changes, develops and transforms man's natural needs and abilities—such are the simple abstract elements of labour as the universal, eternal condition of human life.

The fact that Marx includes purposeful activity in these elements is of special importance to us. Purposeful activity can be performed only by an individual capable of distinguishing himself from his own activity. Otherwise activity cannot be treated as a guided process, a process directed towards some aim. What is more, the

[1] Karl Marx, *Capital,* Vol. I, p. 174.

setting of the aim is a function of the individual's ability to view his activity from the side.

Activity directed towards an aim. The image of what should appear as a result of activity, but which is not yet and without this activity never will be, hovers in the mental vision of the acting individual. And it is this goal-oriented activity that Marx includes among the universal (simple and abstract from all their real historical social forms) elements of labour.

Man-creating labour includes among its own initial definitions *purposefulness*! And at the same time the actual ability to direct one's actions to the achievement of a goal appears and develops in activity, in labour. At this point rationalist thought breaks down. For rationalism this is an "insoluble" contradiction: labour creates a person capable of setting goals, but labour is only labour when it is purposeful, goal-oriented activity. But what for rationalist thought becomes an insoluble logical antinomy unfolds historically into a situation whose internal contradiction is solved in real events and actions which change that situation. And so it is in our case.

Reasoning man (capable of setting goals) is not a premise of history but always its result. The "situation" in which his history began is characterised by the formation of the non-biological type of inheritance of the modes of life-activity of his animal ancestor. The contradiction clearly enough defining this situation consists in the fact that on the one hand our animal ancestors could survive only thanks to their specific mode of "instrumental" [1] interaction, while on the other hand this interaction could not be inherited somatically (genetically) and thus become peculiar to and definitive of the species. For the biological activity of the species such a situation turns out to be extremely unpromising, if not a dead end. The preservation and transmission from generation to generation of the modes of common action, common use of the supplementary natural means is possible in one and only one case: if these situa-

[1] The word "instrumental" is in quotation marks because the situationally assimilated and not purposefully created objects of nature that acted as the means of biologically significant actions were not instruments in the literal sense of the word.

tionally particularised means turn out to be also means of communication, means that preserve in their own way (form, "structure") the mode of common action and communication of individuals when the biologically important functions within the herd are naturally divided according to sex or age.

In this case, as a way out of an impossible situation, as a way of resolving its contradiction, a new non-biological mode of inheriting life-activity develops. And in this prehistoric "step" of evolution of the hominids, a "step" away from the biologically regular inheritance of functions, one can see also the first step of history, whose further development is known as anthropogenesis, that is, the process of the birth of man by emerging labour or the process of the birth of labour by the emerging man.

So from our point of view, anthropogenesis is the incipient history of humankind, whose result (not premise!) will be man with his inherent modes of purposeful activity—labour. The point is that in the new mode of inheriting "life-activity peculiar to the species", there began to appear, in embryo, precisely the universal definition of labour in its simplest abstract elements. This is the not yet "begun", not fully "emergent" but already exerting its systemising (and transforming the elements of the old system) effect of the "tripartite" relation of individuals to nature and to one another. Only instead of "the object of labour" (material for creating consumer values purposefully singled out from nature) there is the appropriated "product of nature"; instead of the means of labour there is also the appropriated "product of nature", but already performing the "instrumental" function of strengthening the natural organs, and also the function of communicating "sign" of this or that mode of action; and, finally, there is this action itself instead of the purposeful activity of labour.

However, it is in this action that individuals—man's ancestors—enter into communication, which in its turn determines their activity and their needs. And it is this action in communication that constantly reproduces a special, new (non-biological) interrelation of individuals and their relation to nature mediated by communication. But because of this, action turns out

to be in accordance, if not with an aim,[1] then at least a visible "pattern" of the mode (image) of its common realisation, enshrined (objectified) in the form of the very means (instrument) of action. The further preservation and "extended reproduction" of this non-biological inheritance of "species-specific" life-activity of man's ancestors could not fail to culminate in the development of objective means of their action, their intercourse, and thus, their needs and abilities, and this was what was "objectified" in the modifications of their morphophysiological organisation. And it is this latter that is most often described as the content of antropogenesis.

The main thing in the way of resolving the initial contradiction is for us that it is not the non-biological species-specific predetermination of genetic heredity, but intercourse (its forms and means) that becomes the actual substance of incipient history. And only in intercourse does the individual become capable of realising and realises the actuality of *his* natural life-activity.

Here, in order to avoid any misunderstanding I must quote a fairly long passage from Marx and Engels's *The German Ideology:* "Individuals have always and in all circumstances 'proceeded *from themselves*', but since they were not *unique* in the sense of not needing any connections with one another, and since their *needs,* consequently their nature, and the method of satisfying their needs, connected them with one another (relations between the sexes, exchange, division of labour), they *had* to enter into relations with one another. Moreover, since they entered into intercourse with one another not as pure egos, but as individuals at a definite stage of development of their productive forces and requirements, and since this intercourse, in its turn, determined production and needs, it was, therefore, precisely the personal, individual behaviour of individuals, their behaviour to one another as individuals, that created the existing relations and daily reproduces them anew...." (Note that it is the personal relations between individuals that by determining production and

[1] Since this action is still far from being conscious and goal-oriented in the specifically human sense that presupposes awareness of a goal as an ideal image of the future result of action.

needs create, and daily reproduce, the existing relations, that is to say, society as such. There is no need to prove specifically that personal relations themselves are the relations between individuals that have reached a certain stage of the development of their productive forces and needs, and not just any abstract individuals of the species Homo sapiens.) "... Hence it certainly follows that the development of an individual is determined by the development of all the others with whom he is directly or indirectly associated, and that the different generations of individuals entering into relation with one another are connected with one another, that the physical existence of the later generations is determined by that of the predecessors, and that these later generations inherit the productive forces and forms of intercourse accumulated by their predecessors, their own mutual relations being determined thereby. In short it is clear that development takes place and that the history of a single individual cannot possibly be separated from the history of preceding or contemporary individuals, but is determined by their history." [1]

After so precise and exhaustive a definition of the individual as an individuality, reproducing and realising both the history of the interrelations of preceding individuals and his own interrelations with his contemporaries, and only because of this acting "from himself" and acting purposefully, we need draw attention only to the psychological side of this "action-from-oneself". But identification of the "psychological" aspect of the problem of consciousness (becoming conscious of being, purposeful "action-from-oneself") derives from the premises considered above, which may now be formulated quite briefly:

1. The individual of the species Homo sapiens presents itself to us, first, as the result of history and, second, as a result that implies (realises in its life-activity) historically developed modes and means of intercourse with other individuals, modes and means of their common action.

2. The substance of history is not "society" stand-

[1] Karl Marx, Frederick Engels, *Collected Works,* Vol. 5, pp. 437-38.

ing above the individual and opposed to it, is not its or the people's, the epoch's, etc., culture, spirit, genius, and so on. This illusion evoked by the social division of labour and the phenomenon of "alienation" to which it gave rise, was most fully developed by Hegel. On the other hand, nor is the substance of history the physical continuity of the human race, conditioned by the natural bodily organisation of man's specific needs and abilities. This illusion, generated by the same causes, was most rationally and fully expressed in philosophy by Feuerbach, and is today exploited in caricature forms, in forms of non-reflexive consciousness by a whole flock of biologisers.

In reality the substance of history is the personal relation of individualities to one another, their intercourse, interrelations creating and daily reproducing and also developing all the particular forms of purposeful activity or, in other words, their activity itself.

This definition of the substance of history as consciousness realising itself (causa sui) in space and time, far from being identical with, is directly opposed to definitions in which the subject[1] of history is also its substance. This is understandable. The substance of history and its subject (the individual) cannot be one and the same thing if only because the subject of history is itself the historical individual. Individuals making history are not only the "starting point" of historical movement, but also (and always!) its result. Thus Marx, having taken individuals producing in society as the natural starting point of his analysis of the substance of history, immediately adds, "and consequently the socially defined production of individuals". The production of the individuals themselves (as makers of history) is in

[1] The subject laying claim to historical substantiality is in fact the individual outside history, "man in general" comprising only specific definitions of the historically limited individual in the system of social division of labour. This applies equally to the subject understood naturalistically as an individual with a set of universal human attributes, to the subject as an individual making history thanks to his reason (in the sphere of theory), his needs, emotions and will (in the sphere of practical life), and to the subject understood as the Genius (spirit, culture, etc.) of the people and the epoch positing itself in history but personalised in separate individuals.

fact their own activity in common and above all their material production. Consequently, the substance of history is the objective activity of individuals, above all their material production, creating and shaping human individuality as the subject of history, as the "history-making" individual.

3. Since the being of the human individual is a particular (having travelled its own road of individualisation) realisation of the universal foundation of human history and therefore the inimitably unique being of individuality, and since the universal foundation of history is the identity of activity, intercourse and goal-setting (thought), it will be understood why the necessity of comprehending, becoming aware of his life-activity is included in the definition of man's individuality. We must emphasise once again that the life-activity of the individual of the species Homo sapiens can become human only as life-activity of which he has become conscious.

What is meant by "being a personality"? The question is once again answered by any number of different voices depending on the different methods of theorising. But there is no need for us to go into the fact that according to the logic of empirical generalisation the personality is either a new, "higher" quantitative gradation of general human merits (the individual of the masses, the individual with certain developed features, the individuality, the striking individuality, and finally, the personality) or yet another general name for man: all of us, so to speak, have a face (admittedly, it may also have a mask), so in this sense we are all personalities.... The latter usage is perhaps the most common. But as we hope to show, it is this usage that finds in genetic logic its new and quite unexpected substantiation, true, one that categorically excludes the "nominalist taint" of the magic power of the general name that lingers here subconsciously.

We must note once again that the initial (and universal essence of the human mode of life-activity is the objective activity with tools performed only in intercourse. My relation to the object of my life-activity and to nature itself is mediated by the historically developed mode of our interaction. I can relate to myself as my

Self, be aware of my own Self because I relate to myself, to my activity as to something that is common to us and depends not only on me and my abilities and skills. Man separates himself from his activity insofar as it is simultaneously also the activity of another, that is, insofar as it is activity performed together, intercourse. In this way a person looks upon his own action with the eyes of another and this is why he himself (as if seeing himself from the side) can check, correct, and guide his actions—guide them in accordance with a general plan, a joint plan, a goal.

This essential initial definition of man's relation to the world embraces from the start, like an embryo, the identity of opposites: the general and one's own. The process of active intercourse (intercourse in activity, it makes no difference) is the way of resolving the given contradiction, the dialogue between the general and the particular. In the real space and time of intercourse this contradiction becomes a dialogue of two representatives of the particular or, if you will, two particular representatives of the general:

either in the correlation (combination, "adjustment", contest, conflict) of two different modes of action, the difference between them being determined by the difference in the individualities representing them;

or in the correlation (in the same sense) also of two different modes of action but represented by one person: internal dialogue, thought. Here the difference between the presupposed, projected or practically selected actions is determined by the individual's ability of reflection, that is, his ability to distinguish himself from the sum total of his actions, from his behaviour, to make his activity the particular object of his activity (correction, assessment, etc.).

Thus the need for free expression of the will is part of man's initial, universal essence. One-sided determinism with its predetermination (decision given by preceding and accompanying circumstances) turns man into a machine, to whom it can only seem that he is doing something himself, and then only because he has insufficient information about all the causes and circumstances predetermining his decision. The way out is to find that which is not contained in either one or the other solution

to the problem, to see the problem "from the side", to rethink the very way it is posited. Activity that is truly free of predetermination thus comprises a free-ranging search for a more general point of view, a search for different modes of action, rejection of one's own abilities and skills, criticism of "indisputable" beliefs and at the same time reliance on integrally developed human culture, which although it does not contain a single ready-made "recipe" for solving any given problem reveals in its general forms both the ways of getting out of its framework and the "formula" for more general, substantially and integrally presented concepts.

In the integral development of world culture every particular step of this development is a problem, but a particular problem. Consequently, on the one hand, it is limited as a partial embodiment of the universal. And by this limitation it determines both its limits and the possibility of going beyond them, thus allowing itself to be subsumed as a particular problem. On the other hand, "our" problem being a particular form of the universal is connected with it by innumerable forms of linkage and transition. In other words, in the universal there is an objective "pointer" to the way out of the confines of the particular problem to its own future, where it will be only one of the aspects, facets, moments of the developing universal.

CHAPTER THREE

MAN AND HIS THOUGHT

1. Life Source of the Self

From what was said in the preceding chapters it will be clear that in isolation from the general laws of development of social forms (forms of intercourse in activity or, which is the same thing, forms of activity realised in intercourse), both nature and man become an "abstract object", a set of ready-made things taken outside their own history and wholly determined by their present, given bodily organisation.

Similarly, the individual consciousness, considered in isolation from the actual history of the forms of human intercourse, proves to be a "function" of the human organism and again can be regarded only as a set of given abilities inherent in the organism, such as thought, will, emotion, feeling, perception.

All we have to do now is to develop this idea into a full-sized concept. We shall begin with the "moment" when the biological means of life-activity were finally deprived of their direct adaptive function and became, in a modified form, a natural "mechanism" of people's social activity. In the formulation given by Marx and Engels this "moment" is described as the "first historical act". The passage runs as follows: "But life involves before everything else eating and drinking, housing, clothing and various other things. The first historical act is thus the production of the means to satisfy these needs, the production of material life itself." And this production is "...an historical act, a fundamental condition of all history, which today as thousands of years ago, must daily and

hourly be fulfilled merely in order to sustain human life." [1]

Production of the means of sustaining life is both the first historical act and a "fundamental relation" repeated billions of times throughout history and containing the fundamental (universal) contradiction of this act: "...The satisfaction of the first need, the action of satisfying and the instrument of satisfaction which has been acquired, leads to new needs; and this creation of new needs is the first historical act." [2]

Consequently, in the process of production people acquire new needs, new abilities and the instruments for their satisfaction, that is to say, man takes shape mentally and physically along with all the social means of his life-sustaining activity. His ability to set himself aims, his ability to think, is also perfected, as are the instruments of this ability, from means of communication to the bodily organs (for instance, what A. N. Leontyev calls the functional organs of the brain).

So thought (and consciousness as the individual's relation to the world, the individual perception of the world that thought generates) is not produced by the brain as such, any more than it is produced by language, as a means of speech communication. Only intercourse between individuals as a social process is at one and the same time the actuality of the process of thought, its genesis and its realisation. Marx wrote: "But also when I am active *scientifically* etc.—an activity which I can seldom perform in direct community with others—then my activity is *social*, because I perform it as a *man*. Not only is the material of my activity given to me as a social product (as is even the language in which the thinker is active): my *own* existence is social activity..." [3] Clearly, then, one cannot discover the nature of any human ability by studying the processes occurring in the brain. The only thing that can reveal to us the nature of human abilities is what people do with instruments and objects in the corresponding forms of their intercourse.

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[1] Karl Marx, Frederick Engels, *Collected Works*, Vol. 15, pp. 41-42.

[2] Ibid.

[3] Karl Marx, Frederick Engels. *Collected Works*, Vol. 3, p. 298.

Marx and Engels showed that human activity cannot in principle be one-sidedly determined either by its historical goal (by thought, as Hegel believed) or by its "pure" objectivity (spatial, corporeal being as such, as Feuerbach imagined). Objectified activity, "doing things" provides us with a third element that in relation both to thought and to natural being emerges as their integral "substance", whose development simultaneously generates and determines the one and the other and their opposition itself.

In fact, neither the human individual's being as such nor his thought are the foundation or cause of each other. For a man to be a man he must think. One could even say that human existence (the organic life of the body) is determined by man's having the ability to consciously set himself goals, his ability to think, including his awareness of his instincts. And since this ability develops and exists only in people's intercourse, in their speech, which "reinforces" their accumulated knowledge and skills, it cannot be inferred merely from the spatial, corporeal interaction of the individual with other objects.

On the other hand, in order to enter into intercourse with living and past generations, every human being must possess a body organised in a certain way. He must be born a man, and his being is a most essential premise of his intercourse, speech, and thus his thought.

In this mutual opposition of being and thought the question of their relationship (identity, in philosophical language) will be solved by the "pendulum method": now thought will be the foundation of being, now being the foundation of thought. But is not man's being his mode of life? Is his mode of life not people's activity together, in which they become involved as soon as they are born? And finally, is not people's joint activity, above all, the historically developed means of the objective, instrumental transformation of nature for their purposes? And if this is so, then surely it ought to be closely studied.

Historically developing objectified activity is the lap where the thinking human being, aware of himself and the rest of the world—our Self, our Ego—is formed. People develop bodily and mentally as people insofar as in their intercourse they transform surrounding nature with instruments that in their making establish the social

modes of activity. The objects with which man has to do, which are given in his perceptions, become socially significant for him, for everybody, and thus of direct universal significance, insofar as his relation to them is mediated, that is, served not only and not so much by the organisation of the vital processes peculiar to his species, as by the "organisation", the making of the instruments of his intercourse and activity.

In full accord with the long tradition of empiricism Bertrand Russell held that the social (universal) significance of the word "rain" was the result of abstraction (induction, building of inference) from the individual particulars of perception. For him it is social "depersonalised" language that strips rain of its indidvidual perceptual peculiarities and keeps in the meaning of the word only that which is repeated in an autumn drizzle and a tropical downpour. But we see that a word contains the universal (our Something) in its meaning because it serves us as a means of intercourse, "doing things" in relation to rain, when we shelter together from the rain, pray for rain, study the possibility of preventing it or making it by artificial means. In all these cases the ways and means of our intercourse and activity (particularly language) establish not the mere sensations that are personally unique or the same as everyone else's, but the meaning of real rain for our life-activity, its objective role in our social and personal lives, the role it plays precisely because it is rain, because this is its objective essence that does not depend on us. And it is for this reason that our "initial", apparently direct perception which Russell took as the sensuous individual basis of all human experience, is itself guided and filled out by the universal meaning of the ways and means of intercourse and activity that we have learned (this is the idea behind Marx's thesis that our senses become theoreticians).

For a person to be able to see anything, that "anything" must speak to him with its visible attributes in "depersonalised" public language. Otherwise the eye will lose its sense of support and become clouded. Either its glance will become inattentive and turn inward or it will be guided only by hunger, thirst or the sense of approaching danger and resemble that of an animal. Without the

ability to determine every separate object in a social (basically instrumental) way, that is, without the ability to notice its universality, a person is not a person and can neither think nor exist.

Thought means, in the first place, treating all separate objects of contemplation and activity as generally significant (meaning something for others and thus for myself). And, secondly, it means operating with social means of intercourse and activity that mean something for others, and thus for each separate individual.

This can also be stated in another way. Thought means constantly organising and checking one's life-activity, one's being, with the help of the historical means of intercourse (particularly language), whose social form reveals and establishes the objective properties of nature and social relations. To be (a human being) means transforming in the process of joint instrumental activity the objective forces of nature into modes of one's life-activity, and thus into the socially significant content of one's thought.

Thus, people's objectified activity as the historically developing mode of their life is their social being, and this is what determines man's social consciousness, mode of individual being, and individual consciousness. Consequently, thought itself is, like the organisation of the body, its very existence, abilities, etc., a result and moment of people's joint objectified activity. Individual being and thinking are not even two sides of the same medal. Rather they are manifestations of the individual's whole mode of life and the difference between them is not given primordially but develops historically. Man himself noticed this difference (later to become a contradiction) only when the integral mode of social, historical activity in the course of its development generated and gave social form to separated mental and material production (thus opposing one to the other).

From this standpoint the attempts to discover the specific nature of man's inner world by analysing the physiological peculiarities of the sense organs and the brain are no more than relics of the anthropological interpretation of the human essence. And this being so, it is quite logical first to acknowledge the community of the natural, sensuous means of reflection in animal and man,

and then introduce a highly important addition—the second signal system, language as a social phenomenon.

No one contests the fact that man inherited the means of sensuous perception from his animal ancestors. But the animal's individual behaviour, its selective attitude to the objects of the external world are somehow predetermined by the sum total of biological needs peculiar to its species. The animal sees in the world around him only that which it needs to see, its perception is prepared by the evolution of the species and is, as it were, expected by the organism. "...If an animal has no instinctive attitude to a given thing ... and the given thing is not related to the realisation of this attitude, then the thing itself virtually does not exist for that animal." [1] But an animal does see things that don't exist for it. Yes, but how! Take Leontyev's very apt analogy explaining how things and phenomena that have on direct biological significance exist for an animal: "You are walking along the street, absorbed in your own thoughts, you see houses, cars, you stop at crossings, you wait for the traffic lights to turn green. All this happens automatically, unconsciously or, as some people say, subconsciously, because your mind is occupied with your own thoughts. This is approximately how the animal sees the surrounding world, but with the one essential difference that it is not absorbed in its own thoughts, because it has none.

"Now let us take the analogy a stage further. You are in a hurry to cross the street, but are compelled to stop to let the traffic go by. If you are thinking of something else, you will look upon the traffic merely as a nuisance and not consider whether a bus or trolleybus, a car or a lorry is going past, and certainly not what make of car it is. According to the eminent German psychologist Jakob Uexküll this is precisely how the animal perceives its environment." [2]

So the "sensuous stage" that we have in common with the animals cannot, in principle, provide a basis for conceptual generalisation. One can only pity the person

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[1] A. N. Leontyev, *Problemy razvitiya psikhiki* (Problems of the Development of Mentality), p. 257.

[2] A. A. Leontyev, *Vozniknoveniye i pervonachalnoye razvitiye yazyka* (Origin and Initial Development of Language), Moscow, 1963, pp. 12-13.

who has to be content with such knowledge. In fact, this can only happen to a person who grows up, is brought up outside society. But such cases merely confirm the fact that the biological means of sensuous contact with the environment that we have inherited from our animal ancestor are not in themselves capable of any cognition unless they are guided by the socio-historical experience of generations.

Here is a case in point, based on documentary fact. A normal child with all the means of perception that we have in common with the animals was lost and for a time lived with a pack of wild animals. It lost the ability to perceive things that any normal human being would notice immediately and stopped developing as a personality. On the other hand, another child, Olga Skorokhodova, lost her sight, hearing and speach because of illness, but thanks to the efforts of those who in the given case represented the socio-historical experience of generations she later grew up to become a poet and a scientist, a truly creative personality. The story is told in her book, *How I Perceive, Imagine and Understand the World Around Me.*

The mentality of social man differs from that of the animal not because of any immanent, innate "additions", but thanks to that which in general distinguishes one person's inner world from another's—their external world, the world around them, their being. It is in being that one must look for the qualitative difference between human and animal mentality. [1]

Our animal ancestors broke out of the animal world and became people thanks to collective labour. There is no need to expound Engels's classical works *The Part Played by Labour in the Transition from Ape to Man, The Origin of the Family, Private Property and the State,* and others. Those who are particularly interested in the question have a wide range of anthropological literature to choose from. And we shall have more to say about one aspect of the problem later on.

At this point it is worth recalling Marx's splendid *Theses on Feuerbach.* Marx writes that Feuerbach, not

[1] See on this point A. N. Leontyev, *Deyatelnost. Soznaniye. Lichnost* (Activity. Consciousness. Personality), Moscow, 1975.

satisfied with *abstract thinking*, wants sensuousness but cannot conceive it as *sensuously practical, revolutionary activity*. The process of production, of historical social practice involves not abstract "society in general", but living, feeling individuals who experience, are aware of their actions. Their sensuousness is not a special "stage in the process of cognition", not the "sensuousness" of the philosopher contemplating nature. It is living contact with nature in the process of its practical transformation. The objective essence of things revealed by labour, by production, is necessary to the living, feeling human being. On the other hand, unless he can feel the hardness of stone, unless he can picture the direct aim of using an instrument and the results of the collective efforts of the members of the tribe, in short, unless the conditions and objects of his activity are sensuously reflected in the individual's mind, the process of production cannot take place as a social process. The practical activity of society is an interweaving of the activity of its members, each of whom is capable of doing something insofar as he experiences, sensuously perceives the world around him. Sensuously practical, socially individual activity constantly changes both society as a whole and each individual, and is thus truly revolutionary.

To sum up, man's objectified activity is that integral foundation of all forms of his life-activity which alone enables us to understand consciousness as a social, historical phenomenon.

2. The Language of Real Life

I have mentioned language as one of the modes and results of the activity and forms of intercourse that mediate man's relation to the world and make it conscious (carried out with knowledge). Now the time has come to say that language is indeed the first among equals in the family of these modes, results and forms. It thus deserves special consideration. As in other cases, the history of the development of this most important "instrument" of human activity will help to tell us what it actually is. But this brings us back to the problem of man's origin.

There is much that is controversial and hypothetical in the literature on man's first steps in becoming a human being. But it is indisputable that one of the less promising branches of the biological adaptation of the anthropoids turned out to be unexpectedly viable. And, as I have suggested already, not because of the mechanisms of selection classically associated with biological adaption and species-forming, but rather despite of them. The very thing that according to the laws of biology condemned this "branch" to extinction became the main factor of its non-biological development.

Judging from what we know of the australopithecine apes, the characteristic features of our animal ancestors were the herd instinct, certain forms of division according to age and sex of the most important vital functions among individuals within the herd and, consequently, certain species-specific, genetically established modes of intra-herd signal communication and, finally, manipulation of objects of nature (bones, rocks) in various situations. Given smooth evolutionary development, these factors of our animal ancestors' life-activity could only help them adapt as a species. But they could not turn the herd into society, herd signalling into language, or manipulation into a process of production.

It is a fact that heredity reinforces the influence of these factors on the preservation of the species. But this turns the herd instinct into an ecological factor demanded by the organism, intra-herd signalling into a specific means of preserving the division of certain vital functions according to age and sex, and situational manipulation of natural objects into a peculiarity of the animals of the given species. [1] As Henri Wallon has stressed, "if the organism were capable of fixing such systems (he has in mind the action-instrument system.—*F. M.*) would not the biological stability of the fixed systems be an obstacle to the rapid development of the techniques with-

[1] Compare the ability of elephants to carry trees with their trunks, shower themselves with water, sprinkle themselves and, in a dangerous situation, others with sand, etc. These species-specific abilities objectified in the "structure" of the organism exclude any development that would take them out of their own limits and allow them to manipulate fundamentally different objects successfully.

out which human history would have been impossible?" [1]

But, as I have suggested, the organism of our animal ancestors proved at some point in its development unable to establish the successful manipulations with rocks, sticks or bones, as a structure specific to its species. The highest anthropoids are already incapable of becoming "tool-using" animals, that is, animals whose organisms are biologically adapted to goal-oriented actions with specific objects. Their life-activity, regulated by the "situational intellect", is a form of active adaptation which presupposes broad opportunities for seeking and using the most diverse objects within the limits of a given situation. Our most remote ancestors, the still extant primates, display total incapacity for heredity fixation of any "instrumental" actions. It is better for them within the bounds of a constantly changing situation to find a new way of using the ready-made "tool" (object of nature) than to establish the old way genetically, thus compelling the species to "renounce" the broad opportunities of manipulating objects that save them in moments of crisis.

If one assumes that one of the branches of the evolving order of primates several million years ago found itself in a prolonged ecological situation (change of climate, development of steppe and forest steppe territories, etc.) requiring constant use of auxiliary "instruments" of action, one faces the paradoxical situation in which the "tool-using", "instrumental" means of the interrelation with nature, vital though it was in sustaining life, could not be fixed hereditarily and could not yield a new population adapted to the given conditions. And biological evolution had not produced any other forms of inheriting the modes of life-activity. On the other hand, the biological instability of the vitally important "tool-using" actions keeps such a species on the brink of extinction. It is possible that the sad fate of the Australopithecus, the giant pithecus, the Zinjanthropus and pre-Zinjanthropus is due to this, and this is why I spoke earlier of adaptation as a closed, rather than open-ended line of development. The point is that all animals without exception inherit the "programme" of their activity *biologically.* The

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[2] Henry Wallon, *L'évolution psychologique de l'enfant,* Librairie Armand Colin, Paris, 1968, pp. 63-64.

process of the origin of their species is recorded in the morpho-physiological organisation of each individual of the given population. The animal's bodily activity "demands" certain vital conditions and substances of nature and the animal seeks them actively and finds itself an environment, a habitat, peculiar to its species. The organism of the individual is the "instrument" of the adaptation of the species. But in so doing the animal inherits and "finds" in itself not only the programme of its life-activity but also the main, essential (and often sufficient) means of realising this programme: its own organs and the ready-made mode of using them.

In man, on the other hand, we encounter a diametrically opposite mode of inheritance. Man inherits part of the "species programme" of life-activity, but the greater part (and precisely the specifically human part) is geared into the "mechanisms" of his life by his mastering the objectified means of culture in intercourse with other people. He even develops his bodily needs and abilities in the process of mastering the historical ways and means of activity and intercourse, such as the need for communication, for prepared food, for "instruments" to consume it with, for objects that provide for the human functioning of his organs, creating the conditions for normal sleep, rest, labour, and so on. And, particularly important, the infinitely diverse and infinitely developing means of realising the inherited "programmes" of life-activity are acquired only in the form of the socially significant instruments of activity and intercourse created by the labour of previous generations.

Academician N. P. Dubinin writes: "The possibilities of human cultural growth are endless. This growth is not imprinted in the genes. It is quite obvious that if the children of contemporary parents were deprived from birth of the conditions of contemporary culture, they would remain at the level of our most remote ancestors who lived tens of thousands of years ago. Whereas the children of such "primitive people" placed in the conditions of contemporary culture would rise to the heights of contemporary man." [1]

[1] N. P. Dubinin, *Vechnoye dvizheniye* (Perpetual Motion), Moscow, 1973, p. 425. This statement perhaps requires the amend-

But this means that the very foundations of the life of man and that of the animals are diametrically opposed. In order to survive, the animal must carry in its body both its "programme" and the means of realising it. Man, on the other hand, must possess a human organic body capable of mastering as it goes along any historically developed "programme" and the means of its realisation. And for this reason the genetic fixation of any given mode of activity and intercourse (and biological evolution has no other means of ensuring survival of the species) would spell death for man.

This is why man cannot be assumed to have developed from the biological realm by purely quantitative evolutionary changes in the modes of life of his animal ancestors. The foundation and origin of the new process, the process of non-biological survival excludes biological means and fundamentally changes and subordinates them to itself. Here we are confronted with a clear contradiction between the need to use unprocessed, ready-made objects of nature as the ecological situation demands and the impossibility of genetically fixing the skills thus acquired, a contradiction that can be resolved only by the disappearance of the given species or the birth of a new way of inheriting the habits and skills of life-sustaining activity. And if we could assume that our animal ancestors "found" a way of fixing, preserving and transmitting from generation to generation the skills of "tool-using" action, then we could also assume that man might have appeared on our planet in this way. But, as we have seen, this departure would have been, to put it mildly, extremely unusual for the animal world. It would have to be a way that did not depend on the genetic "code" of the given species, that did not predetermine any link between the animal and one particular instrument or skill, and that was not expressed (objectified) either in the inherited structure of the organism or in any form of "instrument".

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ment that for contemporary children deprived of contemporary culture to maintain the level of culture of our remote ancestors they would have to master the culture as an "inorganic body" of their own life-activity. Outside the intercourse and activity that confronted them (at whatever level) they simply would not be able to survive as people.

However, such an unusual biological mechanism of heredity does exist. And we, human beings, have it. People inherit the modes of their life-activity by becoming involved in the already existing, fairly stable *forms of intercourse* and, in doing so, master the objectified *means* of intercourse (in particular, language).

If our remote animal ancestors in the process of their common struggle for survival had been able to preserve both the objectified means of their interaction and the skills of "instrumental" action they had found in this or that situation, the further development of this new, non-biological mode of inheriting would have become our history. But this is something that cannot be "found" either in the form of the objects our ancestors were compelled to manipulate, or in the organic needs and "abilities" of their bodies, or in actual action with objects conditioned by situation and biological needs. It can only be assumed that the "substance" in which the skills of "instrumental" action were imprinted was a special interconnection between individuals acting together with the help of "instruments", an interconnection that destroyed and superseded the old system of the herd, with its divisions of sex and age.

You will say that such an ephemeral "substance" could easily disintegrate, and did disintegrate, as soon as the biological impulses of joint (herd) action ceased to function. But at this point I must draw attention to something that is not apparent at first sight.

The objectified means of intercourse in the herd, regulated by sex and age, by biological stimuli are again organic bodily means possessed by each individual: gestures, poses, smells, "vital sounds" (grunting, bellowing, etc.), affective cries. This is, in effect, the "language" of species needs, generated in a broad range of orientational, searching and similar actions—what Wallon calls the "situational intellect" and Pavlov the "objectified thought" of animals. The "language" and "thought" of animals are therefore strictly species-specific. They can be changed only by a change in species characteristics (genetically inherited and fixed in the body mechanisms) of a new population. But that which is in principle excluded in the world of biological laws becomes the main and necessary condition of the existence and development of

human history.[1] The need for external (in relation to the individual's bodily organisation) inheritance of changes in the structure of intercourse may be connected only with other (outside the body) organs of life-activity in general and interconnection between individuals in particular. Such external "organs" of life-activity (and intercourse) which objectify, objectively embody the stimulus of interaction are those same "instruments" or "tools", that is, the objects of nature, such as the bones of large animals, stones, and so on.

The not immediately apparent circumstance I mentioned earlier lies in the fact that the unprocessed object of nature (not yet a proper instrument or tool, because not purposely made before use) may turn out in the situation described to be primarily an instrument of intercourse. To be more exact, an objectified means of intercourse of a type (natural "design") that serves as a signal for joint action performed in a certain order. This is particularly likely as the shin-bones and horns, for example, which man's animal ancestor did not create or mould beforehand, acquire a rather uniform shape in the process of use.[2] The "language" that stimulated our ancestors to undertake joint activity could have included these "words" made out of bone. And while "language without bones" generated affective sounds expressing the species-specific bodily needs, the "language of bones" assumed the function of stimulator and regulator of joint actions.

There are probably some grounds for the attempt to view the "instrument" of the Australopithecus or the Zinjanthropus not only as the extension of a natural

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[1] Thus we are once again convinced that any possibilities of purely evolutionary development of animal "language" into human speech is ruled out precisely by the genetic inheriting of attributes peculiar to the species. Only one condition is needed for articulate human speech—liberation of the modes of its realisation from genetic fixation. Thus a child is born capable of learning language and oral communication, but to be able to realise this ability and develop it there must be a national language not genetically given but historically developed and developing further in active human intercourse.

[2] On australopithecine sites Raymond Dart discovered heaps of long bones from large animals, all of approximately the same shape, a shape they could have acquired through situational use as piercing, cutting or striking instruments.

organ (the hand) but also as an objectified form of fixation of joint modes of action (hunting, defence, etc.). Anyway it is not in doubt that not only at the very beginning (even before man's first steps), but throughout his history all objects of culture have performed the function of *means of intercourse.* There is no object of culture that has not been a stimulus and means of human intercourse. The "language of human intercourse" embraces words, architecture, music, tools, means of transport and much else besides.

But here is the interesting point! Language—a specific, outstanding and relatively self-sufficient "specialised" means of intercourse—is sometimes regarded only as a "symbol system" with its own special place among other social phenomena, with its own functions dependent on structure, although still, of course, connected with other social phenomena. We will recall that for Russell, too, language was a depersonalised social means of preserving and circulating (in the speech of individuals) the knowledge accumulated by mankind. Language has therefore always been associated as a self-sufficient "system" either with all the diversity of sensuous perceptions (Russell again), or with thought as a special psychological process, or with other artificial symbol systems. In all such cases the origin of language also appeared to be a self-sufficient process. For example, the process of the evolution of the "symbol system" of means of intercourse within the herd into a system of articulate human speech. With this approach to language (speculatively regarded as a ready-made system participating in all interactions with other social phenomena), language itself, music, painting, the whole arsenal of technical means, are tied up together like a bunch of twigs. But those twigs originally came from the same seed, from one shoot, from the same tree.... Language is a branch like all the other branches that provide for and sustain human intercourse. It is a living branch, growing from the same root and trunk, not severed from them. So perhaps we had better go to the root of the matter? And the root of all human history is, as we know, people's labour in common using objectified instruments—their labour, their intercourse in activity and activity in intercourse.

The one root of all forms of our ancestors' human life-activity, the seed that had not yet put up its shoots must have been an "abstract-universal" form of intercourse in activity the "language" of which was all the objective means with which this intercourse arose and took place. But their core, the main vehicle of all acts of intercourse was the "instruments" of these acts themselves.

Marx wrote that the production of ideas and the production of consciousness were originally interwoven in the language of real life. The instruments and objects of labour, as well as all the other objective factors created in the process of labour, establishing and providing for their constant interrelations—these are the main material means of human intercourse. Taken as a whole they do constitute the language of real life, a language in the sense of a system of symbols, each of which—the subject or object of action—unites people, regulates their actions, guides their activity. What is more, this is the only symbol system that does not require any primeval language to build it.

Language began not with a shout but with an action. And the "logic" of the action impresses itself mainly on "instruments" that have not consciously been processed. But both the intercourse preserved in action and its "language", freed of the direct control of species-specific instincts, turn out to be, as it were, between our ancestor and the object of his actions. The mode of intercourse and its "instrument" are the mediating link of the relationship. The object of action is thus determined not only by the biological need, but also by the common mode of satisfying it. The objectified "symbol" of the common action in relation to this object is not only the actual biologically significant appearance (shape, colour, smell, etc.) of the object, but also its form when regarded as an "instrument", which suggests how to "relate" to one another in order to "relate" to the object. The object bears the impress, as it were, of the means of intercourse, the stamp of the "subjective" form of common life-activity, picking out in the body of the object that which it has not yet become but may become if the skill evolved and preserved in the form of the "instrument" is applied to it.

Even in a long bone of a large animal our ancestor

could have seen something that was not there but that would be there if it were struck with a stone, and "see" it *before* the blow was struck. And that "before" becomes fundamentally possible when, and only when, the object has become instead of a mere object of consumption an accepted means of intercourse. An object determined by the language of real life of communicating individuals presents itself to us as something capable of change, as not only "the one" that is perceived here and now, but also as the process of converting it into the expected result of action. But this also means, first, that this is where the making of tools may begin and, second, that this making may be purposeful. The shape that it will assume as a result of these actions is now determined not by the need but by the skill in changing the object preserved in the form and means of intercourse. The expected result (a bone split by a stone in one way and not another) becomes the motive, the stimulus of action and the goal that guides it. It does not matter that for perhaps a million years this goal was preserved as an entirely objective model not floating about freely in the imagination in the form of a purely ideal image. The main thing is that this model obediently reproduced in stone (the famous Chelles chisel, for example) was simultaneously the ideal, the goal, the means and the "word", for all the meanings of which the object presented itself as an integral process, as a universal, as its objective essence revealed to man. So, despite the individual differences it turns out that in the eyes of those who see the instrument there is something essentially general: the meaning, direction, aim, result of collective action. In direct contact with the social "symbol" — the instrument or object of labour — the main role in the organisation of mental processes is played by the meaning of things[1] objectified in practical activity.

[1] How different, indeed opposite, is the Marxist approach to the question of the formation of human mentality from the positions of those committed to an epistemological Robinsonade. Russell, for instance, believes that the meaning that the individual (child or adult) associates with a word "is the product of his personal experience" and only after that does the social superstructure—language—prune away all that is personal in recollection, leaving only the socially significant. The Marxist, on

The idea or representation is focussed on the instrument or the object at which the instrument must be directed. And since the image of the object signifies something that goes beyond the frame of instinctive relations to the environment and carries in itself the meaning and aim of the collective action, the individual will experience this image as an external object, and not as his instinctive activity. The thing now has meaning in itself.

This is where the most substantial qualitative leap in the evolution of mental forms and processes takes place. Man at last learns to see the object in the object, to treat it as it deserves and demands, and not as the conservative experience of the species, morphologically and functionally fixed in the organism, dictates. In the eyes of man a stone becomes a stone, and a hare a hare, as they are in reality, regardless of any experience. And this miracle occurs because the "language of real life" has begun to inform those who have learned it, who have learned it through the skills of socialised labour, about the objective significance and aim of every action involving objects, about the object itself that has been drawn into collective action. This was how the "language of real life" restructured the mentality of our remote ancestors.

It looks as if we have reached the source, the birthplace of knowledge, of understanding, and realised once again how limited the view of pre-Marxist materialism was. The individual's mere contemplation of an object could never have given birth to knowledge. But

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the contrary, stresses that it is the social symbol (and the instruments and object of labour are the first such symbol) which shapes an idea (notion, representation) that is socially significant and generalises the qualities common to a whole class of objects that play an active role in goal-oriented collective action. And after making this or a similar point he will surely add: "Only separate details of the idea can be supplied out of the individual's personal sensuous experience." (A. A. Leontyev, op. cit., p. 82.) Even the general in the idea is also formed in the process and out of personal sensuous experience. In the individual's mentality there is not a single phenomenon determined by social being that is not at the same time deeply personal. And, on the contrary, in the individual mentality each "only" personal perception comes "only" out of the social means of reflection, the chief of which is language.

the use of the object in accord with its natural qualities makes it possible to retain its purpose even as an idea and, hence, the Something that inheres in it and that depends neither on accident nor on appearance.

Now we see primitive man not as a geometrician, not as a philosopher thoughtfully contemplating the repetitive features of things, but as an ignorant savage whose hands, when necessary, are cleverer than his head. These hands perform a task without which there would be no language, no thought, and not even the most brilliant philosophical or mathematical brain. The "language of real life", in whose dynamic system each member of the tribe was involved, carried the meaning of words that was "carved out of flint" by the hands of preceding generations. So man could contemplate nature only through the prism of all the social work-skills that had been accumulated by his predecessors. People could see the sun as round only because they rounded clay with their hands. With their hands they shaped stone, sharpened its borders, gave it facets. So the meaning of the words "border", "facet", "line" does not come from abstracting the general external features of things in the process of contemplation.

But in the collective notions interwoven in the language of real life the essence of the objects themselves is still hidden in the sense-like memory of the mode of action. Here meaning is still not knowledge as such.

3. When Consciousness Is Conscious of Itself

But could man always ask himself: "How is it that I know? How is it that I know that I am I, know other people, know that we are people, and not bears or tigers?" As we have seen, such questions presuppose the ability to look at one's own activity from the side. Here am I, here is an object, and this is what it will be like when I do this or that with it. Only when "I" and "I shall do this or that" are not the same thing, when the "I", the Self, the Ego is able to treat its activity as a forthcoming process, which may be corrected, modified in accordance with a prepared plan of action,

only then can the question arise of the nature of knowledge and what human *consciousness* is.

If present-day ways of thinking are transferred to the past of mankind it may seem that the person who does not separate himself from his own life-activity is simply not yet a human being. It now seems to us so natural to be able to organise activity according to the aims that are generated in our consciousness. Surely, then, to be a human being merely means being able to distinguish one's knowledge from the object of knowledge, oneself from those around one and from the external world in general and, of course, oneself as a person from one's own abilities and actions. "I can't do that yet, but I will learn to do it." "I can type but somehow I feel more at home writing." No one is surprised at such simple statements. Is it so important whether I can type or not, whether I can speak Chinese? I remain myself. Knowledge, skills, abilities come (and go) with the years. Knowledge, skills and abilities can exist without me, they need not necessarily be mine. I acquire them as external "objects".

Has it not always been so? Did not even "primitive man" teach his children what he knew, the skills he had acquired? They knew less than we do, of course, but if they were human they must have been able to teach their children, pass on their knowledge and abilities as something separate from the person who possessed them.

In this case it would be natural to assume that man has always been able to ask himself the question, what is knowledge and, consequently, what is *consciousness?* This is how things may seem to the person who regards man's ability to separate himself from the specific forms of his life-activity as a historically immutable attribute always manifesting itself in the same forms.

At the dawn of history[1], however, people did not view their activity "from the side", although in objective terms their relation was reflexive. Why? Because people knew *how* to act only insofar as they obeyed the ritual of their collective life, the mode of their intercourse and activity, reproduced by one generation

[1] This "dawn" probably lasted a whole geological age.

after another, having arisen on the basis of the division of labour according to sex and age.

"We are kangaroos," declared as late as the last century a tribe of aborigines in Australia whose totem was the kangaroo. The Kangaroo tribe, unlike, say, the Crocodile tribe, had not only its own ancestor, but certain unique features in the ritual of life that were carefully guarded against any change. The ritual was a means of preserving, reproducing and handing on the skills, production activity and rules of intercourse from generation to generation. The ritual was an inviolable standard, a set of rules of intercourse in obedience to which people played the roles assigned to them, depending on sex and age. Each "role" in the ritual reproduction of the modes of collective activity was their own essence, their own Self, which had not detached itself from the "mask", from the mode of action assigned to this "mask" by the ritual of collective life.

Many critical arguments based on thoroughly researched ethnographical material have been mounted against the so-called "theory of primitive animism".[1] But it is now clear that the person of primitive society did not detach the soul from, or contrast it to, the body despite his conviction that every member of the tribe and he himself could be a child, a grown-up hunter, an old man, a kangaroo, a plant, and so on. Each of his fellow tribesmen lived not as an individual in his own right, possessing his own consciousness, his own soul, but according to the pattern of his whole tribe, which had assigned to him the ritually necessary roles. The ritual mask, the scars on the face and body (marks of initiation), the natural attributes of age and the distinctions between sexes, were for him evidence of his indissoluble unity and blood relationship with the group.

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[1] *Animism*—belief in spirits. By analogy with later beliefs associated with the opposition of body and soul it was thought that primitive man also saw around him good and evil spirits on which his life might depend. Primitive man was indeed surrounded by living forces in the most diverse guises, which worked both for and against him. But he had not yet learned to distinguish the force from the guise and regard it as an "incorporeal soul".

These sensuously apparent, ritually denoted attributes of "kinship through role" along with instruments and articulate speech constituted an organically integral system of means of communication ensuring goal-oriented activity and intercourse—the "language of real life" that we have just been discussing.

As a system it did not belong to the individual; rather he belonged to it. His mode of life, guided and regimented by the ritually reproduced rules of the "language of real life" did not allow him to look at himself from the side. This meant that he could not pose the question about his own consciousness. He had consciousness, but he was not yet aware of the fact.

Only with the development of objectified activity and the division of labour is man given the opportunity of treating, first, his activity as an acquired ability, of "separating himself from his activity", and, second, separating the object of knowledge from knowledge itself, and thus objectively preparing the ground for the question of the nature of consciousness. This question could be asked only after the social division of labour in material and mental labour. Marx wrote: "Division of labour only becomes truly such from the moment when a division of material and mental labour appears. From this moment onwards consciousness *can* really flatter itself that it is something other than consciousness of existing practice, that it *really* represents something without representing something real; from now on consciousness is in a position to emancipate itself from the world and to proceed to the formation of 'pure' theory, theology, philosophy, morality, etc." [1]

But humanity did not advance at once to the production of "pure theory". The division of material and mental labour was foreshadowed by yet another great change in the structure of the productive forces of society: the separation of agriculture from cattle raising and the appearance of agriculture as a stable mode of production. This had truly fundamental significance for the further history of mankind. For the first time man took possession of the soil as an object of his labour.

[1] Karl Marx, Frederick Engels, *Collected Works*, Vol. 5, pp. 44-45.

It is usually assumed that people became settled with the transition to agriculture. But what matters is not so much whether certain tribes led a settled or nomadic existence, as that the crop farmers did not merely till the soil, but owned it. This was the relation that turned out to be crucial for the further development of human activity and intercourse.

But surely the primitive tribal communes had their own habitations? Surely they did not allow other tribes to cross their boundaries? Yes, for primitive man the forest, the fields, rivers, sky, even the wind were corporeal embodiments of his life, a sensuously visible picture of where and how he must do what. But where did the river end? Where was the border of the sky? Even the elders of the tribe did not know the boundaries of the forest where sacred relics, masks and so on were kept. This forest — the forest of the tribe — was a boundless whole. No one owned it, any more than one owned the river or the wind, a hill or a cloud. The people of the tribe did not admit strangers (people of a different totem) into their forest not because they owned it but because strangers might infringe the ritual of their existence. And they defended the forest not as their property, not as something possessed but in order to defend *themselves*.

Tilled land breaks out of the circle prescribed by ritual and confronts man as an *object* of activity. Now a stranger may not set foot on tribal land not because he is thus penetrating the body of the tribal life, but because in doing so he "takes the bread out of its mouth", robs it of the means of life, tramples the young corn, tramples that which does not belong to him. All the people of the tribe, all who work this land are its owners. This is how it was at the beginning of the "agricultural revolution".

A new relation of social production arose, transforming not only the intercourse within the farming tribes, but also their intercourse with the outside world, and particularly with the cattle-raising tribes. Now if they set foot on land that someone owned, they entered into legal relations with its owners because they had with good or evil intent violated the principle of ownership.

Raiding or parleying accompanied by gift-making as a sign of peaceful intentions, these new relations between tribes were based on the relation to the land as property. It was this relation that mediated human intercourse and turned it into a political act. The exchange of the product of activity as an exchange of "gifts" was thus at first political in character and only gradually evolved into trade, which made it possible to orient production on the exchange value of its goods.

Yet another consequence of the agricultural revolution had special significance. The inexorable life cycle of the land itself, objectified through the skills of agricultural production and in its implements, destroyed the established principles of the tribal ritual so jealously preserved by the elders. As tribes proliferated and grew in numbers, the elders, who personified the unity of the tribe with its ancestors, formed a special group that included their nearest relatives, who also came to be regarded as representing the root unity of the tribe. As tribes spread and merged with each other this "tribal nobility" symbolised the "beginning" of tribal traditions that was still associated with the worship of ancestors. In the tribal associations that grew up on the basis of agriculture the nobility, as the guardians of tribal tradition and high priests of ancestor worship and tribal unity, formed a new social institution, whose main function was to realise the relation of property.

This practical division of the former community into two unequal groups (unequal both in numbers and in the substance of their activity) laid the foundation of class history (or, as Marx and Engels wrote, the prehistory) of mankind. It was here that the majority of the members of the agricultural commune realised their activity in relation to the land as direct material activity, the aims of which were always set both by the object itself (life cycle of the land) and by those in the commune who personified that object, that is, the tribal nobility. In its turn, the nobility had as the object of its activity not the physically existing plots of land that had to be tilled at any particular moment, but the land as a whole, as the territory of its commune, its tribe, and eventually its people.

In this case the activity of the "upper crust" becomes for the first time different from the general activity

not only in its object, but also in its social significance, in the status it acquires in the system of social production. The organisation of other people's activity, the subordination of all seasonal and other particular forms of labour to the principle of the territorial integrity of the land becomes a special object of "upper crust" activity. It is also their business to set goals for the working majority of the community. Thus the head now sets other people's hands to work and this turns the larger physically toiling part of the community into an instrument of the owners of the land. Thus the "co-owners" are split up into those who are actually owners and the mass of land workers dependent on them and held together in small communes enjoying no rights whatever, or slaves completely excluded from the relationship of common ownership of the land. Thus were laid the foundations of the vast land-owning despotisms of the East.

At first guardians of the ritual mode of activity and intercourse acted as the part of the tribe that on account of its association with the ancestors was promoted to the role of spokesman for "bounteous mother earth" in relation to all the other members of the tribe. The history of the tribe, of its ancestors became the explanation and justification of the integrity of the tribal territory and the tribe itself. "Dying" land, reborn land, blossoming land, fertile land, all became interwoven in the saga of the tribe, in tales of its heroic progenitors. Their exploits, embellished by the imagination, became associated in the consciousness with the seasons in the life of the earth, of all nature, with the influence of the natural forces on which agriculture depends. The first heroes of the tribe were usually "remembered" as being as powerful as these forces and often became identified with them. The history of the agricultural tribe was thus transformed into *myth.*

Mythological awareness is a phantasy awareness of the real historical existence of the agricultural communes developed on the basis of tribal communities and serves both as a mode of social goal-setting and as a set of vivid patterns of precedents governing intercourse in accordance with the customs of the given tribe and its form of awareness of reality. The stability of the given form is also connected with the phenomenal stability of the cycli-

cal self-reproductive, self-contained agricultural mode of production.

As the tribal nobility increases its power and the political organisation of society develops, the myth begins to perform social functions. A priesthood appears. At the same time, the mythological form of society's awareness of its historical existence acquires ever new features of ideological consciousness, of religion.

Yet another historical consequence of the great agricultural revolution is thus finally established—the division of labour into material and mental labour, the emergence of theoretical activity. Only this division of labour allows consciousness, in the words of Marx, "to emancipate itself from the world" and judge world as its object and itself as a problem. What brought about mental production as such? What is the substance and structure of this new form of activity?

Aristotle in his day observed that the invention of free arts became possible because some people acquired leisure at the expense of the labour of others—the slaves who were compelled to give all their time to useful but arduous toil. And even today the question of the origin of mental activity is often summarily decided in much the same way, on the grounds that part of society was freed of the necessity to perform constant physical labour.

But the correct notion that without slavery there would have been no flowering of ancient culture [1] only describes the result and does not reveal the causes and essence of the origin of theory as a special form of activity. Leisure, after all, may be devoted to any number of things. The interesting point is why did the Greeks devote their culture to creative intellectual pursuits. What was the objective necessity that prompted them to reinterpret their myths on an entirely new foundation. Why, specifically, does the search for the one nature (arche) of all being gradually begin to intermingle with the picturesque tales of the birth of gods and heroes. To reply to these questions we must return to stratification of society

[1] Social development necessarily passes through all stages of the organic integration of the human group, including the stages of antagonistic class formations. The price is a high one but, had it not been paid, humanity would still not have emerged from the neolithic age.

into two unequal communities, one of which becomes the subject of the property relation, and the other, the subject of production (primarily agricultural) activity. The first group, the tribal nobility (later the "upper crust" of the agricultural despotism that grows out of it, a special caste of the agricultural aristocracy, the priesthood, civil and military governors and generals, mandarins, etc.) exercised ownership of the land in practice. In relation to those who worked on the land this was an organisation of political power ensuring the economic interests of the "upper crust" by extra-economic acts of administration based on violence, on special detachments of armed men.

The state is, in fact, organised political power based on force, that is, on an apparatus of force. But the point to remember is that the guidance, the direction of activity now emerges as a special form of occupation.

Objectified practical production activity is focussed directly on the land, on irrigation canals, buildings, tools, etc. The focus of activity of the "upper crust" is the same land, but as a whole, as a territory, as the universal foundation of all the works performed on it. For those who are engaged in material production, the objective attributes of natural phenomena are something directly given, perceived as resistance to the efforts of the toiler. In the special activity of those who on the basis of the "common interest" (which, as Marx showed, conceals the selfish interests of the ruling class) set the specific goals of particular forms of activity, the land, implements, buildings and people themselves are seen in their general form.

As I have explained, man always sees in every object of his activity or contemplation mainly the "object in general"—the land in general, buildings in general, people in general, and so on. Without this ability to define each object in a social way, that is, define it in its general sense, a human being is simply not a human being.

So the farmers of the period of the "great agricultural revolution", the period of the emergence of political communities, of states, much as we do now, and as did primitive man, saw in each object, phenomenon or process, no matter how direct the perception, the universal (social) definition: "This is a bullock", "This is a river", and so on. The "angle of vision" of those who exercised the rela-

tion of ownership to the land "picked out" in real objects precisely their universal determinates. On the other hand, physical labour as the basis of its social function socially formulated as the class distinction of those who performed it, had the task of material, sensuous-practical transformation of the substances of nature. Moreover, the labourer knew, of course, before he harnessed a bullock that what he was harnessing was a bullock, and before picking up a spade or an axe he saw in them, above all, a spade in general or an axe in general. But the instruments and objects of his labour were still in fact that particular bullock, that spade, that plot of land, and so on. The whole point of his labour was that he was directly engaged in working that plot of land with that instrument.

Those who realised the property relation, all those who were in some way involved in directing all the particular forms of labour focussed their attention directly on these particular forms and modes of labour, that is, on the socio-historical foundation of their universal determinates. In other words, activity in guiding, in representing the universal interests of the state is activity whose object is the modes of labour, forms of intercourse, etc., precisely the socio-historical forms of representing the object that constitute the basis of universality for man. This is where man has to work directly with universals.

So the territorial integrity formed by the given community's transition to stable forms of agriculture was represented by the special role of the tribal aristocracy which exercised the property relation. But this meant at the same time that the land domains of the given community were limited, and this in turn presupposed the marking out of the actual borders of this territory.

We are now faced with two directly objectified kinds of activity: the first is the working of the land, agriculture, arduous physical labour; the second is the working out of how to regulate "border conflicts" with the neighbouring agricultural or cattle-raising tribes. The head of the given tribe and his closest associates see the basis of their activity precisely in the integrality of the tribal lands. And it is this land as the possession of the tribe that they represent in their activity of border regulation. So the object of their activity is the mode of dividing, the mode of limiting the claims of neighbours on their land,

on their possessions. It was not the land as such with its life-giving fertility, not the plough and the bullocks that occupied the attention of the head of the tribe and his advisors, but the way of objectively presenting to oneself and one's neighbours where their domain ends.

But how can one objectively delimit land? What does it entail? It entails a number of things. It entails putting a stone landmark at some disputed point, another some distance away, noting a solitary tree as a third "point", the top of a hill, as a fourth, and then perhaps putting up another stone, and so on. All these "points" are only the means of expressing the border as a line. The border itself thus drawn is only the objectively formulated means of representing one's land as a single whole.

Finding such a means and formulating it is a special kind of labour. The erection of the stones or digging of divides will be done by others, namely those whose social position has now bound them to material production with all its one-sidedness, its separation from setting goals and finding ways of achieving them. Having as the object of his activity the means, methods and forms of activity as such, having people's social modes of activity as the object of his labour, the head of the tribe was confronted with a direct universality of natural processes reflected in human modes of activity. For him the border of the land was a line drawn mentally from a post to a stone. And this line made a perfectly real measurement of the land and was itself an object of his labour.

Lines, straight lines... They may be used to draw a geometrical figure. A line is free of the sensuous immediacy of a given plot of land. It cannot and does not have to be ploughed or dug up. The real relations objectively inherent in nature are reflected in it, as they are reflected, "caught" by every mode of socially significant human action. But as soon as these modes and means as such (line, figure, angle, etc.) become the object of a person's activity, then nature is represented in them only as an idealised, "directly universal" object. Activity connected with it is no longer material but *mental* activity, performed as a set of intellectual operations with given idealised objects.

Thus a great revolution came about in the development of the modes of human activity. The ideal plane of peo-

ple's objective activity—and this is what distinguishes man from the animals—acquired a relative independence, became a special mode of activity of a special group of people. This set the stage for intensive development of the modes of theoretical goal-setting and of everything that the intellectual culture of society was to produce.

Consequently, intellectual culture appeared on the scene out of necessity. Its emergence was determined by the social development of the property relation, which broke away from direct, material influence on the object of possession (particularly, the land). It was not the leisure of the free citizen of the ancient city-state, but the character, the content and object of his socially necessary activity that made possible and essential the "invention of free arts".

What was the relationship between the individual's consciousness and the social forms of consciousness *before* the appearance of theoretical consciousness as such? The consciousness of primitive man was almost a direct unity, if not fusion, of the individual and the collective in the form of ritual with its developed "language of real life" as a mode of setting goals and ways of achieving them. The individual's obedience to ritual was the basic condition for society's survival and the handing down from one generation to another of the social modes of activity and intercourse. This was the basis of the tribal social and individual mode of goal-setting (thought).

For a whole epoch a great variety of human communities developed on this basis. And those of them that entered modern times with a tribal organisation had travelled from their primitive state as great a distance in time as the peoples now populating the so-called civilised world.

In the agricultural tribes, and later also the agricultural state despotisms, at the early stages of their development, people probably still retained some of their mythological consciousness with its characteristic subordination of nearly all acts of individual consciousness to the content and logic of the myth. But before the emergence of relatively independent theoretical activity the question of the nature of the consciousness, as a specific problem, did not arise. The drive and purposefulness of human activity were understood along with the activity

of the forces of nature as a manifestation of the world-governing principles described by the myths of the origin of all existence.

We thus find that the question of the nature of consciousness did not arise over a long period of human history, and not simply because people did not yet know what we know today. The reason was that they knew themselves and the whole world in such a way that, far from demanding that the question of consciousness as an individual attribute of man whereby he might understand the world he lived in should be posited, it actually ruled out any such positing. It only becomes necessary when the universal forms in which mental production develops, the production of social goals, the production of knowledge itself, the production of consciousness, turns out to be socially opposed to the particular modes and means of material production. When "the head set the hands of others to work", when the idealised object of theory had apparently been stripped of all the sensuous flesh of the real object worked by the hands of other people, only then did the question arise of how the "purely universal" meaning of a word (geometrical figure, number, etc.) might not correlate, coincide with all the diversity of unique, inimitable things. But, out of the same context, the question arose of the role of language in the production of consciousness, because it was the language of the people, as though freed of its direct function of providing for human intercourse in their direct material activity, that became the sphere of the elaboration of "pure meanings", the sphere of the existence of the universal as such.

4. The Real Life of Language

The time has now come to bring language in the ordinary sense of the word—as a system of sound signalling in the process of people's practical collective activities—into the foreground of the history of consciousness. I have kept it in the wings up to now not because it arose and developed after human relations had taken shape in the process of labour and the means of the language of real life providing for human intercourse had exhausted

their communicative functions. This was not what happened. The historical development of the spoken language proceeded, as it was bound to proceed, in step with the development of the collective process of labour, exerting a massive influence on the organisation of social relations and the formation of man's inner world.

The study of language has yielded a fairly orderly picture of the claims made on any symbol system. Language is a system of symbols that are arbitrary in the sense that their material nature does not express the content of the information they carry. Even a system of traffic signs will serve us as an example. What are its characteristic features? First of all, it consists of a certain number of symbols. The symbols are chosen quite arbitrarily or rather without any direct relation to the tasks the system has to perform. The lights of the signal can be in different positions or their Red, Amber and Green can be changed for other colours. The simple fact that an automatic traffic signal can be replaced by a traffic policeman tells us that the actual material of the symbol does not affect its meaning.

The second no less important feature of a symbol system is the use of symbols in accordance with certain definite rules. It could not perform its function of communication and guidance without them. All three lights are rendered useless if they all go on at once. Contradictory signals from the traffic policeman and the traffic light would lead to the same result, if it were not for the rule that any signal by a policeman cancels the signal of the traffic light.

And here we discover that the actual meaning of the symbol is determined by its use, by its rule-governed relation to other symbols of the system. Only the order in which the lights go on in relation to the conditions on the road gives Red, Green and Amber their respective meanings. Of course some road signs do bear a resemblance to certain phenomena or objects, but the person unfamiliar with the highway code would scarcely be able to guess, for instance, the meaning of a wavy line on a red-bordered triangle.

The symbols themselves without the system have no meaning. And the meaning of the system exists not only

in the system but also for the system. It is a function of the symbol in the given system. And since human language is a symbol system, all the above-mentioned principles apply to it.

But wait a minute, the reader may retort. What you are saying implies that the meanings of words exist only within and for a linguistic system, that they are determined not by the objective world but by the rules of grammar, or, in other words, that they are purely arbitrary and subjective and do not reflect the world as it is.

To be sure, the assertion that language is an ordinary symbol system does seem to put us in rather a difficult position. Symbols have to be arbitrary and their material should not be associated with the message they are supposed to convey. All right, then, that is understood. Words, their phonetic envelopes cannot, in fact, claim to reproduce any of the objective attributes of things or objects. It is equally certain that the use of the media of linguistic intercourse is regulated by certain rules. Violation of the rules robs the linguistic symbols of their meaning. The rules themselves are not arbitrary and cannot be broken without detriment to the meaning of the idea that is to be conveyed. On the contrary, a person often feels the objective power of language: the demands that its rules make on speech unexpectedly distort the meaning of what is said if a sentence is constructed carelessly or hurriedly. "That's not what I meant to say!" the speaker hastens to correct himself. The linguistic form, organised according to certain rules produces an unwanted meaning.

A linguistic symbol becomes a meaningful word only in a linguistic system with all its specific rules and principles. Such objections as "but you will understand what I mean if I simply say 'table' or 'cat' " are based on a misunderstanding. The person who does not know English will not understand anything from these words. A whole system of language is implied in even one word. The sound combination "cat" does not fall on a clean slate of consciousness, but on soil that is constantly in readiness for perception—a functioning system of linguistic relations and associations. We are simply not aware of our readiness, of how the whole linguistic system at our disposal swings into action and determines the meaning of

the signal. The driver who brakes suddenly when the traffic lights go red does not give a thought to the fact that the whole objective traffic system is responsible for his understanding. What would his reaction be if a red light in exactly the same shape suddenly went on on his bench or in his office? Surprise, complete bewilderment. And he would probably never think of traffic lights or the highway code, because the situation would be so different. So the whole system of symbols called language participates in the understanding of one word.

When we speak, write or read, our attention is concentrated on our aim, on the logic of thought, on its content, on the answers we receive, on semantic associations and so on, and we are seldom, if ever, aware of the work of our mental "muscles". The material side of language—physical movements involving the articulatory apparatus and so on—becomes an inwardly experienced mental state but is rarely conscious. But at the same time the organism's reaction to the meanings of linguistic symbols must also become an inner mental state. This is the only explanation for the fact that the one thing to emerge from our automatic speech movements is our attitude to the basic message spoken. Everything would be quite clear if the sound, the phonetic envelope of the word itself meant something to us, if its material structure carried its meaning.

But most linguists regard the link between sound and meaning as unmotivated, accidental, and in a sense arbitrary. For those who believe that a word is the name of a thing, and that the meaning of a word is a thing that has been understood in a certain way, such a solution to the question of the link between sign and meaning is natural enough. A word is a symbol of a thing, its accidental but socially established name. So far so good. We join the nominalists in saying that the nature of the sound cannot in principle repeat, reflect the diversity of qualities in the thing that we are capable of conceiving. The connection between sound and meaning is totally unmotivated and cannot be motivated. Here the law of the symbol system comes into operation. To fulfil its semantic function the symbol must be unlike the thing whose meaning it represents. In *Capital* Marx wrote: "The name of a thing is something distinct from the qualities of

that thing. I know nothing of a man, by knowing that his name is Jacob." [1]

The animal organism's sensitive reaction to materialised, objectified meaning is quite understandable. The "situational intellect" of the higher animals is a clear example of how keenly their organisms sense the thing's biological purpose. The reaction of the human organism to the social meaning of a thing, object, and so on, also evokes no surprise because this meaning has been put there by human hands and become its material structure. Here too the mastery of an object is also mastery of its meaning. But what do we get out of mastering the symbol-word whose material structure means nothing to us?

Someone will probably object that "accidental" symbol bearing no resemblance to the object is firmly connected by a physiological mechanism of temporary neural link with—with what? Some say, with the object. We would say, with the meaning of the object revealed in the process of people's material activity. But neither explanation makes matters any easier. If we are talking about the direct link between the symbol and the object there can in psychological terms be only an association between name and external appearance. We have already demonstrated that this hypothesis is untenable from the scientific point of view. As regards the link between the symbol and the meaning of the object, the position is even more difficult. A temporary nerve connection, as a physiological process, can link only various forms of physiological activity of the organism. The movement of the speech organs required for articulation of the word "axe" may by association with the repeated action of felling evoke a certain sense of muscle fatigue. At first glance, this example seems to explain something, but only at first glance.[2]

The majority of words in our language tell us about objects, processes and phenomena whose meanings could not in principle be comprehended by any movements on

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[1] Karl Marx, *Capital,* Vol. I, p. 103.

[2] One of the central ideas in Henri Wallon's book *De l'acte à la pensée* (Paris, Flammarion, 1942) is that from the scientific point of view it would be a serious mistake to treat a concept as a copy of a specific action, no matter how social it may be.

the part of the individual, but have been revealed in the social process of abstract logical (i.e., linguistic) analysis and can have no other motor "representatives" in the human body apart from certain habits of the speech organs. So it works out that understanding of the meaning of a symbol comes about when by one movement of the articulatory organs we evoke the necessary consequent movement of the speech organs. Indeed, the only means by which something can be explained to a grown-up person is by explaining it in words. A certain physiological movement of the speech organs evokes by association yet another movement and a word is articulated. One word explains another; it also explains the purpose of an object that is unfamiliar to us. And in this movement the actual meanings of things must be also mastered, assimilated along with the specific features of the acoustic waves. The sound itself must possess meaning, otherwise the real life of language simply cannot be explained. In which case there would appear to be no alternative but to refuse to acknowledge that the link between the sound, the phonetic envelope of the word and its meaning is unmotivated and accidental. The sound of a word, the acoustic air waves must be firmly linked with its meaning, just as structure and practical purpose are linked in an instrument or an object of labour.

But can the phonetic envelope of a word be closely connected with its meaning? Let us turn to modern linguistics for advice. Arguing that the attributes of a phonetic system cannot be extended to the structure of language, V. A. Zvegintsev stresses that, as distinct from a symbol, "the phonetic envelope of a word is inseparable from its semantic content. . .".[1] This a point that is of exceptional importance to us.

The phonetic envelope of a word is inseparable from its semantic content. But one must beware of understanding the content of a word as the object or thing itself, or the relation of things—in short, the phenomena of objective reality that are apparently designated by the symbol-word. The content of a word is its meaning, its function in any given linguistic structure, that is, its lexical

[1] V. A. Zvegintsev, *Ocherki po obshchemu yazykoznaniyu* (Essays on General Linguistics), p. 28.

meaning.[1] The lexical meaning is very closely connected with the sound, the phonetic envelope, and within the framework of the given linguistic system such a connection is perfectly well motivated.

An episode from an essay by Daniil Granin will help to explain this point. A writer in the Altai Mountains learns about a process for utilising the antlers of mountain deer. He talks to the workers involved and notes the apt professional expressions they use. The room where they dry the antlers, for example, is a "vetrovaya" (literally "windroom"); its walls are like Venetian blinds, allowing the wind free play from all sides. Something united the ideas of wind and building in one word and Granin writes: "Only labour, work, in which the essence of things is revealed, in which a word is shaped and polished by everyday necessity, only labour could find just the right name, create a new word perfectly akin and comprehensible to language."

Well said! It is profoundly and philosophically true that the essence of a thing is revealed precisely in the process of acquiring practical mastery over it, and that words are "shaped by everyday necessity." But another fact is also noted with subtle precision. The word "vetrovaya" actually does unite wind and building (the adjectival ending suggests the idea of "room" as in many other words built on the same pattern) in a way that is immediately understandable.

Now we should find the thinking of the linguist easier to follow. V. A. Zvegintsev writes: "A word's phonetic envelope is built not out of arbitrary sounds but from the sounds of a definite language that form its phonological system and are therefore in a certain relation-

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[1] It is curious that V. A. Zvegintsev does not regard it as possible to identify meaning and concept. Adam Schaff in the section on meaning and concept in his book *Wstep do semantyki* (An Introduction to Semantics), (Panstwowe Wydwinctwo Naukowe, Warszawa, 1960, p. 274) on account of this even calls him an idealist, stressing the importance of understanding "how while proclaiming dialectical materialism objectively people arrive at idealist views in one form or another". The reader will understand the gist of the argument by referring to the book by V. A. Zvegintsev *Semasiologiya* (Semasiology), Moscow, 1957, and the book by A. Schaff.

ship to each other and to other structural elements of the language. They carry a firmly established functional meaning, thanks to which the Russian "t" and the German "t" or the German "a" and the Russian "a", even if they are articulated in exactly the same way, cannot be regarded as identical phonemes . . . This peculiarity of phonemes, often interpreted as their discriminatory function, cannot fail to influence the formation in each specific language of words with a definite sound pattern. Moreover, we must take into account the fact that the word's phonetic envelope is not a monolithic or homogeneous formation for us. We can identify in it the various sound units which we define as separate components of a word (root, base, ending, etc.), and which at least in part (prefix, suffix, inflexion) have a strictly conditioned phonetic form. And this determines from a new angle the dependence between the phonetic envelope of a word and its lexical meaning since, depending on the character of this meaning (its belonging to the noun or verb categories) the word may acquire as inflexions, prefixes, or suffixes (in inflected and agglutinative language) strictly conditioned sound units.

"Compare such examples as the Russian *motovstvo* (squandering), *motovstvom* (by squandering), and *motat'*, (to squander continuously) and *motanut'* (squander once). And correspondingly in Uzbek: *kitob-lar-ingiz-da* (in your books), and *daftar-lar-ingiz-da* (in your notebooks), and so on." Noting that this applies not only to derivatives, but also to their roots, V. A. Zvegintsev continues: "It is worth recalling what B. Delbrück wrote on this point: 'It seems to me that as a result of the studies made to date the basic proposition has been established that concepts slowly and with difficulty develop together with the sounds of words and with their help, and are not formed in man independently of language and only then clothed in a verbal envelope.' Further research by linguists and especially psychologists, far from shaking this proposition, has tended to fortify it." [1]

So once again we are compelled to answer yes and no. No, we say, the phonetic envelope does not reflect,

[1] V. A. Zvegintsev, op. cit., p. 28-30.

does not "copy" the actual attributes of the object. If we try to avoid treating language as an integral whole and correlate the sound of a word directly with the attributes of the object we find they have nothing in common. So the name is arbitrarily, accidentally, unmotivatedly linked with what it names. On the other hand, we also say, yes, the meaning of the word is always in its external, phonetic envelope, is inseparably linked with it, and certain sounds in a given language always perform a certain lexical function. The whole point is that the lexical function of the sound is not the direct reflection of the object. For simplicity's sake we shall follow Zvegintsev's example and, leaving aside the question of roots (the question is similarly solved, but too complex to be taken as an illustration), illustrate our point with a suffix or prefix. Take the prefix "pri". It obviously plays an auxiliary role in the language and only acquires a meaning of its own in combination with the root of a word. Or take the suffix "ochk". Although both "pri" and "ochk" have a lexical meaning that is peculiar to them as sound combinations, they become related to reality, to objects and thereby become understandable only in connection with a word, in connection with the operating structure of the language.

In the orderly, necessary connections entered into by the sounds of language, this or that combination of sounds lives with the support of the whole phonetic and lexical structure of the language. One can understand each separate word only by an instantaneous and unapparent recreation of the whole system of sounds in the language and their auxiliary functions. Even when we seem to be relating the word directly to the object, the word does not so much designate the object as express its practically realised essence through the whole system of the language. It is not the wordname but the structure of the language that preserves the whole system of human practical actions with objects, actions in which objects speak for themselves, with their own voices. It is the structure of the language that reproduces the structure of the actual life of society.

The "language" of objects, things and practical actions, the "language of real life", which brings people together and guides their efforts to attain a common

goal, has objectified the purpose of every object in its structure, in its "substance". Only the person who acts practically, who first in movement, in the life-activity of his organism, copies the substantial properties of a thing and, secondly, organises his behaviour accordingly, coordinates it with the actions of other people and together with them uses the object for its proper purpose can really understand this "objective meaning", understand why this or that social object is needed. This is the first and extremely important aspect of the complex objective reality that we call society and that the individual is obliged to assimilate (even if at first it only presents itself to him as articles of household use). The second (no less important) aspect of material social being is the complex of sound (and other) signalling media by which people communicate.

Language confronts us as an objective reality that each of us must assimilate through movement of his speech organs and purposeful practical action performed together with other people. So by assimilating in living forms of intercourse the phonetic structure of the given language the individual assimilates also the modes of intercourse imparting universal meaning to its elements, while at the same time constantly correlating his actions with the communicative function of words, with the actions of other people, and with the objects of their actions. It remains for us to explain why we understand this or that sound of a word or part of a word as something intrinsic not in the sound itself but in the phenomena of the objective world. Now we have only a little way to go. But this is the most important part of our journey.

Yes, we can allow that the sound combination "ochk" has its own inherent function in the language—affectionate diminutive. And I assimilate that function as I assimilate the sound. But my affection is evoked not by the combination of sounds, but by an objectively existing person of whom I am fond. When I am talking about something I am not merely aware of the need to link a word that has one sound with a word that has another sound. In fact, I do not think about the functions of the sounds in the language at all. I think about things, objects. Can the lexical meaning of

a sound combination be at the same time the meaning of the object itself existing outside me?

Here I must warn the reader against an extremely widespread error. The warning may come as something of a digression from the answer to the question I have just posed, but it is quite justified from the standpoint of methodology, if not of method.

The warning is that it is quite impossible to answer our question if we repeat Bertrand Russell's error, even unconsciously. The personal and the impersonal in human cognition and consciousness must not be separated and opposed. Can we, following Russell, regard a symbol system regulating human intercourse as a social system? We now know that if the question is put in that way the answer may be both yes and no. If we give preference to only one answer, namely the one chosen by Russell—language is a purely social phenomenon—then we are faced with a series of insoluble problems.

Analysis of the integral laws of a language system may create the impression that the question of how the individual understands the meanings of words has been solved. It may appear that the main thing, our Something—meaning and how it is formed—has been found. But meaning must mean something for someone. If it is the linguistic system, social in origin and essence, that creates the meanings of its symbols, the individual is not a part of the system, he merely uses the ready-made meanings of words. But how does he understand them?—that's the question. When formally analysed, language hangs in the air, as it were, is deprived of its roots and becomes an independent object of research; the individual, whose tongue makes language a living thing, is pushed into the background and forgotten.

Everybody realises, of course, that language is used by individuals. But language itself, so the argument runs, comes to him ready-made, with all the lexical meanings of words. He has only to take it and use it as a ready-made commodity. The owner of the commodity does not create its value. He only buys and sells the commodity. So it would appear that in order to understand what value is, one should first of all study how commodities are exchanged. And this is when an im-

pression is created that is very difficult to dispel, the impression that the commodity itself contains its own value. The roots of commodity fetishism were revealed by the author of *Capital.* Marx showed that behind the relations between commodities lie the relations between people and that it is man himself by his labour who creates value. A similar, linguistic fetishism arises when the relative independence of language is absolutised. [1]

If we put a period after the expression, "A linguistic system itself determines the meanings of its symbols," the people who use that language will appear to us as "buyers", "sellers" and "consumers" of the "value" of the symbols, while the "value" itself (the meaning of the symbols) turns out to be the natural result of word exchange. People receive directly "from the language" ready-made thoughts and treat each other affectionately as and when the language demands the use of the suffix "ochk". This, of course, is an exaggeration, but one that clearly underlines the philosophical conclusion to be drawn from theory that falls under the spell of "linguistic fetishism".

One can scarcely accept the notion of the unity of word and thought in which thought is regarded simply as a function of language, expressing nothing but the laws of the given symbol system. The fact is that the meanings of words play the leading role in the building of sentences. If we study language as an independently existing symbol system in which the meanings of the symbols are determined by the rules for their use in the system, we are compelled either to totally ignore the above fact or seek its explanation in something beyond the given symbol system. When we are dealing with artificial languages, the answer is quite simple: the system is always based on the language of everyday life. Linguistic thinking does the rest, defines the rules, selects the symbols and attaches to each a specific meaning. The very existence of such a structure is founded on our ability to think, as is the category of "meaning". The function of the symbol in an artificial language becomes a meaning only for the person who is equipped to understand it.

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[1] See Adam Schaff, *Wstep do semantyki,* op. cit., pp. 229-230.

Contemporary empiricism, which has taken the form of "logical empiricism" and studies the methodology and logical principles of the structure of scientific knowledge ("language of science"), was forced to consider the question of what the language of science is based on. Rudolf Carnap [1], a leading exponent of this school of philosophy, wrote of the "primary" language determining the principles on which the language of science is built as being the everyday thing language. "Once we have accepted the thing language with its framework [2] for things, we can raise and answer internal questions, e. g., 'Is there a white piece of paper on my desk?', 'Did King Arthur actually live?' 'Are unicorns and centaurs real or merely imaginary?', and the like. These questions are to be answered by empirical investigations. Results of observations are evaluated according to certain rules as confirming or disconfirming evidence for possible answers ... The concept of reality occurring in these internal questions is an empirical, scientific, nonmetaphysical concept. To recognise something as a real thing or event means to succeed in incorporating it into the system of things at a particular space-time position so that it fits together with the other things recognised as real, according to the rules of the framework.

"From these questions we must distinguish the external question of the reality of the thing world itself. In contrast to the former questions, this question is raised neither by the man in the street nor by scientists, but only by philosophers. Realists give an affirmative answer, subjective idealists a negative one, and the controversy goes on for centuries without ever being solved. And it cannot be solved because it is framed in the wrong way. To be real in the scientific sense means to be an element of the system; hence this concept cannot be meaningfully applied to the system itself." [3] Consequently the thing language is just another symbol system. To be a scientist (or simply a clear-thinking per-

[1] See R. Carnap, "Empiricism, Semantics, and Ontology." Supplement A. In *Meaning and Necessity,* The University of Chicago Press, Chicago, 1956.

[2] Carnap defines "linguistic framework" as a system of ways of speaking, subject to rules.

[3] Ibid., p. 207.

son and not a philosopher) means solving certain problems with the help of such a language and not going beyond its framework, in which case it proves effective for most ordinary purposes. And in principle the thing language is no better and no worse than any other symbol system.

But why exactly should it be the basis for the construction of the framework of a scientific language? For Carnap it had become obvious that the original conception of logical empiricism (neo-positivism) of so-called empirical data, understood as the elementary, subjective states of the individual in the process of sensuous contact with reality and supposedly forming the foundation of all constructions of science, yielded nothing new in comparison with the classical empiricism of subjective idealism. The whole magnificent super-structure of scientific knowledge built on the principle of the logical reducibility of the statements of scientific language to the empirically given, the sensuously perceived, was robbed of all objective value because knowledge could not escape from subjective experiences, could not be correlated with anything but our own sensations. Carnap saw that all the contradictions of the old empiricism had been inherited by the new, and that the epistemological conclusions drawn from the new theory had not moved a single step forward from Berkeley, Mach and other subjective idealists of the past. And it is to solve the insoluble, to escape from the impasse of solipcism that Carnap abandons the rotten foundation of individual sense perceptions acquired by experience and introduces the so-called "thing language".

But the thing language suffers the same fate as any other symbol system in being faced with the question of the principles on which the symbols and the rules of constructing the framework are selected. The thing language, that is, our statements about what we experience as facts of immediate perception, can be selected and constructed only by someone or some people who already know how to select, compare, think, that is to say, someone who already possesses a symbol system with meaningful symbols enabling him to choose and judge. Perhaps the language of objectively existing things is such a primary language? But from Carnap's standpoint,

we should then be going outside the accepted system and be talking about purely metaphysical, unscientific, philosophical matters. The only thing left is the "language" of our sensations and "Berkeleian repetition". No other way out presents itself. So the opposing of the social to the individual, on the one hand, makes language into an impersonal construction that we learn to use as something external to ourselves, as an auxiliary, and, on the other, reduces knowledge and the ability to understand the meaning of language to the purely individual sensuous experience that we have in common with the animals. This is the result of repeating Russell's mistake.

But how are we to deal with our question? Why do we think not with the meanings of the symbols in a given system but, as it were, with the things themselves, objects, phenomena, stripped of their flesh and represented only by their pure essence?

I think we must return once again to the way in which people master the practical purposes of the objects and instruments of labour. So far we have stressed only one side. By mastering any action with an object, its material structure, the individual learns its purpose, its aim and essence. Is that so? In principle, yes. But in the practical use of things the individual's sense organs master only their external attributes. But the socio-practical purpose of a thing (and this alone expresses its essence) is mastered in special collective (although simultaneously individual) action that brings people together as a social group. Under the pressure of the labour social situation (and of the construction of the intsruments and the objects of labour) the behaviour of each participant becomes purposeful, and the stereotype nature of their behaviour, the habits, skills of their social labour establishes not the external appearance but the essence of the object that is inseparably connected with it, its objective meaning for practice.

If in analysing the question of people's mastering the practical objective purpose of a thing we stand by the same principles of investigation as in the above argument on the mastering of the meaning of a word, there is still no answer to the question: how does a person master the essence of a thing if in the motion of

his sense organs he reproduces only its external appearance? Sensuous-practical activity is not only sensuous. At the same time it is also practical, social activity. And only as an indissoluble unity of the sensuous and the practical, the individual and the social does the mastery of the purpose of an object become the personal mental state of an individual, his personal operations with a given object.

Now we can return to language. The lexical meaning of a word is always learned and used by the individual only in the process of learning and using its material, sound envelope. This is why in a language system the meaning of a word is inseparable from its sound and motivated by it. Using the sound of a word means pursuing a certain aim with the help of the given word, the given combination of sounds, together with other people. Only in purposeful social action does the use of the sound as a symbol give it a definite meaning connected with the action and its aim. So even now when we study the language of a people the sound envelopes of its words, learned without relation to their functions of bringing people together for this or that action mean nothing to us.

Everything that people have done billions of times with a given thing, everything that it could give people in their actions, has become the assimilated flesh and blood of the word—its sound, its ability to combine organically with other words of the given language. The social function of a word is thus objectified in its sound. And it is now the sound that determines its linguistic function, that is, its function of guiding relations between people and people's relations to things.

This is why the sound combination appears in the language and is related to its whole structure in such a way as to bring to the fore the purposeful relation between people, that is, what they are using the object for. And vice versa. The linguistic framework of quite natural rules of the interaction of words regulating and determining the behaviour and actions of individuals in the objective world according to the objective essence of the objects themselves endows every word, every sound combination with the function of a symbol indicating the necessity or possibility of this or that action with a

given object. The sound combination becomes an object, whose objective, social meaning consists in organising people's actions in the way demanded by the essence of things themselves.

So the linguistic lexical meaning of a word is in the final analysis the social purpose of its sound envelope, its social function, that for the sake of which the word is uttered—its indication of the goal, character and necessity of a certain action. In the simplest, early forms of language the meaning of this or that sound combination consisted in guiding and regulating practical actions directly related to objects. Today a word may tell us not only to use the essences of things directly, but also to perform actions that are not directly connected with the world of objects. It may tell us to solve a problem in our heads, that is, to operate only with words themselves, to regard them as external facts, to analyse the objective logic of their relationship, in short, to perform actions with words that are dictated by their meanings. In this context a word evokes not a behavioural action of the organism, but another word.

So having merely glanced at an object and seen in it a familiar word, we are able through its lexical meaning (and thus through the whole social system of the language) to recall instantly the actual purpose of the object, its objective essence, what it is useful for, what it represents, and so on.

We relate to the world with knowledge of the purposes, of the objective functions of its objects because each of us has a fluent command of the language of society and is constantly relating the linguistic, lexical meanings of words to his own actions. And the lexical meaning itself does not exist except as a call to purposeful action (whether as an action with things or words). But it is not in formal operations with the sound combinations of a language but in constantly relating them to the world of our, and not only our feelings, ideas and actions that their lexical functions are revealed and exist. It is only in abstract analysis of the "exchange" of words one for another that this lexical function appears to be a purely linguistic thing existing in and for the language. But the real life of language is primarily in collective real life, in people's actions, aspi-

rations, behaviour. In reality the "value" (meaning) of a word's sound envelope is created in the concrete social use of it by an individual, in the concrete "labour" (with or without quotation marks) of individuals that is needed for the achievement of a certain social goal.

Here is the answer, then, to the question of which language determines the linguistic framework of the thing language. It is the language of socially necessary actions mastered by people in their work together and comprising various sound combinations calling for action and indicating the need to use certain skills. So the language of a people is not merely a symbol system. Besides symbol-words it encompasses also the objective purposes of things, reflected in collective, practical actions and our notions, representations of such actions. The individual's concrete social activity determines the "consumer value" of words, that is, their meaning, aim and purpose. A word's "consumer value" (that for the sake of which it is uttered) is realised in the process of speech (internal or external). But the meaning of a word in general, its place in the social language, its "barter value" is revealed by its relation to another word. Man's social and uniquely individual life is part of the system of language and language itself is constantly a most essential part of human existence.

Why do we understand the meaning and purpose of words? It is impossible to reply to this question in abstraction from the purely intimate, personal motivation of sensuous-practical action. But it is equally impossible to understand the personal, intimate motives of purposeful actions without answering the question of why we understand the meaning and purpose of words. Surely, we have not been trapped in a vicious circle? No, only the person who thinks entirely in terms of opposites without being able to see their unity will fail to notice the dialectical unity that lies beyond the difference between the individual and social moments in the life of language.

It is impossible to live in society and be free of society if only because literally every move a person makes is connected with objects created by society, with objects whose very structure organises and guides human actions. And almost every human movement is

communicative, geared to the purposeful behaviour of other people. Stereotype life patterns are formed in people from birth by other people, by society. And they are formed in such a way that needs, desires, urges are always mediated by objects and concerted, collective actions. Even the satisfaction of natural needs (the need for food, say) is organised as a social action, the ritual of which involves objects created by society and therefore becomes possible only on the basis of the social division of labour in the process of the production of food and the instruments required for eating: plates, spoons, forks, chairs, tables, and so on.

From earliest childhood people have to discover the purpose of things and understand the dictates of situation through the actions of other people, or to be more exact in interaction with other people directed towards a certain goal. Moreover we come to realise that success in such interaction is achieved with the aid of certain sound combinations.

So precisely intercourse, with its object "language", mediates man's relation to the objects of his life-activity and forms the foundation whose development shapes (perfects) both the capacity for goal-setting and, which is basically the same thing, the ability to see creatively in nature that which nature itself is not capable of but which does not contradict its possibilities. The slow and gradual development of the forms of intercourse and activity led to the division of the objective means of intercourse and activity into relatively independent systems of means of intercourse and a base "system" (arsenal) directed upon nature. (Moreover, both systems retained their communicative functions. Marx emphasised more than once that people's mode of action is at the same time the means by which they interact).

But at the very "beginning" the means of activity and intercourse objectifying people's mode of interaction included both actions and supplementary gestures and shouts. The latter arose through the bringing into play of the articulatory organs developed by the cries of wild animals. Admittedly, for this to happen the species-specific sound "signals" had to be restricted (although even today a person may literally howl with pain,

scream in terror, and so on, but even these atavistic modes of sound signalling about mental states have changed immensely, no matter how far away on the periphery of speech they may be). The sonic aids to the "language of real life" that developed in people's joint activity undertook communicative functions. Even today, when they are no longer aids but component elements of the organic language system, that is when language has become a special, relatively independent system of means of intercourse, integrally preserving all the historically arising forms and modes of human intercourse. they form part of the integral relation of the objectified means of human intercourse. Language does not exist as language outside living, objective-sensuous intercourse between individuals. Even if a language has retained some generally significant means of establishing its "elements", or, to put it more simply, if some texts have been preserved that were written in this language (even decoded, that is, translated into a modern language) we still call it a dead language. A language can live only when all the means of people's objective activity, all the historically evolved objects of culture become in it and through it means of living intercourse between people and the individual's internal communion with himself.

Language is an organ of human life-activity. No, that is not a slip of the tongue. I said life-activity because outside the historically shaped forms of intercourse a person cannot remain physically alive (the rare exceptions, when children were fostered by animals, only confirm the rule) and, secondly, the goal-setting function of language (linguistic thinking) provides man with the main inner motive (impulse) of all his actions.

Language is indeed an organ or, which is the same thing, a part of an organic whole, of active human intercourse developing in time. The part is determined by the whole, which creates the organs that are lacking for complete, full-blooded concrete historical realisation of the whole. Language develops along with the development of the whole wealth of human activity and intercourse. So language cannot be opposed (correlated, etc.) as something independent either of human culture in general or of any of its subdivisions. The culture of de-

veloping humanity in the specific forms of the culture of this or that people is fully expressed in the language of the given people, as in its own living mirror. Only when we abstract from the life of language and single out its objective signal-symbol substance for purposes of professional analysis are we concerned with language as a separate object and quite often, when doing so, we try to find the answer to the question: why does a word mean something? But it means nothing outside the "language of real life", outside the developing forms of living, active human intercourse.

The real life of language is, in fact, the real life of the individual in his constant communication with others and himself. Otherwise language is dead, it is only material, and its various states are a tape recording heard by no one.

5. Language and Consciousness

This is how it was in the history of the species. But what about the history of the individual?

For the newborn child the world is not immediately something external. At first the warmth of its mother's caresses, the peaceful rocking of the cradle, the sweetness of milk are all part of its inner life-activity. It is not even aware of having a relation to the outside world.

But the "little ball of living flesh" grows daily and hourly and responds to external stimuli with increasingly complex movements of its bodily organs. It seems to reach out to flows of light, to air waves, to the touch of human hands. Thanks to the inherited organisation of its body it is able to accept or reject external influences. And from the very beginning the mother's sympathy becomes part of the intricate network of its instinctive relations with the world. The child's mastery of its environment is regulated by adults in accordance with their notions of what it needs.

Added to this, the organism's life-activity becomes connected with the historically shaped structure of human relations. The external world detected by movements of the child's organism was shaped long before

the child's appearance on the scene. It presents itself to the child as a world in which every action relates people to one another, every object has its purpose, and even the most elementary, most natural goals can be achieved only with the help of specially adapted objects.

Even an individual need, as the first stimulus to this or that action, is formed, determined by the social means of its satisfaction. The social and the individual are literally identified in human life-activity. The most natural, biological needs (sleeping, eating, etc.) always take the form of a need for the objects of social life. The pillow for the head, the blanket, the baby's bottle, its clothes, all these objects are assimilated by movements of the organism as necessary factors of its life-activity. Each is designed for its social purpose and no matter what the baby's hand reaches for or where its eyes wander, everything regulates and guides its activity in accordance with the rules of human life and intercourse evolved by society.

So it is that the child becomes part of the "language of real life", where people in communicating with each other constantly use objects as "symbols" of their needs, abilities, will, etc., where objects therefore regulate the relations between people, inform them of their purposes. We already know that the mastering of social objects in the process of their purposeful use means mastering their objective essence. This should not be misinterpreted. The child does not understand the essence of things. It simply utilises it in its experience by mastering the practical purpose of the object. Here the decisive role is played by the relations between adults and their attitude to the child. Only if the child's actions are consciously and purposefully guided do things acquire a certain meaning for it. And not only things. People themselves, their actions, their attitudes come to have meaning as well.

Learning the purpose of things is possible only as a moment in the interrelation with other people, as a moment of social relations. The skills, habits of purposeful action with objects are evolved only as the practical realisation of the relation with adults. Only when action with an object is realised for others and links the child with them, when the action is continued and

approved of by adults, only then does it become the child's own action, individual and fully mastered.

Skills or habits in handling objects and in relations with adults, the images of things, personal impressions are preserved, added to, joined together and, as it were, stay around, ready to repeat themselves at the first demand of the situation. The memory, which unites all past experience in an integral inner world, constantly reacts to new impressions. Past experience combines with the sense organs in reacting to the objects around us. So it is not the excitation or inhibition of neurons in the cerebral cortex but the skills or habits of active perception of things, of acting with their help, that evaluate every new impression. The automatic habits of action with objects, invisibly present in the process of perception, are superimposed on the unusual shape of a new object, thus testing the possibility of handling it in this or that way and discovering its objective practical purpose. And just as any desire (need) on the part of a social being is a need for objects created by society, so is the individual action motivated by a social need always in principle calculated to receive the support and approval of other people.

In childhood this appears in the most direct and obvious forms. By the action of crying the baby demands that its parents should feed it, change its bedding, and so on. Its every movement reaches out to people, every movement is addressed to them. The organism's whole life-activity is formed as activity realised together with other people, as social interdependence. Whatever the inner, personal stimuli, the action itself always means something objectively for other people.

In these first steps the patterns of movement of speech organs are also formed and contribute their specific coordinatory functions. These functions are shaped not by biological laws as such. The child's active and purposeful participation in human social relations regulated by speech is what stimulates the organism to learn the phonetic system of the language, which incidentally is no simple matter.

The "thing", sound envelope of a word is an extremely complex object and the child has to put in a lot of effort to reproduce it. It is one long fight with ob-

stacle after obstacle. The delightfully amusing talk of a two-year-old is a stage in its duel with the language of grown-ups. Watch a child puffing and blowing as it learns to climb the stairs. Marking time or trying to put both feet forward first, it slowly and uncertainly finds its way to the top. But it may be even more difficult to master the word "stairs". "Shtairs", "sez", "sairs"... Luckily this word doesn't involve coping with the treacherous "th" or "w".

These efforts are certainly not made merely for the love of trying. The same objective necessity that makes the child climb stairs brings it constantly into contact with other people forcing it to utter sound combinations with a definite purpose which is thus objectified for him in the sound combination itself.

No, sound is not the deputy of representation, of image. It carries meaning in itself. The sound itself compels the parent to act as the child expects. The sound is the social "thing" that the child masters to achieve its own personal aim. Personal interest, an inner need forces it to utter the right sound at the right time. It is just as much a matter of necessity as picking up a spoon. The spoon itself means something with which people eat. The sound combination "give" means something with which one gets what one wants.

When the purpose of the object with the help of adults and their words is learned through the child's own actions, the sounds of which these words are composed become a more important and significant reality than the object itself. The meaning of the object lives far more actively in the speech of adults, in their demands, instructions and so on, than in the heavy, immovable objects themselves. Even a real chair is only "what people sit on" because the grown-ups call it so. The word's sound envelope carries a definite meaning indicating the practical purpose of the object.

In childhood (and not only in childhood) we all unconsciously adopt Platonic positions. That which a word calls upon us to do, that which it means for us in real, concrete relations with other people is the prime factor in regulating our behaviour, defining our attitude to the world. Since we already know that the meaning of a word is the practical meaning of things, phenomena,

processes of the objective world mediated by the whole structure of language, "Platonism" (the apparent separation of the idea, the essence of a thing from the thing itself and treatment of the word and its meaning as reality) holds no fears for us. It is clear to us why the real significance of a word begins to run ahead of the personal sensuous assimilation of the thing the word indicates.

The living, constantly functioning system of sound combinations draws the child into its orbit, and every sound is not merely repeated but appears with strict regularity just when it is expected from the sense of the situation. It is always in strict order, necessarily interwoven with other sounds, and each of them and all of them together are essential components of action.

The sound of words, naturally linked with characteristic actions, is gradually assimilated by the child as something that has an independent meaning. The point is that, although they cannot be related to this or that concrete object, they already guide actions with objects and, above all, actions with other sound combinations reproducing the practical relations between people and objects. The logic of the linguistic framework and the structure of the language demand certain sound combinations when one has to orient oneself in an objective situation or when it is replaced by a linguistic situation. But in all cases the use of the logic of language, the use of the inseparable connection between the sound envelopes of words and their lexical meanings is experienced by the individual and realised for definite purposes.

In the actions of individuals, in their sensuous-practical relation to the world of things and thing meanings and in relation to one another, the relatively independent system of language is gradually corrected by practice and correlated with the "language of real life". Separating language, words from action, from the individual's sensuous-practical relation to reality means regarding language as a closed and absolutely independent system in which symbols possess only the meaning determined by the formal rules governing their combinations. But the point is that the individual always uses symbols in a real, objective situation, orga-

nising joint action, helping to achieve a common aim. The constant interpenetration of word and action, their constant mutual conditioning test the coincidence of their meanings for the life-activity of society.

As the child's relationship to the world develops, external objects and experience of its bodily states through the use of words become conceptual, conscious. When it sees its own experience and the objective world through the prism of the experience of generations, of society as a whole, it acquires the ability to correlate its experience with the meaning implied by the words of the national language, which reproduce what is fundamental, essential and necessary in the perceived objects.

By assimilating the external world through its movements, by relying on the social meaning of things, the little ball of living flesh begins to see the world outside itself. It starts to treat itself as "I", as "Myself", as the subject of perception, as a person. And by using the objective meanings of things, the necessary and essential discovered by people through practice and thus transformed into the independent meanings of words, by correlating these meanings with the meanings of its own and group actions, this person sees the essence of things and comes to understand its relation to them. The universal (social) meaning of the objects he is now dealing with, constantly revealed in his living intercourse with other people, is directly represented (objectified) in the means of intercourse and the first among these means, the freest and best suited to the "pure universality" of our Something is language. It is language that constantly participates in converting the perception and understanding of the external object into self-awareness and self-consciousness.

When defining the state of self-awareness we run into a contradiction. The external object appears to us in the internal movement of the sense organs, but the experience of the movement of life-activity itself, is, unlike the object, the organism's sensing of itself. So it works out that one and the same state of the organism is both the registering of an object external to it and the self-assessment of the given state.

How does this come about? Let us take any percep-

tion. It may seem that we are concerned with only one, unbroken movement, for example, the movement of the hand over the surface of an object. But this only seems so. In order to feel the object, the hand does not merely obey the orders coming from outside, from the object itself. The organism, above all, the central nervous system also guides this movement. In the process of feeling an object the physiologically established habits of past experience have a feedback connection with the tactile receptors of the hand. The brain coordinates every new movement as it transmits signals to the motor muscles. Without such coordination the hand would remain helplessly suspended after the first contact with the object.

But what makes the brain coordinate each new movement? The universal, social meaning inherent in words and objectified in their material organisation. The hand touches the object. At once all the actions of which it is capable, which it has performed before, established in its physiological structure and shaped in the process of past experience, guide its further movements over the surface of the object. At the same time the object itself guides the hand's movement. The identification of informative points (the object's peculiarities) are assessed by all past habits; they are "cold", "smooth", etc. The hand glides over the surface, reproducing its shape, its image. And the object is felt as something under the hand and not depending on the hand, although it is the hand that feels it. Constant correlation of the given movement with past habits "represents" the movement to these habits and makes it the object of assessment, testing and coordination. And just as the meaning of the object identifies it as the thing under the hand, so the movement of the hand over the object is felt as something distinct from the object, as my movement, as life-activity of which I am aware. Such a duality is always involved in the integrated process of perception.

In his last "dream" of the Kurshskaya Sand Bar the author argued with an imaginary pupil of Bertrand Russell's. The argument was based on the British philosopher's theories that are known to anyone who has read his *History of Western Philosophy.* Yet another

objection that Russell could have raised against the propositions developed here, may be borrowed from his book on human knowledge. I have not yet mentioned this objection. And deliberately so.

Now the time has come to resume the argument and conclude it. Once again I shall envisage my indignant opponent who has now decided to deliver the most telling blow against the "utilitarian philosophy of the cavalry officer". (Incidentally, it is a curious fact that Alfred Whitehead in 1911, when working with Russell on the fundamental problems of mathematical logic, wrote: "It is a profoundly erroneous truism, repeated by all copy-books, and by eminent people when they are making speeches, that we should cultivate the habit of thinking of what we are doing. The precise opposite is the case. Civilisation advances by extending the number of important operations which we can perform without thinking about them. Operations of thought are like cavalry charges in a battle—they are strictly limited in number, they require fresh horses and must only be made at decisive moments." [1] Russell's friend and co-author compares thinking (which one would imagine to be a calm, careful operation) with a cavalry charge, rightly believing that there are many operations (or impulsive actions enabling us to avoid obstacles) that we perform with the help of firmly established habits or skills.

And now let's go back to the old dream. I picture a lecture room, a blackboard, a table, bookshelves and our old acquaintance, the Pupil, for some reason with a piece of chalk in his hand.

Pupil. But your explanation of the mechanism of dreaming gives no answer to the fundamental question that should be asked: what programmes the cerebral cortex that transmits to the sense organs the impulses that set them in motion?

Author. No answer, you say? I'm not so sure. It seems to me that it does. But if you haven't noticed the answer, it's probably my fault. I didn't make my point

[1] A. N. Whitehead, *An Introduction to Mathematics,* Henry Holt, 1911, p. 61. Cit. in Morris Kline, "Logic versus Pedagogy", *The American Mathematical Monthly,* Vol. 77, No. 3, March, 1970, p. 275.

clearly enough. It got lost in these endless arguments, digressions and comparisons that I have been using — in vain apparently — to get my ideas across. But there is one thing I am quite sure of. The question you say ought to have been stated has been stated. And stated most definitely and clearly.

Pupil. But no answer to it has been given. And without an answer to this crucial question all your arguments amount to no more than rhetorical questions.

Author. Excuse me, but Spinoza showed us a long time ago that thinking, as an attribute of substance, is the reproduction in the spatial movement of one of its "modes" (man) of the real forms of all its other modes. In other words, everything that exists for man as his external world, everything that is found, felt, repeated, reproduced, in the movement of human life-activity, treats every new image as a problem. The brain is only a control post of this activity; the activity follows the logic of the world itself. And the difficult "questions" not automatically solved by this "logic" but occurring in it as the clashing and disharmony of images external to man, their objective meanings, create their own internal semantic conflict that can be solved only by creatively clanging the images themselves. The laws of biochemistry, electricity, excitation and inhibition, the storing and emission of impulses in the neurons, and so on, which operate in the brain as a spatial body, are not responsible for the way an arithmetical,[1] philosophical or everyday problem is solved. The image and meaning of a real objective event that happens outside the brain and its objective contradiction in relation to other, equally real facts of existence compel the person who calls himself "I" to change them by groping for and finding in their incipient movement a new objective image in which they are coordinated.

This is why we say that human life-activity is a reflection of nature, its self-cognition, self-evaluation and self-development. That is what I'm getting at!

The brain sends command impulses to the sense or-

[1] Although an algorithm of its solution may be found and fed into a computer, or the brain, making it possible to solve all problems of this type without thinking.

gans. "Who programmes the brain?" you ask. A very right and proper question. Right because without an answer to that question the whole discussion about the nature of the human Self, the Ego is inevitably and rather dishonestly replaced by descriptions of "the neurophysiological mechanisms processing information" addressed to no one knows who.

(Here, I have a feeling that a third person who has evidently been listening to us attentively enters the discussion. As often happens in dreams, he appears quite suddenly without causing any surprise. He was there and listening all the time, his intervention was only to be expected. And as this Third Person goes on talking he gradually pushes the Pupil into the background.)

Third Person (addressing the *Author*). You have been talking very enthusiastically but you are going too fast and too far. I'm not sure I have understood you correctly. Let me sum up. On the one hand, if I understand you rightly, the mysteries of nature (its "difficult problems") solve themselves, as it were, obeying only their internal logic. And this is the more likely to happen, the more the images of natural phenomena, which exist in us as the ways in which the organs of our life-activity move, are free of their objective, material connection with the real processes happening outside us. In solving the conflicts inherent in these images themselves (or the objects themselves, which you treat as almost the same thing), the brain performs only a "motor" function and has no relation to the content of the conflict or to the actual finding of ways of solving it. It would also appear that all neurophysiological states and actions are bound to occur in obedience to the self-developing logic of the objective meaning of perceived and comprehended images. The brain is commanded by the mind (if, like you, we understand mind as an integral organic system of movement of images of the external world and their objective meanings, which the movement of the organism discovers and establishes as existing outside itself). It is the mind that is responsible for what happens in the neurodynamic systems of the brain. That is all part of my first point. I have some other points to raise, but I should like to know whether I have understood you correctly.

Author. Well, on the whole, yes. But the funny thing is that your question throws into relief the unclear part of what I have been trying to say. I was in a hurry to convince you. So I took, so to speak, just the straight approach to the problem: external objects — person finding these objects outside him, reproducing their real images in the movement of his organs — contradiction between the images (their failure to coordinate), and, finally, person's search, efforts to change the images so as to coordinate them. In doing so I overemphasised that the stimulus to seek and the direction of the search were dependent not on the mechanisms of the brain, but on the content of the objective contradiction between "images" (objects). And while I still don't know whether you have accepted this aspect of the problem, you suddenly show me another aspect of the problem without which my whole argument does begin to seem even to me more than strange. I did not quite take into account the point you have just made. I was anxious to develop my own line. But I'm dreaming. So who is arguing with me?

Third Person. I am, of course. And I'm the one who does not agree with you in principle. The way you put things, it is nature itself that solves all its "problems" while man is just a kind of mirror in which nature finds it convenient to reflect them, and for the sake of clarity brings its trends and phenomena into conflict there in their pure form, so to speak. Or to put it another way, man is something like this blackboard, and you and I are opposite tendencies in natural processes writing out different opinions on it so as to later reach agreement. The blackboard (man, his consciousness) naturally takes no part in Nature's debate with itself. And I solemnly declare here and now that I'm against this conception. That's my second point. I am a human being, I can think for myself and I won't let you turn me into a passive, indifferent blackboard or mirror, passively reflecting conflicts going on outside me and even resolving themselves without my participation. My brain resolves these conflicts and that's why it's a human brain, a creatively thinking brain.

Author. Well, that's up to you. But there's devilry here somewhere. Just like in Dostoyevsky. All I can do

is recognise you as the devil and continue the conversation à la Ivan Karamazov.

Third Person. What have Karamazov and the devil to do with it? And there's no point in bringing up Dostoyevsky either. Please, don't change the subject. Is man a *tabula rasa,* a clean blackboard, a screen for projections, a mirror, or is he a creator, a demiurge, a genius?

Author. All right, let's leave Dostoyevsky out of it. But wait a minute! Dostoyevsky was a creator, a demiurge, a genius. Dostoyevsky was a man, a human being and not merely the mirror of natural conflicts. Why do you insist that there is nothing or no one in man that can be a genius except the substance (structure, functions) of the brain? Nature is genius, but it is a genius only in man. With surprising accuracy you have hit upon the thought I was trying to express about the contradiction in the object itself as the cause and stimulus of thought in the subject, about the contradiction whose objective content sets the direction of the mental search for its solution. Yes, that's it! The brain as such is responsible for how the problem is solved only when the problem — is solved, when the creative activity of thought is not needed, when there is no need, as Whitehead put it, for cavalry charges, for flashes of insight. The standard pattern, the mechanical effect of habit is enough. If the brain is "out of order", the standard pattern, the stereotype doesn't work and the results of the brain's "miscalculation" of the alternatives come into conflict with both the terms of the problem and the stereotype results that should have been obtained. But even the brain has to work in a new way when an objective contradiction reproduced in the movement of thought demands creative, non-stereotype solutions. But this "departure" from the normal working of the brain is caused by the need to find something new in the objects of our life-activity. But there are other departures from the norm. A schoolboy, for instance, who has overloaded his brain with passively memorised facts stands up in class in the morning and can't remember the next line after Lermontov's "Faster than the deer did Garun run. . . ." All he can think of is problems in geometry. Is it only the brain that is at fault in that case? Or is it. . . .

Third Person. Now you're off at a tangent again! Can't you make up your mind who does the creative thinking — Nature in us or we in Nature?

Author. We, of course. Don't get so excited. Let's think this out calmly, taking the schoolboy as an example. Suppose he is writing an essay. The various subjects are chalked on the blackboard. He chooses one of them: "Gorky as the Stormy Petrel of the Revolution". He thinks over the events of Gorky's life, remembers some of the lines from the *Stormy Petrel,* the characters of his novel *The Mother* and so on. The content of the subject is real history, what actually happened long before our schoolboy was born, what flashed into the writer's consciousness and acquired new life in his prose and poetry. What will guide the schoolboy, what will make him write? The command impulses to the muscles, coming from the cortex? Yes, the muscles of his hand will be guided by impulses. Here they go: "The year 1905. . . ." The muscles of the hand, the muscles of the fingers have moved the pen across the paper. But why does this figure and not some other figure appear?

Third Person. I understand you. Of course, one could say that the neurons store the facts of history, the facts about Gorky's works. The flow of information is switched on by the external stimulus—the subject written up on the blackboard — and sends a coded message to the hand muscles, which reproduce it (in decoded form, in words and figures) on a clean sheet of paper. But I won't say that. I quite see how naive it is to play patience with a lot of terminology. You and I are not interested in machines for preset reproduction of the information stored in them. We were talking about genius. I realise that thinking is creativity, a new vision of something past. But isn't the brain built in such a way that it can recombine the past in a new form?

Author. Why should it?

Third Person. Why?

Author. Why should it combine the past in a new form? There would have to be some cause, some stimulus that would make it reshuffle its store of information?

There are only two possible answers to that question. Either the stimulus is an attribute of the brain it-

self (it just can't calmly reproduce on demand what was fed into it in coded form by the sense organs. It has to recombine everything it stores because of its "creative instinct"). Or else the stimulus to carry out all the "reshuffling" operations is in the information itself.

Third Person. No question about that. Of course, it's in the information. Your schoolboy, admittedly, may prove to be a well-tuned machine for producing the expected stereotype transformations of the teacher's "input". And he may have chosen the subject because he knows exactly what words are expected and in what order. Perhaps his quotations are already prepared, the standard superlatives well rehearsed, and the likely spelling mistakes already noted. But you are right to take the example of a schoolboy. Only not the one I have just described. Let him be an interesting person. You say he has just written: "The year 1905. . . ."

Author. Actually that beginning is rather a stereotype. Still, we won't be too exacting.

Third Person. Yes, that's understood. Well, the boy's hand is moved by something in the problem itself, in the actual subject of the essay. And you said that there were only two possible answers to my question (1) the brain is so built that it produces information creatively reprocessed or (2) the objective contradiction between the external objects felt by movements of the organism is the "stimulus" to create. The first I indignantly reject because I don't want to be a machine, even one that produces its own rehashing of the information input. I don't want to be the slave of my own "design". I want my "design" to help me to be free in achieving a thought-out solution of external circumstances that can be realised in life and change those circumstances in accordance with their own nature. And for that — here you are quite right — the stimulus determining the direction and content of my inquiry must be the objects themselves. But the trouble is that even this second (and you only allow two) of your alternatives does not save your lad writing his essay from the purely passive function of registering external contradictions. Just think! The 1905 revolution in Russia, class antagonism at its peak. Wavering and vacillation among the liberal

intelligentsia. Gorky boldly raising the banner of struggle. One can choose a direct, impressive way of beginning the essay: "The year 1905. . ." Or some other beginning. But if the objective problems of the subject are reproduced in our essayist's consciousness and they are the stimuli of his creativity, these problems do not themselves produce the solutions. He does that. But then "he" is the third alternative that you have ruled out by saying there are only two. And in doing so you have "buried" the main point in our question. The very question you were just asked: "Who programmes the cerebral cortex?"

And the answer comes of its own accord: he, the thinking subject. But then we are back at the beginning. Your answer — the contradictions in the objects themselves — is only an apparent answer. Let the brain receive contradictory information from outside, but the impulses that it sends along the effector channels are impulses that *solve* the contradictions. So according to you it appears that the brain itself does not solve contradictions; the solution is prompted by the objects, by the "semantic conflict" implied in them. But then our schoolboy creatively writing his essay is really writing from a crib cleverly devised to fit the problem. The problem solves itself and all the schoolboy has to do is to note the fact and write it down. Any individual colouring in his "creative work" depends only on his personal experience, certain unique associations that happen to arise in his consciousness. He is no genius. A mere mirror reflector, concretising in himself the objects or images of the external world and combining them in a new way, but as they insist on being combined. There's your "nature in us"! I don't think much of your theorising.

Well, I don't sleep well after such a bout of criticism. Particularly when I realise that my opponent's indignation is justified. Perhaps it was my discomfiture that made me wake up.

There really is some kind of devilry in this! What a dream to have! The way he pitched into me. How dare he? Calls himself a critic. Who was he anyway?

Like my friend from the sad short story of the previous dream, he never existed. But if that was some-

one inexplicably dear to me, this other one, this opponent, this controversialist — why should I dream about him? What strange questions one asks oneself on waking up! Why did I dream about him? Do any of us know why we dream certain things?

But what he said was quite reasonable. He contested my view and I couldn't answer him. On the whole, I must admit that what he said sounded convincing. Damn it all! What he said was something I never thought of myself either in dreams or reality. I did not have time to tell anyone about the view I was developing in my dream and, of course, had not heard any objections from anyone. So it looks as if there is someone inside me, listening to my thoughts and criticising them. I was looking for the answer to the question. "What am I?" And now there turns out to be someone else, this "he", this "third person". Why, the third? Oh, of course, there was that Pupil, he was the second. No, not the schoolboy, that was only an example. I mean Bertrand Russell's pupil. But that was all quite straightforward. I dreamed of him as a substitute for a perfectly real critic, his teacher. And I could have read the words of the Pupil in reality, in books existing outside and independently of me. I did not dream them up. Yes, the second person was the real objections of a perfectly real person.

So we find that the problem under discussion ("Who programmes the cortex?") objectively contains a contradiction. I presented one side of the contradiction in saying that the programming is done by the objective world which the individual finds outside him and which is reproduced in the movements of his life-activity. The other side, so it seemed to me, lies in the actual framing of the mind-body problem as a problem of the nature of consciousness.[1] According to the very logic of this problem the mental, mind, is produced either by a movement occurring in the brain or is not pro-

[1] The basic question of philosophy is being and thought. The mind-body problem arises when this problem is narrowed down to the problem of "brain and thought" (and this happens only when being, existence is revealed not through the history of human activity but in the mirror of the brain's spatial body).

duced at all because it has always existed since time began as mental substance. I have shown that this alternative arises only when the theoretician considers bodies interacting in space. The brain is a body and there are other bodies. Bodies interact. There is no thought in other bodies, so it must arise in the body of the brain under the influence of other bodies acting upon it.

I rejected this second side of the contradiction and pointed out the historical origin of the method of theorising that reduces the world of objects to the spatial interaction of bodies. I myself have tried through philosophical arguments to develop the opposite side of the contradiction, which reveals the process of the origin, development and functioning of human thought (which turns man's attitude to the world into a conscious relation) precisely as a process taking place in real historical time and through real historically developed means of human intercourse and activity.

This was how I reproduced one of the contradictions of the problem of the Self. And then a really existing person finds the internal contradiction in my case and puts the question: "But who programmes the cortex?" This astute question contained a twist that I had not noticed.

The pupil of Russell's that I dreamed of literally repeated his question and I answered it just as I had thought the answer should be in my waking hours. And when I answered I did not realise that he and I personified two sides of a new problem. It seemed to me that I was a hundred per cent right, so there was no need for the Pupil or his objections. But then a Third Person appeared in my dream and started pulling to pieces my "impregnable" position. How he did it, you will remember, so there is no need for me to repeat his argument. The important point is that now I no longer find my position invulnerable. The Third Person has shown clearly enough that my case is not waterproof. But he didn't offer any positive solution either. He merely demonstrated the one-sidedness and incompleteness of my "solution". Russell's works did not contain the arguments used by this Third Person. Nor do mine. Where did they come from?

But what if this Third Person is, after all, me? He is my dream, my vision, a glance at my own logic as if from the side. Don't we all argue with ourselves all the time? Are we incapable of seeing our own arguments from the side? Don't we evaluate, judge our own actions? After all, the situation in my dream is, if you like, the typical situation of any thinking.

No, it's not a matter of solving a stereotype problem with a known algorithm and a few new facts to be fed into the computer. We are concerned here with the thinking that, as Whitehead put it, is like a cavalry charge and is performed only when the problem cannot be solved according to a stereotype. I see one side of the question and there is another side that I can't accept. But then a Third Person appears and finds a contradiction in my view of the matter. This Third Person is myself, looking at my own work from the side.

Let's take an example from everyday life. You are hurrying to work. You know the way and are guided by habit. Your actions are automatic: a five-kopek piece for the Metro fare, down the escalator, then without thinking you turn a corner, that will bring you to a convenient door of the train for coming out at the other end. Your eyes scan the newspaper headlines. The train rumbles, the pneumatic door hisses and opens in front of you, and so on. You simply aren't thinking about where you have to go. But then a voice comes over the public address system. Owing to repairs, Oktyabrskaya Station is closed, passengers are advised to change at Prospekt Mira. Oh, what a nuisance! Why change there? It's on the other side of town. I'll go to Turgenevskaya, and there... No, wait a minute, why go to Turgenevskaya? I had better try Novokuznetskaya. It's closer, and then... Yes, but then I'll have to make two changes...."

And here we have all the characters in my dream. Here am I, Ego, who knows the way to work. Here is the Pupil—he tells me by radio that this time I won't be able to go that way. And, finally, there is the Third Person. He rejects my decision to go to Turgenevskaya. Now I am no longer acting according to a stereotype. I have to think and that means arguing with myself.

But then, returning to the question that interests us, I can answer the Pupil that the cerebral cortex is prog-

rammed by—no, not by the brain itself and, as my dream opponent correctly noted, not by the objective contradiction confronting me. The cortex is programmed by two people (I and the Third Person) which make up my Self.

What are they? Where are they? How do they arise in the life-activity of my body?

Here I ought to make a long pause and ask the reader to go back in his mind over all the zigzags and dead-ends of our by no means straight road to the solution of the riddle of the Self. We now have sufficient material to answer the final and most important question of all: what is it in our body that thinks, that creates, that sets the goals by which the world of objects (as yet in our imagination) is reconstructed in a way that it could never reconstruct itself? Only when we have answered that question shall we discover the mechanics of the imagination and of creativity in general.

THE RIDDLE ANSWERED?

Spinoza once observed that to know something is to be able to make something. If on the basis of our theoretical suppositions about the origins of consciousness, we were able to inspire, to *make* conscious a body clearly lacking in consciousness, then, as Spinoza suggests, our suppositions would become *knowledge,* the answer to the riddle of the Self. After all, is not a fundamental understanding of the nature of consciousness claimed by those who today assure us that quite soon, and certainly not later than the year 2,000, an artificial intellect will at last be made by man? ". . .The construction of an artificial thinking system, built out of other elements, but in its total effect reproducing the same highest programme—thought—is quite feasible." [1]

If this were so, we could confidently consider our riddle solved. And this is, in fact, the view of those who along with the above-mentioned author declare with great assurance that consciousness is the ability to receive, preserve and process information according to the programmes inherent in the brain. No fundamental problems are involved. What difference is there, for instance, between the living organism and a machine? Only the complexity of its organisation. This was the view taken three hundred years ago by Descartes, who believed that all the phenomena of life could be explained by the laws of mechanics. And so it is today: "The main difference be-

[1] N. M. Amosov, *Modelirovaniye myshleniya i psikhiki* (Modelling of Thought and the Mind), Kiev, 1965, p. 43.

tween the organism and a technological control system is the large number of levels involved. This makes the living system so much more complex that technology as yet has nothing to match it." [1] However, man is also "a system capable of perceiving external influences, extracting information from them, processing it through the formation of numerous models at different levels, and influencing the environment with multi-level programmes. In most general form man is a programme-controlled automation... Or to put it another way, man is a self-teaching and self-adjusting system." [2]

And to clear up any possible doubts or misunderstandings, man is an automation inasmuch as his activity "is based on a programme that is right inside him and not somewhere outside him", and therefore, "there can be no question of any 'free will' as opposed to determinism".[3] What enviable confidence that man's essence is now perfectly well known, and even backed up by plans for making an artificial intellect. This is certainly a case of knowing means making. Only the technical difficulties constitute a temporary obstacle in the way of reproducing the phenomenon of thought (and consciousness as a whole) in other, "non-biological" material. But we can be sure that in a few years' time our knowledge (what we have already?) will be objectified in the form of a likeable kind of robot that solves Zeno's puzzles at the drop of a hat and gives its own highly original interpretation of Liszt's Hungarian Rhapsody No. 2.

We should be prepared to wait not three but three hundred and three years for the fulfilment of such a promise, but all the same... It sometimes, indeed quite often, happens that "technical difficulties" hide the real tro-

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[1] Ibid., p. 165.
[2] Ibid., p. 95.
[3] Ibid., p. 96. All these propositions are, of course, an extreme but therefore particularly significant instance of *consistent* application of the logic of mechanical, spatial interaction (unlike Wooldridge's, absolutely devoid of reflection) in defining man and his consciousness. The Cartesian God, Kant's third antinomy, the eternal agonising problems of Dostoyevsky, all the two thousand years of man's efforts to know himself are here brushed aside quite happily and thoughtlessly. You're an automaton with a programme and don't you expect any freedom!

uble, the heart of the problem. And here it seems to me there is yet another misunderstanding.

If thinking is merely the reception, programmed processing and output of information, why should we have to wait so many years and decades? Robots programmed to perform similar actions, and performing them quite successfully, already exist. What is it that thinking robots lack? Emotions? But can't this psychological state be modelled in cybernetic terms? Again we open N. M. Amosov's book: "Emotions are the stimulation of quite definite centres in the cortex which have a clear biological purpose (we shall discuss this in more detail later on)." [1] And here is an example of some of the interesting "details": "Pleasant sensations arise from affection, from stroking, for example, or from affectionate sounds. This is related to the instinct to continue the species. It is important because it is the basis of vanity." [2]

So this is why we shall have to wait so long. They haven't yet taught the machine the programme for continuation of the species and for the time being it isn't getting any pleasure out of stroking or vanity. But all the same... According to the "cybernetic" definition of thinking, it thinks! Without emotions perhaps, but it can think or rather, I beg your pardon, it processes information. So though it may not be fully operative, the artificial intellect has already been created in its main function? Does this mean that at least we know the essence of the process?

Now, in my view, this is the point where the misunderstanding begins. Most of the works written about cybernetic and "neurocybernetic" interpretation of the mind and thought processes treat thought on the same level as all the other manifestations of consciousness.

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[1] N. M. Amosov, op. cit., p. 146.

[2] Ibid., p. 148. More than three hundred years have passed since Descartes wrote his *Les passions de l'âme* (The Passions of the Soul). How interesting to see the logic of the mechanical system winning supporters regardless of the passage of time and the advances in human knowledge! One has only to compare the mechanistic explanations of mental phenomena given by Descartes with N. M. Amosov's attempts to explain them in terms of cybernetics.

The general impression is that human thinking implies only a very subjective attitude to "information". And this is why the "technical difficulties" conceal the heart of the matter. It is too early yet to speak of solving the mystery of consciousness.

The riddle remains a riddle because it was stated quite wrongly in the first place. The book you are now coming to the end of has been entirely devoted to how the problem of the human soul, of consciousness has been posed throughout the history of man's knowledge of himself. We have seen that the essence of the problem does not lie in whether the human brain is capable or incapable of reacting to external influences. The essence of it is why and how a human being can know the essence of things that exist outside him. Or to put the same thing in a different way: How a person can know the capabilities of objects and processes of the external world. *How can he know something that does not exist in nature itself, that will never be there without his intervention, but that nature is capable of in principle*? So the actual problem of consciousness is not only and not so much a problem of the "reproducing" in cerebral processes of that which influences the brain, as a problem of the human capability for *free, creative goal-setting*. Or, quite simply, the *problem of creativity*. And, as I have already said, this problem has a twist. Yes, the brain processes information that comes to it from outside, but the question is *who* or *what* determines the way the processing is done.

We know three possible answers to this question.

One: the brain is so constructed (so programmed) that in processing (combining, generalising, analysing, synthesising, etc.) information, it produces in its "output" something new.

Two: information itself implies contradictions, the trends of their development and the way of resolving them, and this enables the brain (which has not been programmed beforehand either one way or the other) to find this way, and in so doing, to find the new element with which the information is "pregnant".

And finally, the third possible answer... But first let us clear up once again what we find unsatisfactory in the other two.

If the actual construction of the brain is responsible for the way the information is processed, then Amosov is right: free will is a fiction, goal-setting a reflex, creativity instinct, and human beings the obedient slaves of their own bodily organisation, automata, robots that simply "imagine" they are free to choose their programmes of action, because the programmes, including the programme of "choice", are already there, inside them. The determinism of the brain's inner construction decides how information is combined and thus what is produced in the output. Then knowledge of essence, which enables the consciousness to imagine the world in its development as an integral whole, is nothing but a peculiarity of the "generalising programme" inherent in the brain itself and having no existence in the external world. Hobbes discussed this possibility three hundred years before the discovery of cybernetics. And the difference lies not in the logic, and not in the conclusions, but merely in terminology. Instead of a "neurodynamic system", a "programme" and so on, Hobbes spoke of the inner power of the natural light of reason. And much later than Hobbes came Johannes Müller, who also tested this possibility in his experiments, taking its conclusions to their logical extreme. And the result was that even at the level of the simplest sensations, the "construction" (programme, etc.) of the nervous substratum determines the phenomenon of mind. But this cuts out any possibility of the identity of mind (particularly thought) and being, existence. Feuerbach called this answer "physiological idealism". And Lenin in his book *Materialism and Empirio-Criticism* fully agrees with this definition.

The rationalist version of this "answer" postulated from the start a special ability of the reason (as the "neurocybernetics" of the brain) to operate with universal forms, ideas of reflection, innate knowledge of the essence of the world, and intuitively clear notions about it. And in order to fill the gap thus opening up between reason and the real existence of what this reason is directed at, the rationalists were compelled to rely on God, who in Descartes's words could not be a deceiver, on "preordained harmony" between the cognisable essence and its real existence in the world (Lei-

bnitz), and so on. Today's neuro-cyberneticists are apparently left with the hope that since the human brain is a creation of nature, they will be rescued by a preordained harmony between children and parent.

The second "answer" also condemns man to passive reflection of particular and specific phenomena of the external world, because the problems and the ways of solving them are both hidden in these phenomena. Man finds them by using a "crib" that is cunningly passed to him by nature. In this case, too, the "preordained harmony" of thought and being is presupposed, but there is no comprehension of the real premises, causes and means that determine how thought arrives at the truth and produces on this basis something fundamentally new, something that has not yet existed in nature.

Yes, thinking is creating, and particularly creating values that are not inherent in nature itself, just as the joy of life in Beethoven's Ninth Symphony is not inherent in the physics of sound waves, and the luminous sadness of Levitan's landscapes is not intrinsically connected with the chemical substances used to paint the canvas. The whole problem of consciousness, the heart of the riddle of the Self lies in understanding how in human activity the physical, the chemical and other natural being is transformed into the beautiful, the good, into honour, dignity, truth, and justice, which actually form the basis and aim of human life. How these highest spiritual, intellectual values can become the basis of a programme for a transformation of nature carried out in accordance with nature's own laws. This is the only way to approach the question of the identity of thought and being, which Engels called the great and fundamental question of philosophy.

What I have been trying to prove is that unless we consider how this question has been posed in the history of philosophy we cannot even properly state the problem of the Self. Making robots capable of processing information is a different problem, which can be associated with the riddle of the Self only by someone who sees in consciousness nothing but the sensuous biological basis of the emotions plus an ability to compute certain set alternatives.

But if thinking is creating, can we use this philosophical knowledge to give consciousness to a body deprived of consciousness? Have we anything but an imaginary experiment like Condillac's [1] proposed inspiration of a statue with which to counter the promises of the neurocyberneticists that they will one day construct an artificial intellect? If we could actually produce consciousness in experimental conditions, we should prove that philosophical knowledge cannot be ignored when the words, mind, thought, consciousness, creativity, are being used. But the conditions of such a real experiment must be agreed on beforehand, in other words, it must be based on theory.

So now at last we approach the third answer to the question.

The first thing we must agree upon is that no one denies the simple fact that without knowledge of something there can be no knowledge. And if, following Condillac's example, we think of a—no, not a statue, but a living human body that as yet has no contact with the outside world, we shall all have to admit that such a body would have no possibility of contrasting its own existence with that of the world. And in order to give this isolated, sealed-off life a soul, consciousness, we should have to open its eyes and ears. Yes, above all, eyes and ears. For the human body these are the main and widest windows on to the world. The sense of touch, taste and smell are only "helpers". Even sensations of touch without the support of sight and hearing (or at least the memory of space dimensions that were once felt) are quite useless by themselves.

Imagine for a moment that a group of people have lost both sight and hearing. They cannot see or hear each other. But everything of any significance that people convey to each other has an objective form that can be seen or heard. Human beings have no developed autonomous means of communication that rely on smell,

[1] Étienne Bonnot de Condillac (1715-1780). French sensationalist philosopher. In his famous *Traité des sensations* (Treatise on Sensations) he tried to prove that it would be enough to provide a statue with the five senses for it to be able to develop powers of judgement (i.e., consciousness) by storing and comparing the impressions from each sense.

taste, or touch. The deaf-blind have no means of intercourse. And where there is no intercourse there can be no communication. An external world that communicates nothing, that tells nothing about itself, is not an external world.

The sensitivity of the skin, the ability to smell and taste cease to be sensations of external objects. Warmth, sweetness .... Only smell, perhaps, brings something from outside, and even then the hand has to touch something to sense that it is external. But this is only apparent. Without the help of visual and auditory impressions, in absolute darkness and silence, neither the smell nor the hardness of an object can be associated with it as something existing apart from the sensation itself. Even darkness and silence exist only for the person who has sight and hearing, who knows what light and sound are. For the person who has never had sight or hearing, there is no such thing as darkness or silence. There is no dark and silent world existing around them.

People without sight and hearing would be not so much like animals as like plants. But since the history of their species has left them without heriditarily fixed active-biological forms of behaviour, the deaf-blind are doomed to passive immobility. But even the "vegetable existence" is not a very true comparison. A plant grows into the earth, into the atmosphere—into the world. It demands life and finds it through the activity of its organs of breathing and feeding. But the person who is blind and deaf will eat only when he is fed by others. He does not know that the source of food is not in him, he does not look for it outside him, and any hunger that he may feel has no orientation. Such creatures, who are not even vegetables, are doomed to rapid extinction.

So now, following Condillac's example, we shall conduct our main philosophical experiment. We shall try to return to life a human being who lost his sight and hearing in early childhood.

Or rather we have no need to try because the "experiment" has already been performed in reality. Not long ago I met some people who, though blind and deaf were no less conscious than you and me, people whose striking individuality could be the envy of many a well-known "personality".

Yes, the experiment was successful. And it was conducted on the basis of clearly defined theoretical premises. This has now been acknowledged. Literature is available that traces the whole path of this creation of consciousness step by step. I mentioned the main works not in a footnote, but in the text, wishing to stress that they need to be read in full in order to appreciate the solution to the riddle of the Self that they offer. My first witness is Olga Ivanovna Skorokhodova.

At the age of five Olga lost both her sight and hearing and thus found herself in the position of the child that we had in mind when discussing the conditions of our experiment. The whole story is told in her book *How I Perceive, Imagine and Understand the World Around Me* (Moscow, 1972, in Russian).[1] The magazine *Problems of Philosophy* No. 6, 1975 (in Russian), contains a report on the work of A. I. Meshcheryakov and his associates, who continued the life work of I. A. Sokolyansky, the man who educated Olga Skorokhodova and made her into a writer whose work is known all over the world. The report is rightly called "An Outstanding Achievement of Soviet Science." The journal also contains reports by four of Meshcheryakov's deaf-blind pupils and collaborators Sergei Sirotkin ("In the World of the Deaf-Blind"), Alexander Suvorov ("Our Studies"), Natalya Korneyeva ("At the Sources of Mind"), and Yuri Lerner ("On My Work").

A. N. Leontyev, a member of the USSR Academy of Pedagogical Sciences, sums up the experiment in the following words: "The special feature of this experiment lies in the fact that it creates conditions in which the

[1] Admittedly, greater renown has been accorded to the late Helen Keller, the pupil of Anne Sullivan. Whole libraries of specialised and popular literature have been written about her life and education. W. Gibson's play *The Miracle-Worker* ran successfully at several theatres in the Soviet Union. Unfortunately, less publicity has been given to the life of Marie Heurtin, whose education was described by L. Arnuld in his *Les âmes en prison* (Imprisoned Souls) in 1948. The story of Helen Keller's development and life, and also the earlier experience of Samuel Howe's teaching of Laura Bridgman, who was blind and deaf from the age of two, are thoroughly analysed and shown in a new light by the psychologist A. M. Meshcheryakov in his book *Deaf-Blind Children* (Progress Publishers, Moscow, 1979).

key events of the process of formation of the personality, the actual coming into being of human consciousness becomes clearly visible, I would almost say tangible, and at the same time spread out as in a slow motion film. And these are events that open a window for us into the most secret depths of the nature of this process."

And further Academician Leontyev writes: "Now there is no getting away from direct theoretical and philosophical conclusions. Now we have not a unique phenomenon but four splendid students. They are not 'Mozarts', but the natural results of the tremendous work directed for the past fifteen years by I. A. Sokolyansky's pupil A. I. Meshcheryakov. These young people have come to us from a boarding school where dozens of deaf-blind children have been put on the road to secondary education, so now one cannot speak of any sudden 'illuminations' or any special innate talent." [1]

Professor V. V. Davydov stressed that there was a solid foundation of philosophical argument underlying this unusual experiment: "The historians of our science, unfortunately tend to lose sight of the distinctly dialectical tradition of the theoretical description of the mind, the Ego, the soul, the Self, in the way that we find in Descartes, Spinoza and later Fichte. Without considering this tradition it is impossible to understand the modern method of cognising the mysteries of the 'soul'. And this method lies at the heart of all Meshcheryakov's works." [2]

But the main source of information about the problem of the experiment, its methods and their philosophical interpretation is, of course, to be found in Meshcheryakov's own book, *Slepoglukhonemiye deti. Razvitiye psikhiki v protsesse formirovaniya povedeniya* (Deaf-Blind Children. The Development of Mind in the Process of the Formation of Behaviour, Moscow, 1974).

Alexander Meshcheryakov directed an outstanding research project and made a notable contribution to the method of practical realisation of the truth of Marxist philosophy. The human being, as the subject of conscious, goal-oriented creative activity is formed in inter-

[1] *Problemy Filosofii*, 1975, No. 6, p. 67.
[2] Ibid., p. 71.

course with other people, *the modes* of which develop historically and *the means* of which preserve in themselves the universal (social) determinates of all the objects of this activity. Meshcheryakov's experiment has provided practical proof that a human being only acquires the ability to think and have conscious knowledge of the world when the real historical *time* of the development of culture becomes his personal biography.

Meshcheryakov's book describes the life of the Zagorsk boarding school for children who have lost their sight and hearing in early childhood or who were born blind and deaf. "Such a child," Meshcheryakov writes, "has not only never heard human speech. It does not even know of the existence of speech, of words that designate objects and thoughts. He does not even know that objects and the external world exist." [1] He continues: "Without special tuition deaf-blind may spend year after year in the corner of a room, in bed, or in some other place without ever learning any signs or symbols, or even how to walk, eat and drink in a human fashion." [2] And further: "The deaf-blind child may not even have a human posture until it is taught, it may not even be able to stand or sit like a human being." [3]

But these creatures that are "not even vegetables" do have brains and all their sense organs except sight and hearing. The book shows that all attempts to give such a child information about the world by means of a code designed for the remaining functioning sense organs were bound to fail. The words of the living language do not designate separate objects, they are not names permanently attached to certain objects. Sokolyansky and Meshcheryakov introduced their pupils to the language of real life by organising their intercourse in such a way that socially significant objects became the media of every movement a child made towards joint action together with other children or its teachers.

The most difficult thing was to separate the action and the external object of the action, to make *the object*

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[1] Quoted from O. I. Skorokhodova, op. cit., p. 8.
[2] Ibid., p. 10.
[3] Ibid., p. 11.

something separate and independent from the action. Even the feeling movement of the hand had to become an object of attention, had to be identified and "evaluated" by the child who moved it. It is a point of fundamental interest that this was only possible when such a movement was organised by the teacher as a joint, common action. For example, the hands of the teacher and the pupil had to "find", take hold of a spoon together, scoop up food together, and carry it to the mouth together. The spoon, the felt shape of it, then becomes a *medium* of intercourse, a means of contact between two people, its objective *symbol*. This common action is directed and controlled by a purposefully acting adult.

In this way the *aim* of the movement—satisfaction of hunger with the help of one's own actions (even if they are not yet entirely one's own) is instilled not by the pupil's bodily organisation, not by its "programmes", but by the *relationship* to another person, the actual *intercourse* with him. Here it becomes quite clear that the mode of action is simultaneously a mode of intercourse; the means of intercourse is simultaneously a means of action and a means of communication, which means something for one person insofar as it means something for another. The movement of discovering and feeling the "medium" (in our example, the spoon) finds it *externally* because another person by his participation and correction of this joint action separates the action with the "medium" from the "medium" itself, thus turning it into an independently and separately existing object. And we are thus confronted by an elementary act of human mental reflection.

As we see, this act is nothing like the one that has been described, and is still being described, by the empiricists. It is not the action of the external object on the receptors, codified and transmitted to the brain, decoded there by a neurodynamic system and then presented in the form of a "mental image" by this system to what still remains a mysterious individual. The living organism finds an external object and by the action of its organs establishes the object's attributes as existing outside itself, repeating, as it were, reproducing them by its movements only because it has been drawn into inter-

course, the mode of which separates action with the object from the object itself.

And here is yet another important conclusion that may be drawn from Meshcheryakov's experiment: the mental image is not a "trace" of external influence discovered by somebody (who?) in the brain, but an integral image of action (external, objective action) with the object of perception, action that is "disintegrated" thanks to the socially significant media of intercourse into action as such (my action) and the perceived object of this action (external object, its perceived image). Only in this case is it clear who perceives, *experiences* the image of the object. Naturally it is the person who separates his action with the object from the object as such, who can say: my action, my movement, my hand, my ear, and so on. And he perceives and experiences the object as something *under his hand,* as something *outside him*, as a perceived image of an *external* object, and not as a state of his nerves. Without human objective intercourse, without contact with the real time of the history of the development of forms of intercourse (its ways and means), the most elementary acts of mental reflection inherent in man as a member of the species Homo sapiens are impossible.

This is where the inner dichotomy, the "dialogue" of objective action arises. To be more exact, it is a division into three: the relation to one's action as if from the side presupposes fixation of the action itself, its object, and this "side" from which the action and the object are fixed. In intercourse organising this "triple" structure of action all three elements are represented: the object of action, the person with whom I am acting in common, objectively presented to me as helper and critic, who assesses my actions, comparing them with his own (as with a socially significant pattern) and, finally, I myself, acting for him in the same role. Any action that I perform I can therefore evaluate as the action of "another person" and argue with myself as I would with him.

Addressing oneself with the help of socially significant means of intercourse is in fact "involvement" in the given moment of universality embodied in them, it is the measuring and evaluation (measure!) of this in-

stant by eternity. The measure by which the action I experience "here and now" is evaluated was born long ago at the dawn of history, and it developed, absorbing the expanding universe of human knowledge, was broken down and refined in the cultures of various epochs and peoples, and was born again as an integral measure—as meaning in the living language of my own living and acting people.

And now, whether my eye blinks or my fingers stir, if someone calls this a movement (that is, repeats it with words of the living language), the meaning of this name, its universal meaning, nourished by the past and oriented on the future, will be the human measure of that movement. But this "someone" need not be another person. It may equally well be me. Because in intercourse with other people I have constantly put myself in their place and determined my own actions and thoughts by the same measure.

The measure of human affairs.... In the infinitely small and in the epochal it is set by history itself. And only the history of humankind, of their culture, always, at any given moment embodied in the living intercourse of people alive today, in their affairs, in their language, in their poetry and knowledge, measures every given experience with itself, with its value. And this measure has no clearly defined limits, for it is oriented on the future. Therefore my Self is infinite.

No matter how limited it may be by the "specific", particular modes of its functioning, nevertheless by constantly arguing with itself in a language which is a living embodiment of history and therefore of the unity and eternity of being, such a Self always experiences its involvement in eternity. And this experience, embodied in every elementary act of thought (or internal dialogue) is always realised as aesthetically productive imagination, as creativity.

In other words, if a person really thinks, he always thinks as a poet. Because to experience one's action as an action evaluated by a universal measure means at the same time becoming this measure, experiencing one's own state not as a "standing still' but as movement, as going beyond this action itself, as one's involvement in historical creation, as inspiration.

For this reason all the work of forming the consciousness of children can be realised only as development of their joint objective activity. And each of them, by becoming a thinking person aware of the world and himself, could speak the following monologue:

"Now even in the most complex actions I am able to be my own critic mainly because the sum total of historically completed actions lives in me, objectively unfolded in the language of my people. Besides my friends and tutors, my teachers and professors, I have constant interlocutors, critics and helpers in those who throughout the centuries posed and solved the most serious and difficult riddles of existence, who in themselves, in their works personally experienced the problems of their time and argued with the time, and with me, a representative of another culture that is still the same, continuing culture of humankind. And I together with them, in disputation with them, take part (even if I discover only for myself) in the discovery of great ideas, ideals and evaluations. In myself I relive anew the clash of the notions of good and evil, beauty and happiness, truth and aim. They are born again in me and perhaps in some way they are new.... And now I myself on the basis of my own experience, assessing my own actions, know that thinking is not description, not the reproduction of that which is given in the imagination, of that what I find in the spatial field of experience. Thinking is my *movement,* the movement of my knowledge in *time.* And this movement in time is possible because the different voices of different times, peoples, epochs and cultures constantly come to life in my life. Teaching someone to think does, in fact, mean involving him in active, objective intercourse, bringing human history into his life, teaching him to feel, rejoice and suffer, to protest and admire, to know and thus to carry in himself a whole world in all its integrity as the known, conscious world of our life. This is the only way to awaken the doer and the critic, the craftsman and the artist in a person. So now my different Selves live even in my dreams, arguing with each other, assuming the shape of other people including people that have never existed in this world. They argue,

imagine, act and even solve problems with which I and they wrestled during my waking hours. But sometimes, just because in a dream they are not restrained by the clear knowledge "That can't happen", they are able to find something that really never did happen but that today I simply cannot do without".

This monologue with perhaps just a few changes is to be found in Olga Skorokhodova's book, and in the reports of the four students of the psychological faculty of Moscow University, and in their poetry, in their letters and their accounts of their very difficult and yet truly human life.

Those who even today believe that the riddle of the Self can be solved by treating man as a machine that receives and processes information want simply to *feed* endless streams of information about the world into the ready-made body of the brain. In these pages I have tried to show that both in the theory and practice of the formation of the human personality things are far more complex. No, it is not a matter of feeding some electronic device complicated enough to resemble the human brain (or the brain itself) with a sufficient quantity of information which is then processed according to the most complex programmes. What has to be done is to guide the body that already possesses such a "device" into real intercourse and activity. This is the road to the making of the human Self, the Ego, all its attributes and particularly its intellect. For intellect is determined by the *content* of historically developing human culture and not the rapidity of the algorithmised computing of the possible answers to a preformulated problem.

Philosophical analysis is needed to understand man as a being who in every integral moment of his life realises the integrality of infinite and eternal nature. Man becomes such a potentially infinite being not because he "absorbs all the contents of all the libraries", not because an endless stream of information about separate attributes of nature are recorded on the "tape" of his memory, but because in the values he creates, in the universal forms of knowledge, good and beauty, he reproduces the objective logic of nature developing ac-

cording to its laws. To understand this is to understand the dialectical identity of the social (universal) and individual (specific) modes of human life-activity that comes about in living human intercourse.

It was this understanding, substantiated for the first time by Marxism, that became the theoretical foundation of the practical work of those who solved the riddle of the Self and breathed a soul into a living body that had been robbed of consciousness.