

*Alexander
Spirkin*



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The book offers a systematic exposition of the foundations of dialectical and historical materialism. It begins with deliberations on the nature of

philosophical knowledge, the role of worldview, and the purpose of methodology. There is also a brief excursus into the history of philosophy. Relying on a wealth of theoretical and practical materials, the author gives an all-sided analysis of such fundamental concepts as being and consciousness, matter and motion, cognition and activity; step by step, he identifies the main principles, laws and categories of dialectics, and closely studies the socioeconomic, political and cultural aspects of society's life against the background of the global problems of modern times. The book shows conclusively that a consistent scientific philosophy did not develop as a mechanical accumulation of previously discovered grains of the truth but through their critical analysis and creative elaboration under the changing historical conditions.

The book was awarded a prize at a competition of textbooks for students of higher educational establishments.

A.G. Spirkin, Corresponding Member of the USSR Academy of Sciences, is a well-known Soviet philosopher and psychologist. His principal works deal with the problems of consciousness and self-consciousness, worldview, and the subject matter, structure and functions of philosophy

Translated from the Russian by *Sergei Syrovatkin*

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Chapter I WHAT IS PHILOSOPHY?

1. The Subject Matter and Nature of Philosophical Knowledge

On the etymology of the term “philosophy”.

Etymologically, the word “philosophy” means “love for *sophia*”, which is often translated, very approximately, as “love for wisdom”. In actual fact the Old Greek concept of *sophia* is much more complex and comprehensive than just “wisdom”. The fact is that Plato, who made the term “philosophy” part and parcel of the European terminology, did not see *sophia* as an acquired subjective human property but a great objective quality, “becoming only to a deity”, inherent in a reasonably ordered and harmonious world. Because of his innate mortality and cognitive inadequacy, man could not, in Plato’s view, really merge with *sophia*; he could only “love” it, respectfully and at distance. That was the precise meaning that Plato attached to the word “philosophy”, and that is why it would be more correct to translate it as “love for the truth”, although this is not quite exact either.

Thus at its very inception philosophy was not conceived of as a mere collection of truths but as a desire for the truth, as an ideal attitude of man’s soul and mind that can lead to a harmonious equilibrium between both his inner psychical life and his complex relationships with the world. Philosophy is, as it were, a guardian and indicator of the truth, one that is embedded in the soul of man himself and does not permit him to bow down before some partial or subjectively attractive knowledge, constantly reminding man of the need to correlate his actions and opinions with some deeper truth about himself and the world. Taking a bit of metaphorical liberty, philosophy can be said to personify a collective expression of man’s faith in the meaningfulness of his existence, in the existence of a higher truth, and at the same time in man’s exceptional predestination revealed in his craving for this truth, for reasonable and purposive activity.

It was precisely the emergence of philosophy, as distinct from the mythological world perception, that asserted in mankind’s spiritual culture a reflective (fr. L. *reflecto* “I turn back”, “I reflect”) rather than immediate

empirical attitude to the environment, to man himself, and to man's thought; it was philosophy that created the intellectual background and style of thought which asserted, as it were, man's special position in the world and his consequent responsibility to himself and the world.

The great semantic diversity and spiritual wealth brought by the history of culture in the past two and a half millennia, have largely changed the inner content of philosophy and the outer forms of its expression. At the same time it has remained a special type of thought which does not strive for a utilitarian pragmatic or purely rational knowledge, which does not identify itself with usefulness, truth or wisdom, but ensures the tenor of man's soul and mind which underlies what is known as the "philosophical attitude to life".

Now, wherein lies the specificity of the subject matter of philosophy as distinct from all the other forms of social consciousness?

The subject matter of philosophy.

Before attempting to clarify the relationship between philosophy and other forms of social consciousness, science in particular, we should try to define, if only tentatively, the subject matter of philosophy as such, outside any reference to the other aspects of man's intellectual activity. After all, we do not begin the study of, say, physics with its relationship with philosophy; first, we try to define the specificity of the subject matter and method of physical knowledge, and only after this is done is it natural to study the connections between this knowledge and philosophical problems.

Philosophy is an area of intellectual activity which is based both on a special type of thought (which underlies philosophical knowledge—which we have already discussed in part), and on the autonomy of its subject matter. Interestingly, the specificity of the philosophical type of thought has practically never been doubted (even the opponents of philosophy recognize that it is based on a type of thought all its own — of which they are intensely critical, but that is another question), though the existence of an object of cognition characteristic only of philosophy has been, and still is, questioned by many researchers, especially those who raise concrete scientific knowledge to an absolute.

Of course, philosophy does not have the same kind of subject matter as, say, the natural sciences, not being localized within a concrete domain of

knowledge and reality, as it is in biology, geography, etc. But philosophy does have its own subject matter, and the fundamental impossibility of such localization is part of its specificity.

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This is the area of intellectual activity underlying which is reflexion on that activity itself and thus on its meaning, purpose and forms; ultimately, reflexion on the essence of man himself as the subject of culture, i.e. on his essential relations to the world.

Unlike mythology, philosophy as a form of man's intellectual activity emerged together with the appearance of a new subject matter and a new type of thought, when the focus was transferred from the idea of God to the idea of man in his relation to the world, i.e. to man who studies, implements or questions the idea of divinity. In the course of history, ever new semantic nuances were introduced into the concept of the subject matter of philosophy, but deep within, philosophical knowledge has always been oriented towards clarifying the links between man and the world, towards the inherently human inner goals, causes and modes of cognizing and transforming the world.

Thus philosophy is not just a specific scientific discipline: it is also a specific type of thought and even a special kind of emotional attitude, a system of worldview emotions; immersed in this state of the spirit, man cogitates on the universe, on good and evil, the beautiful and the ugly, on social justice, truth and lie, and on the meaning and purpose of human history.

Philosophical creativity answers man's deep need for a rational explanation of his place in the flow of being, of his historical destiny, personal freedom and the essence of the surrounding world.

A truly scientific philosophy offers man a chance to find his place in the limitless ocean of events, to gain a deep understanding not only of the external world but also of his own spiritual world. In varying degree, we all need such a philosophy, for it primarily deals with humanly relevant problems. It is not only a reflective theoretical system expressing a most general vision of the world but also a system of principles which teaches the art of living rationally.

Permeated with the moral element, philosophy, just as literature, perceives in its own way everything that ails an epoch. No concrete science can solve the problems with which philosophy is concerned; it has a mission of its own. Its study offers not only intellectual but also aesthetic and moral

delight, and, most importantly, it inculcates (this is, of course, true only of progressive humanist philosophy) the civic attitude in man.

9

Are there any internal divisions within philosophical problem areas which are on the whole aimed at defining man's relation to the world? Such a division was outlined already in antiquity; it does not, of course, fully coincide with the present-day structure of philosophical knowledge, primarily because in the remote past philosophy comprized a great deal that was later relegated to the natural sciences.

Still, even in antiquity philosophers spoke of *ontology*, or the study of being (fr. Gk. *on*, gen. case *ontos* "that which exists" and *logos* "theory"); of *gnoseology* or *epistemology*, or the theory of knowledge (fr. Gk. *episteme* "knowledge"); and of *logic*, or the theory of the forms of thought. Characteristic of classical culture was deep mutual interpenetration not only of philosophy and theories of nature but also of those areas of spiritual and intellectual activity which came to be termed the human sciences in the modern times, and which now fall into several separate disciplines. Ethics as a separate science of morality, and aesthetics as a science of the harmonious structure of the world and man's corresponding attitude towards it, were just coming into being, and social philosophy and the history of philosophy had a more subordinate status than now. Besides, philosophy comprized fundamentals of linguistics, rhetoric, poetics, and musical harmony.

All these areas of knowledge had yet to find a place for themselves, and to finally assert themselves in their mutual relations with philosophy, which subordinated them all to its specific tasks. Moreover, the question of the relationship between various forms of spiritual and intellectual activity and philosophy cannot be completely solved even now, and the separation of philosophical knowledge proper from the specialist knowledge embodied in the sciences is still the focus of researchers' attention.

On the nature of philosophical knowledge.

At this point, it is not so much the subject matter of philosophy that emerges in the foreground as its relationship with other forms of social consciousness. An interesting point here is that, while in the Middle Ages it was the relationship between philosophy and religion, and thus between philosophy and the domain of the human sciences, that was the stumbling block, the subject of deliberations in the modern times has mostly been the

relationship between philosophy and, first, politics, and second, science (that is, natural science); at the same time the interest for philosophy's interaction with art and the humanities is still intensely alive.

10

Now, what is the problem here? Why does a state of things that would appear quite obvious at first sight (don't we all know the difference between the philosopher and the politician or physicist!) give rise to endless argument? The explanation lies in the fact that philosophy occupies a special place in culture, being simultaneously the focus in which the rays from all the other areas of man's cognitive and practical activity (political, emotional, aesthetic, and so on) meet, and a kind of general energy impulse for all these forms of his intellectual activity.

The exact manner in which philosophy, with its own subject matter, provides at the same time generalizations of and stimuli for the various forms of creativity, has remained one of the most debatable issues.

The history of culture has known practically all possible versions of the answer to the question of the place philosophy occupies or should occupy in the general system of human knowledge; and of the role it plays in political life and in the process of cognition. These variant approaches range from the panphilosophical position that philosophy absorbs the wealth of all the sciences, being their concentrated synthesis and recognized leader, to total rejection of philosophy, seen as a historical relic which has outlived its semantic usefulness and was only necessary in the periods of, first, spontaneous, uncontrolled development of social life, and second, of insufficient level of development of concrete sciences. The adherents of panphilosophical notions are justly reproached for scholastic dogmatism, while people intent on driving philosophy out of the domain of human knowledge are forced to ward off the reproaches, just as deserved, of being too eclectic and empirically minded.

Now, why these paradoxical and polar positions? Why do some scholars insist on the abolition of philosophy, while others, on the need for its absolute supremacy?

Does it all really come down to one side wanting to expand the boundaries of the philosophical sphere to absorb all human knowledge while the other wants to exclude the very concept of philosophy from cultural experiences? No, the thing is much more complicated than that. Underlying these arguments are the three above-mentioned mutually connected issues which cause so much conflict of opinion and ideas: the nature of

philosophical knowledge in general, the subject matter of philosophy, and the relation of philosophy to politics, to the specialist sciences, and other creative manifestations.

11

Question: is philosophy a natural outcome of the development of the needs of the human life (in other words, does it have objective causes for its existence), or is it merely a form of political ideology or abstruse speculation on problems not yet solved by science?

He who sees philosophy merely as a temporary self-consolation of a disgruntled mind would probably offer this answer. In the past, philosophy could, and did, have the status of a separate science, a special form of cognition; thus in antiquity philosophy was in fact identical with the entire culture of the times. In the 20th century, though, in this age of unprecedented separation of the sciences, with each problem being treated in a specialist science (logic, linguistics, physics, etc.), philosophy no longer has its own territory, and has thus lost its former magic power—especially in view of the fact, an opponent of philosophy would add, that it has openly stated its political or social foundations and interests, retaining merely its ideological function—but is it worth it, then, to apply the term “philosophy”, say, to some political doctrine? From this point of view, the word “philosophy” should be solemnly deposited in the archives of history, while the cause of philosophy should be carried on by the specialist sciences on the one hand and by politics and ideology on the other.

This is an extreme position, of course. Opposed to it is the other extreme—the view that philosophy, far from being “put out to pasture”, has assumed an absolute synthesizing function almost as great as in antiquity. What are the arguments in favour of this? An adherent of this position would say that, for the first time in history, philosophy has realized its true position as the queen of the sciences, replacing religion that has reigned for so long. For the first time it has come close enough to social life to make not only an indirect but also a direct impact on it. For the first time, too, philosophy has gained the right to evaluate and even solve conflicts not only in social and political life but also in the economy and in academic life. If we do not openly recognize this leading role of philosophical thought, if we admit that the once splendid building of philosophical knowledge has disintegrated, its bricks pilfered by the specialist sciences, we shall thereby give up the unity of our spiritual world, which is alone capable of sustaining us in our practical activities.

These two opposing stands on the interpretation of the place of philosophy are so rigid not just because they express the concern about the possibility of philosophy's hegemony (including political and ideological hegemony): the other underlying reason is the acutely polemical attitude to the relationship between philosophy and science.

12

As for the relationship between philosophy and politics, it is fairly obvious on the one hand and extremely complex in terms of detail, on the other. Of course, philosophy cannot replace political consciousness; still less can the latter become philosophy. These are two fundamentally diverse forms of social consciousness differing in their subject matter, methods of thought, and, most importantly, their goals. At the same time, of course, there are meaningful, emotional and functional contacts between them, these mutual links being most fully manifested in the 20th century. However, these unquestioned and generally recognized close ties between philosophical and political thought must in no way give rise to the conclusion that "philosophy is finished". (Below, we shall dwell on the relationship between philosophical and political thought in greater detail.)

Those who reject the need for philosophy in our times deny its political claims on the grounds that it is not a science. For those who see it as a form of social consciousness called upon to generalize and control all the other forms, it is, above all, a science. In the first case, the role of philosophy is belittled through putting it outside science, in the second, it is elevated as being "more scientific than all the sciences" and even capable of affecting the social evolution.

In both instances, the view is manifested, in one way or another, that the only true form of knowledge is rational knowledge, and that only in the interpretation it is given in the natural sciences. This methodological orientation, which belittles the importance of all knowledge that does not have a strictly rational form, has come to be known as "scientism". The positions of scientism are so influential that the question of the relationship between philosophy and science must be considered in greater detail.

The problem of the scientific nature of philosophy and the limitations of scientism.

A little history first. Before the 19th century, science occupied a special, and quite respectable, place in European culture; still, it came third or even

fourth after religion, philosophy and art. The crisis of the religious world perception which gave way to philosophy, on the one hand, and the triumph of rational thought over the intuitive methods of art, on the other, led in the past century to science moving up to occupy the second rung, the one below philosophy, in this conventional hierarchy of values. In the 20th century, despite the fairly serious decline of rationalism in the first two or three decades, the prestige of scientific knowledge later rose so high that science actually found itself in the vanguard. The dilemma itself of the “end” or “efflorescence” of philosophy, referred to above, was provoked precisely by the type of thought characteristic of scientism, which expressed this dilemma in the following way: if philosophy is not a science, it must cede its positions; if it does not cede them, that will mean that it is a science.

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This position cannot, of course, be justified. The question of whether philosophy is a science or not cannot be given an unambiguous solution since, on the one hand, if it is a science, it is not a science in the same sense as the natural disciplines; if, on the other hand, it is not a science, this does not mean that it loses all the attributes of scientific knowledge. Let us deal with this point more thoroughly.

What precisely is so “anti-scientific” about philosophical knowledge, from the standpoint of scientism?

In the first place, an adherent of scientism will reproach philosophy for the undemonstrability and fundamental unverifiability of its truths, for the fact that philosophy does not contain scientific knowledge; for being, on the contrary, so imprecise that it is closer to art than to science. This reproach is far from new: already in antiquity, the sceptics censured philosophy for its inability to provide irrefutable truths; let us not forget, though, that they levelled the same critique against science itself. The epoch of Enlightenment, also cited by scientism today, was just as critical. Let Rousseau speak: “I will ask only these questions: What is philosophy? What is contained in the writings of the most famous philosophers? What are the lessons taught by those friends of wisdom? Listening to them, we have the impression that they are mountebanks in a public square, each one shouting, ‘Come to me! Only I will tell you the truth!’ One of them teaches that there is no such thing as matter, but that everything exists only in representation. Another declares that there is no other substance than matter and no other God than the world itself. A third tells you that there are no such things as virtue and vice, and that moral good and evil are chimeras; while a fourth informs you

that men are only beasts of prey, and may conscientiously devour one another.”¹

But the adherents of scientism neglect the fact that the French philosophers of the 18th century did not at all propose to divorce philosophy from science: on the contrary, they called for a harmonious merging of the two in the face of the then prevailing religious world perception.

14

This eternal doubting of the usefulness and reliability of knowledge has reached, in the view of scientism, its highest point today. Can the philosophical mode of thought be treated seriously these days, they ask, if each philosophical argument can be convincingly refuted by a counter-argument, and if philosophers are unable to apply in their field the strictly scientific proofs and verifiable methods evolved by mathematics and natural science? Moreover, philosophy is incapable not only of experimentally proving its principles — it is still less capable of productive forecast. Human reason is alleged to be capable only of predictions based on knowledge obtained through experience, observation and experiment (as, e.g., in physics, biology, and the other sciences), but the ground slips from under its feet as soon as it leaves the sphere of experience for the rough seas of the deep universal problems or, even more precariously, hypotheses of the future. Since there is no criterion of the reliability of philosophical knowledge, representatives of scientism reason, philosophy cannot be regarded as a science with predictive force.

The argument of scientism about the lack of predictive force in philosophical knowledge is often linked with Hegel's well-known and bitterly ironic aphorism about the owl of Minerva, to the effect that philosophy lays claim to instructing the world but always comes too late to do that. The very appearance of philosophy, with the given content, on the historical arena means that the sun has gone down. “When philosophy paints its grey in grey, then has a shape of life grown old. By philosophy's grey in grey it cannot be rejuvenated but only understood. The owl of Minerva spreads its wings only with the falling of the dusk.”²

¹ *The Essential Rousseau*. Translated by Lowell Bair, New American Library, New York, s. a., p. 224.

² G.W.F. Hegel, *The Philosophy of Right*, Encyclopaedia Britannica, Inc., Chicago a.o., 1952, p. 7.

An adherent of scientism who rejects the scientific nature of philosophy attempts to belittle its significance even unto complete dissolution of it in commonsense or practical wisdom.

On the contrary, a follower of scientism who has hopes of philosophy's revival sees it as a "superscience" which, generalizing the results of the specialist sciences at the philosophical level, directly controls their further development. He also draws the conclusion that, along with the general movement of culture to increasing rationalization, philosophy becomes a science in the direct (and even natural-scientific) sense of the word.

15

Let us note, however, that the tendency towards rationalization of philosophical knowledge after the model of the natural sciences can result not only in such historically positive developments as the emergence of really necessary new disciplines (e.g., social psychology), but also in such an objectively negative consequence as the disappearance of philosophy as a special form of knowledge.

Can we accept then, the reader may ask, the proposition of scientism that philosophy, not being a science, has no right to exist? Or should we consider yet another option, not yet broached here, that philosophy has a right to live, but its methods, goals and means must not be similar to those of natural science — which means that they must remain irrational?

Unlike the former two, this last viewpoint is based on *antis scientism* rather than scientism, on the opposition of philosophy as the highest truth, arrived at only by irrational and intuitive methods, to science as the lower or utilitarian truth which only satisfies man's base, material needs. At its extreme, this position rejects in principle the application of any scientific methods to the solution of philosophical problems proper, for philosophy can only fulfil its historical mission if it gives up any attempts at scientific reasoning.

However strange this position might seem in the age of the scientific and technical revolution, which has revealed to mankind both the mysteries of the microcosm and the laws of cosmic processes, it has numerous supporters. Present-day irrationalism is a reaction against the extremes of scientism described above, it is a vote of no confidence in the rational doctrines of science and politics. Doesn't it follow that philosophy need not aspire towards a scientific status, considering that the orientation towards supremacy of scientific rational cognition, engendered by our times, is more and more called in question?

But the problem of the relationship between philosophy and science cannot be solved simplistically, as proposed by the three approaches described above. The whole point is that the relationship between philosophy and science is very complex, and the two must neither be equated with each other nor separated by a wall.

Wherein lies the complexity of the relationship between philosophy and science? Along what parameters are their correspondences and differences established? Science is built on experiment, and on the formulation of knowledge that remains true regardless of the changing conditions of human existence. A scientific truth is, as it were, indifferent towards man, it is objective. However, philosophy, too, seeks above all the objective aspect, its own specific form of harmony with the reality. As it is only in form that philosophy is distinguished from other modes of cognition, Hegel writes, it must necessarily be in harmony with actuality and experience.³

16

Philosophy cannot be constructed on the natural-scientific model, having its own criteria of exactness and demonstrability. Philosophy is just as objective as science—in the sense that its subject matter is the objective nature of man's relation to the world rather than his subjective sensibility.

The development of philosophy is not linear and consistent like the logical course of scientific thought, like any theoretical system verified on purely rational principles. Philosophical thought moves along a great many lines, as if piercing its object on various sides. Even the form of prediction characteristic of philosophical thought differs significantly from scientific hypotheses. Philosophy provides the general cognitive impulse which largely stimulates the emergence of concrete natural-scientific hypotheses. The same is true of philosophy's social predictions: determined, basically, by the general direction of mankind's social evolution, philosophical prediction cannot at the same time aspire towards substantiation of the concrete details of the future. That is the sphere of the specialist sciences. Where philosophy attempts predictions concerning the concrete details of the evolution, it may confidently be said to undergo rationalization after the model of the exact sciences; properly speaking, philosophy either disappears there as such or becomes an obstacle in the way of free development of scientific knowledge.

³ See *The Logic of Hegel*. Translated from the *Encyclopaedia of the Philosophical Sciences* by William Wallace, Oxford University Press, London, 1931, p. 10.

There is also the separate issue of what is known as the synthesizing mission of philosophy—that of generalizing the results of the specialist disciplines. What does philosophical generalization mean? Should it aspire towards a summing up of the history of knowledge, philosophy would face an insoluble task, for the human mind has historical and individual limitations. Such a summing up was to some extent possible in the times of Aristotle, but in these days no single man, however talented, erudite, and endowed with a phenomenal memory, can be at home in all of the fields of scientific knowledge. And anyway philosophical thought should not attempt this task, for it will never be able to replace the specialist in any given field. Generalization is, in its form, an essentially rational act performed within the framework of the given specialist discipline whose results are subjected to this generalization. *Integration of knowledge* is quite a different thing. Here indeed philosophy is quite capable of finding, even before the contiguous disciplines take shape, the points of contact and the unified basic principles of disjoint sciences. But integration of the data of the specialist disciplines cannot be regarded as philosophy's principal task: it is merely a subsidiary function; philosophy has a subject matter of its own and, consequently, its own goals and special means of achieving these goals.

Philosophy is not a protective or controlling organ in the “state of the sciences” but an independent field of spiritual knowledge taking part in the direct production of ideas rather than in their forced distribution and regulation.

17

It is only when the conclusions of the specialist sciences begin to be used for various ideological purposes that philosophy, staying within its domain, does some generalizing work. The scientist's philosophical frame of mind may or may not help him in his professional activity, and philosophy certainly plays a significant role here. Philosophy can and must react, in terms of worldview, to the discoveries of the specialist disciplines that previously seemed fantastic, such as the big bang idea or, say, the methods of genetic engineering; in doing so, philosophy acts as the interpreter of the achievements of all the areas of knowledge. But philosophy cannot and must not interfere in the process of scientific creativity itself, it must not decide arbitrarily which of the new standpoints, including the theoretically questionable ones, have the right to exist and which have not.

Two questions have yet to be answered to clarify the relationship between philosophy and science: first, the interaction between the logically rational

and the intuitive; and second, the effect of the philosopher's or the scientist's personality on the results of his activity.

It would be wrong to assume that science is nothing but the logically rational while philosophy and art are nothing but the intuitive. But the diametrically opposed interpretation of philosophy as purely rational knowledge, sometimes stated in scientistically oriented arguments, is also erroneous. The power and significance of a given philosophy lies not so much in the purely logical demonstrability as in the depth of its insights, in the ability to pose new problems, to attain a better understanding of important aspects of human being and activity and, finally, to be the source and stimulus for further movement of thought, to be a methodological instrument of scientific cognition and practical transforming activity.

18

The possibilities of intuitive insights and of predictive impulses to scientific cognition do not mean that philosophy can be a kind of mystic oracle revealing truths which came no one knows how or whence and which are not amenable to rational interpretation. We may pay tribute to the intuitive and the irrational, but that does not at all mean that rationalism in general, and the need for the demonstrability of the philosophical form of the expression of truth in particular, can be ignored. On the other hand, the orientation towards the logically rational, characteristic of the sciences, does not negate the significant role of intuitive insights in natural-scientific activity either. Intuition and logic-governed reason are inseparable in any form of human creativity; their union is a necessary element in the birth of the truth. In this respect, the difference between philosophy and science consists in the fact that science aspires towards a logical orderliness of its propositions which are confirmed at every step experimentally and theoretically, which ultimately leads to the independence of the natural-scientific conclusions from the scientists who discover and formulate them, from the subjective factor in general; while philosophy aspires on the contrary towards a profoundly convincing presentation of its knowledge, in worldview terms—although the importance of the rational elements is, of course, fully realized. This difference is ultimately due to the difference in the very subject matter of science and philosophy. Indeed, the basic properly philosophical problems, i.e. the principles on which the relationship between man and the world are founded, are not amenable to natural-scientific methods. Philosophy as a science requires rigorous and well thought-out methods, theoretically convincing formulations, and an orderly

systematic presentation of its concepts, categories, principles and laws. It is akin to science at the level of general theory, provided it is considered as an integral entity.

But philosophy is not just a science. Although it is based on the thinker's immediate experiences, it has no empirical research devices at its disposal. The truth and effectiveness of philosophical theory are verified as a rule by the entire stream of life events rather than by separate experiments and observations.

The specificity of the creative cognitive process also has a bearing on the role of the personality creating a philosophical or scientific work. Of course, the individual plays an essential role both in science and in philosophy, whose very existence would be impossible without him; in stating this, we do not refer to man as a condition of the situation of cognition or to man as such, but precisely to personality, that is, an individual with a definite creative potential. If Einstein had not lived, the theory of relativity would have been discovered by a person of equal creative potential. In the same way, had not Marx lived, dialectical materialism would have emerged in the history of philosophy all the same—through the work of a personality of the same genius.

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Still, there is a difference here between the specialist disciplines and philosophy. In a sense, philosophy is closer to art than to science. Without Byron, Romanticism would have replaced, in one way or another, Classicism and Sentimentalism, in accordance with the objective logic of the development of art, but in any case, the history of culture would not have known such a literary hero as Childe Harold without Byron and Prince Myshkin, without Dostoevsky. In art, personality is in principle irreplaceable.⁴

All attempts to introduce a unitary model into philosophy, to emasculate it by removing the personality element, only lead to dogmatism and thoughtless repetition of certain truths; as a result, real philosophical texts give way to a stream of uniform pseudo-philosophical writings. Just as art, philosophy only develops where the personal element is welcome. Without

⁴ The relatively lesser role of personality in the natural sciences must not be exaggerated, of course. A scientist's creative activity absorbs the whole of him as an individual personality. The humanist meaning of scientific activity manifests itself, above all, in the personal responsibility for the results of the discoveries, especially technological ones, and their possible practical application.

the personality energy and creative élan, mass-produced philosophy becomes an aver-aged-out ideology. Man in his relation to the world is the principal subject matter of philosophy; man as personality is the only possible subject of it. Philosophy asserts man as the highest value of the world, as the starting point of philosophical knowledge, and this knowledge must therefore inevitably assume a personality-oriented form.

The language and style of philosophical thought.

Philosophy is a special form of social consciousness and is thus based on an original style of thought. The following questions may be asked in this connection: does philosophy have a language of its own? Does a philosophical text differ, say, from a sociological, economic, or political one?

20

There have been trends within philosophy itself which were particularly concerned with analysis of the language of philosophical texts. Thus the main proposition of the Vienna Circle (led by Ludwig von Wittgenstein) was this: philosophy will always contain the possibility of ambiguity and dogmatism unless it radically changes the mode of presentation accepted in it. From this standpoint, philosophy has only itself to blame for undemonstrability and vacuity, having fallen into the numerous traps of natural language. To avoid this kind of situation, Wittgenstein insisted on a therapy for the philosophical language in order to overcome in philosophy the polysemy and fundamental imprecision of natural everyday usage. But Wittgenstein and his followers sought this therapy in extreme formalization of philosophical language, in bringing it closer to the language of mathematics and natural science. Philosophy, however, has inherited in many respects the lexicon and syntactical means not only of science but also of art; as specialist studies have shown, it has a language of its own based on the philosophical style of thought, a language that reflects both the specificity of its subject matter and the special intellectual tenor that is linked precisely with philosophizing. Just as the other kinds and genres of speech, philosophy has worked out a form of language usage with a distinctive modal colouring, rhetorical devices, and unusual form of combining the logical and the emotional elements. A truly philosophical text cannot be confused with texts from science, journalism or fiction. There are, of course, a great many gradations between these basic forms of language usage, but the specificity of each of them is so obvious, and is on the whole

so directly perceived by the reader, that the fundamental relevance of a text to science, art or philosophy can always be recognized even in synthetic styles.

Leaving aside the concrete conclusions and recommendations of researchers in philosophical language (that is a special subject of interest to professionals only), let us note merely that the close attention to the language of philosophy came into the foreground in connection with certain negative processes in this area.

Thus there is clear evidence of such a morbid symptom as empty word play divorced from concrete semantic content. Philosophical thought often abuses the word. This is first of all true of the idealist systems in which scholastic verbalization sometimes assumes highly involved forms divorced from the needs of thought. Francis Bacon, the English philosopher, criticized in his theory of "the idols" this sort of verbalization, which is a caricature of the scholastic devices, a mere waffle. It would be wrong, though, to reproach idealism alone for such waffling. Unfortunately, non-idealist literature, too, offers examples of pseudoscientific philosophizing in deliberately complicated verbal form, when the thought content is trivial but the text is an impenetrable verbal thicket, which creates an illusion of profundity despite the actual triviality. The language is also negatively affected by the dogmaticization of the content of philosophical texts which is expressed in their anonymity (impersonality), in worn language clichés and empty rhetoric instead of proof.

21

An impersonal averaged-out style is unacceptable in philosophical language. All outstanding philosophers were distinguished both for the individual content of their ideas and for their individual language style. Marx, Engels and Lenin, as well as Plato, Aristotle, Kant, Schelling, Hegel and Schopenhauer, had profoundly individual styles. Lenin's impassioned philosophical language, and the disciplined power of the language of Marx, are instantly recognizable. An impersonal language indifferent to the subject matter in hand, as if churned out by a single standardized mechanism, is detrimental to philosophy. It must have a distinct individual colouring, and differ clearly from the language of natural scientists, sociologists, economists, or politicians.

Philosophy and its human dimension.

At this point we can already offer a more extended description of the domain of philosophical knowledge than at the beginning of the present section. Indeed, what is meant concretely by the statement that the focus of philosophy is man and his relationship with the natural and social world? First, it should be emphasized that philosophy does not regard man as an object (man as object is dealt with in the human or social sciences—such as psychology) but as a subject. Second, the subject matter of philosophy is not the individual subject with his particular qualities but *subject as the general*, as a universal category opposed to the category, just as universal, of object. It does not only study, say, the problem of self but the problem of relationship between this self and others, the problem of understanding as a central issue in the theory of knowledge. Third, philosophy purports to free man's thought from the various traps (rational, formal, intuitive, etc.) embedded within this thought. These include, in particular, a vision of reality obscured by the verbal means of its expression; this requires the ability for correcting the cognitive operations and instruments to suit the reality. In other words, philosophy frees the human mind from the obstacles to an adequate perception of the world inherent in the mind itself.

22

Being better prepared than the specialist disciplines for the overcoming of the most widespread prejudices of reason, such as neglect for the differences in the modes of concept usage, in the meanings of words, etc., it acts as the *methodological* purgatory for experiential and, more generally, for all specialist knowledge seeking true road. Fourth, philosophy meditates not just on man as subject but on man in his relation to the world. It strives to find the common features in the world of objects and in the world of the subject, i.e. the universal laws of being; but most importantly, it attempts to identify the form of the subject's relation to the entire diversity of objective phenomena, to determine man's concrete and unique place in the universe of being. Therein lies its *worldview* function, for no creative activity of man is possible outside a general worldview orientation. Fifth, philosophy answers the central question arising out of the consideration of man's relation to the world (the so-called *basic question of philosophy*): the question of the primacy of objective or subjective being. This problem covers the forms of reflection of the world of objects by the subject, and the modes of establishing the correctness or truth of the subjective image of the objective world. Sixth and last, philosophy substantiates its subject matter as the universal pivot of the process of cognition in general. That is why the human

dimension of philosophy causes such great interest. The view is sometimes taken as a basic philosophical axiom that the universe is in itself the way we perceive it. However, there is a great deal in the universe that is inaccessible to our perception. Man directly observes only processes of a strictly determined type, while processes of a different type unfold “without witnesses”. It would therefore be more precise to say that the universe opens itself up to us to the extent to which we as observers ask it quite definite questions determined by our human essence. By its very nature, the universe assumed the emergence of life and consequently of man. That is why *there is a direct link between the existence of man and the fundamental properties of the universe*. The identification of that link is a significant task of science and philosophy.

2. Philosophy as the Theoretical Basis of Worldview

Worldview: its essence and vital meaning.

23

A *worldview* is a system of generalized sensibilities, of intuitive notions and theoretical views of the surrounding world and man's place in it, of man's many-sided relations to the world, to himself and to other people, a system of the basic orientations in life, not always consciously realized, of an individual, a definite social group or society; their convictions, ideals and value orientations; their socio-political, moral, aesthetic and religious principles of knowledge and judgements. A worldview is a kind of spiritual framework of the structure of an individual, class, or society as a whole. The existence of a worldview is an indication of the maturity not only of an individual but also of social groups, of political parties. The subject of a worldview can thus be a personality, a social group, and society as a whole. An individual develops into a personality only when he forms a definite worldview; outside a worldview, an individual is not a personality in the proper sense of the word.

A worldview is a spiritual and intellectual structure with many levels, one that combines everyday notions comprising rational and irrational elements, reason and prejudices, scientific, artistic and political views. Historically the first elements of worldview content were the notions of everyday consciousness, mythological and religious views which played a definite role

in the consolidation of the forms of social organization of the life of human collectives. With the development of practical-cognitive activity, with the separation of science as a special sphere, the worldview becomes more and more scientific in nature, the share of scientific notions in it steadily growing. Thus the worldview content changed in keeping with the changes of the forms of the practical assimilation and theoretical interpretation of the world. Knowledge, or the information aspect of a worldview, is thus its basis. All cognition moulds the worldview framework, but philosophical science plays the most important part in this process, for philosophy emerged and took shape as a response to the worldview concerns of mankind. That was why world-views were always linked in the first place with philosophical views, although the former were historically independent and much broader in content than the concept of philosophy: any philosophy clearly has a worldview function, but not all worldviews are philosophical. Philosophy is the *theoretical nucleus* of a worldview.

Knowledge by no means exhaust the content of a worldview. For knowledge to acquire worldview meaning, it must be considered in the light of our evaluation and our attitude towards it. We evaluate all things in terms of the interests of a definite social group, of society, and of an individual. There is nothing to which we would be completely indifferent, especially as far as our higher vital values are concerned. That is why worldviews have been, since time immemorial, an area of spiritual conflict of different social forces, social classes and even separate individuals. That means that part of the structure of worldview is also *evaluation* of knowledge; in other words, along with information content, worldviews have axiological content.

24

Knowledge is only poured into the worldview vessel when it becomes *conviction*. Convictions are a constant component of a worldview, the prism through which reality is seen. They express not only an intellectual position but also an emotional state, a stable psychological orientation, an unshakeable confidence in the Tightness of our ideals, principles and views. Convictions are ideas implemented in actions, and actions illumined by an idea. It is convictions that form a most important element in the worldview of a strong and socially active personality.

Ideals, along with knowledge, value orientations and convictions, form part of the worldview structure. Human life is inconceivable without ideals. Like the beckoning lights of hope, they warm human hearts and nourish dreams; ideals are the horizon towards which all the thoughts, feelings and

actions of men are directed. Ideals can be scientifically founded or illusory, they can be real and attainable or unattainable. As a rule, they are directed towards the future. Rooted in the system of the spiritual needs and interests of society and individual, they are determined by practice, by the entire experiences of mankind; in their turn, they make an effective impact on the life activity of both society and individual. Ideals, especially those that have been tested by experience, constitute the basis or tenor of the whole of the spiritual and intellectual life. The more elevated the personal and social ideals, the greater the stature of the personality and the more progressive the given society, the richer and nobler the content of individual and social life. A worldview whose structure incorporates ideals cannot be defined as a mere reflection of reality. The presence of ideals in it marks it as *anticipatory reflection*, as an ideal force which does not merely reflect reality but also calls for its alteration. By themselves, though, ideals do not form an integral and effective worldview unless they are combined with the socio-political practical activities of the masses. A world-view is formed by social conditions, education and training. It takes shape in childhood (from the very beginning of the child's socialization, his involvement in the life of society) and the process continues in fact throughout man's life. It determines the individual's position in life, being realized in the character of labour and social activity, in family and society. In the final analysis, the measure of man's worldview maturity is *his deeds, his actions*.

25

Relying on the Marxist principle of historism in the study of worldview as an integral phenomenon, one can speak of *historical types of worldview* embodying in concentrated form the norms and principles of consciousness and the styles of thought determined by a given historical epoch or a given class. Human society being socially heterogeneous, different social groups and classes may be said to have different social types of worldview. Depending on whether the interests of a given class coincide with the objective tendency of social development, whether it is the carrier of a more progressive mode of production, its worldview may, in content and social significance, be consistently scientific or unscientific, materialist or idealist, revolutionary or reactionary. Thus the worldview of the bourgeoisie was progressive when it was a rising class opposed to feudalism, but after it asserted its power, its worldview became conservative and reactionary.

The basic question of philosophy. Materialism and idealism.

Whatever problem the philosopher might study, and whatever thread of philosophical thought he might be trying to unravel, he will come up, sooner or later, against an issue which he will be unable to bypass. That issue is the basic question of philosophy—the question of *the relation of thinking to being*. Running against this problem, the philosopher will have to choose, willy-nilly, a position which will determine the whole of his philosophy: it will determine whether it will be materialist or idealist.

The crux of the basic question of philosophy is the recognition of two main types of reality—objective or material and subjective or ideal, one of which precedes the other and engenders it. Does matter precede consciousness, or is it the other way round? Does matter produce, at a definite level in its development, its finest flower, reason, or does the world spirit, on the contrary, create the material world? Or do they perhaps coexist as two equal substances? These problems are the core of the basic question of philosophy, but they are only one of its aspects.

Materialism rejects all the unscientific interpretations of the origin and essence of the world. For its starting point, it takes the world which exists objectively and independently of the consciousness of man and of mankind. Explanation of the world from the world itself—such is the worldview and methodological principle of materialism. *Idealism* holds the opposite view, insisting that the development of the world is determined by the spiritual element. Some philosophers in the past recognized the equality of both elements, the material and the ideal. They were known as *dualists*.

26

The other aspect of the basic question of philosophy calls for just as fundamental a solution: is the world knowable? Can man grasp its objective laws? Those who believe that the world is in principle unknowable are called *agnostics*. The most striking example of agnosticism is religious philosophy, which rejects the knowability of the world in its desire to assert the primacy of faith over reason.

Why is the question of the relation of thinking to being so fundamental, despite its fairly abstract character? The reason is that the solution of this problem determines the approach to all the other problems of philosophy proper (the problem of the method of philosophy, of practice and truth, the motive forces of history, etc.) and, moreover, to all the general-theoretical, worldview issues of any other sciences attempting to grasp the essence of

the universe and life, that is, of sciences that make a significant contribution to the construction of the scientific picture of the world.

As applied to social history, the basic question of philosophy is formulated as the problem of the relation of social being to social consciousness. One or the other view of this problem determines the interpretation of the decisive forces of social development: the question is whether ideas and reason govern history, or whether the basis of social development is material production and the socioeconomic and other social relations that follow from it. The basic question of philosophy is thus not just the problem of the relation of thinking to being in general but, more concretely, of the relation of social consciousness to social being. The materialist approach to this issue is straightforward: social being ultimately determines social consciousness, and social consciousness, derivatively, makes in its turn a great impact on this being. Idealism holds a directly opposite position on this issue, and different idealist philosophies are distinguished only by their interpretation of the nature of the motive force: it may be God, or the objective world spirit, or the ideas of historical personalities.

In its development, philosophical materialism passed through several significant stages, from the naive form in antiquity through mechanical and metaphysical forms to its highest stage—dialectical materialism. These stages will be considered in detail below. Here we shall merely point out that, inasmuch as men cannot ignore the objective existence of the material world in their everyday life, they act in this sphere as materialists, some spontaneously, others consciously, with full theoretical and philosophical awareness.

27

Idealism also has various forms. Thus *objective idealists*, ancient and modern ones alike (Plato, Hegel, and others), recognize the existence of a real world outside man, but they believe that underlying it is reason. The irrationalist variety of objective idealism (Schopenhauer and others) postulates an unconscious unreasonable element (*élan vital*, blind will, etc.) as the basis of being.

From the point of view of *subjective idealism*, the objective world independent of man does not exist, it is the product of man's subjective cognitive abilities, sensations, and perceptions. Hence the fundamental idea of this philosophical system (as represented by Berkeley or Mach): things are complexes of sensations and to exist means to be perceived by man's

sense organs. Subjective idealists insist that our attempts to go beyond consciousness are in vain, and the existence of an outside world independent of our mind is therefore impossible to prove. Indeed, we know the world as it is given to man, and to the extent in which it is reflected in our consciousness through the senses. But that does not at all mean that the perception of the world is the world itself. Even our everyday experiences show that the objects of perception continue to exist when we do not perceive them—say, before or after perception. In other words, even everyday experiences demonstrate that the being of things does not depend on the act of their perception. A logical development of the ideas of subjective idealism leads to *solipsism*, to the assertion that nothing but the self exists. Subjective idealist is thus not unlike a person who finds himself in a room with magic mirrors for walls; he sees nothing but himself on all sides and can never find a way out, colliding everywhere with his own reflection.

Materialism relies on the achievements of science and practice, whereas idealism often goes side by side with religion, being its indirect and sometimes direct foundation. Despite the links between idealism and religion, they must not be identified: religion relies on faith and emotions, while idealism appeals to reason, endeavouring to prove its propositions theoretically.

The history of philosophical thought is more complex than the schema outlined here. As a rule, pre-Marxian materialists were idealists in the explanation of the phenomena of social life. Their explanations of natural phenomena, too, although on the whole materialist, were not entirely consistent, as they sometimes postulated a certain prime mover, or recognized the initial act of divine creation, which was then eliminated from their explanation of natural phenomena. What is the source of these difficulties in the development of philosophical thought?

Idealism is not a whim of philosophers straying just because they are dim-witted: on the contrary, many of them were geniuses. Idealism has its *epistemological and social roots*. Cognition of the world is a very complex and extremely contradictory process; it is far from rectilinear, moving mostly in zigzags and roundabout ways, along a spiral. We find here free play of the imagination, common sense, cunning, the power of consistent logic, and assumptions that may be verisimilar or far from reality. This flow of questing, creative thought veering from side to side and sometimes rushing

up blind alleys is inevitably fraught with the possibility of errors and delusions, as demonstrated by the experiences of man's intellectual life. "...Philosophical idealism is a *one-sided*, exaggerated ... development (inflation, distention) of one of the features, aspects, facets of knowledge into an absolute, *divorced* from matter, from nature, apotheosized."⁵ Thus the process itself of cognitive activity contains the potential for divorcing thought from reality, and for departure for the realm of the imagination, which inevitably forces the researcher to choose the false path. It is a well-known fact that things and their properties are given to us in the form of sensations, and that the subjective images of these things are realized by us as existing where their object is located. For instance, looking at a green leaf, we perceive this greenness as belonging to the leaf itself; contemplating the blue sky, we ascribe objective being to the blueness. Subjective idealism exaggerates out of all proportion this aspect of our cognition: relying on empirically given experience, it gives it an erroneous theoretical interpretation; namely, it interprets the subjective form in which the object is given to the subject as the object itself, i.e. it reduces things to sensations and sensations to things. But any biophysicist will explain that greenness or blueness are sensations reflecting the visible spectrum of electromagnetic oscillations of definite frequencies and wavelengths, and that in themselves the waves are neither green nor blue. The subjective form in which the object is given us must therefore be distinguished from the objective source existing by itself, and this is exactly what a scientific materialist does.

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If subjective idealism locks itself within the sphere of the cognizing individual and the sensuous form of his cognition, objective idealism, on the contrary, lifts the result of human thought, of man's entire culture, to an absolute, ascribing to it absolutely independent suprapersonal being and active power. This logic of human thought is expanded to cover the whole world, becoming the logic of being itself.

The epistemological roots of objective idealism go down deep into history, being linked with the formation of abstract concepts, with the progress of cognitive activity and reason's penetration into the essence of things. The problem arose of relating the general and the individual, the essence and its manifestations. It was not a simple matter for man to

⁵ V.I. Lenin, "On the Question of Dialectics", *Collected Works*, Vol. 38, Progress Publishers, Moscow, 1976, p. 361.

understand the way in which the general reflected in, say, the concept of beauty was related to the individual form of its being in a given object. For example, a wise man dies, but wisdom, becoming imperishable, is preserved as something general, and exists in the system of culture as something suprapersonal. Being divorced from the individual, the general came to be perceived as something existing absolutely. Thus objective idealism begins where the idea of a thing is thought of not as a reflection of this thing but as eternally pre-existing it, determining its structure, properties and relations, and continuing to exist after the destruction of this thing. For instance, already in antiquity Pythagoras thought of numbers as independent essences ruling the world, while in Plato general concepts or ideas made up a realm of pure thought and beauty that had engendered the world of visible reality.

Objective idealism raised to an absolute not only the results of human activity but also men's creative activity itself, divorcing the one from the other. That was the reason why in pre-Marxian history of philosophy man's active, creative capacity was mostly studied by objective idealism. The idea of a thing created by man pre-exists the thing itself, in terms of time and of the very essence of that thing, which is derivative from the purpose and design. Most of the things surrounding us are results of our creative activity, so that the idea of creation becomes a kind of spectacles through which we look at the world. It is not all that simple for man to give up that idea and to think of the world as eternally existing, not created by anyone. The eternal existence of the world without a creator was therefore beyond the comprehension of some people—still is, as a matter of fact. Hence the assumption of the existence of a universal creator and ruler.

3. Philosophy as General Methodology

Method and methodology. Theory and method.

Methods originate in practical activity as generalized devices that conform with the properties and laws of reality, with the objective logic of the things at the transformation of which human activity is directed. The methods of practical activity thus reflect the historically formed and socially consolidated modes of man's sensuously objective interaction with the

world. This was the basis for the formation of cognitive and later theoretical devices used in the assimilation and transformation of reality, and for the moulding, in the process of the development of science, of theoretical methods—sets of devices and operations directing the mind towards the path leading to the truth. The choice of methods is conditioned both by the nature of the phenomenon under study and by the tasks pursued by the researcher. All other things equal, it is precisely the method that largely determines the depth of penetration into the essence of the object of study. Each science works out methods of its own; at present, the system of scientific methods is so complex that the need arises for their classification.

Some of the extremely diverse methods of science are used in one discipline only, and are characteristic of its specific domain. These methods are referred to as *particular* (or *concrete*) *scientific* ones. Accordingly, the *general scientific* methods are those that are used by a number or group of sciences. Philosophy is a *universal* method, its subject matter being the most universal principles of thought, of all cognition. It is sometimes naively believed that, owing to the universality of its method, philosophy can yield true knowledge in a concrete scientific field. Nothing could be more absurd and harmful than this delusion. It is inconceivable that we should succeed in, say, making a table by relying on general principles only. This example, deliberately grotesque, shows the whole absurdity of the idea. This view of the methodological function of philosophy turns it into a set of frozen and immutable formulas, depriving it of the most important, essential and necessary element—the ability to develop and be enriched by real historical and scientific practice. Philosophical methods do not determine unambiguously the course of the creative search for the truth. In the final analysis, the decisive factor here is practical life. Every method enables us to cognize only some individual aspects of the object. Hence the need for mutual complementarity of methods, each of which is limited in the scope of its cognitive potential. The universal methods of philosophy are a necessary condition for the solution of various concrete tasks; they do not replace the special, concrete scientific methods—rather, they are given concrete form in these methods. The special methods are particular devices for the discovery of the laws governing the objects under study, while the philosophical methods are devices for the study of the same objects with the aim of discovering in them the universal laws of movement and development manifested in specific ways in accordance with the specificity of the object.

The need for the selection and substantiation of methods and for clarifying their relationships naturally gave rise to *methodology* as a particular area of philosophical and scientific-theoretical knowledge, as a system of the basic principles or elements, of generalized modes of the organization and construction of theoretical and practical activity, and as the theory of such a system.

In short, philosophical theory emerges both as meaningful theoretical knowledge and as a general methodology. What is, then, the relationship between theory and method in it? In general form, the relationship is this: theory is the result of the process of cognition, while method is the mode of obtaining and constructing knowledge. However, in concrete scientific knowledge the mode of obtaining that knowledge does not as a rule form part of the result, of the knowledge itself, for the latter reflects a concrete fragment of reality, while the method forms a superstructure over knowledge, over the meaningful part of the theory; in philosophy, on the other hand, each theoretical proposition and concept becomes at the same time a methodological principle. Philosophical theory is at the same time method. In view of this, philosophy may be said to perform a general methodological function in relation to the entire scientific cognition.

Dialectics as theory and as method.

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In Marxism, dialectics emerges as the *theory of the most general law-governed links and the evolution and development of being and knowledge*, and the *method of creative cognition and thought* based on this theory.⁶ Dialectics is the theory of development in its most complete, deep-going, and comprehensive form; it is the theory of the relativity of human knowledge reflecting eternally developing reality. Dialectics is formed by the unity of its two aspects, subjective and objective. As the theory of the development of thought, cognition, of the struggle of ideas in science, art, philosophy, in spiritual and intellectual life in general, *dialectics* is

⁶ The word "dialectics" was first used by Socrates to denote the art of conducting debate or dialogue (fr. Gk. *dialegomai* "I converse"). Confrontation of ideas, rejection of false paths, gradual attainment of correct knowledge—all this is dialectics. We find it where there is conflict of opposites and struggle of ideas. Transferred later onto the objective world, it came to mean the presence in it of contradictions, their identification and resolution, struggle, development, progress.

subjective: it unfolds in the subject's mind as a reflection of the connections of objective being independent of man and of mankind, that is, of *objective dialectics*. Such is the materialist principle of the interpretation of the relationship between objective and subjective dialectics considered in their unity. Our view that the world is dialectical imperatively requires a dialectical approach to it. The measure of dialectical content in human thought is determined by the level of social practice and, accordingly, by the degree of the cognition of the dialectics of being, reflection of which is a necessary condition of rational orientation in the world and its transformation in the interests of men.

Dialectics affords a reflection of the extremely complex and contradictory processes of the material and spiritual world; it is "living, many-sided knowledge (with the number of sides eternally increasing), with an infinite number of shades of every approach and approximation to reality".⁷ Reflecting objective reality, all principles and laws of dialectics point at the same time to the correct manner of reasoning about the corresponding area of this reality. That is why dialectics is the theory "not of external forms of thought, but of the laws of development 'of all material, natural and spiritual things', i.e., of the development of the entire concrete content of the world and of its cognition, i.e., the sum-total, the conclusion of the *History* of knowledge of the world."⁸ Dialectics is not a mere statement of that which happens in reality but an instrument of scientific cognition and transformation, an instrument for moving from the domain of non-knowledge into the realm of knowledge, a methodology of knowledge based on action and a methodology of action based on knowledge. It is in this that the unity of dialectics as theory and as method is manifested.

The statement that dialectics is both theory and method does not mean that it is identical with Marxist philosophy as a whole. In the same way materialism, being a theory and a method, cannot be equated with philosophy as a whole. The point is that both dialectics and materialism, considered in this capacity, are the universal fundamental principles of Marxist philosophy which enable it to perform its worldview, theoretical, and methodological functions.

⁷ V.I. Lenin, "On the Question of Dialectics", *Collected Works*, Vol. 38, p. 360.

⁸ V.I. Lenin, "Conspectus of Hegel's Book *The Science of Logic*", *Collected Works*, Vol. 38, pp. 92-93.

Dialectics and metaphysics.

Dialectics emerged and developed in the struggle against the metaphysical method of thinking, or metaphysics.⁹ A characteristic feature of metaphysics has always been *one-sidedness*, abstractness, and the lifting of certain elements to an *absolute*. Placing a certain object outside the context of its natural links with other objects, a metaphysically thinking person ignores this integral context of the object's being, and it is only this context that can help to clarify the object's essence by demonstrating its links and role in the whole and in the movement of that whole. Metaphysics is characterized by the static mode of thinking, by the veering of thought from one extreme to the other, by exaggeration of some aspect of an object, such as stability, repetition, and relative independence.

Generally speaking, metaphysical elements in thought are not something unnatural or alien to the very essence of human knowledge. The fact is that man cannot attain knowledge without separating and dismembering the whole into constituent parts (these operations underlie the analytical capacity of thought). Neither can cognition do without involuntary, and at times quite voluntary, simplification: "We cannot imagine, express, measure, depict movement, without interrupting continuity, without simplifying, coarsening, dismembering, strangling that which is living. The representation of movement by means of thought always makes coarse, kills,—and not only by means of thought, but also by sense-perception, and not only of movement, but *every* concept."¹⁰ Characterizing metaphysics, Lenin used some very sharp words: "undeveloped", "crude", "dead", "rigid"; he referred to metaphysical materialism as "stupid" compared to "clever" dialectical idealism.

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The only antidote against metaphysics, and against dogmatism as a variety of metaphysics, is dialectics, with its requirement of flexibility of thought. True dialectical thought is in a sense the music of the spirit which

⁹ Metaphysics is derived from Gk. *meta ta physika* "that which comes after physics" (the title of Aristotle's work that came after Physics, or the theory of nature, in his collected works.—Tr.). In the history of philosophy the term "metaphysics" has often been used as a synonym for philosophy. In Marxism, the term is used to denote the antithesis of dialectics.

¹⁰ V.I. Lenin, "Conspectus of Hegel's Book *Lectures on the History of Philosophy*", *Collected Works*, Vol. 38, pp. 257-58.

grasps the finest interplay of the contradictions of life and consciousness, the shadings of opposites, the transition of some phenomena into others—in a word, the movement and becoming of that which is, its reflection in the logic of concepts. Dialectics brooks no stagnation and imposes no constraints on knowledge and its potential; dissatisfaction with that which has been attained is its element, and revolutionary activeness, its essence. For dialectical philosophy, “nothing is final, absolute, sacred. It reveals the transitory character of everything and in everything; nothing can endure against it except the uninterrupted process of becoming and passing away, of ascending without end from the lower to the higher”.¹¹

Dialectics is a creative theory inconceivable without constant development and enrichment. The pledge of such enrichment and development is unity with the historically developing social practice, with the needs of science and culture. Estrangement from real life, escape into "pure" theory results as a rule in scholasticism and metaphysics as the antipode of dialectics. To be an effective theory of the cognition and transformation of the world, materialist dialectics constantly processes new social practices, assimilating the living experiences of historical activity, and thus receiving new impulses for development towards perfection. This is a necessary condition of its viability. What does the connection between dialectics and real, practical life mean in real terms? On the theoretical plane, this connection means that the general philosophical materialist principle of historicism is applied to dialectics itself: none of its results are accepted as ready-made, final and immutable. Dialectics must demonstrate flexible thinking, reflecting in cognition all the real twists and turns of the object's movement. Only in this case can cognition fulfil its primary task of being concrete.

Materialist dialectics is expressed in a system of philosophical principles, categories and laws which are a means of understanding reality in all its essential forms of manifestation—in nature, society, and thought itself. Dialectical principles underlie the elaboration of a contemporary natural-scientific picture of the world. For instance, physics has got rid of the metaphysical notion of eternally existing simple particles of matter, having established that elementary particles are born and disappear, going through

¹¹ F. Engels, "Ludwig Feuerbach and the End of Classical German Philosophy", in: K. Marx, F. Engels, *Collected Works*, Vol. 26, Progress Publishers, Moscow, 1990, p. 360.

various transformations. The construction of a socio-historical picture of the world is also impossible without dialectics. It is dialectics that helps us to form a clear picture of the mechanism and character of the motive forces of social progress. On the dialectical-materialist approach to analysis of the facts of nature, social life and consciousness, it is possible to determine the laws of their development and scientifically predict the future, discovering real and rational methods of building that future.

Chapter II AN OUTLINE HISTORY OF PHILOSOPHY

1. A History of Pre-Marxian Philosophy

Each epoch in the life of mankind raised its own philosophical problems, and solved them in its own way. While retaining a certain measure of continuity, any newly emerging system rejected, in some degree or other, all the previous ones. The history of philosophy can be likened to the growth of a quaint-looking tree with constantly multiplying branches, each branch having form and colour entirely different from the others. Also, the branches of philosophical knowledge that appear to have long gone dead suddenly break into green leaf, bloom, and produce fruit, useful or illusory, as the case may be.

The evolution of philosophical ideas is a highly contradictory though, in the last analysis, progressive process, with numerous rises and declines, ideas far outstripping their day and time, and a great deal of back-tracking. It also often happened that progress in one direction was accompanied by retreat in another, which produced curious philosophical systems combining, e.g., elements of materialism with idealist explanations and ideas. Old philosophers, especially progressively thinking ones, often raised problems of which the solution demanded several generations of thinkers. On the whole the history of philosophy is the book of wisdom which, if we read it properly, can help a great deal in the comprehension of contemporary philosophical problems as well.

The philosophy of antiquity.

At the earliest stage of human culture, linked with the so-called mythological type of thought, the world perception of practically all the ancient peoples rested on a basically idealist attitude: the objects of the material world were treated animistically, and endowed with psychological traits inherent in man himself. But this kind of idealist world perception was not a philosophy in the proper sense. The starting point of philosophical

thought proper was “spontaneous materialism which at its beginning quite naturally regards the unity of the infinite diversity of natural phenomena as a matter of course, and seeks it in something definitely corporeal...”¹ rather than in something psychically ideal.

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The Greek thinker *Thales* of Miletus (c. 625-547 B.C.) expressed the idea that all things come from water and turn into water. This natural element was, according to Thales, the primary stuff or principle of all things and the carrier of all changes and transformations. These days, Thales’ idea about the first principle appears naive, but historically it was nearly revolutionary, for the proposition “everything comes from water” neatly discarded the gods of Olympus and thus ultimately the entire mythological thought, paving the way for a scientific explanation of nature. Thales’ successor *Anaximander* (c. 610-after 547 B.C.) believed that the first principle of all things was not a concrete matter but primary matter, or *apeiron*, which meant the “unlimited”. Another early Greek philosopher, *Anaximenes* (c. 585-c. 525 B.C.) believed air to be the primary matter.

The same materialist tendency manifested itself, if somewhat later than in European antiquity, in the cultures of the Ancient East, where idealist elements were dominant at the time of the birth of philosophy. Ancient Indian materialists, the adherents of Lokayata, regarded four elements—earth, water, fire and air—as the first principle of the world. In their view, combinations of these eternal and immutable elements gave an impetus to the development of the universe. The thinkers of ancient China counted wood and metal besides earth, water and fire among the basic elements.

Owing to a complex intertwining of mythological and spontaneously materialist tendencies at the early stage of the formation of philosophical concepts, human thought did not know, until a certain moment (marked in Europe by the emergence of the philosophy of Socrates), a clearcut distinction between materialism and idealism. At this stage, it was merely a question of *prevailing* tendencies, materialist or idealist. The “spontaneity” of ancient materialism was evident in that basically materialist propositions often assumed idealist mythological form, but already in those times the conflict between the materialist and idealist explanations of the world was

¹ F. Engels, “Dialectics of Nature”, in: K. Marx, F. Engels, *Collected Works*, Vol. 25, Progress Publishers, Moscow, 1987, p. 467.

an inner stimulus for the development of philosophy. This latent conflict manifested itself, in particular, in the emergence of ancient dialectics.

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The rudiments of dialectics, also spontaneous in character, were contained in the views of the very first thinkers of both materialist and idealist trends, who had some profound insights into the universal mutability of things, of their transformations into one another. Thus the ancient Chinese philosopher *Lao Tzu* (7th century B.C.) held the view that, achieving a definite stage of development, everything in the world is transformed into its opposite: the incomplete becomes the complete, the crooked the straight, the empty the full, and vice versa. This replacement of one opposite by another was regarded as a universal law of the movement of things, as an all-embracing flow, eternal emergence and disappearance.

The greatest dialectician of the ancient world was *Heraclitus* of Ephesus (c. 520-460 B.C.). He taught that everything that exists constantly goes from one state into another; everything flows and nothing abides; you cannot step twice into the same river; there is nothing fixed in the world; the cold becomes hot, the hot cools off, the wet dries, the dry becomes wet. Emergence and disappearance, life and death, birth and decline, being and non-being are interconnected, they mutually condition each other and pass into each other. At its extreme, the idea of continuous flow resulted in antiquity in the absolute relativism of *Cratylus* (5th century B.C.), who said that one could not step even once into the same river, let alone twice. If everything is flow only, and there is nothing stable, there is nothing that thought can rest on, and knowledge is impossible. Movement outside rest is metaphysics turned inside out. However, Heraclitus himself realized that, even as it changes, a flowing river finds repose. According to his belief, a transition from one state into another proceeds through a struggle of opposites, which he called the eternal “universal logos”, that is to say, the universal law common to all existence. “This universe, which is the same for all, has not been made by any god or man, but it always has been, is, and will be—an ever-living fire, kindling itself by regular measures and going out by regular measures.” The dialectics of Heraclitus, who took into account both aspects of any phenomenon—its mutability and its unchangeable nature—was not properly understood by his contemporaries, and was criticized from various standpoints already in antiquity. Cratylus, as we have mentioned, ignored the element of stability, while the Eleatics—*Xenophanes* (c. 570-478 B.C.), *Parmenides* (late 6th-5th cent. B.C.), and *Zeno* (the

middle of the 5th century B.C.)— focused, on the contrary, on the element of stability, reproaching Heraclitus for exaggerating the role of mutability. Recognizing that the world of sensuous data is unstable and changeable (it is born, it flourishes, and it dies), the Eleatics opposed to this indefinite and unstable sensuous world the world of indivisible immutable being open to pure reasoning, which alone can be recognized as true being. Because of the spontaneity of the Eleatics' materialism and their tendency to oppose thought to matter, they declared the ideal world to be a realm of metaphysical rest, although they stressed dialectics in relation to the external world. They regarded eternity as an attribute to truth. Thus a dramatic situation in the development of knowledge arose: some melted down all that exists in the flow of fire, while others crystalized it, as it were, in immutable stone.

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Thus the ancient philosophers developed the rudiments not only of dialectics but also of metaphysics, which resulted from absolute opposition of matter and thought.

Beginning with Heraclitus, materialist and idealist tendencies proper became increasingly distinct in Greek philosophy. The materialist tendency was first philosophically substantiated in the atomistic doctrine of *Leucippus* and especially *Democritus* (c. 460 B.C.). The atomists regarded the world as an integral whole consisting of an infinite number of atoms—tiny, invisible and indivisible particles that move (“dash this way and that”, “are jolted in all directions”) in void. According to Democritus, atoms are material, they are indivisible owing to their absolute density, extreme smallness and absence of pores within them. They infinitely vary in form, size and weight: some are rough, others, round, still others angular or hooklike. Man's soul also consists of atoms, Democritus believed, only these soul atoms are more mobile, they are smaller and rounder than the rest. Atoms and void are the only reality; combinations of atoms form the entire diversity of nature, including the human soul. Thus Democritus was the first ancient philosopher to overcome the opposition of matter and spirit through asserting the unitary universal nature of matter and thought. For this reason, the inception of materialism as a philosophical doctrine is linked with the name of Democritus.

The atomistic theory explained natural phenomena in terms of natural causes, thus freeing men from the mythological fear of mysterious forces. Democritus taught that the world was not created by any god but existed

eternally, that everything in it moved and changed, passing from one state to another through combination and division of atoms, and that all phenomena were subject to causal connections. Democritus rejected a source of motion that would be external with respect to matter.

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Democritus' atomistic theory of the inner causes of the eternal motion of matter was further developed in *Epicurus* (341-270 B.C.). The movement of atoms, Epicurus said, is determined by their inner property of weight. Still more important was, in his view, the ability of atoms to deviate spontaneously in their movement from the straight line. The spontaneous deviation of atoms was the minimum of freedom in nature without which not only random phenomena but also men's free actions were inexplicable. The rational use of the freedom of action permitted to man consisted, according to Epicurus, in achieving health of body and quietude of mind. The pleasure principle, which he posited as the highest good, was to be implemented through philosophical meditation. Since most suffering of the soul came from the fear of death and the fears caused by the mythological belief in the supernatural divine forces, in the immortality of the soul and in fate, a rational worldview explaining all things by natural causes was necessary to free oneself from these fears and sufferings.

The materialist ideas of Democritus and Epicurus were later developed by the ancient Roman thinker *Titus Lucretius Carus* (c. 99-55 B.C.). According to Lucretius, the universe is infinite in time and space, although the worlds that form it, including the earth, are temporal, like everything that consists of particles. But life in the universe will never cease. In rejecting the emergence of the world at the will of the gods, Lucretius criticized in fact the idealist religious doctrine of the immortality of the human soul (he was the author of the dictum: "nothing can be created out of nothing").

Although the spontaneous materialism of the ancient thinkers was, on the whole, a great achievement, it has to be pointed out that there were elements of idealist constructions in the philosophy of Democritus, who believed in the existence of gods consisting of atoms of nearly eternal configurations, and who was inclined to a mechanistic interpretation of causality, to the detriment of dialectics; also in the philosophy of Epicurus, who recognized the existence of gods and their non-interference in the course of natural phenomena and men's affairs; and in the philosophy of Lucretius, who rejected the interference of gods in earthly life yet recognized

the existence in the world of some hidden force beyond the power of the simple principle of causality.

Philosophical idealism took shape in the struggle with the materialist worldview. The founder of the consistent philosophical system of objective idealism was Plato (427-347 B.C.).

41

According to Plato, only the world of ideas represents true being, while concrete things are something intermediate between being and non-being; they are nothing but the “copies” of ideas. Ideas were interpreted by Plato as ideal images—models for the sensuously perceived world of things. Abstracting ideas from the reason of concrete human beings, Plato declared the world of ideas to be a divine kingdom in which man’s immortal soul existed before his birth. It then went to this mortal earth, where, temporarily abiding in the human body like a prisoner in a dungeon, it “recalled” the world of ideas.

The relationship between thinking and being was turned upside down in Plato’s philosophy, and out of this false premiss the philosopher deduced the idealist interpretation of the process of cognition. He believed that the senses deceived man, so he advised man to “get rid of eyes and ears”, and to trust himself to the soul recalling her divine past.

Plato’s objective idealism was combined with the dialectical method of philosophical reasoning—the dialectics of one and many, of the identical and different, of motion and rest. Characteristic of Plato’s philosophy of nature, just as of the Pythagoreans, was its links with number symbolism believed to rule the world of sensuous data. Despite its idealist character, the dialectics of concepts worked out by Plato was of invaluable significance for the subsequent development of dialectical logic.

Antiquity, which gave rise to the materialist and idealist lines in philosophy, also produced the first attempts to reconcile these two lines in a single philosophical system. One of the summits of philosophical thought in ancient Greece, in this respect, was the work of *Aristotle* (384-322 B.C.)—an encyclopaedia of ancient science comprizing profound materialist and dialectical ideas as well as elements of idealism. The starting point of Aristotle’s work on philosophy was opposition to Plato’s idealism (it is Aristotle who is said to have declared: “Plato is dear to me, but dearer still is truth”). In his early works, Aristotle substantiated his critique of idealism, endeavouring to overcome the Platonic gap between the world of sensuous things and that of ideas. Recognizing the objective existence of matter,

Aristotle regarded it as eternal and impossible to create or destroy. Matter cannot emerge out of nothing, he said, neither can it increase or decrease quantitatively. In his later works, though, he partially reverted to Plato's world of ideas as the primary matter. In itself matter is passive, Aristotle asserted. It contains merely the potential for the actual diversity of things, in the same way as marble holds the possibility of different statues.

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In order to turn this possibility into reality, matter must be given the necessary form. The function of form-building is performed by the mind, which is the prime mover. By form Aristotle meant the active creative factor preceding the thing and making it real. Form is the stimulus and the goal, the ideal image, the cause of development of diverse things out of uniform matter, and matter is a kind of clay. For all kinds of things to emerge out of clay, a "potter" is needed, and that potter is God or the mind, the prime mover. The principal mover of the world is God defined as the form of all forms, as the cause and at the same time the crowning glory of the universe. The later Aristotle thus divorced the form of things from the things themselves, transforming form into an independent substance on the model of Plato's world of ideas. In epistemology, though, Aristotle consistently defended the materialist positions. To study the world means to discover the forms, but to achieve this, we must take as our starting point the reality that is given us, not the forms themselves. Particular things are variable, while their particular forms are invariable: this dictum of Aristotle merges dialectics and metaphysics in a single whole. At the same time Aristotle was one of the first philosophers to work out a detailed classification of the forms and modes of rational thought. His theory of the most general philosophical concepts, or categories (quantity, quality, relation, essence, time, space, etc.), in terms of which he endeavoured to express the dialectics of being and thinking, was a great contribution to the theory of scientific knowledge. Aristotle was the founder of formal logic, just as Plato was the founder of dialectical logic.

The philosophy of the Middle Ages.

The Middle Ages cover a long stretch of the history of Europe, from the fall of the Roman Empire to the Renaissance—nearly a whole millennium. In the early Middle Ages, Christian dogmas evolved along with the formation of the European states after the collapse of the Roman Empire

(5th century A.D.), while the later Middle Ages (beginning with the 11th century) are associated with the spreading of feudalism, which used Christianity as its ideological basis, clarifying and deepening the details of this worldview in accordance with its own demands.

The idealist orientation of most mediaeval philosophical systems was prompted by the dogmas of Christianity, of which the most important were the dogma of the personal form of the one God the Creator, which rejected out of hand the atomistic doctrines of antiquity (this dogma was primarily worked out by St. Augustine); and the dogma of the creation of the world by God out of nothing; this last dogma erected an insurmountable barrier between the ideal world of God the Creator and the material world of earthly life, it asserted the latter's derivative origin from the ideal will of the Supreme Being and, moreover, it also assumed the limitedness of the world in time (the beginning and the end of the world).

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Subject to these harsh dictates of religion supported by state authority, philosophy was declared to be the maidservant of theology (St. Pietro Damiani's formula) expected to use the power of the rational apparatus to confirm the dogmas of Christianity. This philosophy came to be known as scholasticism (fr. L. *scholasticus* "learned", fr. Gk. *schole* "school"). All truth was believed to have been given in the biblical texts, so it was necessary to apply a system of correctly constructed syllogisms to actualize that truth by deriving the entire fulness of logical consequences. Naturally, scholasticism relied in this respect on the heritage of antiquity, particularly on Aristotle's formal logic. Since the biblical texts and the symbols of faith were mystical or allegoric in character, their unambiguous interpretation demanded sophisticated logic, a kind of scholastic rationalism, which treated, for example, the dogma of the Trinity, i.e. of the three hypostases of the one God, as a model of logical problems. The content of scholastic debates had no serious impact on philosophy, but in terms of the technique of reasoning scholasticism proved very useful for the development of logic.

Orthodox scholasticism was systematized by the Dominican monk *Thomas Aquinas* (1225/26-1274), who set himself the goal of elaborating the Christian dogmas in the forms of common sense. Relying on the later Aristotle, he canonized the Christian view of the relationship between the ideal and the material as the relation of the original principle of form ("the principle of order") to the wavering and unstable principle of matter ("the weakest form of being"). The merging of the first principle of form and

matter gives rise, according to Thomas Aquinas, to the world of individual phenomena. The soul of man is the form-building principle, but it only becomes fully and individually implemented when it is combined with the body.

This last proposition put the finishing touch to one of the most acute controversies of Christian scholasticism. A distinctly idealist system as far as its fundamental postulates are concerned, emergent Christianity, and thus scholasticism as well, were inevitably concerned with their attitude towards matter, for the third hypostasis of the supreme absolute deity, Jesus Christ, was revealed in the form of man, combining both the divine (ideal) and human (material-corporeal) nature. The very fact of this merging made it impossible to ignore matter entirely as false being, as a nothing (as the dogma of creation out of nothing demanded); therefore Thomas Aquinas' use of a whole system of sophisticated arguments to qualify matter as the "weakest form of being" was seen by the church as a way out of the logical cul-de-sac. Matter was partially "justified" in scholasticism, while still relegated to a dependent position.

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But the conflict between matter and spirit was manifested most acutely in the mediaeval controversy between the realists (fr. L. *realis* "material") and nominalists (fr. L. *nomen* "name"). The debate was concerned with the nature of universals, or general concepts. The realists (Johannes Scotus Erigena, and mostly Thomas Aquinas), relying on Aristotle's proposition that the general exists as indivisibly linked with the individual, being its form, developed the theory of the three kinds of the existence of universals: "before things"—in divine reason; "in the things themselves", of which universals are the essences or forms; and "after things"—in the human mind, as results of abstraction. This position is known in the history of philosophy as "moderate realism", distinct from "extreme realism" insisting that the general exists only outside things. The extreme realism of the Platonian variety, despite all its apparent suitability to idealist scholasticism, could not be accepted by the Orthodox Church since matter was partially justified in Christianity as one of the two natures of Jesus Christ.

The nominalists, like Roscelin, were much more materialistically minded than even the moderate realists; they carried the idea of negation of the objective existence of the general to the logical end, believing that universals only exist in the human mind, in thought; in other words, they rejected not only the presence of the general in a concrete individual thing but also its

existence “before the thing”, and that was tantamount to the materialist view of the primacy of matter. Universals, Roscelin said, are nothing but the names of things, and their existence is reducible to the vibrations of the vocal chords. Only the individual exists, and only the individual can be the object of knowledge.

It was only to be expected that the church accepted the moderate realism of Thomas Aquinas, while Roscelin’s nominalism was condemned already at the Council of Soissons in 1092.

Thus, despite the idealist character of the entire mediaeval philosophy, the confrontation of the lines of Plato and Democritus continued in it, although it was mostly expressed in logical terms. The mediaeval controversy on the nature of universals had a considerable impact on many philosophical doctrines, especially those of such major thinkers of the Modern Times as Hobbes and Locke. Elements of nominalism also occur in Spinoza, while the technique of the nominalist critique of the ontologism of universals was used by Berkeley and Hume in the shaping of the doctrine of subjective idealism. The realist proposition concerning the presence of general concepts in human consciousness later formed the basis of idealist rationalism of Leibniz and Descartes, while the idea of the ontological independence of universals was absorbed by classical German idealism.

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Mediaeval philosophy made a significant contribution to further development of epistemology by working out and clarifying all the logically possible versions of the relations between the rational, the empirical, and the a priori—the relations which later became not just the theme of scholastic arguments but the basis for natural-scientific and philosophical knowledge.

The philosophy of the Renaissance.

The growth of industry, commerce, navigation, and the military arts, i.e. the development of material production, conditioned the progress in the technical sciences, in natural science, mathematics, and mechanics. All this required the freeing of reason from scholasticism and a transition from purely logical problems to natural-scientific cognition of the world and man. This tendency was manifested in the views of the major thinkers of the Renaissance permeated with the idea of humanism. *Nicholas of Cusa* (1401-1464) asserted the power of human knowledge; through the creative activity

of his mind (“A man is his intellect”) man became like God, as it were. The idea of Nicholas of Cusa that “in God there is a coincidence of opposites” is close in content to dialectics, as is the idea of the relationship between part and whole: the particular indicates the pre-existence of the whole. He also meditated on the boundaries of applying the law of contradiction in mathematical knowledge and on the possibility of using mathematical concepts in the study of nature.

For *Pico della Mirandola* (1463-1494), the central idea was elevation of man through his involvement in all things terrestrial and celestial. The fact that man is free in his choices makes him cosmically unbound, and asserts his creative capacity for self-determination. The pantheistic views of that thinker were close to those of Nicholas of Cusa. *Nicolaus Copernicus* (1473-1543) is universally known for the revolution he brought about in astronomy by asserting the heliocentric system.

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Michel de Montaigne (1533-1592), author of the famous *Essais*, endeavoured to prove that human thought must be constantly perfected on the basis of objective cognition of the laws of nature to which the lives and activities of men were also subject. His scepticism was a symbol of the restlessness of intellect, of constant creative search. *Giordano Bruno* (1548-1600) also believed nature, not God, to be the goal of philosophical knowledge, and he expressed the idea that nature and the number of worlds in the universe were infinite. He held pantheist views,² and he was not averse to the dialectical idea of the coincidence of opposites. *Galileo* (1564-1642) was one of the founders of experimental-theoretical natural science; he laid the foundations of classical mechanics. In epistemology, he believed that two methods, analysis and subsequent synthesis, had to be used in the movement from the sensuous perception of natural phenomena to their theoretical understanding. True knowledge appears as the unity of the synthetic and the analytical, of the sensuous and the abstract.

All this, taken together, changed men's views of the world and the position of man in it, imposing a deep imprint on the character of all subsequent science and philosophy. In this epoch, the philosophical ideas of

² Pantheism (fr. Gk. *pan* “all”, *theos* “God”)—identification of the world and God: everything is God—the only thing that exists. There is nothing outside God, but God, too, does not exist outside the world. This doctrine, originated in antiquity, survived the Middle Ages, and developed in the Modern Times.

antiquity were born anew, as it were. The old involvement with man and the old spontaneous materialist tendencies were revived on a new historico-cultural soil enriched by the influence of mediaeval Arabic culture, by the emergence and strengthening of university science along with monastery schools. Another factor here was the needs of socio-historical practice, which gave a powerful impulse to the development of the natural sciences and the humanities in which the foundations of the experimental natural science of the Modern Times were laid.

The European philosophy of the 17th and 18th centuries.

The development of experimental knowledge demanded the replacement of the scholastic method of thinking by a new one, directly addressed to the real world. The principles of materialism and elements of dialectics were revived, and developed, in a new atmosphere. Increasing knowledge of nature confirmed the truth of materialism and rejected the basic propositions of idealism, but the materialism of those times was *mechanistic* and *metaphysical*.

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Since other sciences, such as chemistry and biology, were at the embryonic stage, the standpoint of the most advanced sciences of those times, mechanics and mathematics, naturally seemed universal. The thinkers of that period saw mechanics as the key to the mystery of the entire universe. The application of the mechanical method resulted in striking progress in the cognition of the physical world. The notion of the mechanical determinedness of natural phenomena was greatly consolidated by the powerful influence of Newton's discoveries, as his views were based on a sound mathematical substantiation of mechanical causality. Mechanics, however, knows only motion—it does not know development. That was why the method of thinking used by philosophers was largely metaphysical in those times, too.

The English philosopher *Francis Bacon* (1561-1626), the founder of materialism in the Modern Times, believed that philosophy had to be above all practical: where it remained scholastic and speculative, it was not true. Bacon said of schoolmen that their wit and mind works upon itself, as the spider works his web—admirable for the fineness of thread and work but of no substance or profit. It was Bacon who kindled the torch of new knowledge based on the methodology of experimental natural science which

he asserted as the pledge of man's future power and dominion over nature. Man can only master nature by obeying her laws. The conclusions of science must be based on facts, and serve as the basis for broad generalization. The inductive method, introduced by Bacon and implying observation, analysis, comparison, experiment, fully suited experimental knowledge. Experience can only provide reliable knowledge if the mind is free of certain false idols. The "idols of the tribe" are errors following from the fact that man judges nature on the analogy of man's life; the "idols of the cave" are errors of individual character depending on education, tastes, and habits of individuals; the "idols of the market-place" are the habits of basing judgements of the world on common notions and opinions uncritically absorbed; the "idols of the theatre" are linked with blind faith in authorities. Never invoke anyone's authority—that was the principle of the science of the Modern Times which upheld Horace's motto: "I am not bound over to swear allegiance to any master". Bacon believed that the true connection between things lay in natural causality. However, it is important to note Bacon's "theological inconsistency": while proclaiming materialist principles, Bacon permitted the existence of God, and gave a largely idealist interpretation of the laws of social life.

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Bacon's materialism was further developed and defended by the English philosopher *Thomas Hobbes* (1588-1679). According to Hobbes, matter is eternal but individual bodies are temporary.

He saw the motion of matter as the movement of bodies in space, that is to say, as mechanical motion, and he viewed not only all natural bodies but also man and society as mechanisms. Unlike Bacon, Hobbes resolutely rejected religion, and believed it to be incompatible with science, although his view of religion was not consistent: he reserved for it a place in society as a means of holding the masses in check. Besides, Hobbes' materialism was metaphysical: thus, in his interpretation of motion as the result of collision of two bodies he was practically inclined to the theory of the first push given by God (a standpoint known as deism).³ Hobbes believed that all knowledge is attained through sensations, but in his epistemological writings he

³ Deism (fr. L. *deus* "God")—the philosophical doctrine that reduced the role of God to a mere act of creation and held that, after the original act, God virtually withdrew and refrained from interfering in the process of nature and the ways of man.

stressed the importance of reason, and especially the mathematical operations of intellect.

As we have seen, Bacon mostly worked on the method of empirical, experimental study of nature, while Hobbes somewhat extended the boundaries of Bacon's empiricism by turning to mathematics; now, *René Descartes*, the French scientist and philosopher (1596-1650), placed reason first, reducing the role of experience to that of mere practical verification of the data of intellect. He endeavoured to work out a universal method for all sciences on the basis of the theory of rationalism⁴ which assumed the existence in the human mind of innate ideas largely determining the results of cognition. He counted among innate ideas most of the foundations of mathematics and logic (e.g., "things which are equal to the same thing are equal to one another"). Descartes' view of nature was mechanistic in character: to him, the universe was one enormous mechanism, a changeable one, and with a history of development of its own. The first push to the existence and development of the world is given by God, but the world's later development is determined by the independent creative force of matter. Descartes was one of the first to work out the idea of evolution, albeit on a mechanistic basis, and he implemented that idea in all the areas of the science of nature—from the formation of the celestial bodies to the emergence of plants, animals and man.

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The stars and planetary systems were formed, according to Descartes, by the vortical motion of matter: world matter is infinite, homogeneous, it has no empty spaces, and is divisible *ad infinitum*. At this point Descartes was one of the first to approach the idea of material unity of the universe. Matter is in constant quantitative and qualitative motion determined by the universal laws of mechanics. The organic world is subject to the same laws: animals are no more than complex machines. Unlike animals, man is endowed with reason and speech, which go beyond the sphere of the action of mechanical laws. To explain these phenomena, Descartes had to admit, along with material substance or extension, the existence of God and of a spiritual, thinking substance derivative from God, that is, of the soul. Dualism is thus a characteristic feature of Cartesian philosophy.

⁴ Rationalism (fr. L. *ratio* "reason")—the philosophical position that reason (thought) is the source of knowledge and the criterion of its truth.

To Descartes, the first question of philosophy was that of the possibility of true knowledge, and the problem of method through which such knowledge can be obtained. In dealing with this issue, Descartes had to overcome philosophical scepticism. In the nature of cognition, it is precisely the imperative of doubt embracing all knowledge that leads to the assertion of the possibility of reliable knowledge. Realizing that I am probably deceived by someone very powerful and cunning, Descartes reasons, I begin to doubt everything, but I cannot doubt that I doubt, I cannot doubt that my doubt and thought exist. Hence Descartes' famous dictum: "I think—therefore I am." He reaches out towards the truth of the being of things through the truth of the thought and existence of the thinking being.

Descartes' method of scientific cognition is called analytical, or rationalist. This method requires clarity and consistency in the operations of thought itself (ensured by mathematics), division of the object of thought into elementary parts studied first separately and then the motion of thought from the simple to the complex. No boundaries should be set to the human mind, says Descartes: there is nothing so distant that it could not be reached, nor anything so secret that it could not be discovered.

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The materialist aspects of Descartes' views were further developed by the Dutch philosopher *Benedict Spinoza* (1632-1677), who opposed materialist monism⁵ to dualism. He resolutely rejected the concept of thought as a special substance existing by itself and manifesting itself through itself. God, the ideal and the material merged in Spinoza in a single infinite substance (a position known as naturalist pantheism). Spinoza asserted that there exists a single substance outside consciousness, one that is the cause of itself (*causa sui*) and does not need any other causes. The God of Spinoza is inseparable from nature and entirely devoid of any properties of person. The necessity of causes and consequences following from the inner laws of substance is the only principle of the world order. The single substance possesses two cognizable attributes or inalienable properties—extension and thought. Matter has extension, and matter, beginning with stone and ending with the human brain, is capable of thought, although in varying degrees: human thought is a particular case of thought in general. And that is a

⁵ Monism (fr. Gk. *monos* "one")—the philosophical system which explains all the diversity of the world in terms of one substance only—either matter or spirit.

position known as hylozoism.⁶ Spinoza interpreted thought as the self-consciousness of nature, and this made his position monistic. Hence the principle of the knowability of the world, and the profound conclusion that “the order and connection of ideas is the same as the order and connection of things”. The wider the range of things with which man comes in contact, that is, the more active the subject, the more perfect the thought. The measure of the perfection of thought is determined by the measure of its agreement with the general laws of nature, and correctly cognized general forms and laws of the world are the true rules of thought. To understand a thing means to perceive the universal element underlying its individuality, it means to proceed from *modus* to substance. Reason endeavours to grasp in nature the inner harmony of causes and consequences. This harmony is knowable when reason, not content with direct observation, proceeds from the entire totality of impressions.

By defining nature as the only basis or substance whose being follows from its essence, Spinoza put aside as irrelevant the question of the origin of nature and thus of God as the creator, challenging the pivotal dogma of Christianity concerning creation out of nothing. Spinoza’s only concession to the times was his use of words: he called nature God and God nature. Apart from Spinoza’s great achievement—demonstrating the substantial unity of the world, his views also contained certain elements of a dialectical world perception—of the unity of the finite and the infinite, of one and many, of necessity and freedom. It was Spinoza who produced this classical formula: “Freedom is a recognized necessity.”

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The English philosopher *John Locke* (1632-1704) was against subordinating knowledge to revelation; he insisted that faith could have no authority in the face of clear and obvious experiential data. He considered the idea of God vague and uncertain, and rejected the notion of innate ideas, believing that the source of all our knowledge is experience and sensation. Men are not born with ready-made ideas. The mind of a newborn baby is a *tabula rasa* on which life draws its patterns, that is, knowledge. In this way

⁶ Hylozoism (fr. Gk. *hyle* “matter”, *zoe* “life”)—the philosophical position that all matter possesses the property of being alive, and in the first place sensitiveness, capacity for sensation and perception.

Locke substantiated sensualism,⁷ opposed to the rationalism of Descartes. There is nothing in the mind that was not earlier in the sensations—that was Locke’s main postulate. Sensations are produced by the action of external things on our sense organs. That is what external experience consists in. As for the inner experience, or reflexion, it is the mind’s observation of its own activity and the modes of the manifestation of this activity. But Locke’s interpretation of inner experience was influenced by rationalism: he conceded that a certain spontaneous force independent of experience was inherent in the mind, and that reflexion generated the ideas of existence, time, and number. While rejecting innate ideas as extra-experiential and pre-experiential knowledge, Locke recognized the existence in reason of certain inclination or predisposition for a given kind of activity. He singled out three kinds of knowledge according to the degree of its obviousness: actual (sensuous or immediate) knowledge of individual things; demonstrative knowledge attained through inference, as e.g. through comparison and relationship between concepts; and the highest kind—intuitive knowledge or direct evaluation by reason of the correspondence or lack of correspondence between ideas. Developing Hobbes’ ideas on the connection between language and thought, he proposed the concept of semiotics as a general theory of signs and their role in knowledge. He made a vast impact not only on the subsequent development of materialistically oriented philosophy but also largely determined the further developments in pedagogics and psychology through his pioneering studies in the dialectics of the innate and the social.

52

The German philosopher *Gottfried Leibniz* (1646-1716) developed the ideas of objective idealism contained in Plato’s heritage. He expressed certain profound ideas of dialectical nature. He insisted, for instance, that the world consists of tiny elements or monads—spiritual elements of being possessing activeness and independence, continually changing and capable of suffering, perception and consciousness. As distinct from Spinoza, Leibniz thus added to the concept of substance that of active force, or the Aristotelian principle of the self-motion of matter. But Leibniz removed the

⁷ Sensualism (fr. L. *sensus* “sensation”)—the philosophical position deriving the entire content of knowledge from the work of the sense organs and reducing it to the sum of elements of sensuous knowledge. The sensualists believe that thought cannot produce anything fundamentally new compared to sensation.

pantheistically perceived God from Spinoza's single substance. According to Leibniz, God towers above the corporeal world, being its "culprit and master". The unity and agreement among the monads is the result of divinely pre-established harmony. Thus the lower monads have but the vaguest representations (that is the state which the inorganic world and the vegetable kingdom are in); in animals, the representations reach the stage of sensation, and in man, that of clear understanding, of reason. Attributing to monads active force as their principal property, establishing the energy links between them, and, on the other hand, defending the idea of God the Creator, Leibniz through theology arrived at the principle of the inseparable (and universal, absolute) connection of matter and motion.

Rejecting the notion of space and time as self-contained principles of being existing apart from matter and independently of it, he regarded space as the order of mutual arrangement of a multitude of individual bodies existing outside one another, and time, as the order in which phenomena or states of bodies succeed one another. One of the major achievements of Leibniz's philosophy was his theory of an individual monad as a concentrated world, as a mirror of the one infinite universe. Despite the idealist basis of Leibniz's system, his dialectics of the general and the individual was highly appreciated in dialectical materialism. In his logical studies Leibniz worked out a rational logical symbolism, and revealed the structure and laws of proof as one of the fundamental devices used by rational cognition. He was one of the founders of modern symbolic and mathematical logic.

The 17th and 18th centuries in England were marked by the development of idealist sensualism, of which the most prominent proponents were *George Berkeley* (1685-1753) and *David Hume* (1711-1776).

A convinced adherent of religion, Berkeley undertook a critique of the notion of matter. Relying, on the one hand, on extreme nominalism (and thus challenging the authority of Thomas

Aquinas, who asserted moderate realism in Christianity), and on the other, on a one-sided interpretation of Locke's sensualism, he considered the concept of matter to be general and therefore false, for underlying it is the assumption that we can ignore the particular properties of things constituting the content of our sensations, and form an abstract idea of matter in general as the substratum common to all of them. However, we perceive not matter as such but only the individual properties of things—

taste, smell, colour, etc., of which the perceptions Berkeley called ideas. The things surrounding us exist as ideas in the mind of God, who is the cause and the source of earthly life.

Berkeley's subjective idealism is a logical confusion of religious idealist views and the one-sided elements of nominalism and sensualism. In order to avoid solipsist conclusions from these premisses, Berkeley introduced the concept of collective consciousness, which is determined by God. Here Berkeley relied on realism and even rationalism, but this concession to objective idealism did not change the essence of his doctrine, which remained subjective idealist.

Hume developed a system somewhat different from Berkeley's but also essentially subjective idealist, directed primarily towards agnosticism. To the question whether the external world existed, Hume gave an evasive answer, "I do not know". He believed that man could not go beyond his own sensations and understand something outside himself. For Hume, true knowledge could only be logical, while the objects of study concerning facts could not be proved logically, being derived from experience. Hume interpreted experience as a flow of impressions whose cause was unknown and unknowable. Inasmuch as experience cannot be logically substantiated, experiential knowledge is unreliable. Thus experience can produce first one impression of a certain phenomenon and then another. But the fact that one phenomenon precedes another in experience cannot logically prove that the former is the cause of the latter. In itself, this proposition is indubitably correct. From this, though, Hume drew the erroneous conclusion that the objective character of causality was unknowable. Rejecting objective causality, he recognized at the same time subjective causality in the form of generation of ideas (memory images) by sense impressions. Eventually Hume lost all criteria of the truth of knowledge and was forced to declare belief rather than theoretical knowledge to be the source of practical certainty. Thus we are practically certain that the sun rises every day. This certainty comes from the habit of seeing this phenomenon repeated every day. Hume applied Berkeleian critique of the idea of substance not only to matter but also to ideal being, and this developed into critique of the church and religious faith.

The second half of the 18th century was an epoch of acute aggravation of the conflict between the feudal and bourgeois worldviews, particularly in France. This conflict came to a head in the bourgeois revolution.

Ideologically, it was prepared in the works of the 18th-century French philosophers: *Voltaire* (1694-1778), *Rousseau* (1712-1778), *Diderot* (1713-1784), *La Mettrie* (1709-1751), *Helvétius* (1715-1771), and *Holbach* (1723-1789). They resolutely fought against religion and the socio-political order in contemporary France.

Overcoming the inconsistencies of Locke and rejecting the idealism of Berkeley, the materialistically minded French philosophers defended materialism in its mechanistic form, although some of their views contained elements of dialectics—cf., e.g., Diderot's conception of the development of organisms. According to that theory, nature, or matter, is the cause of everything; it exists by itself, and it will continue to exist and to act eternally; it is its own cause. All material bodies consist of atoms. In relation to man, matter is everything that acts in one way or another on the sense organs. The 18th-century French philosophers regarded religion as a spiritual weapon of enslaving the people, and a tool in the hands of the tyranny. The path of liberation of the people from religion and prejudice lay through enlightenment. At this point they were close to the principles of atheism, and to an understanding of the need for a revolutionary transformation of social life: man and the personal qualities of man depended on the environment, so his vices were also the result of the environment. To remould man, to free him from shortcomings, and to develop his positive aspects, it was necessary to transform the environment, in the first place social environment. This doctrine played a great role in the philosophical substantiation of the ideas of utopian socialists.

Classical German philosophy.

At the turn of the 19th century, Germany, overcoming its economic and political backwardness, was nearing a bourgeois revolution; just as in France, the socioeconomic revolution was preceded by a philosophical one.

An important role in the formation of classical German philosophy was played by the achievements of natural science and the social sciences: chemistry and physics began to develop, and the study of organic nature made considerable advance. Mathematical discoveries which afforded an understanding and precise quantitative expression of natural processes; Lamarck's theory of the conditioning of the organism's evolution by the environment; astronomical, geological, and embryological theories, as well

as theories of human society—all this pushed into the foreground, resolutely and inevitably, the idea of development as a theory and as a method of cognition of reality.

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Immanuel Kant (1724-1804) was one of the greatest minds mankind ever knew and the founder of classical German idealism. It was with Kant that the dawn of the philosophy of the Modern Times broke. But he was a shrewd and profound thinker not only in philosophy. His theory of the origin of the solar system out of a giant gas nebula still remains one of the fundamental scientific ideas in astronomy. Kant's natural scientific works broke down the wall of the metaphysical explanation of nature, as he made his attempt to apply the principles of contemporary natural science not only to the structure of the universe but also to the history of its origin and development. Apart from this, he put forward the idea of lining up animals in the order of their possible origin, and the idea of natural origin of the human races.

Kant believed that the solution of the problems of being, of morality and religion must be preceded by a study in the possibilities of human knowledge and the boundaries of human knowledge. According to Kant, the necessary conditions of knowledge are inherent in reason itself, forming the basis of knowledge. It is these conditions that lend knowledge the properties of necessity and universality. They are also the absolute boundaries of reliable knowledge. Kant distinguished between the appearances of things as they are perceived by man and the things as they exist by themselves. We do not study the world as it is in reality but only as it appears to us. Only phenomena constituting the content of our experience are accessible to our knowledge. The impact of "things-in-themselves" on our sense organs results in a chaos of sensations, which is brought to unity and order by the power of reason. What we regard as the laws of nature are in actual fact the connection brought into the world of phenomena by reason; in other words, reason prescribes laws to nature. But corresponding to the world of phenomena is the essence of things independent of human consciousness, or "things-in-themselves". Absolute knowledge of these is impossible. To us, they are only noumena, that is to say, intelligible essences not given in experience. Kant did not share the boundless belief in the power of human reason, referring to this belief as dogmatism. He believed there was a certain moral sense in the fundamental limitations of human knowledge: if man

were endowed with absolute knowledge, he would face neither risk nor struggle in the performance of his moral duty.

56

Kant was convinced that the ideas of time and space are known to man before perception. Space and time are ideal, not real. Sense impressions are interconnected by means of judgements based on categories or general concepts which, according to Kant, are purely logical forms characterizing pure thought and not its subject. The categories are given to man before all experience, that is to say, *a priori*.⁸ Dialectics figured prominently in Kant's epistemology: contradiction was regarded as a necessary element of cognition. But dialectics was for Kant merely an epistemological principle, it was subjective as it did not reflect the contradictions of the things themselves, merely the contradictions of intellectual activity.

Kant's philosophy was not free from compromise with idealism. Endeavouring to reconcile science and religion, Kant said he had to limit the domain of knowledge to give room to faith.

After Kant, classical German philosophy was developed by such outstanding philosophers as *Fichte* (1762-1814) and *Schelling* (1775-1854). Both of them tried to overcome the Kantian opposition of phenomenon and noumenon by grounding cognitive activeness in some unitary principle—the absolute ego, as in Fichte, or the absolute identity of being and thinking, as in Schelling. The latter carried out a subtle analysis of the categories of dialectics, such as freedom and necessity, identity, one and many; this analysis anticipated Hegelian objective-idealist dialectics. Schelling's studies in the philosophy of nature made a great impact on the minds of natural scientists.

The highest achievement of classical German philosophy was the dialectics of *Hegel* (1770-1831). He developed, on an objective-idealist basis, a theory of the laws and categories of dialectics, and was the first to work out in systematic form the fundamental principles of dialectical logic, criticizing the metaphysical method of thought that dominated both idealist and materialist doctrines of those times. He opposed the dialectical principle

⁸ The essence of Kantian apriorism is that the subject of knowledge possesses certain forms of knowledge that evolved before him. But this apriorism is not identical with the concept of innate ideas: *a priori* elements are not innate ideas but forms absorbed by man in the course of his introduction to the forms of culture developed before him.

that the essence manifests itself phenomenally, and that phenomena are essential, to Kant's "thing-in-itself".

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Hegel asserted that categories are objective forms of reality underlying which is the world reason, absolute idea, or the world spirit. That is the active principle that gave the impetus to the emergence and development of the world. The activity of the absolute idea consists in thinking, and the goal, in self-cognition. In the process of self-cognition, the world reason goes through three stages: the existence of the self-cognizing idea in its own womb, in the element of pure thought (this is logic, in which the idea reveals its content in a system of laws and categories of dialectics); the development of the idea in the form of other-being, as natural phenomena (it is not nature that develops but only the categories); the development of the idea in thought and in the history of mankind (the history of the spirit). At this last stage, the absolute idea reverts to itself, perceiving itself in the form of human consciousness and self-consciousness.

Hegel's philosophical ideas are permeated with the idea of development. He believed that it was impossible to understand a phenomenon without a clear picture of the whole path which it traversed in its development; that development does not run along a closed circuit but proceeds from lower forms to higher ones; that in this process quantitative changes turn into qualitative ones; and that the source of development lies in contradiction, which sets the world in motion; contradiction is the root of all motion and all vitality, it is the principle of all self-motion. Hegel's philosophical system presented reality as a chain of dialectical transitions.

However, there is a deep inner contradiction in Hegel's philosophy. What contradiction is that? Hegel's method is directed towards the infinity of cognition. Since the objective basis is the absolute spirit, and the goal, the self-cognition of that spirit, cognition is finite and limited. In other words, passing through a system of cognitive stages, the system of cognition is crowned by the last stage, that of self-cognition, of which the realization is Hegel's system of philosophy itself. The contradiction between Hegel's method and system is a contradiction between the finite and the infinite. This contradiction in Hegel is by no means dialectical, for it does not become the source for further development.

The classics of Marxism-Leninism subjected Hegel's idealism to acute and comprehensive critique, but at the same time they highly appreciated the positive elements contained in his work, above all his dialectics.

A different trend was represented in the system of *Ludwig Feuerbach* (1804-1872), the greatest materialist of the pre-Marxian epoch and the last representative of classical German philosophy. Criticizing Hegel's objective idealism, Feuerbach propounded the materialist view of nature. Materialism is just as old and omnipresent as mankind itself; it is as clear as daylight, as necessary as bread and water, and as inevitable and unavoidable as air. However, Feuerbach's critique of Hegel was one-sided: rejecting Hegel's idealism, Feuerbach underestimated his dialectics. Feuerbach's materialism remained traditionally metaphysical. Its characteristic feature was anthropologism: the view of man as the highest product of nature, the tendency to consider man in an indivisible unity with nature. Nature is the basis of spirit. It must also be the basis of philosophy called upon to reveal the earthly essence of man, whom nature endowed with senses and reason and whose psyche depends on his physical constitution, possessing at the same time a qualitative specificity irreducible to the physiological processes. Feuerbach's anthropologism also played a great role in the struggle against the idealist interpretations of man, against the dualistic opposition of man's spiritual element to the corporeal one, and against vulgar materialism. But the "natural" side of man was exaggerated, and the social one, underestimated.

In his critique of agnosticism Feuerbach assumed that human thought correctly reflects the reality existing outside consciousness. The senses played the most important part in his epistemology: only the sensuous is as clear as the sun. To think means to connect one sense organ datum with another. Feuerbach regarded all forms of cognition (sensations, representations, concepts, ideas) as images or copies of things, of their properties and relations. Feuerbach's anthropological materialism was metaphysical in nature: it was passively contemplative, and did not take into account socio-historical practice; for this, Marx criticized him in his *Theses on Feuerbach*.

One of Feuerbach's achievements was the fact that he showed up the links between idealism and religion, demonstrating that their root lay in divorcing thinking from being and transforming ideas into independent essences. Feuerbach subjected the origin and essence of religion to a profound and striking analysis, but he traced their roots only to man's psychology, his consciousness and emotions, in the first place the feeling of love. A human being is God to another human being. Although Feuerbach

noted that political, economic, ethical and other social factors imposed their imprint on the content of religion, he failed to demonstrate what its true social roots are.

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2. The Emergence and Development of the Philosophy of Marxism

The philosophy of Marxism was evolved by the great revolutionary thinkers *Karl Marx* (1818-1883) and *Frederick Engels* (1820-1895) and further developed by *Vladimir Lenin* (1870-1924). The emergence of Marxism was a revolutionary upheaval in philosophy and in social science as a whole, and a natural result of the entire preceding history. The philosophy of Marxism did not take shape as a mechanical accumulation of the grains of truth in a kind of philosophical money-box but as a consistent theory resulting from the processing, critical re-interpretation and creative development of these previously found truths under the new historical conditions.

The historical conditions of the emergence of Marxism.

By the middle of the 19th century, the bourgeois revolutions were already over. Capitalism was developing intensely on its own basis. Major industrial enterprises were emerging. It was the time of the formation of the proletariat, whose working conditions were hard and sometimes unbearable. The real significance of the social activity of the working class increased sharply. Class conflicts were growing more acute. Weavers' uprisings erupted in Lyons, France, and in German Silesia; the Chartist movement in England assumed great scope. But working-class actions were still mostly spontaneous and unorganized. The working class lacked clear class self-awareness and a scientific understanding of the paths and methods of its economic and social emancipation. The unorganized and disjoint actions of the proletariat had to be combined with the scientific theory of socialism through the setting up of mass workers' parties—the advance guard capable of leading the rest of the working class in the assault on capitalism. The proletariat could only free itself by destroying the economic conditions of the exploitation of man by man. Marx and Engels came to the conclusion that the working class had a world-historic mission, and that a revolutionary

transition from capitalism to socialism was inevitable. This conclusion could only be drawn on the basis of careful scientific study of the laws of social development, and it assumed the elaboration of a new worldview and methodology.

The theoretical sources of the philosophy of Marxism.

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Great ideas never spring up in a vacuum: they have their sources. As Engels pointed out, highly important for the theoretical substantiation of the philosophy of Marxism was the dialectical-materialist view of nature, greatly stimulated by the outstanding discoveries of natural science—the discovery of the law of preservation and transformation of energy (by Mikhail Lomonosov and Julius Mayer), of the cellular structure of living organisms (by Matthias Schleiden and Theodor Schwann), and the development of the evolutionary theory by Charles Darwin. Marx and Engels viewed the law of preservation and transformation of energy as confirmation of the principles of the material unity of the world, of the eternity and indestructibility of matter, of the mutual transitions of different forms of its being. As for the cellular structure of living organisms, they saw it as proof of the inner unity of the vegetable and animal kingdoms, and Darwin's theory, as a triumph of the idea of development.

However, in developing their theories, Marx and Engels relied not only on natural science but also, and in the first place, on the achievements of social science. The theoretical sources of Marxism are classical German philosophy, classical English political economy, and French utopian socialism. The direct predecessors who made the greatest impact on their philosophical views were Hegel and Feuerbach. In a changed form, Hegel's dialectical ideas became the philosophical source of materialist dialectics. Marx noted that "the mystification which dialectic suffers in Hegel's hands, by no means prevents him from being the first to present its general form of working in a comprehensive and conscious manner. With him it is standing on its head. It must be turned right side up again, if you would discover the rational kernel within the mystical shell."⁹ In their critique of Hegel's idealist views, Marx and Engels relied on the whole of the materialist tradition, and above all on Feuerbach's materialism. Dialectical materialism is precisely the

⁹ K. Marx, *Capital*, Vol. I, Progress Publishers, Moscow, 1975, p. 29.

result of a radical creative transformation of Hegel's and Feuerbach's systems on the basis of a new interpretation of social and natural reality.

The ideas of the outstanding English economists, *Adam Smith* (1723-1790) and *David Ricardo* (1772-1823), who laid the foundations of the economic anatomy of bourgeois society and substantiated the labour theory of value, helped Marx and Engels to evolve the consistently scientific social philosophy of historical materialism.

The conflicts between the rich and the poor, between labour and capital had long caused angry protests among noble people, who dreamed of social justice. A striking expression of that protest in the history of social thought was utopian socialism. Its major representatives—*Charles Fourier* (1772-1837), *Claude Henri Saint-Simon* (1760-1825) and *Robert Owen* (1771-1858)—subjected the contradictions of capitalism to profound and acute criticism, and expressed certain brilliant ideas about the new, socialist society (in particular, about public ownership of the means of production, elimination of exploitation of man by man, about making labour a source of enjoyment, etc.). But they saw no real force that could implement socialist transformations. Marx and Engels saw it in the proletariat, a new class entering the scene of world history.

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The system of scientific views on the objective laws of the development of nature and society, and on the revolutionary transformation of social reality, was termed Marxism, of which the constituent parts are dialectical and historical materialism, Marxist political economy, and the theory of scientific socialism.

The essence of the revolutionary upheaval carried out by Marxism
in philosophy.

The emergence of the philosophy of Marxism marked a qualitative change in the content and social significance of philosophical thought in the entire system of scientific knowledge and practical transformation of reality. Marx and Engels firmly linked revolutionary theory with revolutionary practice. "The philosophers have only *interpreted* the world in various ways; the point is to *change* it."¹⁰ This brief formula contains the gist of the radical upheaval

¹⁰ K. Marx, "Theses on Feuerbach", in: K. Marx, F. Engels, *Collected Works*, Vol. 5, Progress Publishers, Moscow, 1976, p. 5.

in philosophy. This proposition in no way depreciates the great revolutionary contribution of the previous progressive philosophical ideas. It merely points out the fact that, because of their idealist explanations of history, all pre-Marxian philosophical systems failed to create a science that would reveal the laws of restructuring human society. Marxism showed the fundamental role of social practice in the development of the entire material, spiritual and intellectual culture of mankind. Deducing theory from practice, Marxism subordinated it to the interests of a revolutionary transformation of the world. "...Theory ... becomes a material force as soon as it has gripped the masses."¹¹ The philosophy of Marxism merged with revolutionary struggle, and its creators became the ideologues and political leaders of the proletariat. Marx and Engels created a philosophy of the masses and scientifically substantiated the decisive role of the people in history, without underestimating in the least the role of historical personalities.

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The emergence of Marxism signified the end of metaphysical materialism. For the first time in the history of philosophy materialist dialectics was evolved and creatively applied to concrete problems. Recognizing the primacy of matter and nature and the secondary and derivative character of consciousness, materialists of previous times had not been consistent: in their treatment of society, they remained idealists. Marxism showed that people were creators of their history, only they created history in accordance with objective social laws, not arbitrarily. People's being (that is, the material production and the relations between them in the process of labour that take shape on this basis) determines their consciousness.

Having generalized the experiences of the proletariat's revolutionary struggle and the data of science, Marx and Engels demonstrated the dialectical-materialist character of development of nature and of human society. They completed the edifice of materialism by applying it to social history, and in this way created historical materialism. This was of great revolutionary significance both for the science of society and for the entire social practice. An integral theory of the laws of the development of nature, society and thought—the philosophy of dialectical and historical materialism—was created.

¹¹ K. Marx, "Contribution to the Critique of Hegel's Philosophy of Law", in: K. Marx, F. Engels, *Collected Works*, Vol. 3, Progress Publishers, Moscow, 1975, p. 182.

The creative character of Marxist philosophy.

The thinkers of the past often aspired to construct complete theories intended to provide exhaustive answers to all questions. But these claims were in conflict with life, eternally flowing and changeable. To a creatively thinking intellect, the greatness of philosophy lies in that it cannot in principle be completed. Any theoretical claims to ultimate truths doom the philosopher to estrangement from life and escape into the desert of dogmatism.

Marxist philosophy is a creative theory. It is not a dogma but a guide to action. This brief formula stresses the aspect of Marxism that must always be borne in mind, otherwise we make Marxism one-sided, ugly, and dead, removing its living soul and undermining its theoretical foundation—dialectics, the doctrine of historical development through contradictions; we undermine its links with definite practical tasks of the times, which may, and are actually bound to, change at each new turn of history.

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The development of Marxist philosophy by Lenin.

The work of Lenin marks a new stage in the philosophy of Marxism. Lenin lived and worked at a time when history made a sharp turning, and a new socioeconomic formation was born. Capitalism reached its imperialist stage. Social conflicts became acutely aggravated. The international revolutionary movement rose to a higher level. All this posed new tasks before philosophy and practice. In solving them, Lenin made a contribution to the development of the basic principles of dialectical and historical materialism, creatively worked out the philosophical foundations of the theory of scientific socialism, deepened the Marxist theory of the party and implemented it in reality, and analyzed the principal traits of the epoch in which he lived.

Lenin defined the tasks of the strategy and tactics of the proletariat in strict accordance with the premisses of his dialectical-materialist worldview. Already in his early works *What the "Friends of the People" Are and How They Fight the Social-Democrats*, *The Economic Content of Narodism and the Criticism of It in Mr. Struve's Book*, etc., Lenin greatly enriched the

social philosophy of Marxism, in criticizing the Narodniks'¹² idealist views of society.

After the defeat of the 1905-07 revolution, Russia was swamped by political reaction, which tried to take away the working-class movement's organizational and ideological weapons. In this situation, attempts were made to boost the influence of religion on the consciousness of the masses, and various idealist systems—neo-Kantianism, pragmatism, intuitivism, and especially empirio-criticism—gained currency. The views of Ernst Mach and Richard Avenarius had a significant influence in those days on the minds of scientists. Revisionists endeavoured to prove that Marxism had no philosophy of its own, and that it had to be supplemented by Machist epistemology.

Defence of materialist philosophical principles became an urgent task. It was carried out in Lenin's work *Materialism and Empirio-Criticism*, which contained a scientific, dialectical-materialist analysis of contemporary natural science. It demonstrated that natural-scientific discoveries confirmed some well-known propositions of dialectical materialism and, moreover, pointed out certain new conclusions that philosophers had to draw on the evidence of those discoveries. Of substantive methodological significance are Lenin's propositions concerning the inexhaustibility of the atom and the unlimitedness of the cognition of matter in depth and in breadth, and his definition of matter. Lenin's book developed a number of propositions of Marxist epistemology and historical materialism: the concept of practice, the problem of truth, the principal methods and devices of cognition, etc.

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In the years of the First World War Lenin wrote his *Philosophical Notebooks*, of which the principal content is a deeper interpretation of dialectics and especially of its nucleus (the law of the unity and struggle of opposites), of its categories and laws; in this connection, Lenin studied the rational content of the theories of Heraclitus, Aristotle, and Hegel. Lenin's attention was principally focused on the dialectics of the process of cognition, of thought.

Lenin's work in the field of social philosophy was linked with the need for a theoretical analysis of the imperialist stage in the development of capitalism. Philosophical weapons had to be sharpened in preparation for

¹² Narodniks (fr. Russ. *narod* "people")—adherents of a petty-bourgeois trend that arose in the Russian revolutionary movement in the 1860s and 1870s.

the fight against opportunism. That was why Lenin, as he reflected on problems of dialectics, was also concerned with socio-philosophical issues (the future of imperialism, relations among nations, the struggle of the peoples for peace, the theory and practice of the socialist revolution). Relying on the laws of imperialism which he discovered, Lenin substantiated the idea of real possibility of the victory of socialism first in several or even one single country. This idea of his made a great impact on the further course of social development. Lenin also developed the Marxist theory of class struggle and the state, in particular the idea of the organization of the state power of the dictatorship of the proletariat in the form of Soviets; he consistently fought against reactionary bourgeois ideology, revisionism and dogmatism. Lenin's works elevated Marxism as a whole to a higher stage, and that is why this theory is known in the new historical epoch as Marxism-Leninism.

BEING AND CONSCIOUSNESS

Chapter III MATTER: THE UNITY AND DIVERSITY OF THE FORMS OF ITS MANIFESTATION

1. The General Concept of Matter

What is being.

Before we tackle matter, let us turn to a more general category—that of being, which is a fundamental worldview methodological problem.

In the broadest sense, being is an all-embracing reality, the most general concept of existence, of that which is in general. Being is all that exists: material things, processes, properties, connections, and relations. Even the fruits of the most unbridled fantasy, the fairytales and the myths, even a sick man's ravings, exist as realities. It follows that being covers both the material and the spiritual. It is, in fact, something *really existing*.

Being is one of the oldest philosophical categories. All the theories of antiquity contained being as a focal category. The totality of natural elements and the Logos, the energy principle of all that is, were both seen as concrete manifestations of being. It is a different matter that being could be interpreted in various ways: it could be regarded as something primary and determinant or as something reflecting a different existential essence inaccessible to direct perception; that is to say, the interpretations varied, in fact, from the directly perceptible by the sense organs to abstract essences or principles organizing the visible being of the world and cognizable in varying degree or, on the contrary, inaccessible to knowledge.¹

¹ In mediaeval philosophy, the terms “transcendental” and “transcendent” were current. The former denoted going beyond a finite, empirical existence and the latter, going beyond the limits of sensuous experience as a form of the knowledge of the world. In Kant's philosophy, these terms acquired an epistemological status and began to refer, respectively, to a priori conditions and forms of knowledge (e.g. the a priori forms of sensuality like space and time, and also the categories of intellect, like substance, causality, etc.) and to that which goes beyond the limits of

The antithesis of being or *something* is *nothing*. All the concrete forms of being, such as stars or plants or animals, emerge as it were out of nonbeing and become actual, present being. But the being of that which is, however long it endures, comes to an end and returns to nonbeing, losing the given form of existence. The dialectical aspect here is that the transition to nonbeing is destruction of a given form of being and its transformation into a different form. The emergence of a given form of being is a result of the transition from one form of being into another. Nonbeing is a relative concept: there is no nonbeing in an absolute sense.

These categories were closely studied by Hegel, who filled them with profound dialectical content connected with the idea of development, of becoming. Hegel began the construction of his philosophical system with the most meagre and abstract concept of pure being (nothing). Why this concept, precisely? Is being devoid of any definiteness? After all, it covers all that is in the infinite variety of its concrete manifestations. Doesn't it encompass both the material and the spiritual world with their properties, relations and interactions? Yes and no. "...If when we view the whole world we can only say that everything is and nothing more, we are neglecting all speciality and, instead of absolute plenitude, we have absolute emptiness."² Therefore pure being is, according to Hegel, so meagre and empty that it is indistinguishable from nothing. Of course, Hegel realized all the paradoxically of the situation, and he said that common sense could laugh all it wanted here: How's that, being identical to nothing?! Doesn't man really care if he has any money in his pocket or not? Such is the irony of common sense. But this irony is the fruit of intellectual ineptitude: pure being is connected with the beginning, and the beginning, with the existence of a possibility. The possibility itself is something; it is not a formed something but something as a potential, a form—folded for the time being—of future being. An embryo or potential combines being and nonbeing. It is a two-faced identity of nothing and something, a unity of opposites subject to anxiety and tension. Within it, hidden work goes on, leading to a becoming, to the transition of nothing into something. In a

possible experience, which is actually inaccessible to theoretical knowledge but is the object of faith (God, the soul, immortality).

² *The Logic of Hegel*, p. 163.

word, there is no absolute nothing, for it is the starting point for the manifestation of something.

Whatever forms of being we might consider, they all of them have matter as their deep-lying foundation or substance. Spiritual reality, too, exists in unity with matter and is defined in terms of it. *Matter and spirit are the most general philosophical concepts.*

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On the history of the development of the category of matter.

Matter is a basic category of philosophy; its interpretation determines the approach to practically all the other philosophical problems. Etymologically, the term goes back to L. *materia* "substance". This "substantial" meaning of the term survived until the 20th century; then a revolution took place in physics which signified the crisis of the one-sided interpretation of matter based on obligatory sense perception, which was the essence of the concept of metaphysical materialism.

The unity and diversity of all the forms of manifestation of matter can only be understood on a historical approach, through generalization of the experiences of scientific and philosophical knowledge. We have already pointed out that the first stage in the realization of the materiality of the world was spontaneous materialism. The starting point of the formation of the concept of matter was the transition from the qualitative diversity of existing things to the concept of *primary matter*—the single basis of the world embracing all this qualitative diversity. The difficulty of the intellectual operation of abstraction necessary for that is clear from the fact that at first all the qualitative diversity of the world was deduced from a single qualitatively definite and empirically perceivable element, say water or fire. But Democritus noted already that it was impossible to explain the origin of a qualitatively definite substance in terms of another such substance. No element contained in it the principle of its transfiguration, and it had to be explained just why it had a given quality. Further movement of thought inevitably led to the unification of all the first principles of being, ultimately resulting in the idea of the world's atomic structure, of which the underlying basis was the particles, or atoms, inaccessible to the senses.

But atoms were also interpreted as substance, as the smallest "building bricks" out of which all that is, is built, the qualitative diversity of this building material depending on the various types of interaction among them.

This marked the birth of the discrete picture of the world, which persisted until certain discoveries were made in physics at the end of the 19th century, and which presented being as consisting of tiny isolated (discrete) particles interacting among themselves in a particular fashion. This view, which took shape already in antiquity, proved to be of great heuristic value and therefore very stable. It was the starting point of scientific explanation of many natural phenomena. Relying on the idea of atomism, Newton introduced the concept of mass in physics and formulated the law of universal gravitation and the principal laws of motion. Atomistic views underlie the molecular-kinetic theory of heat, and in chemistry they played a role in the discovery of the law of conservation of matter; Mendeleev's periodic system of the elements was also created on the basis of atomism.

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Newton's mechanics, which afforded an explanation of most phenomena and events in the world on the basis of interaction among atoms, asserted the mechanistic-atomistic picture of the world and served as a model of scientific precision for other sciences. Matter in the form of atoms and motion in vacuum were the two main principles of Newtonian mechanics. The mechanistic-materialist principle seemed to be able to explain the essence of all the phenomena occurring in the world, the finest psychical facts included, and theoretical physics, which studied the fundamental properties of atoms, looked like it might complete its search any time now, assuming a fully finished form.

However, along with the triumph of atomism, a crisis was gradually coming to a head connected above all with the discovery of new facts which could no longer be adequately explained in terms of the atomic structure of matter; besides, the atom itself proved to be a far from simple and not at all the smallest particle of matter. The electron was discovered, as well as radioactive decay and transmutability of atoms. The atom, which was previously seen as "faceless" and structureless, proved to possess an extremely complex inner structure consisting of a nucleus and electrons revolving round it. Still more critically dangerous to mechanistic materialism were the new views in the theory of interactions, where the heretofore unknown interactions within atoms and nuclei had been discovered.

This crisis was connected with the introduction into physics (by Michael Faraday and James Maxwell) of the new basic concept of *field*, which describes a state of matter fundamentally different from *substance*. Now,

what is the special physical and philosophical meaning of the field concept, and in what way has human thought arrived at this new form of matter?

Originally, field was defined as space surrounding some material object, for each point of which it was possible to determine, in terms of mathematical equations, the magnitude and direction of the force of interaction between the given and some other object. Thus the tension of gravitation, the principal type of interaction between objects, calculated by Newton, varies at different points of the field, i.e. at different points of the space surrounding an object. However unexpected these mathematically definable data, in which the medium of interaction actively participates in the process, might be, they merely undermined somewhat but did not entirely destroy the notion of matter as substance, for a field of this kind could still be thought of as an attribute of substance.

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The field became a really disturbing factor only when it was conclusively proved that it was not just an attribute of an object but an independent physical reality capable of existing and spreading in space regardless of the material object; the field thus became, along with substance, a new and particular form of matter of which continuity rather than discreteness was the main trait.

However, before the field concept became generally accepted, it had caused a storm of indignation among physicists and philosophers, and then, as the latter became accustomed to it, it led to a philosophical crisis, for it shattered the concepts of matter and substance. "Matter has disappeared!" the scholarly world exclaimed in consternation when the physicists, handling the new concept with the delight of neophytes, began to explain the properties of substance by the action of fields: matter indeed disappeared, giving way to the new god, the field. Newton's classical mechanics stated that such fundamental properties of matter as mass and volume are absolutely immutable, basic, and not conditioned by anything. Experiments showed, though, that electron mass depends on the field the electron creates and varies with field energy. Consequently, particle mass varies with changes in field structure. Mass also changes with body velocity: as electron velocity approaches the speed of light, the tension of its field tends to infinity, and its mass changes accordingly. Since mass was regarded as the measure of the quantity of matter, the discovery of mass inconstancy, its variability depending on the changes in the field and in body velocity, was interpreted in the sense that matter had disappeared and materialism

collapsed. The radioactive decay of atoms was interpreted in the same sense. It was perceived as transformation of matter into energy, as disappearance of matter. In itself, it did not yet signify the replacement of materialism by idealism, but it was accompanied by distinctly idealist tendencies in epistemology. Unable to sensually perceive, and conceive of, micro-objects, physicists had to resort more and more to mathematical models. Relegating matter (the earthly roots, so to say, of these models) to oblivion, some physicists (as e.g. Ernst Mach) tended to think that these constructs were no more than the fruit of pure thought: matter evaporated in the haze of mathematical constructs, and the constructs themselves turned out to be self-sufficient essences; the whole reality was thus reduced to abstract ideal structures. Public opinion turned to idealism, for materialism was traditionally linked with mechanistically substantial notion of matter. This situation urgently required some resolution.

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Objectively, the whole ensemble of new discoveries was *dialectical in character*. To overcome the crisis in physics, theoretical thought had to take a more flexible approach to facts, in particular to the connection between matter, motion, space and time. A much subtler approach was needed to the notion of truth and its mutability: it had to be understood that truth is process. In the picture of the world that was becoming clearer and clearer in science, it was precisely change, transition, transformation, and development that needed dialectical explanation. But scientific thought was still enthralled by the mechanistic tradition. New discoveries in science called for profound changes in the very mode of human thought. Thus the agonizing process of the breakdown of old, familiar concepts began.

The dialectical-materialist conception of matter.

The critical situation in natural science and philosophy was resolved in dialectical materialism, which replaced mechanistic materialism.

To overcome the crisis in the understanding of matter, this category had to be clarified, first of all, in the light of new natural-scientific data, which was only possible if it were consciously subjected to dialectical analysis. The category of matter had to be freed from the allegedly inalienable links with the concept of substance, and then given a definition that would reflect its really universal content. It would therefore be absurd to add any new attributes to the "substantial" conception of matter; to add, say,

electromagnetic, gravitational or some other, as yet unknown, fields to matter as objective reality existing in various forms of substance. On this path, every new fundamental discovery of new forms of reality would each time bring about a critical worldview situation: again and again voices would be heard about the breakdown of materialism, again and again it would be necessary to add a new variety of matter to its definition, and that would inevitably mean falling into bad infinity.

Rejecting the unacceptable, from the dialectical standpoint, tying up of matter with the physical modes of its existence, Lenin said that it was sheer nonsense to say that matter was connected with substance only, and that dialectical materialism had at any time professed a mechanical rather than electromagnetic or some other, immeasurably more complex, picture of the world of moving matter. Lenin saw the way out of the crisis in the natural scientists' acceptance of dialectical materialism: physics went astray into the clutches of idealism precisely because physicists did not know dialectics. It was not matter that had disappeared but the metaphysical conception of it, and the new discoveries could only be correctly understood from the positions of dialectical materialism, which never reduced matter to any immutable and further indivisible "building bricks of the universe".

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The path towards a dialectical definition of the concept of matter as the single substance of the world does not lie through listing its properties but, as Lenin showed, continuing the materialist tradition of the French philosophers of the 18th century, in particular Holbach, through correlating it with consciousness: "Matter is a philosophical category denoting the objective reality which is given to man by his sensations, and which is copied, photographed and reflected by our sensations, while existing independently of them."³ Although Lenin relied on the entire materialist tradition, he introduced a fundamentally new element in the interpretation of the essence of matter, stressing that the sole property of matter with whose recognition dialectical materialism was bound up was the property of being an objective reality, of existing outside the mind.

Idealistically minded physicists and philosophers tried to refute Lenin's definition of matter on the grounds that science already knows manifestations of matter that are not given in sensations, hence a definition

³ V.I. Lenin, "Materialism and Empirio-Criticism. Critical Comments on a Reactionary Philosophy", *Collected Works*, Vol. 14, Progress Publishers, Moscow, 1977, p. 130.

of matter as existing outside consciousness and reflected in sensations is unjustifiable. But they did not take into account the fact that matter is given us in sensations not only immediately but also indirectly; most manifestations of matter that we know of are not immediately perceived: there are phenomena that are in principle inaccessible to our sense organs, like the elementary particles of which scientists can only judge by observing the traces of their interaction with extremely sensitive instruments. In this case an instrument is a modified organ of human perception of matter, and before drawing some fresh conclusion concerning the structure of matter, man necessarily comes in contact with it. Thus the objective existence of electrons was also proved experimentally. The world that is not given us in immediate sensations is explored by human thought through specially devised experiments. The difficulty here is in learning to adequately interpret the data obtained in the course of an experiment.

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Idealistically minded philosophers also asserted that Lenin's definition of matter concealed idealism. If matter can be defined through its relation to consciousness, the former depends on the latter, and not vice versa. Here, too, their arguments proved untenable. Matter is the substance of that which is; it has self-being in its spatio-temporal infiniteness: it is self-sufficient and does not need anyone to be aware of it. In the rays of human reason, however, it is reflected in sensuous and conceptual images. The antithesis of matter and consciousness, just as their relationship on the whole, is by no means absolute but relative—a fact that Lenin pointed out unambiguously: "...The antithesis of matter and mind has absolute significance only within the bounds of a very limited field—in this case exclusively within the bounds of the fundamental epistemological problem of what is to be regarded as primary and what as secondary. Beyond these bounds the relative character of this antithesis is indubitable."⁴

Thus the concept of matter as objective reality is identical with that of the single substance with all its properties, laws of structure and functioning, movement and development.

Lenin's definition of matter is therefore levelled both against *objective idealism* (which posits the spirit as the substance of being) and against *subjective idealism* (which assumes that all objects are mere complexes of our sensations).

⁴ Ibid., p. 147.

As we have already noted, apart from clarifying the concept of matter, natural science had to be moved onto dialectical ground. What did this actually mean in connection with the new conception of matter? Wherein did dialectics lie here? A scientist must not be confused by real or apparent contradictions in the structure of matter. Neither the substance-based discreteness of the world nor its field-based continuity are the final attributes of the structure of matter. These attributes are only antithetic at the formal level of thought, while in reality they dialectically complement one another, being different forms of the manifestation of the same essence. This dialectics of reality must be reflected in the minds of scientists; for them, the apparent antithesis between different forms of the manifestation of matter must serve as a stimulus for further inquiry into the as yet unknown phenomena rather than as a pretext for hastily announcing a crisis. It was precisely through application of dialectical methods that physics found a way out of the crisis.

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The principle of the material unity of the world.

A dialectical theory of matter cannot be exhausted by its philosophical definition only. It was also necessary to construct an integral and comprehensive conception of matter; this called for the application of the entire historically accumulated arsenal of dialectics, and in the first place for a substantiation of the dialectics of the discrete and the continual in matter, as well as an explication of the unity of matter and mind—reflected in the dialectical principle of the material unity of the world.

Two basic philosophical positions can be tentatively identified in the treatment of the issue of the unity of the world. On one of these approaches, the universal unity of all world phenomena is believed to lie in their materiality (the line of Democritus), and on the other, in the common ideal basis of the world (the line of Plato). Both of these positions are monistic, for the basis of the world is seen in one substance only. The former position is called materialist monism (with dialectical monism as its highest stage of development), the latter, idealist monism. Apart from these two varieties of monism, there also exist *dualism* and *pluralism*, i.e. recognition of several equal first principles of the world irreducible to one another (embodied, e.g., in the ancient conception of the four first elements— water, earth, air and fire).

It is clear from the above that two principal issues are at stake here: the primacy of matter or of spirit and the possibility or impossibility of reducing the entire qualitative diversity of the material world to the single universal substance. Now, how are these issues approached from the dialectical monistic positions?

The fundamental premiss of dialectical monism, "the real unity of the world consists in its materiality", means that consciousness, the spirit, the ideal are both a knowledge of the material reality and a component part of this reality, and that there is no unbridgeable gap between the material world given us in sensations and man's consciousness. Consciousness is not something uniquely supernatural but a natural property of highly organized matter. Dialectical monism rejects the separation of consciousness and reason as a special substance opposed to nature and society. The reality surrounding us, and we ourselves, form a single material world. Unity is not conceived here as qualitative similarity but as a unitary substantial basis that may assume the most diverse forms, among which natural-material and ideal forms are the most antithetic ones.

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However, the statement of the material unity of the world does not by itself solve all the questions arising here. The idea of unity is inevitably linked with the concept of universal interaction. If the unity of the world was thought of only in terms of its materiality, without the concept of interaction, the existence of different and entirely unconnected material worlds could easily be accepted as a logical inference. But that would have meant pluralism of the worlds rather than the unity of the world. For the same reasons, it is logical to accept the dualism of mind and matter, for in this case, too, interaction between them is ignored: matter is thought of as existing by itself, and so is spirit. The process of world development could not be explained, either, unless we recognize the fundamental importance of the continual and universal interaction of all things with all other things in the world. Development was inexplicable within materialist monism in its mechanistic form, while dialectical-materialist monism, with its principles of universal interconnection and interaction, has precisely the idea of development as its core.

The interpretation of the unity of the world from the positions of dialectical monism entailed yet another extremely important consequence: it permitted the view of human society as one of the forms of the development of matter, while previously society, in view of its special *subject-object*

nature, could not be squeezed, as it were, into the traditional notions of matter.

The insistence of dialectical monism on the primacy of matter entails the existence of a single substance as the basis of the qualitative diversity of the world of nature and the world of man. Here we run into a difficulty that only dialectics can resolve. This difficulty is bound up with the concept of substance in the special philosophical sense (fr. L. *substantia* “essence”). We have spoken several times already of the existence of such a single substance—but is there any difference between the concepts of matter and substance? Why is it necessary to introduce this latter concept of which the content appears to be a replica of the basic concept of matter?

Historically, the category of substance was indeed thought of as an almost complete synonym for matter in its present acceptance. But the development of dialectical materialism and continuous clarification and specification of the logical status of all its categories, above all the category of matter itself, made it clear that a special category was needed to designate the single natural basis of the world not in terms of the epistemological antithesis of spirit and matter but in properly existential and ontological terms. On the epistemological plane, matter and mind are antithetical, whereas on the ontological plane they must be identified, as it were, if we are to adhere to the principle of materialist monism. So the concept of substance, in which the relative antithesis between matter and spirit loses its significance, was introduced precisely to designate the common basis of the entire indivisible material being combining both spirit and matter, the discrete and the continual. The concept of substance is the result of the ontological deepening of the concept of matter.⁵

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It must be clearly realized, though, that the concept of substance is inseparably bound up with that of matter: these are two aspects of one essence. Substance is not some third entity embracing both mind and matter (as Ernst Mach believed, for instance) but matter considered outside its relations with consciousness, matter in which consciousness is already regarded, firmly and without reservations, as its attribute. If substance is understood outside its essential links with matter, its union with the sphere

⁵ In some contexts in this volume (e.g., see above or further below) the term “substance” is used in the less philosophical sense of physical matter or material.— *Tr.*

of the ideal is inevitable, and then matter will be regarded as an attribute of the spirit, as in objective idealism.

Substance again leads us to natural-scientific problems, for it is here that the battles were fought over the unity of or difference between the first principles of material being, and over the question whether there was one or many substances underlying it. That was the meaning of the controversy in physics at the turn of this century concerning the wave (continual) or corpuscular (discrete-material) substance of the world.

Modern science on the material unity and diversity of the world.

The dialectical-materialist conception of the material unity of the world, and of the inexhaustibility of the structure and properties of matter, was confirmed by the achievements of 20th-century science, of physics in the first place. The antithesis between continuity and discreteness, which caused such a stir among the physicists early in this century, was dialectically expressed in quantum mechanics with its discovery of such a property of matter as its corpuscular and at the same time wave structure. This synthetic property is found, e.g., in photons, or particles of light; their corpuscular-wave nature was established owing to the discoveries of Einstein, Bohr and Schrodinger.

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The dialectical method of thought in physics manifested itself strikingly in the fundamental principle of complementarity, according to which neither a corpuscular nor wave-theory description of the material properties of the microcosm taken separately can provide an exhaustive understanding of the facts known to science, and only their dialectical combination can ensure the adequacy of scientific propositions. Underlying the formal antithesis the scientists saw a reflection of essential properties of the single material substance which was not, however, exhausted even by these corpuscular-wave notions. Substance is the same in all its formally antithetic properties: that is now an indubitable fact confirmed both theoretically and experimentally.

Now, what is the picture of the world and of its inner unity from the standpoint of present-day science?

On the one hand, matter has a granular", discontinuous structure: consider the elementary particles, atoms, molecules, stars and their systems, galaxies, etc. On the other hand, matter is marked by continuity, found in

various kinds of fields—gravitational, electromagnetic, nuclear, etc. Substances and fields are the two principal forms of the existence of matter known to science. A substance is defined as something that has mechanical mass (rest mass). We can speak here of hierarchically arranged structures, as it were, from the atom to celestial bodies of any conceivable size. The atoms themselves have a complex structure: they consist of elementary particles, the protons and neutrons that form the nucleus, and of electrons revolving round the nucleus at fantastic speeds. At present, science already knows a great many other elementary particles—mesons, hyperons, neutrinos, etc. They exist both as parts of atoms and in the free plasma state, as e.g. in the residual cosmic radiations reaching us from the universe's past. Science has also discovered antiparticles—the antipositron and others, having the opposite sign of the electric charge. Elementary particles, just as photons, have corpuscular-wave properties: they are both discrete and continuous (being particles and waves simultaneously), and they have both mass and a definite electric charge.

In the form of various substances, matter exists in diverse states. The most widespread state of matter in the universe is plasma, which consists of electrically charged particles, electrons and ions that have not yet formed atomic and molecular bonds. The stars, the nebulae, interstellar gas are all plasma. The solid, liquid and gaseous states of matter are extremely rare in the part of the universe known to science.

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The “continuous” forms of matter include fields, i.e. matter without rest mass. Fields connect the particles of matter, enabling them to interact and therefore to exist. Without gravitational fields nothing would bind atoms within molecules, electrons and nuclei within atoms, stars within galaxies, and substance itself in stars. In general, all bodies would have ceased to exist.

But the boundary between substance and field must not be regarded as absolute in the sense that only the same unchangeable fields and the same constant and immutable particles of substance exist in the world. This conception would lead to dualism. The deep unity of all matter in the universe means that the concepts of substance and field are relative with respect to each other. Their relativity is not only a dialectical imperative that follows from the principle of substantial unity of the world: it is also an experimentally verified and scientifically demonstrable fact. Science has established that the boundaries between field and substance are relatively

constant only in the macroscopic world accessible to sense perception. In the realm of microphenomena, these boundaries are obliterated, as it were, so that substance and field become mutually convertible. Thus mesons are particles of substance and at the same time quanta of a definite field.

All the contradictions in the views of the structure of matter arising in science are the result of the relativity of our knowledge about objective reality. Scientific thought keeps completing and then drawing all over again the picture of the world which appears to us as an infinite variety of the forms of being of matter and the properties, connections and laws prevailing in it and resting on the solid foundation of the substantial unity of the world. Science moves from one level of the perception of the unity of the world through the study of the diversity to a new level of understanding its unity.

The principle of conservation of matter.

One of the attributes of matter is the fact that it cannot be either created or destroyed; this is displayed in a set of natural-scientific laws of conservation of matter in all its mutations. The process of change of the forms and states of the material substance is practically unlimited. Thus physics has discovered the universal transformability of elementary particles and of forms of motion of matter. For instance, friction caused by mechanical motion leads to accumulation of the body's inner energy, to acceleration of the heat motion of its molecules. In its turn, this motion can be transformed into electromagnetic or chemical one. In the microcosm, the particles of matter are transformed into radiation, and vice versa, field processes can result in the emergence of matter. However, in all these transformations matter is preserved as substance, or the basis of all change.

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The principle of conservation of matter, just as that of the material unity of the world, entails, when logically unfolded, two other fundamental principles of dialectics—universal connection and development. Any object emerges, develops, functions and disappears only in connection with other objects. The birth of a thing does not mean birth out of an absolute nothing but its emergence out of another thing, just as destruction only signifies its transformation into another thing. In all these transformations, births and destructions, material substance remains immutable—it neither comes into being nor does it disappear. Matter changes only in connection with its

conservation, and conservation is manifested only in the changes of its forms.

The principle of the uncreatability and indestructibility of matter is of great worldview and methodological significance. It permits a deeper and fuller understanding of the processes occurring in various spheres of reality, and it remains the guiding principle in the formation of the most up-to-date hypotheses of the origin of the universe.

The controversy concerning the principle of conservation, uncreatability and indestructibility of matter flared up with renewed force after the idea of a stationary universe, which had prevailed in science, was replaced by the idea of a changing universe regarded as a dynamic process of change, of constant transition of one form of matter into another, rather than as a static system. Inasmuch as the idea of development is in excellent harmony with the principles of the material unity of the world and of conservation of matter, the idea of continual change in the universe could not in itself raise any objections. It was not the idea of development that caused the controversy but the starting point of that development (the origin of the universe) and its final point (the death of the universe). First, there was the controversy concerning the theories of the death of the universe (say, through dissipation of matter in infinite space), and this was followed by a controversy on the theories of the origin of the universe as a result of the so-called big bang. In the first case some scientists saw a theoretical possibility of the destruction of matter, while in the second the question arose of creation or emergence of matter practically out of nothing. Let us consider these two scenarios in greater detail.

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First, the theory of the emergence of matter in the universe. The universe, says the English astronomer James Jeans, lives its own life and follows the road from creation to extinction just as we mortals; science knows no other change but movement towards old age, and no other process but progress towards the grave. We see that stars are continually melting away into radiation just as eternally and incessantly as an iceberg melts in a warm sea. The sun at any given moment weighs a few thousand million tons less than it did a month before. Since other stars are melting down in the same way, the universe is on the whole less material now than before. Not only does the quantity of matter diminish in the universe: what remains is continually dissipated in the icy cold of space at a colossal and menacingly increasing

speed. The material universe seems to be going like a tale already told, dissolved in nonbeing like a ghost.

The untenability of this hypothesis is due not so much to its failure to take into account the principle of mutual transformability of different forms of matter and energy as to its assumption that space is absolutely independent of matter, and that the matter of the universe will be dissipated in this space in the form of the tiniest particles. According to present-day notions, space is not accidental in relation to material substance but a reflection of its essential structure. The three-dimensional space that we know from everyday experience expresses this essence only in the visible world, while at the micro- and macrocosmic levels it has a greater number of dimensions. The folding up of several dimensions of space may result in the appearance of what we perceive as matter. This close bond between space and matter, their essential identity discovered by modern science, signifies the untenability of the theory of dissipation of the matter of the universe to the point of complete disappearance—a theory in which space is conceived as an exterior attribute in relation to matter.

Similar problems arise in connection with the hypothesis of the origin of the universe in the big bang. According to that hypothesis, some 15 thousand million years ago there was an explosion of super-dense material substance, and what we observe now is the result of that explosion—an expanding universe. The state of matter which exploded in that big bang, and the causes of that explosion, have not yet been exactly established by science, and this inevitably gives rise to hypotheses challenging the principle of the uncreatability of matter, some of them even reviving the original Christian dogma of the creation of matter out of nothing.

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The fact itself that we know nothing of the state of matter before the explosion, or of the causes of it, in no way contradicts the principles of the material unity of the world and uncreatability of matter: the development of science has already resulted, on more than one occasion, in revolutionary changes in the views on the concrete structure of matter, and it will also lead to such changes in the future, without in the least affecting the philosophical category of matter. However, in connection with the big bang theory, some scientists have expressed views that are very close in import to the physical idealism of the late 19th century: as various processes in the expanding post-bang universe were clarified, the view has been expressed that matter emerged out of the so-called physical vacuum in which a complex process

occurred of spatio-temporal fluctuation, which led to the emergence of substances and of various fields. It follows, however, from the scientific meaning of the term "physical vacuum" that it is not a nothing but a concrete physical object which has material nature so far unknown to science. Just as in the case of the field concept, scientists will quite possibly arrive some day at the conclusion that there is yet another form of matter, next to substances and fields, hidden here: matter is infinite in its manifestations, and its one constant property is independence of human consciousness. The illusion of the origin of matter out of nothing, connected with the idea of physical vacuum, is largely due to the not quite felicitous term itself. Just as mechanistically reasoning minds in the past saw the field concept as a threat to matter (understood entirely in terms of substances), so now many make the same error: having grown accustomed, as Einstein said, to the field concept as to the chair they sit on, having forgotten that it once provoked just as turbulent discussions as the physical vacuum concept now, present-day idealist physicists are ready to infer from the concept of physical vacuum, which they themselves developed, a disappearance of matter, or rather its emergence out of nothing. In actual fact, though, physical vacuum is a real physical object of material nature, and not just a result of mathematical calculations.

There is thus no time or place where matter would lose its capacity for new transformations. All conceivable transformations of matter are possible except two: emergence of matter out of nothing and its passing into nothing. There is no place from which matter could appear, and no place into which it could disappear: it is the source, the cause, and the effect of itself. It exists in and for itself. It is indivisible in its self-being, and owes its existence to nothing and no one. The principle of conservation of matter was also confirmed by the following proposition evolved by present-day science: the total energy of the universe (the latter regarded by most scientists as closed) equals zero (that is to say, the quantities of negative and positive charges are mutually balanced). It follows from this proposition that the indestructibility and uncreatability of matter, or, in other words, matter existing always in one and the same quantity, is a necessary condition of the existence of the world, energy being the measure of matter's motion.

2. Motion as the Mode of Existence of Matter

The concept of motion. The unity of matter and motion.

Everything in the world is in continual motion, changing its form, being transformed, and wavering between being and nonbeing of all individual existences. The myriads of stars that we admire on a clear night merely appear to be motionless; in actual fact they move at enormous speeds. Every star is a sun with its own ring of planets. Along with the satellites revolving round them, the stars rotate round their axes and participate in the rotation of the galaxy round its axis. In its turn, our galaxy moves in relation to other galaxies. Besides, according to the latest cosmogonic hypotheses, the universe is not a mechanism with parts constantly moving along strictly determined orbits; it is an expanding universe continually moving towards ever new states. All that lives is in incessant movement: everything feeds, grows, multiplies, flourishes and dies. Innumerable inner processes occur in every living system: pulsation of energy and information, processing, assimilation of foodstuffs and ejection of waste. Everything is in an eternal state of becoming something else, and that not by coercion but of its own free nature. Since motion is an *essential attribute of matter*, it is, like matter, uncreatable and indestructible, absolute, unavoidable, and universal. Matter and motion are of the same essence.

Motion is the mode of existence of matter: to be means to be in motion. The question of the first cause of matter and the primary source of motion is essentially one and the same question. We know from the history of science and philosophy that the original source of universal changes, of the motion and development of all that is, just as the source of the existence of matter, was often thought of in a reference frame comprizing the omnipotence of divine power and universal will. Materialism, on the other hand, especially dialectical materialism, relies on the data of science which prove that motion, just as matter, is uncreatable and indestructible, that it is not introduced from the outside but contained in the very nature of matter. Some forms of motion are transformed into other forms of motion, and not a single kind of motion emerges out of nowhere. Motion is self-motion in the sense that the tendency, the impulse towards a change of state is inherent in matter itself: it is its own cause. If the universe came into being

after the big bang, the causes of that big bang must be sought for in matter itself, not in some external force.

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The dialectics of motion and rest.

Motion is not a pure continuum but the unity of continuum and discreteness, of change and stability, of disturbance and rest. In the endless flux of ceaseless motion there are always moments of discrete stability, manifested above all in the conservation of the inner nature of each given motion in the form of equilibrium of phenomena and their relatively stable form, i.e. relative rest. Thus the physics of elementary particles proves that these particles can only exist as transmutations of elements of a system, that they exist and are conceived of only in motion, but at the same time physics also points to the objective reality and immutability (i.e. rest) as a characteristic of the process itself of the transmutations of particles. As distinct from field, substance has a property expressed in the physical concept of rest mass. But there is also an element of stability in field motion itself. The stability of the rate of change is also a form of manifestation of immutability. In this case, rest is conservation of a definite (in this case quantitative) state of motion. Each kind of field has its immutable, stable characteristics. Thus rest only exists as a characteristic of motion in some stable form. Whatever the object's changes, as long as it exists, it retains its definiteness.

Absolute rest is impossible, for to attain absolute rest would mean to cease to exist. Rest is always relative in character: bodies can only be at rest in relation to some reference system tentatively accepted as motionless. A body's motion, Einstein said, is always understood as its position in relation to another body. Thus the relationship between continuity and discreteness is handled in philosophy in terms of the dialectics of motion and rest.

The philosophical controversies around the principle of unity of matter and motion.

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The history of science and philosophy knows quite a few systems in which matter and motion were perceived as two independent and isolated substances rather than as essentially forming a unity. This issue is of

fundamental worldview meaning, for matter in this case was regarded as a kind of passive, inert element devoid of any inner activeness. To set this dead matter in motion, a “divine first push” was certainly needed. In the sciences that sought for mechanical principles of the emergence and existence of all phenomena, this approach assumed the form of notions of hidden forces (the first impulse, God, *élan vital*, spirit, etc.). In our times, more influential proved those theories, isolating matter from motion, which did not spring from the idealist positions of their authors but from the development of natural science itself; this refers in particular to the “energism”, which is already overcome, however, by present-day science.

In “energism”, the possibility of regarding motion as an element of the world isolated from matter was founded on the fact that the natural-scientific concept of energy as a measure of motion permitted a unified description of many physical processes which were previously regarded as entirely different and irreducible to one another. Energy began to be thought of as the common denominator of all the natural processes, so that some physicists decided that there was no need to consider the concrete mechanisms of these processes, since all of them could be covered by the energy concept. From this standpoint, energy is the only objective substance, while matter is merely a secondary and accidental consequence of it. For instance, Henri Bergson believed that mutability, or motion, did not at all imply the existence of a changing object—it was itself the thing. Motion was clearly raised to an absolute here.

The same view was held by Wilhelm Ostwald, who insisted that only energy existed in the world. What would a person feel when hit with a stick—the stick or energy? Certainly energy! Everywhere where people are accustomed to feel and see matter, they feel and see only “pure” energy, according to Ostwald; the processes involving energies are manifested, through our consciousness, as physical phenomena. The discovery of the law of conservation and transformation of energy and the successes of thermodynamics stimulated again these persistent attempts to lift “pure” energy to an absolute, the ultimate content of all that exists. But “pure” energy is no more than an abstraction. Energy is one of the characteristics of the intensity of interaction between material objects, it is motion which is just as impossible without a material vehicle as thought without a thinking brain or blueness without something that is blue.

In scientific research, one often has to single out only the energy aspects of certain processes, ignoring their vehicles. This abstraction is quite justifiable. As long as the real structure of elementary particles is unknown, researchers generally restrict themselves to descriptions of transmutations of particles in terms of energy only. But if this procedure is treated as an absolute one, energy is sometimes interpreted as an indestructible, stable substance out of which elementary particles are, as it were, constructed. Sometimes it is the photons that are identified with “pure” energy. The discovery of light pressure has shown that photons are not only waves but also tiny accumulations of matter possessing both energy and mass. Since the time of that discovery “energism” has virtually ceased to exist, but there were traces of it in some interpretations of the law binding the mass and energy of material objects: $E=mc^2$, where energy E equals mass m multiplied by the second power of the velocity of light c . Erroneously identifying mass with matter, physicists believed that matter could fully pass into a concentration of “pure” energy. But mass is a measure of such properties of matter as energy and gravitation, and energy is a measure of motion. There is neither “pure” energy without mass nor mass without energy in nature. For instance, the proponents of the idea of total transformation of mass into energy often cite the example of the transformation of the electron and the positron into the electromagnetic field, ignoring the fact that the electron and the positron are not “pure energy-less mass”, nor is the electromagnetic field “pure” energy. The field has its mass expressed in the concept of field quanta. Any object of reality possesses mass and energy, rest and motion, linked by a definite interdependence.

The diversity of the forms of motion and their relationship.
Reductionism: its necessity and danger.

In classifying the forms of the motion of matter, dialectical materialism relies on the achievements of the natural sciences and on the philosophical view of motion as the mode of the existence of matter, and singles out a number of basic forms out of their immense diversity. The first scientific classification of the forms of motion was proposed by Engels. The forms which he identified were: mechanical, physical, chemical, biological, and social. This classification still retains its significance, although it has been

significantly enriched, of course, by the achievements of contemporary science.

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The forms of the motion of matter are organically linked with a definite level of its structural organization, each of which being characterized by a system of laws and a vehicle of its own. The starting point in this hierarchy is the submicroelementary level—the hypothetical form of the existence of matter having field nature, out of which elementary particles are born (the microelementary level); at the next stage nuclei are formed (the nuclear level), which are the building material for molecules (the molecular level); molecules combine into aggregates—gaseous, liquid, and solid bodies (the macroscopic level). The latter form stars, planets, stellar systems, metagalaxies, etc. (the cosmic level).

The organic level is the result of gradually increasing complexity of the molecules of carbon compounds which has led to the formation of organic compounds. Life was the necessary, law-governed outcome of the development of an ensemble of chemical and geological processes on the earth's crust. The evolution of life proceeded from pre-cellular forms of protein existence to cellular organization, to the formation first of unicellular and later multicellular organisms. The primates became the final stage in the evolution of organic nature and the starting point for the origin of man. We thus find ourselves on the top rung of the magnificent ladder representing the progressive development of matter, this top rung being the social level. The fact that man and society are a special form of the motion of matter, the highest one, is a fundamental discovery of philosophy.

Society is not just matter but spirited matter. The vehicle of the social form of motion is man as the subject of history. Inasmuch as he is a reasonable social being endowed with spiritual inner life, and inasmuch as his actions are purposeful, the social form of motion is expressed in subject-object relations, i.e. in the relations of man, social groups, society as a whole, to the surrounding world, to objective reality. Herein lies the specificity of the social form of the motion of matter, its radical difference from all the other forms of motion.

Thus there are several qualitatively different levels of the motion of matter. What does qualitative difference mean? It means that the qualitative specificity of one level cannot be explained in terms of the qualitative specificity of another. For instance, the biological organization has its own meaning inexplicable in the framework of the physical picture of the world.

In the kingdom of life, we deal with such phenomena as adaptation, metabolism, growth and multiplying, struggle for survival, mutability and heredity. There is none of this in inorganic nature. In the living organism, even the purely physical and chemical processes are directed towards the solution of definite biological tasks. Physical and chemical laws cannot explain why a monkey is ready to sacrifice her life to save her young, or why a bird can spend weeks brooding. Each level of the organization of matter is subject to its own specific laws.

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While stressing the need to take into account the specificity of the levels of the organization of matter, we must bear in mind certain general laws characteristic of all levels, as well as the links between, and interaction of, various levels. These links are manifested above all in the fact that the higher level comprizes the lower as one of its genetic premisses and at the same time as its own element. The physics of elementary particles has not only “conquered” chemistry, it has also approached living substance in biology. Biologists have established that heredity is conditioned by the nucleus of the cell, the chromosomes, which transmit hereditary characteristics. It transpired that the answer to one of the most intimate questions of biology largely depends on chemistry, and that life is the chemistry not only of protein bodies but also of other chemical components, in the first place of nucleic acids. For this reason, physico-chemical methods must be used along with the leading biological ones in the study of life phenomena.

The study of biological phenomena in its turn enriches chemistry and physics. Thus chemistry, which studies the structures of the molecular level, has made considerable advances thanks to the appearance of quantum mechanics, which has revealed certain peculiarities in the structure of the atomic level, chemical reactions at the molecular level being connected with intra-atomic processes.

The higher forms of organization, however, are not included in the lower ones. Life is a form of organization characteristic of protein bodies. There is no life in inorganic bodies. The chemical form of organization is characteristic of chemical elements and their compounds. But there is no chemical organization in such material objects as photons, electrons, and similar particles.

Where the irreducibility of the more complex forms of motion to the simpler ones is ignored, relapses are frequent into mechanicism and reductionism. Thus psychoanalysis often reduces human essence to the

biological components of man, neglecting his social nature. That is reductionism. To explain man's inner spiritual world, to understand the nature of his axiological and semantic links, joys and sufferings, as well as the hidden springs of volitional impulses, the power of conscience, etc., the methods of physiology, biophysics and biochemistry are inadequate.

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So what is reductionism? Is it always bad and scientifically untenable? Or does it have some rights in science? Reductionism is defined as a methodological principle in accordance with which cognition of complex systems assumes their reduction to simpler and even quite elementary ones, the laws of the functioning of the former subsequently deduced from the principles of the functioning of the latter. However, this principle can only be applied within strictly defined limits. The method of reductionism is to some extent characteristic of all sciences, and certain achievements are possible on this path. For example, there is a tendency in modern physics towards reducing to the minimum the number of the fundamental principles of the structure of matter: at present, scientists are trying to find the common basis of the four forces of interaction known to physics—electromagnetism, gravitation, the weak and the strong nuclear interactions. Is this reductionism? It is not, because the search for the general is not a simplification of the concrete but a step towards the truth. Explanation of the nature of, say, electromagnetism will provide additional information for the study of man, who is also a source and a receiver of electromagnetic radiations whose strength and intensity apparently affects the human psyche. To reject the unity of the fundamental principles of the structure of matter at all its structural levels would mean to challenge the principle of the material unity of the world, which implies the existence of different forms of matter in motion.

Motion as an essential attribute of matter expressing the mode of its existence necessitates also the introduction of such characteristics of forms of the existence of matter as space and time.

3. Space and Time

The concepts of space and time.

All motion assumes a change, interpreted in one way or another, of position in space, carried out in time, also interpreted in one way or another. Despite their apparent obviousness, the concepts of space and time belong among the most complex characteristics of matter. The science of the 20th century has filled them with content so diverse that they have often become the object of fierce philosophical controversy. So, what are the causes and the meaning of such close attention to these categories?

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The most general conception of space and time rests on our immediate empirical experiences. The concept of space emerges both out of the characteristics of a separate body, which always has a certain extension, and out of the different spatial positions of a great many coexisting objects. Space is now defined as *a form of the existence of matter characterized by such properties as extension, structuredness, coexistence, and interaction*. The concept of time also emerges both out of the comparison of different states of one and the same object which inevitably changes its properties because of the duration of its existence, and from observation of different objects succeeding one another in the same place. *Time* is also *a form of the existence of matter; it is characterized by such properties of alteration and development of systems as duration and sequential replacement of one state by another*. The concepts of time and space are correlative: the concept of space reflects the coordination of different objects located outside one another at one and the same moment of time, while the concept of time reflects the coordination of objects replacing one another at one and the same place in space.

What was the essence of the controversy about these concepts?

Putting aside the various interpretations of space and time throughout mankind's cultural evolution and concentrating on the history of natural science only, we can single out the two opposite conceptions—the substantial one and the relative one. According to the former of these conceptions, which formed in the framework of Newton's classical mechanics, absolute space and time exist independently of matter, and material events and processes proper take place in these absolutes. Absolute space and time are pure extension and pure duration in which material objects are placed; they are immutable and constant. All bodies can be removed from space, and still space will remain, and it will preserve its properties. The same applies to time: it flows identically throughout the universe, and this flow does not depend on anything; time is a continuous

world stream, a constant cosmic scale for the measurement of all concrete movements.

The second conception, which arose within the framework of the dialectical tradition, was clearly formulated in dialectical materialism and later finally borne out by Einstein's theory of relativity (hence the name of the conception) and by the entire subsequent course of the development of science. The philosophical meaning of the relative approach is in the conception of space and time as forms of the existence of matter rather than as special entities separate from matter. It follows from this conception that space and time are, first, objective attributes of matter and, second, universal in this their capacity. Along with the general properties of space and time, each of these categories has qualitatively specific properties. The specific properties of space are tridimensionality, symmetry and asymmetry, forms and sizes, location, distances between bodies, distribution of substance and field. The properties of time are unidimensionality, asymmetry, irreversibility, i.e. constant orientation from the past into the future, the rhythm of processes, and the velocity of change of states.

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The philosophical approach to space and time demands that they be considered in unity with motion and matter.

The unity of matter, motion, space and time.

The idea of absolute space and time corresponded to a definite physical picture of the world: the view of matter as an aggregate of atoms possessing invariable volume and inertia (mass) and instantaneously acting on each other either at a distance or through contact. Revision of the physical picture of the world changed the conception of space and time. The discovery of the electromagnetic field and refutation of the theory of instantaneous long-range interaction revealed the untenability of the classical picture of the world and thus the untenability of the previous conception of time and space.

However, all this took time. Both new facts and new ideas had to be accumulated first. A great contribution to the development of scientific notions concerning the connection between space and time, on the one hand, and matter in motion, on the other, was made by the Russian mathematician Nikolai Lobachevsky. He came to a conclusion that was highly important not only for geometry but also for philosophy: the

properties of space are not always and not everywhere identical and immutable; they vary with the most general properties of matter. Lobachevsky's ideas about the unity of space and matter in motion were confirmed and concretized in modern physics. Einstein's theory of relativity revealed the direct links that tied space and time with matter in motion and with each other. The fundamental conclusion that follows from this theory is this: space and time do not exist without matter, their metrical properties being created by the distribution and interaction of material masses, i.e. by gravitation. It turned out that the existence of metrical properties of space and time is a function of gravitational forces that different masses in motion exert upon each other. Without the masses, there would be no gravitation, and without gravitation, there would be no space and time. Space and time therefore do not exist without matter. Since matter is in constant motion, space and time change their properties with this motion. One of the expressions of these links of space and time with motion is the fact that the simultaneity of events is not absolute but relative. To fully comprehend this fact, it is necessary to bear in mind that a spatio-temporal description of phenomena is impossible without a frame of reference within which observation is conducted.

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The distance between bodies located at a finite distance from each other in space is not the same in different moving inertial systems. With the growth of velocity, the length of bodies diminishes. There is no constant length of a body in the world: it changes with the frame of reference. In a similar way, the interval between given events varies in different material systems in motion. As velocity grows, the interval diminishes. According to the general theory of relativity, the flow of time slows down in a very strong gravitational field. Imagine an astronaut flying a spaceship in the depths of the galaxy. Setting out on his voyage, he promised to send a signal to the earth every second. Now imagine the following picture: the astronaut approaches an immensely dense star lost somewhere far in the galaxy; the density of this star is many times greater than that of the atomic nucleus. Observers on the earth would notice, in fear and amazement, that as the astronaut approaches this body, the radio signals sent by the traveller come not every second but rarer and rarer, with intervals stretching into minutes, then hours, then years and centuries. Eventually the signals will stop coming in at all, although the astronaut keeps sending them each second, just as he promised. The point here is that neither radiations nor any particles can

leave this super-dense star, and it only interacts with the universe through the force of gravitation.

Thus the single continuous space-time of the universe is a manifestation of the gravitational forces acting in it. The identity of the gravitational and spatio-temporal phenomena was reflected in the equivalence principle, in accordance with which the observer within a closed system cannot determine, from within that system, the character of changes taking place in it, for the external indications of the action of gravitation, on the one hand, and the accelerated motion of the system, on the other, which cause, as we know, changes in spatio-temporal characteristics, coincide. Therefore the field of gravitation and the field created by accelerated motion are physically indistinguishable, equivalent to each other.

As we see, Einstein's theory of relativity confirms the dialectical-materialist principle of the unity of space and time with matter in motion. The unity of space, time and motion of matter could be expressed in these terms: studying matter in various forms of its manifestation, we inevitably study thereby space and time in their organic connection with motion; and vice versa, studying the spatio-temporal parameters, we inevitably study thereby matter in motion.

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This unity was already suspected by the wise of antiquity, who visualized space as strings in varying degrees of tautness, i.e. in varying degrees of tenseness, condensation, and rarefaction. This view implies the energy character of space, its organic links with matter, with its infinite activity, and the conception of space as a very fine vibrating medium full of great potential. Ancient wisdom rejected pure, empty and absolutely homogeneous space: it ascribed to space all those elements of density, curvature and plasticity which scientists attributed to it only many centuries later. Previously it was thought that these characteristics belonged to bodies themselves rather than the space they occupied.

Space and time are conditioned by matter as form is conditioned by its content, therefore each level of the motion of matter has its own spatio-temporal structure. The spatial organization of a crystal is different from the form of the extension of a blossoming rose. Living structures also have specific features of space and time: their geometry grows complex, and the rhythms of time change, too. Here we come up against the biological characteristic of time and space: all organisms have their own biological clocks. The time of historical events also has its own structure, for the

subjects of these events master time and space by organizing these events and by experiencing them. Thus historical time is a different characteristic of time compared to physical time, say, the motion of celestial bodies. When we say that time moves faster, we mean that the events occur faster, i.e. the intensity of all the forms of social life increases. Socio-historical time is measured in generations, centuries, and millennia. Its special characteristic is that historical events are stored in the memory of mankind. In this time, the reference point may be certain social events or even legends. There is also psychological time, associated with its subjective experiencing. Thus tense expectation lengthens time, while experiencing pleasure or joy tends to shorten or condense it: time shrinks, as it were.

Thus the relativity of space and time, their connection with the qualitative material content of the structure on which they essentially depend, has now stepped across the boundaries of theoretical physics and is used practically in all areas of human knowledge.

On the multidimensionality of space.

The theory of relativity employs the concept of a unified spatio-temporal continuum or, as it is sometimes called, of four-dimensional space, in which time is added to the three familiar spatial parameters. This is done in order to fix a given material object more accurately than is possible in ordinary three-dimensional space. Einstein himself said that he was surprised at the caution with which four-dimensional space was sometimes treated, although this concept means no more than the fact that a body with given spatial coordinates occupies a given position at a given point in time (the fourth dimension).

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David Hilbert's multidimensional space is quite a different matter. Now, what is that multidimensional space? What physical and philosophical meaning does this concept have? Its purpose is to reflect the presence in the object under study of certain entirely non-spatial properties which are merely expressed as "space-like" in terms of various mathematical operations. Thus if three coordinates expressing, say, the three components of an object's impulse are added to its three familiar spatial coordinates, the sum of all these data is said to be a six-dimensional phase space, although there are only three properly spatial coordinates here, as usual. The concept of six-dimensional phase space is a mathematical abstraction, and it does not

at all claim to have supplanted the concept of three-dimensional space. Multidimensional space is not a fiction, but neither is it space in the direct meaning of this word.

The use of the method of multidimensional space is accepted in quantum physics, which has to describe the phenomena of the microcosm inaccessible to sense perception and therefore to visualization. Expressing concrete physical phenomena of the microcosm with the aid of concepts worked out in the classical physics of the macrocosm, multidimensional spaces are a justifiable scientific abstraction which has both physical and mathematical meaning. There is nothing supernatural or meaningless here. Various idealist interpretations of multidimensional space, such as the theological constructions placing all kinds of Spirits or the ideal substance itself in these fifth, sixth, etc., dimensions, are not proposed by physicists or mathematicians themselves, who clearly understand the nature of the abstractions they introduce, but by idealists who exploit the achievements of natural science, or by those who do not fully understand the meaning of this new category.

The dialectics of the finite and the infinite.

It would be hard to find a person whose imagination was not struck, at some time or other, by the mystery of the abyss of the universe, by the sight of the dark sky with myriads of sparkling stars in it.

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In our everyday life, in all that surrounds us, we deal with finite objects and phenomena. Finite means moving towards an end, limited in space and time. Infinity is interpreted in the sense of anything sufficiently large or sufficiently small—which depends on the conditions of a given task. Thus a milliard raised to the hundredth power is a practically infinite magnitude. Our experience does not permit us to answer definitely what infinity is. The ancient Greek philosopher Archimedes thus visualized infinity: take a spear and throw it as far as you can; go to the place where the spear has fallen, throw it still farther; we may repeat the procedure as many times as we like, and we will never come up against a boundary beyond which we could not throw the spear. Therefore space is infinite—it is all so simple and clear! Hegel called this kind of infinity “bad”: “However far I may place the star, I can go

beyond it, the world is nowhere boarded up.”⁶ Hegel pointed out that it would be wrong to interpret infinity in the sense of unlimited repetition of one and the same act: this is a merely quantitative, and therefore limited, understanding of it, illustrated for instance by the natural number series containing the possibility of unlimited addition of more and more units.

True infinity, opposed to the bad one, is a process of continual movement beyond the limits of the finite, a movement that is not just quantitative but qualitative and even essential: one measure of the definiteness of a system passes into a qualitatively different one, both great and small. Any system, however great, is finite in space and time, but in the transition from one link in the chain of the world hierarchy to another, one system of properties and relations passes into another possessing its own measure, that is, qualitative and quantitative definiteness. In this sense, infinity is qualitative diversity of hierarchically organized systems of the universe. Then, true infinity is also a process in the sense that the universe is a reality continuously creating itself rather than something accomplished and given once and for all. The finite is a constantly emerging and disappearing moment of the infinite process of change in that which is. Change is in general connected with the passing of a system beyond its spatial, temporal, quantitative and qualitative boundaries. The endless web of the connections between objects and phenomena in the world, of their energy and information interactions is continual movement beyond the bounds of the finite and the particular. True infinity is a process of constant qualitative formation of the new comprizing the infinity of space and time; it is a dialectically unfolding process of acquiring boundaries and losing them, of achieving equilibrium and at the same time tending to disturb it; that is to say, it is a constantly and tensely pulsing process of the unity of opposites.

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The infinity of the time of the existence of the world is expressed in the concept of eternity. Eternity is a property of the world as a whole, of which each concrete system is transient. Acceptance of the eternity of the material world is a cardinal principle of the dialectical-materialist worldview. In religious and idealist philosophy the concept of eternity is connected with the idea of God or of the Absolute Spirit. God is conceived as an infinite and absolutely perfect being abiding in eternity, not in time.

⁶ G.W.F. Hegel, *System der Philosophie*, Part Two: *Die Naturphilosophie*, in: G.W.F. Hegel, *Sämmtliche Werke*, in 20 volumes, Vol. 9, Frommans Verlag, Stuttgart, 1929, p. 72.

Quantitatively, eternity is manifested in the actual infinity of the intervals of the being of systems and events succeeding one another (centuries and millennia). Qualitatively, it denotes an infinite series of changes in the material forms of that which is.

Epistemologically, infinity is conceived of as a process, in principle impossible to be completed, of expansion and deepening of the subject's knowledge of objective reality. We know incomparably more now compared with the past generations, but there is a bottomless pit of the unknown ahead, and the future generations will have to handle it.

The concept of the infinite and unlimited in natural science.

A philosophical conception of the essence of the finite and the infinite, the limited and the unlimited presupposes generalization of the achievements of science. This is mostly associated with the modern interpretation of gravitation. We know already that the general theory of relativity, which demonstrated the connection between space-time and matter, generally describes space as non-Euclidean ("curved"). Einstein regarded the gravitational fields of various bodies as space curvatures in the areas surrounding these bodies. But does the entire world space have curvature? World curvature is defined by the curvature of all the world lines passing by massive bodies. If for instance we take the totality of the world lines of all the bodies of nature, these lines curve more strongly near gravitation centres: planets cause weaker curvatures than stars. Gravitation is weaker in intergalactic space, where world lines straighten. Since all world lines are subject to curvature, space in general may be said to be curved. Naturally, the infinity of space thus perceived does not coincide with its unlimitedness. Indeed, let us imagine an insect (like the blind beetle which Einstein described to his son) crawling on a ball. Moving on the surface of the sphere over an unlimited period of time, it will never encounter any boundaries: the sphere is unlimited in two dimensions.

There are various interpretations of the curvature of world space. Some are inclined to interpret it as proof of its closedness, and in this sense finiteness similar to the finiteness of any spherical surface. Movement in this space in a strictly determined direction will not necessarily be movement away from the starting point, but owing to the inner curvature of space it may end in a return to the starting point from the opposite side. This

problem is similar to the one discussed before Magellan's circumnavigation of the globe: is it possible to sail in some strictly determined direction, say west, and to reach eventually the starting point, coming to it from the east and having covered a finite distance? The unlimitedness of space does not mean its infinity. Others assert that the finiteness of space does not at all follow from its curvature: the closedness of space is merely a particular and idealized (because it assumes uniform distribution of matter in the universe) case of its curvature. Although curved, space remains infinite.

Whatever the solution of this issue in the natural sciences, the concept of infinity in dialectical materialism has above all a qualitative rather than quantitative meaning, the more so that the concepts of space and time are relative.

This problem is especially acute in various cosmological theories. As we know already, modern cosmology generally accepts the theory of the origin of the universe out of the big bang. There are three varieties of this theory. In one of them, the gravitational attraction between the slowly receding galaxies is so strong that at some moment it will make them begin to draw together even to the point of reverse condensation or collapse. According to another theory, the galaxies recede so fast that the gravitational forces will never be able to stop them, and the universe will go on expanding infinitely. According to the third theory, gravitation is close to the critical magnitude, which hinders both the infinite unfolding of the universe in space and its reverse condensation (thus avoiding the collapse).

How is the issue of the finiteness or infinity of space resolved in these theories? The first insists that space is finite but has no limits, while in the other two space is infinite. In all of them, however, the problem of time is unsolved. Time turns on the moment of the big bang (and in the first of the theories, on the moment of the big collapse). Does the fact of the explosion signify the beginning of time, and the fact of the collapse, its end? The answer assumed by scientists but not yet confirmed by science is this: space and time end at the moments of explosion and collapse, but they only end in the sense that we now know.

Before the explosion and after the presumed collapse there are other space and time, so far unknown to science. This answer essentially coincides with the one provided by dialectical materialism which accepts the inexhaustibility of matter and of the forms of its existence. Still, what can this new state of space-time mean? Why do scientists assume the existence

of heretofore unknown forms? Attempts are made to answer this question by creating a quantum theory of gravitation. In the past, the founders of quantum physics faced similar problems in connection with the stability of the atom. Discharging energy, the electrons would inevitably have to fall on the atom's nucleus (that is an analogue of the big collapse). But none of this happens, and quantum physics thus explained this fact: if the electron fell on the nucleus, it would have to have quite definite position and velocity at that moment, which is impossible in terms of the indeterminacy principle discovered by quantum physics. Physicists place their hopes of constructing a quantum theory of gravitation on the possibility that at the big bang and big collapse points the properties of space-time as we know it change in such a way that the continuous flow of space and time disintegrates into quanta; in other words, just as the field concept, space and time acquire quantum features, which brings them still closer to the general properties of matter and further confirms the correctness of the principle of the material unity of the world. It will no longer be possible to say that the bang and collapse points are the limits of time and space: it will have to be definitely said that the spatio-temporal forms of the existence of matter acquire a qualitatively different character here. Our well-established and largely empirical notions of space and time will have to be repeatedly revised in the future, but one point will remain immutable: space and time are objective; they are universal forms of the existence of matter, qualitatively infinite just as matter itself.

So far we have considered the problem of infinity in relation to the cosmic scale of the existence of matter; we have dealt with the so-called extensive infinity. The just as infinite world of the tiniest particles of matter represents the so-called intensive infinity. Human thought ranges from areas measured in millions of light-years to areas of the order of one billionth of a centimetre. In this latter area, space and time apparently have special properties, although it is not excluded that they are similar to those we know.

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Thus all objects and processes in the world are finite, but the totality of these finite things and processes is infinite. There are no borders beyond which there could be something that would not be covered by the concept of objective reality: it is in everything, and it is everything. The concept of limit has meaning only in relation to the finite.

In conclusion, it should be stressed that the task of philosophy is not to offer a final solution to the problem of infinity. Relying on the entire body of

concrete scientific knowledge, on the history of knowledge and culture as a whole, philosophy establishes the world-view and methodological significance of the theoretical thought's search for a solution of one of the deepest mysteries of being.

Chapter IV. CONSCIOUSNESS: ESSENCE AND ORIGIN

1. The General Concept of Consciousness

Definition of consciousness.

Man possesses the wonderful gift of reason, with its keen insight into the remote past and future, into the world of dream and fantasy, a gift that affords creative solution of practical and theoretical problems, and realization of the most daring plans. Since the earliest antiquity, philosophers have striven to find the solution to the riddle of consciousness. Heated debate on this subject has raged for centuries. Theologians see consciousness as a tiny sparkle of the grandiose fire of divine reason. Idealists insist on the primacy of consciousness over matter. Divorcing consciousness from the objective connections of the real world and regarding it as an independent and creative essence of being, objective idealists interpret consciousness as something fundamental: it is not explained in terms of something existing outside it—on the contrary, it is meant to explain out of itself everything that occurs in nature, history and the behaviour of each individual human being. The adherents of subjective idealism see consciousness as the only reliable reality.

According to ancient notions, which still survive in religious beliefs and idealist philosophy, there is a supernatural force called the soul active in the human organism; it is believed to be the vehicle and cause of our thoughts, emotions, and desires. Such notions, which essentially mystify consciousness, have always been an obstacle to the study of natural phenomena, social life, and man's very essence. Hence the agnostic assertions that grasping the essence of consciousness is just as vain an attempt as, say, the drowning man's desire to drag himself up by the hair.

Idealism digs an abyss between reason and the world, whereas materialism searches for community and unity between them, deducing the spiritual from the material. Materialist philosophy and psychology proceed from two cardinal principles in the solution of this problem: they see consciousness as a function of the brain and as a reflection of the external

world. In pre-Marxian philosophy, though, the materialist interpretation of consciousness was limited and metaphysical in character, reducing consciousness to passive contemplative reflection and ignoring its socio-historical essence and links with social practice.

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Resolutely rejecting the idealist conception of consciousness as a manifestation of the specific spiritual principle, as well as the limitations of metaphysical and mechanist materialism, its contemplativeness and resultant simplistic notions of the relations of matter and consciousness, Marx and Engels were the first to propound a consistently materialist and at the same time dialectical explanation of the essence of consciousness and its origin, demonstrating the socio-historical, specifically human level of determination of psychical phenomena. The starting point of a Marxist interpretation of consciousness is a scientific view of the socio-historical role of social practice, the view of man as a product of his own labour and social relations. By changing external nature and social relations, man simultaneously shaped and developed his own nature. There is no, and neither can there be, consciousness outside society, outside knowledge accumulated in the course of mankind's history and outside the specifically human modes of activity worked out by mankind. Now, how can we define consciousness? *Consciousness is the highest function of the brain characteristic only of man and connected with speech, a function whose essence is a generalized and purposeful reflection of reality, anticipatory mental construction of actions and foreseeing their results, and rational regulation and self-control of behaviour.*

Consciousness and the brain.

The human brain is an amazingly complex structure, a nervous apparatus of tremendous subtlety. It is an independent system and at the same time subsystem, incorporated in an integral organism and functioning in unity with it, regulating its inner processes and reciprocal relations with the external world. What are the facts, now, which irrefutably prove the brain to be the organ of consciousness, and consciousness, to be a function of the human brain? There are a great many such facts.

In the first place, it is a fact that the level of the complexity of brain organization determines the level of the reflective-constructive capacity of consciousness. The brain of the primitive man, a member of a herd, was at a

rudimentary stage of development, and could only be the seat of very primitive consciousness. The brain of modern man, evolved as a result of a long biosocial evolution, is a highly organized complex organ. The dependence of the level of consciousness on the degree of organization of the brain is also confirmed by the fact that the child's mind is moulded, as we know, as the brain develops; also, when a very old man's brain is ruined by old age, the functions of consciousness wither away, too.

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A normal psyche is impossible outside a normally functioning brain. The moment the fine structure of brain matter is disturbed or destroyed, the structures of consciousness are destroyed with it. Subjects with damaged frontal lobes cannot produce or realize complex programmes of behaviour; they do not have stable intentions, are easily distracted by outside irritants, and cannot properly control their conduct. When the occipitoparietal parts of the cortex of the left hemisphere are affected, disturbances ensue in orientation in space, in operations with geometrical relations (the perception of the difference between right and left disappears), in the performance of the simplest arithmetical operations, and in the analysis of some grammatical constructions. Pathological rebellions of the subcortical areas can manifest themselves in fits of anger, fear, etc. When a person systematically poisons his or her brain with alcohol or other narcotics, the spiritual world of the individual is deformed, and sometimes a complete degradation occurs, as is all too well known.

The experimental data of various sciences—psycho-physiology, physiology of the higher nervous activity, and others—irrefutably demonstrate that consciousness cannot be separated from the brain: it is impossible to separate thought from thinking matter. The brain with its complex biochemical, physiological, and nervous processes is the material substratum of consciousness. Consciousness is always associated with these processes occurring in the brain, and is impossible without them. But it is not these processes that constitute the essence of consciousness.

The material and the ideal, image and object.

The physiological mechanisms of psychical phenomena are not identical with the content of the psyche itself, which is a reflection of reality in the form of subjective images. The dialectical-materialist view of consciousness is not compatible either with the idealist positions, which divorce psychical

phenomena from the brain, or with the positions of the so-called vulgar materialists who reject the specificity of the psychical. These materialists state, for instance, that thought stands in almost the same relation to the human brain as gall to the liver. The error of this position stems from the incorrect interpretation of the brain as the cause and source generating psychical phenomena out of itself. On this approach, consciousness proves to be merely a passive echo of the material brain processes rather than a subjective image of external actions.

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What is the essence of the brain processes? Ivan Sechenov, Ivan Pavlov, Nikolai Vvedensky, Aleksei Ukhtomsky and their followers explained the reflex nature of psychical processes and substantiated the view of psyche as a system of activity shaped by the external world. The reflex process begins with the perception of a stimulus, continues in the nervous processes of the cortex, and ends with the organism's response activity. The reflex concept reveals the interconnection and interaction of the organism with the external world, the causal dependence of the brain's work on the objective world through the mediation of man's practical activities. An essential function of the conditioned reflex is anticipation, *signalling* of the imminent events in the external world. Temporal connections in man develop both under the impact of the real objects of the surrounding world and that of verbal stimuli. The role of nervous brain mechanisms consists above all in the *analysis* and *synthesis* of the stimuli. Reaching the cortex, the action of a conditioned stimulus is included in the complex system of connections formed as a result of past experiences. An organism's behaviour is therefore conditioned not only by a given action but also by the entire system of existing connections.

An important principle of reflex activity of the brain is the principle of *reinforcement*: only that reflex activity is developed which is reinforced by the achievement of some result. Reflexes are reinforced by the actions themselves through the *feedback mechanism*: when a reflex sets in motion a certain effector apparatus (the muscles, the glands, whole systems of organs), the impulses produced in the said apparatus as a result of its work return to the central link of the reflex. They signal not only that the organ works—they also inform the brain of certain results of this work, which makes it possible to correct the ongoing action and achieve an adequate realization of intention. The task of feedback is to inform the brain constantly of the processes in the system it controls. An inability to

coordinate and control movement at the right time is as harmful to the organism as paralysis.

In their material nature, the neurophysiological processes are electrochemical. Not a single sensation, not one, even the most primitive, emotion or impulse can arise without the physiological, biophysiological, bioelectric, and biochemical processes in the brain. All these processes are the necessary mechanisms of psychical activity. But the latter is characterized not just by its physiological mechanism: its content, i.e. part of reality which is reflected in the brain, is also important.

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Reflection of things, their properties and relations in the brain, does not of course mean that they are transplanted into the brain or produce physical impressions on it similar to impressions on wax. When I see a birch, there is neither birch in my brain nor its physical impression. The brain is not deformed, nor does it become blue or cold when hard, blue or cold objects make an impact on it. The subject's image of an external thing is something subjective and ideal; it is irreducible either to the material object outside the subject or to the physiological processes occurring in the brain and giving rise to that image. As Marx puts it, "the ideal is nothing else than the material world reflected by the human mind, and translated into forms of thought".¹ The reflection of a thing in the brain is thus an active reflection connected with the processing or transformation of external impressions.

Man's spiritual world can be neither felt nor seen nor heard nor discovered by any apparatus or chemical reagents. No one has so far found either the duller or the brightest thought directly in the brain: thought, the ideal, has no existence in the physical or physiological sense of the word. At the same time thoughts and ideas are real. They exist. An idea cannot therefore be regarded as something unreal. Its reality, however, is not material but ideal. It is our inner world, our individual, personal consciousness, as well as the entire world of "suprapersonal" spiritual culture of mankind, i.e. externally objectivized ideal phenomena. It is a question of a special type of reality here. Matter is *objective reality* while consciousness is *subjective reality*.

Consciousness is a *subjective image of the objective world*. What does this mean? In the first place it means that consciousness belongs to man as subject, not to the objective world. There aren't any sensations, thoughts or

¹ K. Marx, *Capital*, Vol. I, p. 29.

emotions that would be no one's. Any sensation, thought or idea belongs to a definite person. The subjectiveness of the image is not something arbitrarily added by the subject: an objective truth is also a subjective phenomenon. At the same time the subjective can be interpreted in the sense of incomplete adequacy of the image to the original.

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Representations, concepts and thoughts are "subjective in their abstractness, separateness, but objective as a whole, in the process, in the sum total, in the tendency, in the source".² The content of a mental image of an object is not determined either by man's anatomic and physiological organization or by what he finds directly in nature on the basis of his individual experiences. Its content is a synthetic description of an object obtained in the course of object-transforming activity. This opens up a fundamental possibility of objective study of consciousness: it can be investigated through the forms of its manifestation in sensuous practical activity.

The subjective image as knowledge, as spiritual reality, and the physiological processes as its material substratum, are qualitatively different phenomena. Failure to realize this qualitative specificity gave rise to the mechanistic tendency towards their identification; on the other hand, the lifting to an absolute of the specificity of consciousness as subjective image produces the tendency towards opposing the material to the ideal, the opposition being taken to the point when the world breaks up into two substances, the spiritual and the material. A great role in overcoming both the mechanistic and the idealist tendency in the interpretation of psychical phenomena is played by Lenin's proposition that absolute opposition of matter and consciousness is only permissible in the framework of the fundamental epistemological question as to what is to be recognized as primary and what as secondary. "To operate beyond these limits with the antithesis of matter and mind, physical and mental, as though they were absolute opposites, would be a great mistake."³ Why so? The reason is that the ideal, or consciousness, is not a substance but a function of matter organized in a definite manner. The principle of dialectical-materialist monism consists in the view of sensation as a property of matter in motion.

² V.I. Lenin, "Conspectus of Hegel's Book *The Science of Logic*", *Collected Works*, Vol. 38, p. 208.

³ V.I. Lenin, "Materialism and Empirio-Criticism", *Collected Works*, Vol. 14, p. 246.

Consciousness and the objective world are opposites which form a unity. The basis of this unity is praxis, man's sensuous object-related activity. It is this activity that gives rise to the need for a psychical, conscious reflection of reality. The necessity of consciousness, and a consciousness providing a correct reflection of the world at that, is rooted in the conditions and requirements of life itself.

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Lenin's proposition that sensation is a copy or snapshot of reality is of essential methodological significance. It enables us to show up the complete untenability of agnostic and idealist conceptions of sensation and of consciousness as a whole.

The activeness of consciousness.

In pre-Marxian and non-Marxist philosophy and psychology, the problem of the activeness of consciousness was worked out mostly in the framework of idealism; idealists assumed that the subject perceives external influences actively rather than passively, transforming the material of sensuous experience in accordance with the norms of consciousness itself. The activeness of human consciousness was thus interpreted in idealism as an absolutely independent supramaterial force. Knowledge of the world was therefore interpreted as constructions of reason itself. Only Marxism placed the problem of the activeness of consciousness on the solid basis of science. Man does not reflect the external world in passive contemplation but in the process of transforming activity.

The content of consciousness is realized in practice, in one way or another. For this, though, it assumes the character of design or *idea*. An idea is not only knowledge of that which is but also the planning of that which ought to be. An idea is a concept oriented towards practical realization.

Creativity is closely linked with practical activity, with the needs arising under the impact of the external world. Reflected in the mind, needs become goals. A goal is an idealized need that has found its object, a subjective image of the object of activity whose ideal form anticipates the result of such activity. Goals are formed on the basis of mankind's total experiences and manifested in their highest forms as social, ethical and aesthetic ideals. The ability for goal-setting is a specifically human capacity, a cardinal characteristic of consciousness. Consciousness would be a mere luxury if it were devoid of goal-setting, i.e. of the ability for mental transformation of

things in accordance with social needs. The basis of the goal-setting activity is dissatisfaction with the world and the need to change it, lend it forms necessary to man and society. Man's goals thus arise out of social praxis, out of the objective world, and presuppose its existence.

But human thought is capable not only of reflecting the immediately existing: it can also break away from this given. The infinitely varied objective world shines, as it were, reflected in all its colours and forms in the mirror of our self, forming there a world as complex, multiform and amazingly variable as the outside one. Man's questing thought moves and creates in this fantastic realm of the spirit, in this "spiritual space". Both true and illusory notions arise in the consciousness of man. Thought both moves along ready-made patterns and blazes new trails breaking down obsolete norms. Thought has the miraculous power of innovation.

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Recognition of the active and creative character of consciousness is a necessary requirement of the Marxist-Leninist understanding of the human personality: people are products and creators of history. It is not consciousness by itself that is connected with reality but actual individuals practically transforming the world. Acting on man and being reflected in his mind, the objective world is transformed into an ideal entity. Being a consequence of the action of the external world which is its cause, consciousness, or the ideal, in its turn acts as a derivative cause: through practice, consciousness exerts a reverse influence on the reality that gave rise to it. Activeness is inherent not only in the individual but also in the social consciousness, above all in progressive ideas which, taking a grip on the masses, become a material force.

The structure of consciousness.

The concept of consciousness is not an unambiguous one. In the broad sense of the word, consciousness signifies psychical reflection of reality regardless of the level at which it is realized—biological or social, sensuous or rational.

In a more narrow and special sense, consciousness is taken to mean not just a psychical state but the highest, properly human form of psychical reflection of reality. Consciousness is structurally organized, being an integral system consisting of various elements linked by law-governed relations. Such elements as the realization of things and the *emotional*

experiencing, i.e. a definite attitude to the content of that which is reflected, stand out most clearly in the structure of consciousness. “The way in which consciousness is, and in which something is for it, is *knowing*.”⁴ The development of consciousness assumes above all enrichment of it through addition of new knowledge about the surrounding world and about man himself. Knowledge, realization of things, has different levels, depth of penetration into the object, and *degree of clarity of understanding*. Hence the differences between everyday, scientific, philosophical, aesthetic and religious conceptions of the world, and also between the sensuous and rational levels of consciousness. Sensations, perceptions, representations, concepts, thought form the core of consciousness, but they do not exhaust its full structure: the latter also includes the act of *attention* as a necessary component. It is precisely due to concentration of attention that a definite range of objects is brought within the compass of consciousness.

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The objects and events acting on us produce not only cognitive images, thoughts and ideas but also emotional storms which make us tremble, feel excited or fearful, cry, admire, love or hate. Cognition and creativity is a fervent search for the truth, rather than a coldly intellectual one. The rich sphere of emotional life comprises *feelings* proper, which are the attitude to external influences (pleasure, joy, grief, etc.), *moods*, or emotional *states* (cheerful, depressed, etc.), and *affects* (fury, horror, desperation, etc.). Depending on a particular attitude to the object of cognition, knowledge acquires a varying degree of significance for the individual, which is most strikingly expressed in convictions: the latter are permeated by profound and stable emotions. And this is an indication of the particular value of knowledge that becomes a vital reference frame. Emotions are elements of the structure of consciousness. The process of cognition involves all aspects of our inner world—needs, interests, feelings, and will. Man’s true knowledge of the world contains both imaginal reflections and feelings.

Consciousness is not restricted to cognitive processes, to directedness at an object (referred to as attention), and the emotional sphere. Our intentions are realized through an effort of will. But consciousness is not a sum total of its constituent elements: it is an integral, complex structured whole.

⁴ K. Marx, “Economic and Philosophical Manuscripts of 1844”, in: K. Marx, F. Engels, Collected Works, Vol. 3, p. 338.

Self-consciousness. Reflexion.

Man thinks and knows himself. He realizes what he does, thinks, and feels. Both historically and in the course of his individual perfection man is first aware of objects and his own practical actions, and at a higher level of development, of his thoughts about objects and actions. He realizes himself as a personality. Self-consciousness presupposes the singling out and differentiation of man, of his own self from everything that surrounds him. *Self-consciousness is the realization by man of his actions, emotions, thoughts, motives of behaviour, interests, and position in society.* An essential role in the formation of self-consciousness is played by the sensations of man's own body, of his movements and actions. Man can only become himself in interaction with other people, with the world, through his practical activity and communication. The formation of self-consciousness is socially conditioned not only through direct communication between people and their reciprocal evaluations but also through the formulation of society's imperatives imposed on the individual, through his realization of the rules for mutual relations. A human being realizes himself not just through other human beings but also through the material and spiritual culture created by them. Labour products are mirrors, as it were, in which we see our radiant essences: a child, says Hegel, throws pebbles in a river and admires the spreading ripples as something that he can see as his own creation.

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Self-consciousness is closely linked with such a spiritual phenomenon as *reflexion* (these concepts are sometimes used as synonyms). Reflexion is a principle of human consciousness which guides man towards a conscious realization of his own spiritual and intellectual processes, towards a frequently critical analysis of his spiritual and psychical states with due attention to all the contradictions in the orientation of the emotions, impulses and thoughts; reflexion is contemplation of the devices used in thought processes and of their social significance. The levels of reflexion may vary widely from elementary self-awareness to profound meditation on the meaning of man's being and its moral content. In cognizing himself, man never remains the way he was before. Self-consciousness did not arise as a kind of spiritual mirror for idle self-admiration. It appeared in response to the call of the social conditions of life which demanded of each individual from the very beginning that he evaluate his deeds, words and thoughts in

the light of definite social norms. Life's harsh lessons have taught man self-control and self-regulation. Regulating his actions and anticipating their results, the self-conscious man assumes full responsibility for them.

The conscious and the unconscious.

The colourful fabric of psychical processes and their manifestations in the form of human actions and relations is woven out of various threads ranging from the highest degrees of the clarity of consciousness to the depths of the unconscious, which figures so prominently in man's mental life. For instance, we do not realize all the consequences of our actions— very far from it. Not all the external impressions reach the focus of consciousness. Many actions are automatic or habitual. But, despite the great significance and place of the unconscious forms of the psyche, man is above all a conscious being.

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Consciousness forms a complex relationship with various kinds of unconscious and irrational mental phenomena. They have a structure of their own, whose elements are connected both with one another and with consciousness and actions which influence them and in their turn experience their influence on themselves. We sense everything that acts on us, but it is by no means all sensations that reach our consciousness. A great many of them remain on the periphery of consciousness or even beyond its limits. Two types of unconscious actions should be distinguished. The first comprizes actions that were never realized, the second, those that *were* previously realized. Thus many of our actions, controlled by consciousness in the process of formation, become automatic and then performed unconsciously. Man's conscious activity itself is only possible on condition that a maximal number of the elements of that activity is performed automatically.

As the child develops, many functions gradually become automatic, and the mind is freed from any concern about them. But when the unconscious or already automatic elements violently invade our consciousness, the latter fights against this stream of unbidden guests and often proves unable to cope with them. This is manifested in various mental disorders—obsessive or maniacal ideas, anxiety states, overpowering unmotivated fear. Habit as something mechanical encompasses all kinds of activity, including thinking, where we often say: I didn't mean to think of it, it just occurred to me. The

paradox lies in the fact that consciousness is present in the unconscious forms of spiritual activity, too, observing the overall picture, so to speak, without close attention to all the details of what occurs in the depth of the mind. In most cases, consciousness can control familiar actions and speed them up, slow them down, or even stop them altogether.

However, not all the unconscious elements, as we have already said, were previously conscious and then became automatic: a certain portion of the unconscious never reaches the illumined area of consciousness. It is these psychical phenomena, uncontrolled by consciousness, that expand the whole field of the psyche beyond consciousness as such.

Human activity is only conscious in relation to those results which originally exist in the design and the intention as their goals. But it is by far not all the consequences of actions that are adequate realizations of the objective. The results of our actions and deeds are often entirely different and even contrary to what we aspired for in performing these actions.

There is a great deal that is both rational and irrational in the life of a separate individual and in the whirlwind of history. The unconscious is manifested in extremely varied forms including information which is accumulated as unconscious experiences and settles in the memory of man forming, e.g., the rich sphere of illusions, the dreams, the powerful instincts, etc. But I would like to repeat that man is above all a conscious being. Both his thinking and emotions are imbued with consciousness.

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2. The Path from Animal Psyche to Man's Consciousness

Reflection as a universal property of matter. Reflection and information.

The consciousness of modern man is a product of world history, the sum total of the practical and cognitive activity of countless generations throughout the centuries. In order to understand its essence, it is necessary to establish its origins. Consciousness has not only a social history. It also has a natural pre-history, the formation of its biological prerequisites in the course of the evolution of animal psyche. It took twenty million years to

create the conditions for the emergence of *Homo sapiens*. Without this evolution, the appearance of human consciousness would have been a real miracle. But it would have been just as miraculous if psyche had developed in living organisms in the absence of the property of *reflection* inherent in all matter.

Reflection is the universal capacity of matter to reproduce some features and relations of the object that is reflected. The capacity for reflection, as well as the character of its manifestation, depend on the level of the organization of matter. Reflection in inorganic nature, in the plant world, in the animal kingdom, and finally in man, has qualitatively different forms. A particular inalienable property of reflection in a living organism is irritability and sensitivity as a specific trait of contact between external and internal environment, which is expressed in excitation and a selective response reaction.

Reflection in all the diversity of its forms, beginning with simplest mechanical traces and ending with human reason, occurs in the process of interaction between different systems of the real world. This interaction has as its result reciprocal reflection, which in the simplest cases figures in the form of mechanical deformation, and as a general case, in the form of reciprocal restructuring of the inner state of the interacting systems: in the changes of their connections or direction of movement, as an external reaction or as reciprocal transference of energy and information. As a general case, reflection is an informational reproduction of the properties of the object being reflected. Any interaction includes an informational process: it is an informational interaction, reciprocal causation in the sense that one object leaves a memory of itself in the other. In the broadest philosophical sense, information is being reflected in another, or other-being, as Hegel would say. Information is an objective aspect of the processes of nature, and as such it is universal. Everything in the world is in direct or mediated interaction, tending to infinity, of everything with everything else—everything carries information about everything else.

On animal psyche.

One of the most important aspects of interaction between living organisms and the environment is their abstraction of vital information about that environment. The capacity for obtaining and purposive use of

such information is so important for the behavioural acts of living organisms that it may be included among the fundamental properties of all that lives. A living organism develops a special kind of adaptive behaviour, which is a qualitatively higher level of interaction between the organism as a whole and the environment—namely, psyche-regulated behaviour. This ability enables the organism to grasp and correlate the biologically significant reference points, to anticipate and mediate its behaviour—attain some things and avoid others. Numerous observations of the behaviour of animals, birds and insects show that they possess an amazing capacity for anticipatory reflection. Some species of birds, for instance, build their nests this year close to water and the next year far from it, as if foreseeing the possibility of floods and inundation of the banks. The rudiments of psyche may have emerged in animals that did not even have a nervous system. There is no doubt, however, that later the psyche became a function of the brain. Animal behaviour is realized through the organs, created by the evolution, which provide information about the surrounding things and processes (the sense organs), and also through control and direction of behaviour in accordance with the information received. The psyche receives double information in the form of sensations and perceptions: first, information about the properties and relations of external things, and second, information about their relevance to the organism's life.

The development of psyche is inseparable from the emergence of new forms of behaviour, connected with the concepts of instinct, skill, imitation and learning. An instinct is goal-directed and expedient adaptive behaviour based on immediate reflection of reality, conditioned by innate mechanisms (and information) and realized to satisfy biological needs. There is one essential thing about instinct-determined behaviour: an animal performs objectively purposive actions in relation to stereotype situations biologically relevant to the life of the genus without subjectively realizing them in a conscious manner. From the evolutionary standpoint, instinct as an innate feature of a mode of action carries informational experiences, useful to the individual, of the previous generations of the given species of animals concerning the modes of satisfaction of biological needs, experiences recorded in definite morphological-physiological structures of the organism and in the structure of psyche.

Since time immemorial, our common sense, fairy tales and myths have represented animals as our lesser brethren in intelligence. They have been

credited with all the human traits: cunning, mother wit, consciousness, conscience, a sense of beauty. A great many cases have been described of especially intelligent dogs saving human beings and serving them devotedly, of horses carrying their wounded masters from battlefields, finding their way in snowstorms, etc. Even more interesting from this angle is the case of dolphins rescuing drowning people who are complete strangers to them. For many years scientists have been studying the behaviour and psyche of animals, especially the higher animals—dolphins and apes, who have amazing capacity for imitation and observation. Experiments and observation have shown that the higher animals are capable, in their own way, of thinking, i.e. of solving relatively simple tasks whose terms do not go beyond the limits of a concrete situation. Thus they can find roundabout ways towards a goal, design some biologically significant structure, track down a quarry, improve a stick for obtaining food, crack a nut with a stone. In a word, the higher animals have elementary intelligence. As for consciousness, this concept has a social meaning characteristic only of man; if there is consciousness in animals, it is only in the form of biological rudiments or prerequisites.

The origin of consciousness.

The evolution of man involved disintegration of the instinctual basis of animal psyche and formation of the mechanisms of conscious activity. Consciousness could only emerge as a function of a highly organized brain which evolved through labour and speech. Rudiments of labour are found in *Australopithecus*, but it is only in his successors, *Pithecanthropus* and *Sinanthropus*, that labour became a distinguishing feature, and they were the first men on earth who began making tools and use fire. Neanderthal man made considerable advances in the making and use of tools, increasing their range and employing new natural material in production: he learnt to make stone knives and bone needles, to build dwellings and make clothes out of animal skins.

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Finally, man of the modern type (Cro-Magnon man or *Homo sapiens*, that is, reasonable man) raised the level of technology to a still greater height. The main landmarks in the evolution of labour were reflected in the growth of brain matter: in chimpanzees, the volume of the brain equalled 400 cm³; in *Australopithecus*, 600 cm³; in *Pithecanthropus* and

Sinanthropus, 850-1,225 cm³; in Neanderthal man, 1,100-1,600 cm³, and in modern man, 1,400 cm³. Along with the growth of brain matter, the area of the brain surface increased, too, and that is a second evolutionary index. There was an increase in the parietal, frontal and temporal lobes of the brain, i.e. those areas of the cortex which are linked with the life of man as a social being, acting as inner brakes blocking animal instincts and creating thereby a necessary premiss for harmonious life in society.

The decisive role of labour operations in the formation of man and his consciousness was materially expressed in the fact that the brain as an organ of consciousness developed simultaneously with the development of the hand as an organ of labour. It was the hand, the "receiving" (or coming directly in touch with things) organ, that gave instructive lessons to other sense organs, such as the eye. The actively operating hand taught the head to think even before it became a tool doing the will of the head which plans practical actions in advance. In the development of labour activity, and above all in the perfection of the hand, tactile sensations were specified and enriched, and the ability developed for perceiving the finest nuances of human speech sounds. The logic of practical actions was recorded in the head and transformed into the logic of thought: man learnt to think. Before tackling some job, he was already mentally able to visualize its result, the mode of its realization, and the instruments of achieving that result. "A spider conducts operations that resemble those of a weaver," wrote Marx, "and a bee puts to shame many an architect in the construction of her cells. But what distinguishes the worst architect from the best of bees is this, that the architect raises his structure in imagination before he erects it in reality. At the end of every labour-process, we get a result that already existed in the imagination of the labourer at its commencement."⁵ Of course, the bee's instinct containing the "design" of a cell is present in the bee's psyche, but, as distinct from man, the result of its labour is present in an instinct rather than in an illumined field of consciousness.

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The key to the secret of the origin of man and his consciousness is in one word, labour. In the beginning was the deed! One can say that, grinding the blade of his stone axe, man sharpened at the same time the blade of his intelligence.

⁵ K. Marx, *Capital*, Vol. I, p. 174.

Along with the emergence of labour, man and human society evolved. Collective labour presupposed cooperation among people and thus a division, however elementary, of labour actions among its participants: some kept up the fire, others prepared food, still others hunted, there were those who dug up roots, etc. A division of labour effort is only possible if the participants perceive, in one way or another, the connection between their actions and those of the other members of the collective, and thus their bearing on the attainment of the ultimate goal. The formation of the consciousness of man is linked with the emergence of social relations which signify the subordination of the individual's life to a socially fixed system of needs, duties, and disciplined conduct, all expressed in and regulated by language, historically shaped customs and mores.

Man's reflection of reality differs from its reflection by animals not only in its mode but also in the things that are reflected and provide satisfaction. The needs were determined by the norms of the human mode of life. The objects of nature ceased to be mere objects of hunting or gathering, of immediate consumption. Apart from satisfying his natural needs, man aspired to understanding the world and thus satisfying his evolving intellectual interests. Consciousness now found within itself verbal foundations of its own being, which was expressed in the free play of images, in the flight of the imagination, in purposive solution of problems, all of which made practical actions better thought out.

3. Consciousness. Language. Communication

Man's endowment with the gift of speech.

Language is as old as consciousness. Animals do not have consciousness in the human sense, neither do they have language equivalent to human language. The few things that animals have to communicate to one another may be communicated without speech. Many animals live in herds or flocks, they have voice organs: for instance, the chimpanzees can pronounce about 32 sounds. Dolphins have a complex signalling system. Animals can also rely on facial expressions and gestures for signalling each other. Bees apparently have a special signalling system consisting of various spatial figures. By combining various figures in a whole dance (i.e. thanks to a

special "syntax"), a bee will tell the swarm where the source of food it has discovered is located, and how to find the way to it.

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All these instruments of signalling have a basic difference from human speech: they serve as an expression of some subjective state caused by hunger, thirst, fear, etc. (a partial analogue of this is interjections in human language), or a mere indication (a partial analogue of this is man's pointing gesture), or calls for joint action or warnings of danger (a partial analogue, exclamations, hailings, outcries). The function of animal language is never that of positing some abstract meaning as the subject matter of communication. The content of animal communication is always a situation existing at the given moment. Human speech, along with human consciousness, broke away from the situation, and that was a "communicative revolution", which gave rise to our consciousness and made the ideal element reproducing objective reality in a mediated fashion the content of our speech.

The facial expressions, gestures, and sounds used as instruments of communication, in the first place among the higher animals, served as the biological prerequisite for the formation of human speech. The development of labour of necessity promoted close cohesion among the members of society, increasing the incidence of mutual support and joint activity. Human beings now had something to say to one another. This need created an organ—the appropriate structure of the brain and of the peripheral speech apparatus. The physiological mechanism of speech-formation is in the nature of a conditioned reflex: sounds pronounced in a given situation and accompanied by gestures were associated in the brain with the appropriate objects and actions, and then with the ideal phenomena of consciousness. Originally an expression of emotions, language developed into an instrument for designating images of objects, their properties and relations. Language ensured uniform formation of ideal phenomena in all the individuals engaged in communication, which was a pressing need of joint production activity.

Language: a means of communication.

The essence of language is manifested in its dual function: it serves as *a means of communication and as an instrument of thought*. Speech is activity, the very process of communication, of exchange of thoughts,

feelings, wishes, goal-settings, a process which is realized through language, i.e. a definite system of communicative means. Language is a system of content-related, meaningful forms. Through language, the thoughts and emotions of individuals cease to be their personal property, becoming public property, the whole society's spiritual wealth. Thanks to language, an individual perceives the world not just through his own sense organs, and thinks not just with his own brain, but with the sense organs and brains of all the people to whose experiences he gained access through language. Storing the spiritual values of society, being a material form of the condensation and storage of the ideal moments of human consciousness, language acts as a mechanism of social heredity.

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Exchange of thoughts and emotions through language comprises two closely connected processes: expression of thoughts by the speaker or writer and their reception by the hearer or reader. Man can express his thoughts through extremely diverse means. The thoughts and emotions of a musician are expressed in musical sounds; those of an artist, in line and colour; those of a sculptor, in plastic forms; those of a designer, in drawings; those of a mathematician, in formulas, geometrical figures, and so on. Thoughts and emotions are also expressed in people's actions and deeds, in what a person does, and how he or she does it. Whatever the means used to express thoughts, they are ultimately translatable, in one way or another, into verbal language—the universal instrument among all the sign systems used by man, which acts as a universal interpreter. This special position of language among other communicative systems is due to its links with thought that produces the content of all the messages transmitted through any sign system.

What does perception and understanding of an expressed thought mean? In itself, thought is non-material: it cannot be seen, heard, felt or tasted. Thought is impossible to perceive with the sense organs. The expression "people exchange thoughts through speech" must not be understood literally. The hearer senses and perceives the material shape of coherent words, and he consciously realizes that which they express, namely the thoughts. The realization depends on the cultural level of the hearer or reader. Consider, e.g. "a proverb in the mouth of a youth who understands it quite accurately, yet fails of the significance and scope which it has in the mind of a man of years and experience, for whom it expresses the full force

of its content".⁶ Mutual understanding is only achieved if the notions and thoughts expressed by the speaker arise in the brain of the hearer, by virtue of firm association between a word and the corresponding image/meaning consolidated during the learning of the language.

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Language as an instrument of thought. The unity of language and consciousness.

Consciousness and language form a unity; in their existence, they are inseparably connected as an inherently and logically formed ideal content which presupposes an external material form. Language is the immediate reality of thought and consciousness in general. It takes part in mental activity as its sensuous basis or instrument. Consciousness is not only manifested in but also shaped by language. When we are inspired with an idea, says Voltaire, when the mind has mastered well its thought, the latter leaves the head fully armed with suitable expressions, clad in suitable words, like Minerva appearing out of Jupiter's head in full armour. The ties between consciousness and language are not mechanical but organic. They cannot be separated without both of them being destroyed.

Language is instrumental in the transition from perceptions and representations to concepts, and in operating with concepts. In speech, man records his thoughts and emotions, and can thus subject them to analysis as an ideal object lying outside him. In expressing his thoughts and emotions, man understands them clearer himself. He understands himself only by testing the comprehensibility of his words in communication with others. Language and consciousness form a unity. The determinant side in this unity is consciousness: being a reflection of reality, it moulds the forms and dictates the laws of its linguistic being. Through consciousness and practice, the structure of language reflects, in the final analysis, the structure of being, albeit in modified form. But unity is not identity. The two aspects of this unity differ from each other: consciousness reflects reality, while language designates it and expresses it in thought. Speech is not thought, otherwise, as Ludwig Feuerbach remarked, the greatest talkers would be the greatest thinkers.

⁶ *Hegel's Science of Logic*, Vol. I, George Allen & Unwin, London, 1929, p. 69.

Language and consciousness form a contradictory unity. Language influences consciousness: its historically evolved norms, distinctly different in each nation, stress different features in identical objects. For instance, the style of thought in German philosophical literature is different from that of French literature—a fact largely determined by the features of the national languages of these peoples. But the dependence of thought on language is not absolute, as some idealistically minded linguists assume; thought is largely determined by its links with reality, while language can only partially modify the form and style of thought.

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Language also influences consciousness in the sense that it exercises a kind of coercion, "tyranny" over thought, directing its movement along the channels of linguistic forms, driving, as it were, the variable, individually unique and emotionally coloured thoughts into the common framework of these forms.

AN OUTLINE THEORY OF DIALECTICS

Chapter V. CONNECTION AND DEVELOPMENT AS THE MAIN PRINCIPLES OF DIALECTICS

1. On the Universal Connections and Interactions

The concepts of connection and relation. The philosophical principle of universal connection.

The entire reality accessible to us is an aggregate of objects and phenomena linked with one another by extremely diverse relations and connections. All objects and events are links in an infinite chain joining all that exists in the world in a single whole—a chain that is, at its deep-lying basis, nowhere disrupted, although matter is discrete: everything interacts with everything else. The bond uniting all objects and processes in a single whole is universal in character. The life of the world is in the endless web of relations and connections. They are the threads, as it were, that fasten everything; the moment they are broken, everything will disintegrate into chaos. The principle of relation and connection is an adequate reflection of the organization of all that is, and of the systems forming it; one of the fundamental worldview and methodological principles on which the entire categorial edifice of philosophy is built. It expresses the materiality of reality—the condition of the connection of everything with everything, including the various forms of the motion of matter; in other words, this principle rests on the material unity of the world.

Connection is usually defined as a deep-seated attributive property of matter, consisting in the fact that all objects and phenomena are linked by infinitely varied interdependence and various relations with each other. In other words, *connection is a general expression of dependence among phenomena, a reflection of the interdependence of their existence and development.* As for *relation*, it is mostly defined as *one of the forms of, or*

an element in, the universal interconnection of objects and processes. Indeed, everything exists in two hypostases, as it were: as being “by itself” and as being “for others”, in relation to these others. The existing relations are extremely varied: they are the relations of equality and inequality, of subordination and coordination, of part and whole, etc.

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The kinds of relations listed here are universal in character, concealing, as it were, the deep substantive connection of phenomena; thus the part-and-whole relation expresses the functional connection. Of all the kinds of relations, the most universal in character is the relation of dependence, for even that which at first sight appears independent from the environment, in the final analysis proves dependent on it. This environment, being “indifferent” to something that is apparently independent, exerts, in one way or another, through its development or change, a direct or mediated influence on it, being a direct or mediated cause of change in its state.

Along with the diverse relations, there are the extremely varied types and kinds of connections. The types of connections are defined in relation to the level of organization of matter. Related to the different forms of the motion of matter, there exist in inorganic nature mechanical, physical and chemical connections presupposing interaction either through various fields or through direct contact. In the ensemble of atoms forming a crystal, a separate atom cannot oscillate independently: the least of its displacements affects all others. The particles of a solid body can only oscillate collectively. There are also more complex connections in living nature—biological ones, which are expressed in the relations of elements within an organism, within a species, and among species, as well as in their relations with the environment. In social life, the connections become even more complex, forming production, distribution, class, family, interpersonal, national, state, and other types of relations. However, connections exist not only among objects within a given form of the motion of matter but also among all its forms. For example, there is a connection between attraction and repulsion in the inorganic world. In society, the same connection acts in a complex mediated form, being subordinated to the social laws of people’s life and therefore transformed into a different quality, such as sympathy and antipathy, interpersonal compatibility and incompatibility. Besides, there exist such forms of connections as external and internal ones, direct and mediated, functional and genetic, spatial and temporal, law-governed and accidental, cause-and-effect, and so on. These forms of connections are

differentiated depending on the aspect of consideration of the objects under study. Thus the human organism may be considered in terms of functional connections, genetic connections, or internal and external ones. The connections may be one-sided, two-sided and many-sided. The functional connection is, for instance, a many-sided one, while the genetic connection is onesided, developing always from the past to the future.

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Any form of connection always has its definite basis, which makes it either necessary or accidental, constant or temporary. The basis is an essential objective condition ensuring the formation and existence of a given connection. Thus the gravitational properties of systems condition the force connection among cosmic objects; atomic nuclear charge is a connection in the periodic system of the elements; needs and interests form the basis of interconnections among people in society.

Through his activity, man mediates the connections and relations, existing in nature, among objects and processes. His impact on nature is often negative in its more remote consequences, as man is not always capable of taking into account all the connections and relations existing in nature, stressing only those of them which have a direct bearing on the goals of his activity. In other words, consciously or unconsciously, man violates in these cases the universal interconnectedness of phenomena and processes. For example, forest-cutting reduces the bird population and that, in its turn, increases the number of agricultural pests. Destruction of forests sands up rivers, erodes the soil and thus leads to a reduction in harvests. There is nothing in the world that would be unconnected with the whole; evidence of experience may appear before us only in isolated form, and our mind can point to isolated facts only, but that does not mean that they actually exist in isolation: the whole point is to discover a method for identifying the connection between these phenomena and the nature of such a connection.

The concept of connection is one of the central concepts in dialectical materialism. It is used to substantiate the principles of development, of the struggle of opposites and interrelation between quantitative and qualitative changes, etc. The concept of interaction is a further clarification of the principle of universal connection.

The concept of interaction.

Everything that happens in the world springs from constant interaction between objects. Because of the universality of interaction, all the structural levels of being are interconnected, and the material world is unified. This interaction determines the emergence and development of the objects, their transition from one qualitative state to another. *Interaction* is a philosophical category reflecting the *processes of reciprocal influence of objects on one another, their mutual conditioning, changes of state, mutual transition into one another, as well as generation of one object by another*. The dynamics of the cause-and-effect conditioning of motion, of change and development in nature, society and thought presupposes heterogeneity and diversity of the forms of manifestation of all that is, the incorporation of each fragment of being in the stream of universal interaction.

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Interaction is objective, universal and active in character. The properties of an object can be manifested and cognized only in interaction with other objects. "*Reciprocal action* is the first thing that we encounter when we consider matter in motion..."¹ Underlying each form of the motion of matter are definite types of interaction, which acts in them as the integrating factor through which parts are united in a definite type of a whole. For example, the electromagnetic interaction between the nucleus and the electrons creates the structure of the atom, while informational interaction among human beings creates one of the principal constituents of social life.

The category of interaction is an important logico-methodological and epistemological principle of the study of natural and social phenomena. Modern natural science has shown that any interaction is connected with material fields and is accompanied by transference of matter, motion and information.

The existing classifications of interactions are based on the differentiation between force interactions and informational interactions. In physics, four principal types of force interaction are known: gravitation, electromagnetism, and weak and strong interactions. They provide a key to an understanding of an infinite variety of processes. Each type of interaction in physics is characterized by a definite measure.

Biology studies energy and informational interactions at various levels: molecular, cellular, organism, population, species, biocenosis. Even more complex interactions are found in the life of society, for society is the

¹ F. Engels, "Dialectics of Nature", in: K. Marx, F. Engels, *Collected Works*, Vol. 25, p. 511.

process and product of people's interaction with nature and among themselves. People's spiritual world is organized through semantic (psychological, logical, moral-aesthetic, and other) interactions. The interactions in the social sphere are realized not only in closed social systems, but also within mankind as a whole. And that makes the optimization of social interaction necessary as well as possible. The course of history, social progress, insistently demands the establishment of constructive and creative interaction between the peoples on a planetary scale, creating the necessary premisses for that—political, social and material.

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Without a study of interaction in its general and concrete manifestations, it is impossible to understand either the properties or the structure or the laws of reality. It is in the process of interaction that the essence of interacting objects and their properties are realized. That is why knowledge of things means cognition of their interaction and is itself a result of interaction between subject and object, for "no phenomenon can be explained by itself".²

Contradiction, or interaction of opposites, proves to be the deepest source, the basis, and the ultimate cause of the emergence, self-motion and development of objects. Without clarifying the forms and content of various kinds of connection and interaction in nature and society, it would be impossible to handle adequately the problem of development, which is the second fundamental principle of materialist dialectics.

2. The Idea of Development and the Principle of Historism

The general conception of development.

Application of the principle of universal connection and interaction results in a specific and universal category of dialectics—the category of development. There is nothing ultimately complete in the world: everything is on the path towards something else. A given type of connections and

² *The Wisdom of Goethe. An Anthology*, Carlton House, New York, s.a., p. 166.

interactions determines a definite direction of this path: where from and where to. The principle of the motion of matter as a mode of its existence, combined with the principle of universal connection, gives a general idea of the development of the world. *Development is an irreversible, definitely oriented and law-governed change of material and ideal objects resulting in the emergence of new qualities.* The swinging of the pendulum is an example of motion, while the growth of a child is an instance of development. Let us consider, one by one, all the four distinguishing features of development indicated here.

What does irreversible change mean? It means that in the process of development, as distinct from the cyclical functioning of a system, return to already passed states is impossible. Everything passes through one and the same state only once; thus the movement of an organism from old age to youth is impossible. This example shows already the direction of development.

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Therefore the next characteristic—definitely oriented change—means that changes of the same quality are gradually accumulated in the process of development, being determined by the type of interaction of the given object with the surrounding world and by its inner contradictions. The sum total of such changes determines the line of the object's directed change. For example, the sum total of qualitatively similar methods of processing a given material or substance, rare and isolated at the beginning, results in the final analysis in the formation of a new technology, changing the qualitative definiteness of labour accordingly.

And what does law-governed change mean? It means that underlying development are not accidental events, of which the infinite numbers disturb the object's oriented change, but rather the necessary events that follow from the very essence of the object and from the type of its interactions with the surrounding world. However rich in all kinds of random events the history of the ancient world might be, all the fountainheads of civilization known to science passed through the stage of gentile and tribal organization or feudalism.

All three features of development pointed out here inevitably draw attention to the fourth trait—emergence of new qualities which are, as it were, a definite summing up of the previous development and the starting moment of the subsequent one. Progressive development is thus thought of not as movement of some object from one point to another but as a process

which, at each subsequent stage of its further movement, raises higher and higher the whole mass of already attained content and, far from losing something essential, carries with it all that it has accumulated, bringing in new content. The new is an intermediate or final result of development correlated with the old. The changes may pertain to the composition of an object (i.e. to the qualitative and quantitative characteristics of its components), to the mode of the connection between the elements of the given whole, to the function or behaviour of the object—to the character of the object's interactions with a different object, and finally to all these characteristics as a whole. Development is a dual process: the old departs and the new comes in, asserting itself in the struggle against the old rather than through unhampered unfolding of its potential.

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The relationship between the concepts of development and progress must be clearly understood. They are close to each other but not identical. Development results in the appearance of a new quality, but it is not at all necessary that this quality should be more complex or more perfect than the previous one. If the new quality is in some respect superior to the old one, we have a progressive tendency of development, and if it is inferior, we have a regressive tendency. Thus the aging of an organism is a regressive tendency of development, which may be accompanied (though not always) by a progressive tendency in the development of the individual's spiritual and intellectual potential. Regress is just as irreversible as progress, that is to say, a new quality may appear at any stage in regress which is irreducible to the previous states. Being just one of the tendencies in the development of life, regress is by no means linked with degeneration or extinction. Regressive simplification of the morphophysiological qualities of a given biological species is often linked with the needs of adjustment to a new environment, and many of the so-called degenerated forms belong among the most flourishing groups of the animal world. Progress and regress are two different tendencies of development which, however, are intertwined with one another, forming a complex interdependence. In complex systems, one element or level may be subject to regress while the system as a whole may progress or, on the contrary, a general regress of the system may be accompanied by progressive development of its separate elements. If we consider the larger scales of development, such as organic evolution, interaction of differently oriented processes is distinctly discernible there:

the general line of progressive development is interwoven with changes that give rise to the so-called blind alleys of evolution or even paths of regress.

Having great heuristic force, the idea of development has significantly enriched the worldview and methodological principles of science.

The branch of progressive development known to science includes the pre-stellar, the stellar, the planetary, the biological and the social stages of the structural organization of matter. On the cosmic scale, the processes of progressive and regressive development are apparently equal in their significance, since both result in the emergence of new forms. Cyclic processes also figure prominently in the universe: cf. the transmutation of elementary particles.

Progress and regress actually coexist in objective reality, as do deformation, decay, revolutionary (leap-like) and evolutionary changes, spiral and cyclical material processes, i.e. there coexist two opposing directions of development—along the ascending and the descending line. Development along the ascending line is development from the elementary towards the complex, more perfect, more finely organized, towards a richer potential and greater information volume, a process in which the structure becomes more refined, matter and energy accumulate, and the extent of coded information grows. Descending development is the path of decay, degeneration, impoverishment and decomposition.

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Wisdom has learnt from being that these processes do not run separately but are combined in different proportions. In some cases the ascending element prevails, and progress occurs, while in others regress and the descending line predominate. However, the prevailing general tendency is progressive development, for cyclical development and decay are mostly characteristic of separate objects and processes of the material world, while on the whole the unstoppable and irreversible movement accompanied by the emergence of ever new forms is indubitably universal.

Development and time.

The crucial feature of development is time: development takes place in time, and only time brings out its direction and irreversibility. The history of the concept of development as emergence of new forms goes back to the formation of the theoretical notions of the direction and irreversibility of time. The ancient cultures had no knowledge of development in the true

sense: time was thought of as flowing cyclically, and all events were perceived as mere repetition of the old according to the decrees of fate. The idea of cyclicity could be expressed like this: *The sun also ariseth and the sun goeth down, and hasteth to his place where he arose. The wind goeth toward the south, and turneth about unto the north; it whirleth about continually, and the wind returneth again according to his circuits. The thing that hath been, it is that which shall be; and that which is done is that which shall be done; and there is no new thing under the sun.*³ The idea of the perfect cosmos underlying the ancient view of the world ruled out the very question of the direction and irreversibility of time, and of changes which could give rise to new systems and connections. Development was interpreted as the unfolding of certain possibilities inherent in things and merely hidden in them. The ideas of the irreversibility of time and its linear direction emerged with the assertion of Christianity, and that only in the sphere of human being; only later, with the formation of experimental science, were these notions gradually extended to the study of nature.

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The ideas of natural history, of oriented and irreversible changes not only in nature but also in society, gradually emerged. The French natural scientist Georges Louis Buffon published his *Histoire naturelle* (1749), in which he attempted to present the development of the earth, the animal world and man as a single evolutionary process. For those times, it was a daring step, for everything was then regarded as immutable since the day of creation. Immanuel Kant published his work *General History of Nature and Theory of the Heavens* (1755), which substantiated the view of the earth and of the solar system as having evolved in time, and proposed the hypothesis of the emergence of planets from a primordial dust nebula. The turning point here was the creation of cosmology and the theory of evolution in biology (Lamarck, Goethe, Darwin) and geology (Lyell). The idea of development and the historical thought that sprang from it became part and parcel of natural science and philosophy.

Historical thought moved into the foreground among other methodological principles in the 19th century, which will go down in history as the age of historism. In those times there was not a single natural, humanitarian or philosophical science that would not reflect, in one way or another, the historical type of thought (cf. comparative-historical linguistics,

³ Eccclus. 1:5,6,9.

the doctrines of political economy, etc.). But the triumph of historical thought, based on the concept of linearly unfolding, oriented and irreversible time, and thus on the category of development, came with the Marxist principle of historism.

The principle of historism in a general methodological interpretation.

In Marxism, the principle of historism has a universal methodological significance. The essence of this principle, in brief, is "not to forget the underlying historical connection, to examine every question from the standpoint of how the given phenomenon arose in history and what were the principal stages in its development, and, from the standpoint of its development, to examine what it has become today."⁴ The distinctive feature of Marxist historism is that, embracing all the spheres of reality, it agrees with the monist principle of the material unity of the world.

The idea of historism had different forms. In ancient philosophy it took the form of the idea of becoming—the birth of possibilities and realization of one of them. Among the first to express that idea was Heraclitus, who conceived the world as constantly becoming. However, before the idea of historism found a more or less scientific form of expression, it was deeply rooted in mythological thought, in which even the gods were not something eternally given but were born, struggled through life, and died.

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Later, the principle of historism assumed the form of evolutionism, clearly expressed in Kant's theory of the formation of the solar system out of a primordial nebula. Before him, physics, cosmology, and astronomy were dominated by the Newtonian mechanistic conception of the universe which assumed a nature already evolved, equal and invariable in all its parts. The idea of development was thus inherently alien to the Newtonian paradigm. A similar picture was observed in biology; it was presented in accomplished form in Carolus Linnaeus' system of binomial nomenclature. The fundamental feature of the method of thinking in natural science in those times can thus be summed up: nothing can emerge apart from that which already exists. Kant highly valued physics and its possibilities in the explanation of natural phenomena, but he was not satisfied with a simple

⁴ V.I. Lenin, "The State", *Collected Works*, Vol. 29, Progress Publishers, Moscow, 1977, p. 473.

description of nature, believing that its true interpretation was impossible without the idea of genesis. He was the first to introduce the idea of evolution in the understanding not only of the physical world but also of the living one.

From the moment of the assertion of historical thought in the 19th century, the debate has never ceased about the essence of the process of development, and of its motive forces. Metaphysical theories challenge the very essential content of development—the emergence of new qualities; development is interpreted as mere growth or decrease of a quality or as repetition of it, so that the problem of contradiction as the source of development is eliminated. In biology this tendency was manifested in the theory of preformation, which reduced the development of an organism to mere unfolding or ripening of given hereditary properties. This approach was overcome in biology by the beginning of the 20th century. The epigenetic theory, which evolved in opposition to preformation, rejected innate cognitive structures but it also threw out the child with the dirty water, completely giving up the idea of biological development as the unfolding of innate genetic (hereditary informational) structures. The idea of qualitatively new formations was unambiguously associated with the action of factors external to the given organism. In other words, if the first theory raised to an absolute the role of the inner factors of development, ignoring the significance of the external factors, the second, on the contrary, exaggerated the importance of the external factors, and underestimated the role of the inner ones. Hence both theories proved to be essentially metaphysical.

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Rejecting internal contradictions as the source of development, metaphysics cannot find in matter itself the true causes for this process and therefore often resorts to supernatural forces. The dialectical conception, on the other hand, primarily stresses the source of self-motion and self-development. "The first conception is lifeless, pale and dry. The second is living. The second alone furnishes the key to the 'self-movement' of everything existing; it alone furnishes the key to the 'leaps', to the 'break in continuity', to the 'transformation into the opposite', to the destruction of the old and the emergence of the new."⁵

There is nothing mysterious about the concept of self-motion. It merely means that the source of development is inherent in the developing object

⁵ V.I. Lenin, "On the Question of Dialectics", *Collected Works*, Vol. 38, p. 358.

itself, which interacts with others. The development of any system is realization of the universal principle of being—the activeness and inner striving of all that is towards self-expression in infinite forms of interaction. Development is a form of motion, and the latter is an attribute of matter, a mode of its existence, inherent in it and not inferred from anything. The self-motion of matter on the whole is not conditioned by any external factors, while the self-motion of the concrete forms and kinds of matter is conditioned by internal and external causes. If the self-motion of matter is absolute, the self-motion of concrete systems is relative: the higher the level of the organization of a system, the greater its independence in behaviour, and consequently in its development. For example, primitive society depended to a much greater extent on the elements of nature than modern society.

In the socio-political and philosophical terminology, metaphysical theories like biological preformation came to be known as trivial evolutionism, with its conception of development in which the new is largely a quantitative modification of the old, so that the new does not assume a complete disappearance of the old, as in the dialectical interpretation. Trivial evolutionism naturally implies rejection of qualitative leaps in development (in the socio-political sphere, for example, this stance is expressed in the rejection of revolutions).

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One of the most influential Western theories of development, which ultimately goes back to metaphysical evolutionism, is Henri Bergson's conception of creative evolution. Challenging Herbert Spencer's trivial evolutionism, Bergson insisted on the conception of development as emergence of qualitatively new formations rather than as displacement or redistribution of particles in space. However, Bergson saw the source of qualitative development in the idealist principle of *élan vital* which means, on the philosophical plane, a "need for creativity" (hence the name of the doctrine) attributed to such an ideal object as consciousness or, better say, "superconsciousness". Accordingly, the source of development was conceived as an ideal force and placed outside the developing material object.

In biology, "creative evolution" was paralleled by "emergent evolution". Its creator Conway Lloyd Morgan, the biologist and philosopher, asserted that, along with quality-less "resultative" changes that are a mere algebraic sum of

the original constituents, a sum that can be computed, there are also qualitative changes, but these are unpredictable.

Far from taking into account dialectical laws (on the transition of quantitative changes into qualitative ones, or on the negation of negation), the theory of emergent evolution actually eliminates from science the very concept of objective law, which brings this conception close to metaphysics and agnosticism. There can be no question here of oriented or law-governed change or, in general, of any tendencies of development. Science ceases to be a generalizing and explicative activity of human reason, becoming a mere accumulation of empirical facts and their belated classification.

Metaphysical views became especially widespread in explanations of the life of society. According to a current theory, society develops in an evolutionary manner, and only such development is normal; this evolution, though, leaves no room for qualitative leaps rejecting old states. Revolutionary transitions are said to be deviations from norm, and diseases of society.

Metaphysical, one-sided, and just as erroneous is the opposite view, based on the emergent evolution theory, that nature's life develops exclusively through unpredictable catastrophes, and that social upheavals do not require lengthy preparation, that they are spontaneous and cannot be foreseen.

The category of development and the principle of historicism have a great worldview and methodological significance. A correct understanding of the history of becoming helps to understand the essence of the developed phenomenon and to foresee, at least partly, its perspective. At the same time, as we go deeper into the object's present state, we also see its past in a new light. Dialectical development is characterized by consistency, direction, irreversibility, innovations, negation, preservation of the results attained, and continuity.

The principle of historicism in the social interpretation.

Applying the principle of historicism to society, we can say that social history has the following features. First, it is characterized by a law-governed, irreversible, and oriented development, i.e. by the unending emergence of qualitatively new social structures and systems. Second, despite all the diverse phenomena superimposed on one another, social

development is dominated by the progressive tendency. Third, the source and motive force of social development is the struggle of internal contradictions at each given stage of history. Besides, the principle of historism is important in that it links together all the three times of the historical existence of mankind—the past, the present, and the future, and most importantly, it actualizes the past and the future in the present, without which a conscious (goal-directed) socio-historical practice and people's cognitive activity are impossible. This principle, unfolded in the aspects that we have pointed out, is the foundation of the new system of philosophical knowledge worked out in dialectical materialism—the social philosophy of Marxism.

The ideas of historism as a methodological principle in the study of social life were contained already in the works of pre-Marxian thinkers, most notably in Hegel's philosophy. It was Hegel who was the first to reveal the all-sidedness of development and the inner cohesion of history. However, before Marxism, social development was not explained as the struggle of internal contradictions, and the principle of historism in social knowledge was often replaced by relativism or finalism, i.e. the doctrine of the finality of history.

What does the principle of historism contribute to an understanding of social phenomena and society as a whole? In the first place, it permits to objectively evaluate the relative integrity or completeness of a given stage in society's historical development, and on this basis to predict the tendencies and perspectives by identifying the internal contradictions inherent in it. It further helps to work out specific measures for the attainment of certain goals of social development, and to present society's further movement as a consciously controlled process.

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In other words, in order to evaluate the degree of development of a certain state in the present, it is necessary to know the past well, and to judge it correctly, without distortions, for ignorance of the past adversely affects knowledge of the present and jeopardizes any attempt to act in a historically promising way. It is a profound error to assume that the present is in no way determined, directly or indirectly, by the past. But society's historical ascendance is threatened by another and just as great danger: the dogmatic approach to the past, the ossification of socio-moral values and judgements which leads to uncritical acceptance of evil as good. A historically self-critical attitude of social consciousness is a decisive

condition of an objective (rather than metaphysically one-sided) conception by a people of its real role in world history. Distorting the view of the people's place in history and making this place an eternal absolute, historical complacency is incapable either of seeing anything historically significant in other societies or of adequately correlating itself with them.

Deep penetration into the dialectics of the present and its objective logic, an ability to draw correct conclusions reflecting the flow of time—that is what is necessary above all. A historically oriented mind takes great interest in tracing and noticing everything that emerges, since an understanding of the beginning helps to find the key to the explanation of the essence of facts and events, for it always points not only to the phenomenon itself but also to those conditions which gave rise to it. This leads to an ability to see those internal contradictions in social development which, just as everywhere, are the real source and starting point of all movement.

3. The Principle of Causality and Objective Goal-Directedness

The concept of causality in its relation to the principles of universal connection and development.

The concepts of cause and effect arise on the borderline between the principles of universal connection and development. On the one hand, *causality* is defined, in terms of the principle of universal connection, as one of the types of connections, namely as *genetic connectedness of all phenomena*, in which one phenomenon (the cause) gives rise, under definite conditions, to another (the effect or consequence). On the other hand, from the standpoint of the principle of development, causality is defined as follows: any change, to say nothing of development, i.e. change towards a new quality, has its cause and consequence.

It should be particularly stressed that causal relations are present not only in the process of development but also in the degradation and decay, and generally in all changes or transformations of the world, both natural and produced in a purposive fashion by men.

Limitations on the validity of the principle of causality are not imposed by the principle of development (any development being causally conditioned) but by the principle of universal connection (not all connections are causal). Among the connections that do not have cause-and-effect content are spatio-temporal correlations, functional dependences, the symmetry relation, etc. That does not mean, however, that there is even one phenomenon that would not have its cause and its effect; an event or fact that stands to another in the relations of, say, functional dependence or symmetry, is necessarily linked with some other phenomenon by a causal link.

Causality is universal. There are no phenomena in the world that would not produce some consequences or other, or that would not be produced by other phenomena. Putting it figuratively, there is nothing in the world but parents and children. A cause may be either a circumstance external with respect to the given phenomenon or its internal contradiction. When thought begins to move from one step of causation to another, aspiring to find the very first cause, it dissolves in the infinite distances of universal interaction.

Causality and time.

One of the fundamental characteristics of causality is its organic bond with the category of time. Time is the form of the existence of matter in which cause-and-effect connections are realized most naturally. That is why the greater complexity of our ideas of time, connected with a deeper knowledge of the material world, must be reflected in our understanding of causality.

However, even now the temporal aspect of the cause-and-effect connection is still interpreted in different ways. Some believe that the cause always precedes the consequence: there is a definite interval or delay between the beginning of the action of a cause (say, interaction between two systems) and the appearance of its consequence. For a while, cause and effect coexist, and then the cause goes out, while the consequence ultimately becomes a new cause, and all this is repeated *ad infinitum*. Others insist that the intervals are partially superimposed one upon another. According to another view, cause and effect are always strictly simultaneous. The reasoning here is this: it is meaningless to speak of a cause that exists, and

therefore acts, if its consequence has not yet entered the sphere of being. Indeed, can there be an inactive cause?

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But the concepts of cause and effect are equally used to describe simultaneously occurring events, phenomena that are adjacent in time, and phenomena whose consequences emerge in the framework of the cause. Besides, cause and effect are sometimes described as phenomena which are divided by a time interval and interconnected through the mediation of several other links in the chain. Thus sun flares are the cause of magnetic storms on earth and of subsequent disruption of radio reception. The mediated connection between cause and effect can be expressed in this formula: if A is the cause of B, and B is the cause of C, A can also be regarded as the cause of C. Changing, the cause of a phenomenon is retained in its result. A consequence may have several causes, some of which are necessary, others accidental.

An essential feature of causality is the continuity of cause-and-effect connections. The chain of causal connections has neither beginning nor end. It is impossible to say where that chain began and where it is going to end. It is infinite as the universe itself. There is neither a first (i.e. causeless) cause nor a last (i.e. inconsequential) effect. Accepting a first cause would mean violating the law of conservation of matter and motion. Any attempts to find an absolutely first or an absolutely last cause is a vain undertaking of which the psychological basis is a belief in miracles.

Despite the great diversity of the structural organization of the world, all types of temporal relations are characterized by duration, which signifies either direct sequence of events or contiguity of moments or states replacing one another. Time has duration, it is irreversible and asymmetrical, and cause-and-effect relations are asymmetrical too. The idea of non-uniformity of time cycles does not affect the essence of the matter: in any material system which exists and develops in its own time scale, relations may be quite unlike any other but they are still causal.

Causality and interaction.

Causality cannot be considered as unidirectional action from cause to effect, for it is the inner content not only of connection but also of interaction of phenomena. Interaction, one of those types of connection

which also has temporal duration, greatly complicates cause-and-effect relations.

A consequence extends the tentacles of its influence not only forwards (as a new cause giving rise to a new effect) but also, in a definite temporal perspective, backwards, towards the cause producing it, modifying, exhausting or augmenting its force, especially in those cases when the causal connection is continuous and extended rather than instantaneous and discrete. This interaction between cause and effect extended in time is called the *feedback* principle. It operates everywhere, especially in all the self-organizing systems, in which information is received, stored, processed or used, as e.g. in the living organism, cybernetic device, or society. Stability, control or progressive development of a system are inconceivable without feedback, which regulates cause-and-effect relations.

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Only in the simplest particular case, and an extreme one, can cause-and-effect connection be represented as a one-sided and unidirectional action. In complex situations, it is impossible to ignore the reverse, and secondary, in terms of time, effect of the carrier of action on other bodies interacting with it, which is connected with the complex discrete-continuous structure of matter and changes in temporal rhythms. Thus interaction between cause and effect in feedback in cybernetic devices results in this effect becoming itself a cause in relation to the cause that produced it. Cause and effect may change places, but the temporal direction of the process of causation remains immutable. Psychological processes are also a result of extended and alternating interaction between the surrounding world and the cortex.

Thus no cause-and-effect processes in the world are produced by one-sided actions—they are based on the relation between at least two interacting objects, and causality must in this sense be regarded as a type of interaction, not just as a kind of connection.

Metaphysical theories cover only one aspect of causal dependence—from cause to effect. On the basis of this interpretation, it is impossible to explain the principle of self-motion of matter, which always figures as interaction. Combining causality and interaction leads to “the real causal relation”,⁶ one that does not contradict the principle of self-motion of matter.

Cause and effect are separate links or different aspects of the process of universal interaction. The identification of one rigidly determined cause-and-

⁶ F. Engels, “Dialectics of Nature”, in: K. Marx, F. Engels, *Collected Works*, Vol. 25, p. 512.

effect link is always an abstraction from the multiform world of the real cause-and-effect interactions, which is, undoubtedly, a convenient but at the same time arbitrary cognitive procedure. The world of real interactions is incomparably richer than any abstractions. Different causes may lead to an identical consequence, just as different paths may lead to one and the same place. Then again, one and the same cause may produce different consequences. A cause does not act with absolute determination if only because its result depends not only on its essence but also on the character of the phenomenon at which its action is directed: strong heat will melt wax but it will temper steel. At the same time, the heat effect is produced by various causes: the action of sunrays, friction, mechanical blows, chemical reactions, electricity, nuclear fission, etc. There are no phenomena in the world which would result from one cause only, and which would not be affected by secondary causes. If that were not so, “pure” necessities above would be possible, and that would mean a world ruled by fate.

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Types of cause-and-effect relations.

Classification of the types of causality is a highly complex scientific problem. At present, there are several such classifications, all based on different criteria. One such criterion is the inner substantial content of the processes of causation. The inner mechanism of causation is necessarily connected with transference of matter, energy, and information. Thus the birth of a living organism is connected with transference of matter, energy and information; in the collision of billiard balls, the mechanical energy of the striking balls is transferred; in social control, the information cause prevails at its semantic level. In this type of classification of causes, the causes usually identified are material and ideal, informational and energy, and these, in their turn, are subdivided, in relation to the kinds of the motion of matter, into physical, chemical, biological, psychological, and social causes. The causal connection differs from other, non-energy types of connections, putting it broadly, in this feature of necessary transference of some qualities pertaining to matter or energy.

The cause and condition of an event are also distinguished on this criterion: a cause is something that passes on to something else its force potential, i.e. matter, energy and information, while a condition is the sum total of the circumstances of a causal event which, not being themselves a

direct cause, and taking no part in the transference of matter, energy or information, contribute to the production of a consequence by a cause. Thus if a patient dies in the absence of timely medical aid, the cause of the death is the disease, while the absence of medical aid is a condition of death but not its cause.

The second type of classification of cause-and-effect relations is based on the modes of manifestation of the causal link; these modes are subdivided into dynamic (single-valued) and statistical (probabilistic). Thus all the laws of quantum mechanics or of informational interactions in society are probabilistic in character: their inner content is strictly determined by their direct cause, but at the same time the mode of manifestation of this causal link depends on a great many accidental factors characterized by a certain statistical frequency.

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In metaphysical theories, the probabilistic form of manifestation of a causal dependence is often associated with negation of the principle of causality itself. Probability is identified here with absence of causality. This interpretation, however, indicates a lack of discrimination between the inner content of causation and the modes of its realization: externally, the same content may be manifested both in a dynamic and in a statistical form. Despite the fact that causality may be realized in different (dynamic or statistical) forms, it does not become chance or absence of any causes at all. Thus the fact itself of the appearance of a given personality at a given crucial period in history is statistical-probabilistic, but the connection between the necessity of the appearance of precisely this type of historical figure, with given general features, and its actual appearance, is in the nature of cause and effect. The identification of this kind of statistical-probabilistic laws makes it possible to reveal the chain of cause-and-effect connections which force their way through the total action of a great many chance occurrences. However accidental the fact of the birth of a boy or girl in a given family may be, there is a cause-and-effect connection between the socio-demographic needs and the birth rate: a hundred and six boys are born to every hundred girls.

Apart from the classifications of cause-and-effect connections discussed here, there are also several kinds of epistemological classifications. For instance, causes are subdivided into general, specific and primary; objective and subjective, direct and mediated; universal, particular and individual. Classifications are also based on the number of factors forming a causal

connection: simple, composite, single-factor, many-factor, systemic, non-systemic, and so on.

Determinism and indeterminism.

Philosophical determinism is a worldview and methodological principle which derives the possibility of cognition, of explanation and prediction of events of both dynamic and probabilistic nature from the fact that everything in the world is interconnected and causally conditioned. Causality is the nucleus of the principle of determinism, but it does not exhaust its entire content. The classical form of determinism in its mechanistic interpretation was the determinism of the French scientist Pierre Simon de La Place, who postulated dynamic causal conditioning of one event by another, which implied the possibility of absolutely rigorous prediction. La Place formulated this principle of mechanistic determinism as follows: if there existed a mind informed at a given moment of all the forces of nature and the points of application of these forces, there would be nothing in the universe that would not be clear to that mind, and the future, just as the past, would present itself before its mental eye.

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As for dialectical materialism, it considers the categories of cause and effect as dependent on the categories of necessity, chance, and probability. As opposed to the mechanistic approach, dialectics defines determinism as a theory of relative rather than absolute necessity. The principle of dialectical determinism is borne out by the real process of the development of society, in which development always proceeds on the basis of economic necessity, which ultimately forces its way through countless accidents.

Indeterminism is a methodological position which rejects the objectiveness of causal connections and the value of causal explanations in science. According to the German philosopher Heinrich Rickert, causal explanation is only valid in the framework of the sciences of nature but is inapplicable to the social sciences. The human will (just as divine will in theology) is perceived by indeterminism as an autonomous power free in its manifestations from any causality or necessity, as absolutely unconditioned by anything. Indeterminists interpret the principle of objective necessity as fatalism, making no distinction between mechanistic and dialectical determinism, between absolute and relative necessity. The latter, however, far from being alien to the freedom of will, presupposes its presence in

human activity, for only on the basis of such free will is it possible to cognize necessity and to act in accordance with necessity.

In the sciences of nature, one of the latest surges of indeterminism was linked with the development of quantum mechanics whose laws are manifested in statistical (probabilistic) form. The phenomena of the microcosm, in particular the electron, were ascribed a freedom of will, which was said to enable it to "choose" some type of behaviour regardless of any objective necessity. The impossibility of single-valued predictions concerning the processes of the microcosm, their probabilistic nature, and the statistical character of quantum laws are not evidence of the indeterminism of the microcosm, however, but of the existence of different (dynamic and statistical) modes of manifestation of causal connections.

Despite the close affinity of these principles, causality and determinism are not identical, for the latter covers not only the category of cause but also the categories of absolute and relative necessity, chance and probability. The sphere of determinism is further extended when systems relations are included in it.

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Objective goal-directedness.

Determinism is opposed not only to indeterminism but also to various forms of teleology (fr. Gk. *teleos* "one who has achieved a goal" + *logos*)—the theory of a special, objective-oriented type of causality, a theory that is either a counterpart of determinism or a supplement to it.

Observing the rational organization of plants and animals amazingly adapted to the conditions of their existence, and the "harmony of the celestial spheres", men asked, already in early antiquity, this question: Where does all this harmonious organization of all that is spring from? In answering this question, philosophers relied on different principles of explanation of this phenomenon. Those who held teleological views assumed that the rationality and perfection of all that exists, is determined by the initial goal-directedness of nature which contains, in the depth of its essence, expectations and intentions, and is full of hidden meaning. The idea of teleology only emerges when a spontaneously acting cause is regarded as a consciously acting cause, as a cause acting in an intentionally chosen direction, that is to say, as an objective-related cause, or goal. The view that the universe as a whole realizes a certain design cannot be proved

empirically. The fact is that a goal presupposes the existence of someone who sets the goal: teleology leads to theology, in which the rationality of the world is explained by the creator's original design.

Teleologists thrive on the belief that we are the hub of the universe, that everything else in the world is meant for us only. A causal explanation answers the question *why* a certain phenomenon of nature came into being; to this, teleologists oppose their fantasies as to *what* it emerged *for*. In the past, a brilliant critique of teleology was given by Spinoza; while accepting the fact that the human body was constructed on teleological lines, he said it was no good marvelling at this fact, as a fool would; it was necessary to look for the true causes of wonders, and to look at natural things with a scientist's eyes. That was the way Darwin acted, as he discovered the natural mechanism of the emergence of the remarkable adaptedness of organisms to the conditions of their existence. His theory of natural selection showed that beautiful flowers did not exist to please our aesthetic sense, or to prove the elegance of the aesthetic taste of the Almighty but as a form of adaptation to the environment ensuring a smooth running of the process of pollination.

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Changes in the animal and vegetable worlds emerge in their interaction with the environment. If these changes prove to be useful for the organism, if they help it to adapt to the environment and to survive, they are preserved in the process of natural selection, consolidated in heredity, and transmitted from generation to generation, shaping the organism's structure to suit its purpose, adapting it to the environment, of which the results so strike our imagination. Bright-coloured flowers attract insects, and the insects take part in the pollination. The bright-red feathers of cockbirds developed through natural selection. Adaptation is never absolute: it is always relative, and is transformed into its opposite when the conditions change radically.

Thus what we have here is selection without any selecting agent, automatic, blind and ruthless, working tirelessly, without any interruptions over countless ages; selection of anything whatever—striking external forms, colours, the smallest details of inner structure—on one single condition: usefulness to the organism. It is natural selection that is the cause of the perfection of the organic world, of the objective suitability of natural objects to their purpose. Time and death are the only regulators of the harmony of nature.

However, some elements of teleological conceptions have objective significance. A conscious goal is one of the principal attributes—only not in

natural processes but in human activity. Besides, the so-called teleological approach (i.e. subordination of the process of research to its goal, or the final stage) has some currency in science.

Causality and development.

A special range of problems arises in the consideration of the relationship between determinism and the principle of development. Because of its basic orientation, mechanistic determinism could not demonstrate the causal character of development, since single-valued, rigid determination presupposes the existence of a consequence in the cause itself, so that development as emergence of new forms either goes beyond the framework of determinism or is entirely rejected. Thus Bergson asserted that that which is predetermined is potentially accomplished. According to Bergson, the emergence of new forms is made possible by a volitional impulse on the part of the creative element isolated from causally existing nature, and not by objective causal relations. This negation of inner connection between determination and development, and definition of development as a result of a volitional impulse, clearly manifests the teleological tendency: the volitional impulse as the source of development is ascribed goal-directed intention.

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The inability of mechanistic determinism to combine its basic tenets with the principle of development also stands out clearly in the conception of the causality circle to the effect that time and duration are forms of the eternal return of things (Buddhism, Nietzsche). This position consciously rejects development as emergence of the new, so that time loses its principal attributes—irreversibility and direction.

From the dialectical-materialist positions, determination in the chain of temporal events is a process which presupposes qualitative development; the motion of matter does not mean monotonous repetition of forms given once and for all: that would be tantamount to negation of the development principle. In its form and content, a consequence cannot be absolutely identical with its cause. Causation is generation, and thus an element in the process of development which participates in the emergence of the new. This complex interconnection is most clearly manifested in social development: on the one hand, its progressive tendency has the form of necessity and is causally conditioned, and on the other, at each stage we

have to deal with the emergence of qualitatively new forms—a process in which man's creative goal-directed activity plays a considerable role. The "creative potential" of the cause-and-effect connection also expands the statistical-probabilistic mode of its manifestation, in which the genetic aspect of causation, the aspect of generation, stands out most clearly.

Thus the principles of universal connection and development are specified in the concept of causality and in the theory of determinism. Before we deduce the category of law—the generalizing category which dialectically absorbs all these fundamental principles of dialectics, we must discuss yet another philosophical principle, the systems principle.

4. The Systems Principle

System, element, structure.

Although causality is one of the basic kinds of connection, it does not exhaust the entire diversity of interactions in reality. The genetic and temporal principle of causality does not cover all kinds of correlative, spatial and functional connections; these connections are united by the methodological systems principle. Before tackling the essence and the methodological role of this principle, let us consider in brief its basic concepts.

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As distinct from the principle of causality, in which the most prominent elements are mutability and genetic dependence of one phenomenon on another, the systems approach is primarily associated with stability and harmonious correspondence in the phenomena of reality. *A system is an integral whole internally organized on the basis of some principle, in which all elements are so closely interconnected that they form a single entity in relation to the environment and to other systems.* An element of a system is a minimal unit forming part of the given whole and performing a certain function in it. Systems may be simple or complex. A complex system is one in which the elements themselves act as systems. A living organism, a cybernetic device, a social structure, a scientific theory, the universe, the atom are all examples of systems. Each phenomenon is included in one

system or another, but it is not every aggregate of phenomena that makes up a system.

The nature of the connection between the elements of a system is embodied in the concept of structure. A structure is a mutually conditioned ensemble of connections between elements within a system which determines the system's qualitative specificity. Consideration of a structure together with its substratum defines the concrete quality of a system: thus we speak of the solar system, not solar structure.

Structure and function. Part and whole.

A function is the role which an element plays in a whole both to combine elements in an integral system and to ensure the smooth functioning of the system. Structure and function condition each other. For instance, the structure of the organs of the body is connected with their functions, and any breakdown in the structure, or deformation of the organ, result in the disturbance of its functions. Changes in the development of organs begin with the restructuring of the functions of the organisms under the impact of the changing conditions of the environment, while the structure may remain for the time being without essential change. However, a change in the activity of organs leads sooner or later to changes in their structure: functional disturbances in organs precede their morphological distortions. The contradiction between the new mode of an organism's life activity and its old structure is resolved through changes in the latter. The resolution of this contradiction is subject to the dialectics of the relationship between form and content, where form is interpreted as structure. But structure is deeper than form: it represents the finest inner connection between the elements of the system in question, the modes of this connection: it is in these modes rather than in the elements that content lies.

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There is an apt saying that even when a bird just walks about, you can see that it can fly—it is obvious from the streamlined body, suitable for cleaving the air, from the light weight and fine texture of the bone system, the presence and form of the wings. A bird's appearance is an objectified idea of flight. And if you consider a bright-coloured butterfly, you will readily notice the semblance to a fluttering flower: the butterfly feeds on nectar, and the likeness to a flower protects it against birds, as it sits motionlessly on the

cup of a flower. The life of a bird is connected with air, the life of a butterfly is connected with flowers, and that determines their structure.

The logic of systems thought is largely similar to the dialectics of part and whole, familiar since the times of Plato, in which a whole is interpreted as something both unified and divided.

Genetic causality and systems correlation.

The relationship between the elements of a system is characterized by the type of interaction which presupposes simultaneity of their existence—otherwise the system as such would disintegrate into isolated processes and phenomena. That is the fundamental difference of systems relations from genetic causality, which necessarily implies relations of temporal sequence. Causality and the systems principle cover most of the types of connections now known. Coexistence and causal connection are the principal forms of connection and interdependence.

The principal kind of systems relations is correlation, i.e. the correspondence connection. Not one element of a system can change without effecting some change in the system as a whole. The structure of any system relies on correlative connections. Harmoniously correlative, coordinated actions of elements are a necessary condition of the system's existence. Darwin, who established the law of correlative change of an organism's organs in the course of the biological evolution, believed that it wasn't often that one could say which of the two correlative parts changes first and causes a change in the other, or whether that change was the result of some common cause. Particular manifestations of the correlative connection are coordination and subordination, as well as all kinds of functional dependences.

The relation between the systems principle and the principle of development.

The orientation of the systems approach at correlative connections does not mean that the systems principle is incompatible with the principle of development. Each system, as an ensemble of correlated elements, is in the process of constant functioning and change, and that process does not cover the system as a whole but also its separate elements. The distinctive feature

of a systems object is that, passing through a series of qualitatively different states succeeding one another, a system remains identical to itself (with the exception of cases of disintegration). Thus concrete elements of the biological structures of a living organism are periodically completely renewed, but the organism itself remains invariant. Consideration of systems relations outside a temporal perspective is only possible as an abstraction, for any system is first and foremost a functioning system, and functioning is the system's motion through time.

The most stable element of a system functioning in time is its structure, but the latter is not absolutely invariable either. A structure does not emerge spontaneously. The origin of structures is subject to the principle of causality, and their existence and functioning, to the systems principle. For instance, the process of chemical combination of oxygen and hydrogen is subject to the causal principle, which is active in the production of a structure, say, of a water molecule, but the subsequent life of this molecule as a system is regulated by correlative rather than causal laws.

The structure of the process of development itself is a special sphere of joint manifestation of the systems approach and the principle of development. The sum total of changes appearing as a result of the system's development form its new qualitative definiteness, characterized by a structural organization of its own. However, the new structural organization (especially in a living organism) does not mean a complete disappearance of the old one; the latter is preserved as a definite structure in which information about a definite level (stage) of the system's development is recorded. The structural level of the organization of a system considered in its static aspect, always contains information about its past dynamic state. Thus the genesis of the psychical structure of a mature personality has several stages at each of which psychical units previously unknown in the given individual take shape. All these stage-related structures are retained and exist as levels or elements of the personality's psychical system as a whole. That is why the static structure of a system may be regarded as a spatial projection of those temporal stages through which the given system passed in its evolution. In this sense, structure is not only the law of the system's organization but also of its functioning.

The formation of a structure in time, i.e. the process of its moulding and functioning, is therefore one of the most essential characteristics of development. Structure formation is subject to definite periodical or cyclical

laws referred to as the *rhythm* of development. Rhythm as a manifestation of periodicity expresses the stable in the dynamic. There is rhythm, for instance, of the earth's geological processes, as expressed in the cycles of mountains formation, now intensifying, now abating. Biological processes, too, are rhythmical (hence the biorhythm concept), as are informational processes, in which, in the absence of rhythm, the possibility itself of information transmission is destroyed. For instance, natural speech is subject to strict phonetic regularities: failure to observe correct stresses, pauses and syllabic patterns makes speech recognition impossible. Affinity between the rhythms of various processes is indicative of the affinity of the processes themselves. Changes in the rhythm of a process signify a change in the qualitative definiteness of the functioning system. For example, changes in the frequency of the electromagnetic radiation coming from man's various organs indicate malfunctioning in these organs.

The causal and the systems approaches complement each other; their combination provides a deeper picture of the universal connectedness of all phenomena and of their development. Correlation does not produce a new phenomenon but determines in a particular fashion both the state of a system and its functional development. Science today faces the task of adequate combination of the two approaches in the framework of the broader interpretation of the philosophical principle of determinism. Previously, it was mostly based on genetic causal links, while now the systems correlation, too, is often interpreted as *a kind of determination*, i.e. of mutual conditioning of phenomena.

Now, what is the difference in the determinist nature of these two approaches? As distinct from causal connections, systems correlation is manifested, in the static view of the system, as determination by the present (synchronic determination) rather than by the past. But consideration of the diachronic (developmental) rather than synchronic aspects of structure formation will reveal the same type of determination as in the principle of causality—the temporal one. Synchronic determination has a wide range of application not only in the consideration of the inner aspects of the system but also in the analysis of its interactions—e.g., of the interactions of living organisms with their habitat, where the process of rhythmical adjustment to the environment is particularly important.

Metaphysical interpretations of the systems approach.

The systems approach has achieved special prominence in recent decades. The enthusiasts who have played such a significant role in the deepening of the understanding of the essence of systems and of the heuristic role of the systems approach have also been guilty, however, of exaggerating the importance of this approach, which was at times presented as a new and global trend in scientific thought—despite the fact that its sources lay in the ancient dialectics of part and whole. The systems principle is a fundamental feature of the dialectical method.

The metaphysical lifting of the systems approach to an absolute followed this pattern. The first variant of this approach was the proposition that the world is "desubstantialized" (this is a variety of Machism, which asserted once that "matter disappeared"), with corresponding emphasis on the structural elements of being devoid of their concrete material carrier. This proposition is based on the idea that, since it is the structure of a system rather than system itself, with its material carrier, that is the stable element in the process of the system's change, underlying the world is a desubstantialized structure as pure relation. But the development of concrete sciences applying the systems approach refuted this idea. Thus the formula "language is a system of pure relations" proclaimed by linguists at the beginning of this century merely led to superfluous mathematicization of language and ultimately to linguistics becoming a system of constructs in which the new results obtained were, in fact, a clarification and deepening of the logical operations of thought. But, as soon as the need arose for creating artificial languages for communication with computers, mathematical calculations lost their definiteness at once, and linguistics turned again to the living flesh of language, to its sound matter.

Thus we see that structure taken without its substantial filling (both in the sense of matter and energy), is a logical concept rather than an independently existing object.

In the second version, the emphasis is on static and immutable, that is to say, actually given a priori, structural schemata, especially in thought. From this standpoint, underlying cultural evolution is a sort of "fundamental code" consisting of an immutable set of structural archetypes (codes and elements) manifested in reality in extremely diverse forms but devoid of any development. Apart from partial revival of Kantian apriorism and metaphysical colouring, the positions of philosophical structuralism also

show distinct traces of idealist tendencies, since a priori structures stand here for the ideal first principle of the world, while the idea of development is ousted by the idea of reproducing of archetypal structures. It is a well-known fact, however, that the source of development, of the emergence of new forms, including new structures, is material interaction and reciprocal conditioning of concrete phenomena, which must have material (in terms of substance and energy) form for this interaction to occur. Pure structures cannot interact: they lack the necessary "fulcrum".

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The common features of these versions of the metaphysical treatment of the systems approach as an absolute is rejection of the principle of causal determination and elevation of systems correlations, devoid, at that, of material implementation, to the rank of a fundamental property of being. In dialectical materialism, however, the systems approach, along with the principle of causality, is only one constituent element of its methodology. In dialectics, the stability of a structure is not opposed to its development but forms an organic unity with it. From these positions, structure is conceived not as a goal previously specified and marked for material implementation (teleology is yet another consequence which follows from the philosophy of structuralism) but as a result of material becoming itself. Without matter, structure is devoid of the attribute of development and becomes a purely logical construct.

It can be said that the systems approach specifies that aspect of the principles of universal connection and development which is not exhausted by the causal approach. Taken together, both these approaches make up the content of philosophical determinism in its broader interpretation combining various forms of the conditioning of phenomena underlying the process of development. The dialectical category of law is the node at which all the principles described in this chapter come together.

5. Law and Regularity

The concept of law.

Practical experience constantly demonstrates that the processes going on in the world are not a chaos of raging elemental forces. The universe has a

code of laws of its own. Everywhere we observe order coextensive with the world: the planets move along their strictly determined paths; however long a night may be, day will inevitably come; the young grow old and depart this life with implacable necessity, and a new generation is born to replace the older one. A watermelon or strawberries cannot grow out of an acorn, neither does time flow in reverse—winter never follows spring. Everything in the world, beginning with the motion of physical fields, elementary particles, atoms, crystals, and ending with giant cosmic systems, social events and the realm of the spirit, is subject to regularity.

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Century after century man noted the strictly determined order of the universe and recurrence of various phenomena; all this suggested the idea of the existence of something law-governed. The concept of law is a product of mature thought: it took shape at a late stage in the formation of society, at a time when science evolved as a system of knowledge.

A law is an essential, stable, regular and necessary type of connection between phenomena considered in a generalized form and adjusted to the typologically classified conditions of its manifestation. Laws as relations of essence or between essences are guarantees of the world's stability, harmony, and at the same time its development.

Being in their form (or formulation) the products of human knowledge, in their inner content laws express objective processes of reality. The study of laws is the principal task of science. Scientists are constantly searching for regularity, order, stable tendencies in phenomena, that is, for law-governed connections. Man's power over nature and history is measured by the extent and depth of his knowledge and ability to use their laws.

Law and philosophical determinism.

The concept of law is closely linked with the notion of determinism in the broader acceptance of the term, but it is not identical with it. Determinism covers the universal conditions of phenomena, while the concept of law expresses the qualitative stability of recurrent connections evaluating them in terms of their objective necessity and qualitative regularity rather than in causal (or systemic) terms. Reflecting the regularity and necessity of a connection, a law as such is not a determination but merely a measure of stability (and therefore of recurrence) of such determination. The concept of law may precede rather than follow causal explanations. Thus event A is

interpreted as a cause of event B only in the sphere of the action of a definite set of laws of nature that we already know. It is only possible to deduce event A from the subsequent event B if the regularity and necessity of such a connection has already been established by a law. A law is thus not just a measure of the qualitative stability of a connection but also a measure of its predictability. A law as an expression of the action of objective necessity and as a measure of predictability of events can therefore also be regarded as a special type of determination—as determination by the future as distinct from the causal determination by the past and systemic, correlative determination by the present.

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But that does not at all mean that formulations of laws must be causal. Recall all the mathematical formulas reflecting the laws of quantitative changes in nature. Does Einstein's formula correlating mass and velocity have the form of a causal connection? It does not. In the absolute majority of cases laws are formulated as functional dependences or classificatory correlations, that is to say, the form of expression of a law ultimately gravitates towards a systems correlation rather than genetic causality. Even the laws of causality are expressed as functional correlations. But that does not mean that causality is absent in relations reflected in correlative formulations of laws.

We have here a dialectical contradiction, which has confused many minds that saw it only as a formal contradiction: on the one hand, the content of the category of law took shape in keeping with the law of causality, and on the other, laws were always formulated as various functional correlations without any causal substantiation whatever. This apparent paradox at one time (namely in periods that were critical to the principle of determinism, e.g., at the time of rapid development of quantum physics, when indeterminism found favour among many) gave rise to controversy over the category of law: it was debated what the status of laws was, and whether they were immanent to the world or thrust on it by some external, and probably ideal, force.

According to religious idealist views, everything in the world follows the path predetermined by God, everything obeys the will of the Almighty. A tendency existed, and exists even now, of identifying the laws of the world with God: the world is governed by God and the laws, or else God runs the world through laws. Laws are thus personified and likened to the reasonable and order-creating power of God. From the standpoint of objective idealism,

natural processes are subject to definite laws constituting reasonable non-material relations, and from the standpoint of subjective idealism, the laws of science emerged only out of the human mind's love for and habit of orderliness. However, because the world as matter in motion has the properties of self-motion and self-development, of infinity in space and time, that is to say, because the world is a self-governing system, its laws represent its inner, immanent self-government.

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The concept of law emerges as a dialectical combination of the principle of universal connection between phenomena (in its causal and systemic forms) and of the principle of development, which we have already considered not only from the angle of explaining past events but also from that of prediction, however relative, of future states. Laws help to understand both the connection between phenomena and the mechanism of the formation of the new, which is an attribute of the constantly developing and continually enriched world.

Classification of laws. Law and regularity.

According to the sphere of the application, laws are divided into universal (e.g., the law of conservation of energy, or the dialectical laws which we shall discuss below) and particular ones, valid only in a limited area, as e.g. the laws of social development, which are only manifested at the level of the social form of the motion of matter.

When the conditions under which laws are valid change qualitatively rather than quantitatively, the laws operate in the new situation in the same way in which they operated in the previous situation. Of course, there are no laws that would be absolutely independent of any conditions. The wider the range of conditions under which a law is valid, the more general that law is.

According to their inner content, laws are divided into the laws of the structure (these are mostly laws expressing the necessary correlative connections in systems), the laws of functioning (the joint area of causal and systemic determination) and the laws of development (the area of primarily causal determination, which has both explanatory and predictive value). The dialectics of necessity and chance imparts to the laws of development the character of tendencies which force their way through a chaos of unpredictable chance occurrences (recall the progressive and regressive tendencies in social development).

In their form of manifestation, laws, just as the kinds of causality, are divided into dynamic and statistical or probabilistic. Thus a stone thrown upwards will inevitably return to earth according to the law of gravitation which acts dynamically, i.e. without any indeterminacy, whereas it is impossible to predict the number of points in a throw of dice, since this kind of event is only described statistically.

The concepts of tendency and statistical probability must be strictly distinguished: a tendency reflects the intricate path of the manifestation of dynamic laws, which will pave the way, in one way or another, for its strictly determined consequence through a chaos of chance occurrences, while statistical laws presuppose an alternative (at least two-valued) probability of a concrete event. In this last case, a law is not manifested as an obligatory occurrence of the given particular event A but as a statistical quantitative regularity governing the occurrence of equally possible events A and B.

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This difference between the dynamic and statistical modes of the manifestation of necessity is often used as a reason to oppose the concepts of law and regularity: the term "law" is applied to dynamic manifestations or tendencies, and the term "regularity", to statistical ones. However, it would be wrong to completely oppose the concepts of law and regularity. Both of them are different expressions of necessity, but regularity, unlike law, reflects *a certain degree of probability of the necessity* rather than its rigid determination. Thus the structure of any organism or, say, the composition of a work of art are subject to biological and aesthetic laws respectively, but an organism, and still more a work of art, also have a great many qualities that individualize them, which are, in terms of the general law, an aggregate of chance occurrences through which the law is manifested (or jointly with which the law acts). Acting in a mediated fashion through chance occurrences, a law as necessity in the concrete relates to this concrete as a regularity. In other words, a *regularity* is a law in the precious setting of chance occurrences, *a form of concrete manifestation of the law*.

The world is governed by laws, and not by a blind, implacable fate: the probability of laws, their action in conjunction with a train of chance occurrences make for the bright colours and wealth of life which is not subject to any schematic dogmas. This is particularly true of the higher levels of the organization of matter, in the first place for the social form of motion, for the laws of social development cannot be implemented without

the activity of people possessing a sufficiently high degree of creative freedom.

Thus everything in the world is interconnected, which gives an active impulse towards the world's self-development. The self-motion of matter is impossible without connections, development is impossible without self-motion. Development is conditioned by various kinds of connection, and the most important of these are causal generation and systems correlation. The highest manifestation of the synthesis of the principles of universal connection and development is the category of law, a category which does not only explain the past but also partially predicts the future. Man occupies a special place in this process: unlike the unconsciously acting laws of nature, he consciously realizes the concealed potential of social laws, impregnating them with his creative energy.

Chapter VI. THE BASIC CATEGORIES AND LAWS OF DIALECTICS

1. On the Unity of and Differences Between the Categories and Laws of Dialectics

Categories as stages and forms of the knowledge of the world.

The world in its constant motion and development is reflected in thought that is just as dynamic. "If everything develops...", wrote Lenin, "does not that apply also to the most general *concepts* and *categories* of thought? If not, it means that thinking is not connected with being. If it does, it means that there is a dialectics of concepts and a dialectics of cognition which has objective significance."¹ The content of categories and laws in their interrelation contains precisely this kind of dialectics of cognition. Even the simplest thought like "Three yellow leaves fell to the ground" contains such concepts as object (leaf, the ground), quality (yellow), quantity (three), motion (to fall). If in perceiving things we do not place them under the headings of some concepts or categories we are doomed to mindless observation of objects. The categorial structure of thought is a necessary premiss of the cognitive act.

To every person starting out in life, the historically established categories are given as something a priori or pre-experiential in relation precisely to that person, although they are a posteriori or post-experiential in their origin. As they are assimilated, the categories determine the area and orientation of the vision of any form of givenness—natural, social or spiritual. They direct the substantive understanding of the world by man and of man in the world, and impart a structure to cognitive activity, determining both the field of the mentally observed reality and the angle of its interpretation. In other words, the categories are filled both with methodological and worldview content. Thus the content of the category of

¹ V.I. Lenin, "Conspectus of Hegel's Book *Lectures on the History of Philosophy*", *Collected Works*, Vol. 38, pp. 253-54.

being may be either materialist or idealist. This applies to all categories without exception.

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Every science has its own historically established arsenal of logical instruments of thinking in terms of which the properties and essence of objects are perceived. Of course, any science operates with concepts of varying degree of generality and significance, but its framework is made up of the fundamental concepts. Taken as a system, they form what is known as the categorial structure of a given domain. *The categories of philosophy are general concepts reflecting the most essential, law-governed connections and relationships of reality*; they are “stages of distinguishing, i.e. of cognizing the world, focal points in the web, which assist in cognizing and mastering it”.²

Philosophical categories reproduce the properties and relations of existence in global form. But, just as in any other science, not all philosophical categories are universal. For example, epistemological categories like knowledge, truth, or error describe some essential aspects of cognitive activity only. There are, however, universal philosophical categories as well. These regulate the real process of thinking and gradually form a separate system in the course of its historical development; here belong such categories as connection, interaction, reflection, information, development, causality, structure, system, form, content, essence, phenomenon, etc.

In all the transformations of both concrete scientific and philosophical knowledge, it is the system of categories that proves the most stable element, although it, too, undergoes definite changes, being subject to the principle of development. Our present-day notions of the content of such fundamental categories as matter or consciousness differ significantly from their perception, say, in the philosophy of the early Modern Times, and even more from that of antiquity.

Characteristic of philosophical categories is the fact that, accumulating, as it were, the results of the development of the specialized sciences, they embody the worldview and methodological elements in scientific thought. The categories of philosophy are interconnected in such a way that each of them can only be perceived as an element of the overall system. Thus the material and spiritual reality cannot be understood in terms of the category

² V.I. Lenin, “Conspectus of Hegel’s Book *The Science of Logic*”, *Collected Works*, Vol. 38, p. 93.

of matter only, without recourse to the categories of motion, development, space, time, and many others. Otherwise we would be unable to go beyond a mere statement of reality in its totality. What we have to do is employ the entire system of philosophical categories and concepts in which one element is characterized in terms of others, in unity with the others, now merging in one whole, now splitting apart.

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The order of philosophical categories in the system is based on the growing complexity of objective connections and the movement of knowledge from the simple to the complex. For a deeper consideration of a given problem a person has every right to select a certain unit of the categorial system, bearing in mind at the same time that the system of philosophical categories is an organic whole in which no link can be separated from the rest without damage to true knowledge.

The relationship between the categories and the basic laws of dialectics.

It should be stated from the outset that the basic laws of dialectics implement the links between and interaction of the categories. Moreover, they are themselves expanded categories. Even the concept of law is a category. All that is on the one hand. And on the other, some categories are in themselves also laws. Thus the category of causality is a universal law of the world. In this case, the law/category expresses in effect a fundamental philosophical principle. Reflecting as they do the objective dialectics of reality, the categories and laws of dialectics, cognized by man, act as a universal method of the cognition and transformation of reality. As the history of knowledge begins with the identification of some general element in nature in keeping with the abstraction-forming activity of thinking, knowledge is at first moulded as general concepts and categories which form the basis for certain principles of both being and thinking itself. Subsequently, cognizing thought endeavours to formulate, with the aid of well-developed instruments of cognition (the categories and principles) and on the basis of an increasingly varied empirical data, fundamental propositions introducing order into our knowledge of the world—propositions known as laws. Our presentation of the categories and laws of dialectics is determined by this historically evolved course of knowledge.

2. Essence and Phenomenon

The concepts of essence and phenomenon.

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The development of knowledge is a constant movement of thought from the superficial and observable, from that which appears to us, towards that which is deep-lying and hidden—towards essence. Essence assumes true reality only through definite forms of self-manifestation. For example, just as leaves, flowers, branches and fruit express in their outward appearance the essence of plants, so do ethical, political, philosophical, scientific, and aesthetic ideas express the essence of a definite social system. The essential nature of a social system determines the features it manifests in politics, in the modes of expression of the people's will, in the forms of justice, in the character of labour, in artistic creativity, etc. A phenomenon conveys as a rule only one facet or aspect of essence. To take an example, many symptoms of malignant growths or cancer have been studied in sufficient detail, but the essence of it still remains a sinister secret. Essence is concealed from the human eye, while phenomenon lies on the surface. *Essence is therefore something hidden, something deep-lying concealed in things and their inner connections, something that controls things; it is the basis of all the forms of their external manifestation.*

Essence is conceived both on a global scale, as the ultimate foundation of the universe, and in the limits of definite classes of all that is, e.g., minerals, plants, animals, or man.

The very concept of essence is comprehensive and cumulative: it contains the integral unity of all the most profound, fundamentally connected elements of the content of an object in their cause-and-effect relations, in their inception, development, and tendencies of future evolution. It contains the cause and the law, the principal contradictions and the structure, and that which determines all the properties of the object. Essence is in this sense something internal, a certain organizing principle of the object's existence in the forms of its external expression. The concept of essence is correlative with all the categories, in particular with the concept of content, though it expresses the principal part of the content rather than content as a whole. It is also correlative with the category of quality, but the latter does

not exhaust essence, expressing some one aspect of it only: to bring out an essence, one must also identify measure as a unity of quality and quantity. It is correlative with the concept of law, but law and essence do not coincide: we know the laws of gravitation although we are still ignorant of its physical essence. And who can say what the deep essence of information is? And this is despite the fact that the laws of reception, storing, and processing of information have been studied quite thoroughly.

To bring out the essence of something means to penetrate into the core of a thing, into its basic properties; it means to establish the cause of its emergence and the laws of its functioning, as well as the tendencies of development. Essence varies in depth both on the epistemological and on the ontological plane. It thus has its degrees or order. Knowledge always moves from an essence of one order to an essence of another, deeper order. Beginning with a relatively simple essence, the order of essences ascends into infinity: its nebulous depths are only grasped by the power of the mind *in potentia*, while in actuality the mind always remains in the abyss of ongoing being. What contemporary science knows of essence is only a definite order, one in a series, of its manifestness to mankind's collective reason. Assuming that the universe is infinite, the orders of essence may be said to be unlimited. That is why when we say that we have grasped the essence, it is mostly a metaphor implying that we have merely caught at the edge of essence in its full extent. It should also be stressed that essence is always *concrete*, there are no essences in general.

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In reality, essence is inextricably connected with the forms of its manifestation. Thus surplus value appropriated by the capitalist manifests itself in the form of profit: no one can perceive it outside this form. What is phenomenon? Phenomenon is a manifestation of essence: if essence is something general, phenomenon is something individual, expressing only one element of essence; if essence is something profound, phenomenon is external, richer and more colourful; if essence is something stable and necessary, phenomenon is transient, changeable, and accidental. In a word, phenomenon is *the way in which essence outwardly manifests itself* in interaction with all that is not essence, including our sense organs.

Philosophical controversy on the dialectics of essence and
phenomenon.

Before Kant, the dialectics of essence and phenomenon was practically identified with the idea-matter relationship. Early philosophers already saw essence as the foundation of all things in the world, as the source and starting point of all concrete diversity. According to Plato, essence is identical with idea, or *eidos*, and irreducible to the corporeal, sensually perceived forms of being. It is a certain primordial model of all that emerges and is. According to Aristotle, the essence of a thing is form endowed with a certain activeness, a principle animating inert matter in combination with which all things are formed.

The famous argument between the realists and the nominalists on the form of the existence of general concepts or universals marked the beginning of the separation of the categories of essence and phenomenon from those of idea and matter. In the nominalists' view, only individual things (a partial analogue of phenomenon) had real existence, while the general (or the essence) was declared to be a result of the mental process of generalization of individual things.

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For the realists, on the contrary, the general had existence—either regardless of individual things or phenomena (and that was a step towards idealism), or as their inner element. Kant made the problem even more acute when he introduced the concept of thing-in-itself (or essence), which he purported to prove to be incognizable and opposed to the phenomena of the objective world proper, accessible to sense perception but concealing their true essence from the human mind. Kant finally separated the problem of essence and phenomenon from that of idea (spirit) and matter.

Since Kant, essence has been thought of as the object's qualitative specifics independent of the features of the subject and concealed from direct observation in view of the conventional nature of reflection mechanisms characteristic of the human sense organs and thinking. In order to get access to the world of essences, man must learn to decode the world of phenomena given him in his sensations.

Phenomenon covers the directly observable properties of an object whose vision depends on the structure and functioning of the knowing subject's sense organs, while essence is the object's qualitative specificity determining its "image", one that may be concealed behind the directly observed manifestations requiring adequate interpretation. Thus the green colour of grass is its property at the level of phenomena, while the essential characteristic of grass is its objective physical ability to reflect the rays of

light in such a way that the human eye perceives grass precisely as green. In accordance with the same objectively essential specificity of reflection of light rays, grass is seen not as green but, say, as gray (to use a conventional designation) by a dog, as animals have a differently constructed visual apparatus.

Both essence and phenomenon exist objectively, both are attributes of the object, but phenomenon is a function of two magnitudes—object and its givenness to subject, whereas essence is the object's properly objective quality. This dependence of phenomenon on the properties of the subject himself is reflected in the theory of relativity and quantum physics, where the observer's position and the state of apparatus at the start of the experiment are taken into account in the givens of the experiment and even in the mathematical formulas reflecting physical laws.

When the problem of essence and phenomenon was separated from that of spirit and matter, the philosophical controversy around these categories did not cease, but its content was now different.

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Having finally set apart the categories of essence and phenomenon, Kant raised this issue: can the human mind break through the screen of phenomena to the object's essence? In other words, how can man cognize the objective world? Different solutions of this question were offered. Thus Hegel recognized the possibility of knowing the essence, which he saw as an expression of the absolute idea generating the world of phenomena in the process of its self-development. Agnostics, on the contrary, regarded the world as unknowable, taking Kant's opposition of essence and phenomenon to be an absolute, and thereby ignoring the objective link between phenomenon and essence. The solution of this question thus turns on the dialectics of essence and phenomenon: the view of essence as knowable entails the interpretation of phenomenon not only as a consequence of the subject's properties but also as a consequence or manifestation of the essence itself. In our example, the colour of grass, or the perception of its specific colour spectrum, depends on the structure of the eye, but the fact itself that the physical nature of the reflection of light rays can be expressed in physical magnitudes depends on the object's essence. The fact that we see grass as something green depends on the structure of our eye, but the very fact that we see grass (which would be impossible in the case of, say, microcosmic objects) and, most importantly, that we see not only green grass but also blue skies, brown earth, and various shades of green in the

plant world—all this enables us to identify a common basis in all visible things, and to penetrate into the objective physical essence of light processes. The physical nature of colour formation has been sufficiently studied by science which can even identify the chemical composition of stars from their colour.

In the system of dialectical materialism, the categories of essence and phenomenon are regarded as universal objective characteristics of object reality. The unity of these categories signifies the unity of ontology and epistemology, i.e. the unity of the world and of thinking about the world. Essence and phenomenon emerge as different stages in the process of cognition. Man approximates to the essence of phenomena through praxis, experiment, the mind's abstraction-forming activity revealing the objective nature of these phenomena—but he never exhausts this essence entirely. Such is the dialectics of essence and phenomenon. Ignoring this dialectics entails a great many mistakes. The history of human thought shows that the most widespread type of such errors were the various modifications of empiricism, which endeavoured in every way to reduce problems to phenomena only, without clarification of their deep essence. Thus neopositivists today reject essences, declaring them to be metaphysical inventions and believing their only task to be accumulation, classification and systematization of facts. They declare this position to be the only scientific one, free from the fetters of abstract confused reason. The difficulty is, however, that criteria for the classification of facts are impossible to identify without an initial theory, if only of a very general nature. Blind empiricism is just as helpless as empty theorizing. It was no accident that for a long time physicists felt helpless to classify certain contradictory facts—until the concept of a new essence combining wave and quantum properties was introduced, and quantum physics was thus founded.

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The dialectics of essence and phenomenon is questioned not only by empirically minded natural scientists but also by some scholars. Thus phenomenologists doubt if it is necessary to distinguish in each person his or her generic essence while ignoring the individual qualities which are, after all, the most valuable elements about us. They are right here. It is true that individuality is the most valuable thing about a person, but it is not true that individuality is merely a phenomenon and not essence. The meaning of history lies precisely in the fact that each human being's personal, particular qualities are not accidental (and individual in this sense) but essential.

It is clear from this that the question of the relationship between essence and phenomenon, on the one hand, and the concept of the individual, on the other, is particularly acute in the humanities. But the natural and quite justifiable fear of spiritual uniformity must not lead to rejection of essence. The individual is also essential. Thus Shakespeare and Dostoevsky are unique, and they occupy a special essential place in the history of culture. Neglect for the essential value and uniqueness of the creative individuality can open the way to a flow of dull and faceless literary productions. But the essential and the personal merge into a single whole in man. Personality is an essential human quality manifested in people differing widely in type and character.

The dialectics of essence and phenomenon is by no means a simple process; "one essence—one and only one phenomenon" is not the type of relationship it is characterized by. In itself, a phenomenon is fairly indeterminate, and it does not always conceal a true essence. If the relationship were always simple, true and unambiguous, human knowledge would not abound in errors and delusions. So the problem of appearance proves quite real in philosophy.

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To be and to appear.

We encounter the relations of "being" and "appearing" more often than we think. We must have all had occasion to see from our personal experience that, sitting in a train passed by another train, it is difficult to say whether we are in motion or not, although the difficulty is simply overcome: all we have to do is look the other way. Or consider another example: we have all seen myriads of stars on a clear night, we have enjoyed their sight and dreamed of the higher things, little concerned with the fact that there are no stars where we "see" them—they have gone at dizzying speeds into the infinite distances of the universe where we cannot see them at all. It is thus clear that the mass of stars that we see is merely a seeming mass, and the true being in the skies is quite different. True, we cannot say in this case that appearances are deceptive: after all, we are dealing with a real phenomenon which only assumes the guise of appearance. In this case, appearance is not a delusive product of our organs of sense. It emerges under real relations. Thus mirages in deserts are natural phenomena rather than visual phantoms. They can even be photographed, being the consequence of the

refraction of light rays in the atmosphere. Appearance therefore has a basis in essence: it is essence in one of its manifestations. Since the manifestations of appearance are varied, a critical verification of direct observation data and a clear distinction between being and appearing are necessary for a correct understanding of an event.

The phenomenon of being and appearing expresses above all the discrepancy between essence and its external manifestation. This discrepancy often reaches the stage of direct opposition, and it then figures as a distorting mirror of essence.

Man's self-expression may be essence-related or appearance-related: a person is not always what he is trying to seem. For many, it is much easier to seem to be good and just than to be such. Some persons have this weakness that they are concerned with seeming much better than they really are. The passion for showing off, for constant substitution of appearance for essence in the end completely distorts the personality, and what once was appearance becomes essence, it becomes a character trait determining from within the relationships between the given person and the people around him.

Is a person's every action an adequate form of the self-realization of his personality essence? The answer is yes and no. You may say that a certain person is highly responsible, and his thoughtless action was accidental, quite uncharacteristic. One may accept this, yet there was something lacking in that man's sense of responsibility and something that permitted that thoughtless action, something that made precisely that action possible in principle. It follows that what appears expresses in this case a feature of what is.

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We can thus say that phenomenon manifests essence while appearance as a rule conceals it, and the task is to penetrate beyond the screen of appearance and peer at the true face of essence; to achieve this, one must not accept the external as the internal on trust but persistently move from the external to the internal.

Phenomenon and essence, the external and the internal.

Cognition always proceeds from the external to the internal, from the observable to the unobservable. In Marxist epistemology, the categories of the external and the internal stress the systemic and integral character of the

objects under study. (Here, they are partly correlated with the categories of content and form.) From this standpoint, the category of the external reveals the properties of the object as a whole, and not only of the object in itself but also of its mode of interaction with the environment. As for the category of the internal, it reveals in the process of cognition the structure of the object, and is only identified through theoretical procedures of cognition involving assumptions about idealized objects, formulation of laws, etc.

While the internal can only be understood through the external, the true nature of the external, in its turn, can only be grasped if the internal is understood. The categories of the internal and the external considered in terms of a systemic description of objects are therefore directly linked with a dialectical understanding of development, figuring as necessarily interconnected elements of being in its development.

In the context of the present discourse, the impression may be created that the concepts of the external and the internal are synonymous with those of essence and phenomenon. But is that really so? In the history of knowledge, the problem of the internal and the external was often linked up with that of essence and phenomenon interpreted as characteristics of being. However, there is no complete identity here leading to the so-called doubling of terms. Indeed, even if we grasp the object's inner structure, its elements and composition, we shall have no right to say that we have grasped its essence. The fact is that the latter assumes knowledge of certain principles of its development and functioning; it excludes the presence of anything accidental and inessential. But the inner content of a given object has, among others, accidental and inessential elements. Furthermore, a phenomenon does not, as a rule, tell us anything of the object's links with other objects, while the concept of the external assumes that the object is considered precisely in terms of its links, so that the external becomes essential for the object; in this sense, the external reveals the object's essential links, bringing out a certain aspect of its essence.

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The categories of essence and phenomenon are the focal pair of categories in dialectics; it throws light on the outlines of other categories, for which it serves as a kind of categorial pivot.

3. The Individual, the Particular and the General

The concepts of the individual and the general.

An infinite variety of things exists in the world. All things and events differ from one another, they are individual in their being. Although human beings are sometimes described by the expression "as like as two peas", science knows that genes contain unique and always individual information, which proves that no two identical human beings can be found. An infinite number of specific conditions and a mass of accidentals contribute to the fashioning of the individual. Thus the differences between any two maple leaves are conditioned by differences in lighting, nourishment, temperature, energy microclimate, all determining their size, colour shades, form and weight. Nature is inexhaustible in creating the individual: it brooks no clichés. The individual is an object differing from other objects in its unique specifics. Not only single objects but classes of objects, too, may be regarded as individual, if the class is taken as something integral; the same applies to a single feature of an object considered in its individual uniqueness.

The individual is thus a category expressing the relative isolation, discreteness, delimitedness of one object from another in space and time, the intrinsic peculiarities that make up an object's unique qualitative and quantitative definiteness.

However, infinite diversity is only one aspect of being. The other aspect is the universality of things, their structures, properties and relations. Just as firmly as we stated that there are no two absolutely identical things, we can also say that neither are there two absolutely different things. The notion of the world only as an infinite diversity of individualities is one-sided and therefore false. It cannot be doubted that, although all human beings are individual, we have no difficulty in identifying the generic essence inherent in all of them and expressed in the general concept of man. The general is the singular in the many. It expresses definite properties or relations characteristic of the given class of objects or events. As a similarity of the features of things, the general is accessible to direct perception. Being a law, it is reflected in the form of concepts and theories. Although a law comprizes the concept of the general and is formed on its basis, the converse assertion that the general is a law is false. The general helps us to approximate to the essence of things, but it must not be confused with essence itself. Characterizing a sufficiently high degree of distribution of a quality or property, the general is not correlated with the object's entire

essence as a certain systemically organized whole but only with some one attribute of that whole. It should also be borne in mind that an object's general features may be both essential and inessential. The external features of objects are, as a rule, inessential. For example, man is the only creature in the world that has a soft earlobe. Only man, and no one else, has this feature, and yet it is not essential for him—it does not express his human essence.

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The categories of the individual and the general have a profound worldview and methodological significance. A characteristic trait of objective idealism is separation of the general from the individual, the raising of the general to an absolute and its treatment as something which precedes the individual and creates it (Plato, Hegel). On the other hand, the view of reality as a mass of individualities independent of one another is characteristic of narrow empiricism, which regards the individual as a basic category, and the general, as a mere derivative abstraction. Underlying the mediaeval controversy between the nominalists and the realists was the same tendency to separate and oppose to one another the individual and the general.

A sharp contradistinction between the individual and the general in various systems of idealism is linked with an antithesis, just as sharp, between the categories of essence and phenomenon. In objective idealist systems, the general is identified with essence. In systems of subjective idealism, on the contrary, the individual, identified with phenomenon, assumes the form of essence, and essence is thus identified with phenomenon, it is reduced to mere existence. Dialectical materialism insists on the objectiveness and unity of the individual and the general. So wherein lies their dialectics?

The dialectics of the individual and the general.

Instead of dry theorizing, let us start with the concrete. We know that information recorded in molecular structures of the cellular nucleus constitutes a general programme in accordance with which the individual organism develops and hereditary properties are passed on from one generation to another: man's generic essence in the groundwork of heredity is transmitted from generation to generation and in unity with all the natural and social conditions creates individuality. On this groundwork, common to

all descendants, each of them builds his own special and unique pattern. The individual is dominated by the general, which ruthlessly "forces" the individual to perish, one after another, as something transient, in the name of preserving the general as something stable: the individual dies, but the species lives on.

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But why is the general intrinsically tied to the individual? The simple reason is that, because of the discreteness of the world, the general does not exist, and is not given to us, other than through the individual. They are not things juxtaposed to one another, and the dialectics does not consist here in the fact that the one exists and the other exists and the two somehow interact but in an object existing and manifesting itself as existing (in one way or another) owing to the material unity of the world, its energy-information interactions and the universality of the principal attributes of all that is. The general therefore does not exist separately but as a law of the birth and life of the individual. It contains in itself the law governing the processes going on in any individual phenomenon of the given class. The action of the law, the anonymous power of the general is expressed only in the individual and through the individual. Just as the individual is impossible without the general, so is the general impossible without the individual, which serves as the premiss and the substratum of the general.

If we recognize, however, that the dialectics of the individual and the general is universal and the general is manifested only in the individual, that means that all the existing individualities are indistinguishable. It has been said above, though (and it is an empirically observable fact), that there are no two absolutely identical things, and they are distinguishable in some aspects even when there is nearly complete similarity. This difference in individualities is embodied in the category of the particular. *The particular signifies the measure and mode of combining the general and the individual in a single phenomenon.* It is conceived as the specificity of the realization of the general, a specificity characteristic of the given object.

No cognitive or practical activity is possible without correct account being taken of the dialectics of the individual, the particular and the general. To understand separate phenomena, it is necessary

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to extract them from the general connectedness and to consider them analytically. Science deals above all with generalizations and operates with general concepts, which enables it to establish laws and thus arm practice

with predictions. Practical success, however, does not merely require knowledge of the general but also a full account of the individual and the particular. Creative thought permits of no clichés that would be applicable everywhere without regard for the individual peculiarities: the particular is richer than the general. Of course, when we define the average velocity of gas molecules, we are not interested in the behaviour of each separate molecule: their impersonality does not discourage anyone. In medicine, though, the situation is quite different: the doctor must treat not just man in general but a concrete person with unique individual features that are highly important for the matter in hand. One and the same disease in different patients will require certain modifications in the general method of treatment.

Two paths are possible in the cognition of that which exists: one is through abstraction from the individual and the accidental towards the formation of general concepts and theories reflecting the essential, and the other is the opposite way—through finding the most characteristic individual events which, despite all their uniqueness, directly, as it were, represent the general and law-governed. These are "typical" individualities.

Thus the dialectics of the individual, the general and the particular helps us to understand better the essence of natural and social phenomena, as well as the principles of activity and of cognizing thought. But it only achieves these goals when it is concretized in the necessary and the accidental.

4. Necessity and Chance

The concepts of the necessary and the accidental.

Historically, the categories of necessity and chance emerged as a consequence of meditation on the human fate, on "divine providence", the freedom of the will, on the predestination or spontaneous character of human being. These categories became free of this primarily ethical interpretation mostly in connection with the achievements of natural-scientific knowledge in the Modern Times. After a fairly long epoch of the dominance of Laplacean determinism and other forms of metaphysics, during which the various interpretations of necessity were in fact predominant, further development of the exact sciences, in particular of the

probability theory, gave a new impetus to a deeper understanding of the categories of necessity and chance. These categories acquired a dialectical flexibility in the philosophy of Hegel, and were given consistent scientific substantiation in dialectical materialism. Now, what is the meaning of these categories?

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Can something that exists be nonexistent, and could something have happened that did not in fact happen? Which of us never thought about such questions as whether it was necessity or chance that precisely Napoleon became the head of the French state? Was it an accidental or law-governed event that America was discovered, and that it was precisely Columbus who discovered it? Was it accidental or by law that life sprang up on earth, and then human beings, and then you, my reader? Such questions may be asked *ad infinitum*.

These questions were variously answered by different thinkers. Whatever happens in nature or in the life of society or individual, fatalistically minded people usually say, "What will be, will be." This view is based on the assumption that everything in the world and in the life of each individual is predetermined either by destiny (as in antiquity), or by God (as in Christianity), or by the entire system of interaction of phenomena. From the positions of determinism, which is traced back to Democritus, chance is seen as a purely subjective concept with which we designate something of which the causes we do not yet know. As soon as man discovers the cause of a phenomenon, it ceases to be accidental. What we have here is a substitution of one term for another. The point is that the chance of which the cause has been cognized does not cease to be chance by virtue of the fact of cognition; the existence of a cause is not necessarily connected with necessity. It is true that there are no phenomena without a cause. All accidental phenomena are causally conditioned, in one way or another, but that does not make them necessary at all. In its most refined form, fatalism is formulated in the system of Laplacean determinism asserting that a single mathematical formula can express all the parameters characterizing an instantaneous state of all the parts of nature and of the forces animating nature, as well as all the world's past states, and predict all events in the times to come. In the dialectical world, however, many phenomena take place which cannot be predicted even with the help of a fantastic number of equations and a hypothetical all-embracing mind, for a significant role in this world is played by chance.

There were also those who believed that everything on this earth is a matter of chance, to which our fate should be entrusted. That was the origin of the false alternative that has confused the minds of men for thousands of years: either the world is dominated by chance alone, and there is no place for necessity, or else there is no chance at all—and then everything takes place out of necessity. In actual fact, though, a great many things occur in this world accidentally. Chance has its share of “right” to existence.

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Now, what is chance? Chance is a type of connection which is conditioned by inessential, external, and contingent (in relation to the given phenomenon) causes. As a rule, such a connection is unstable. In other words, chance is the subjectively unexpected, objectively unnecessary event which may or may not occur under given conditions, which may take any course in its development.

Chance may be external or internal. External chance is beyond the power of a given necessity, and it is governed by some attendant circumstances. Say, a person has stepped on a watermelon rind and fallen. We see the cause of the fall, but it is not at all dictated by the logic of the victim’s actions. Blind chance has suddenly interfered.

Internal chance follows from the object’s nature: it is, as it were, a turbulence caused by necessity. Chance is regarded as internal if the situation of the birth of an accidental phenomenon is described from within a single causal series, while the total action of other causal sequences is described in terms of the objective conditions of the realization of the main causal series.

Chance is also divided into *subjective*, that is, emerging from a display of the freedom of the will by an individual acting against objective necessity (such is the nature of the historical voluntarism of some political figures) and *objective* (this will be considered in our treatment of the category of probability). Rejection of objective chance is false and harmful both from the scientific and practical viewpoints. Seeing everything as equally necessary, man proves to be incapable of separating the essential from the inessential, the necessary from the accidental. This view reduces necessity itself to the level of chance.

Putting it briefly, the accidental is the possible under suitable conditions. It is opposed to the law-governed as the necessary in a definite situation. *Necessity is a law-governed type of links between phenomena determined by their stable inner basis and by an ensemble of the essential conditions of*

their emergence, existence and development. Necessity is an element of law, and in this sense a synonym of law. Inasmuch as law expresses the general and the essential in phenomena, necessity is inseparable from essence. If the cause of the accidental lies somewhere else—in the intersection of different series of cause-and-effect connections, the cause of the necessary lies in itself.

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Just as chance, necessity may be *external* and *internal*, i.e. produced by the object's own nature or under the contingency. It may be characteristic of a great number of objects or of a single object. Necessity is an essential feature of law. Just as law, it may be *dynamic* or *statistical*.

Necessity and chance figure as two correlative categories expressing the philosophical interpretation of the interdependence between phenomena, the degree of the determination of their emergence and existence. The necessary forces its way through the accidental. Chance introduces an element of indeterminacy into regularly occurring processes, which is expressed in the category of probability. Why is necessity capable of being manifested through chance? Because it is realized only through the individual. In this sense, chance is correlative with individuality. Accidents affect the course of a necessary process—they either accelerate it or slow it down. Moreover, in the course of development accidents may become necessity. Thus regular features of a given biological species originally emerged as accidental deviations from the traits of another species. Accidents of this kind give a new life and a new perspective to necessity. According to Darwin's theory, insignificant accidental changes of organisms that are useful for these organisms are fixed in heredity mechanisms, reinforced in the course of the evolution, and lead to changes in the species. So chance is linked to necessity by diverse ties, and the boundary between chance and necessity is never closed. But the principal direction of development is determined by necessity. There is therefore only one answer to the question whether it was chance or necessity that precisely Napoleon became the head of the French state, that America was discovered, and that it was precisely Columbus who discovered it: the fact that the inner logic of the events in France demanded a personality like Napoleon was necessity, but it was pure chance that such a personality was Napoleon rather than some person named, say, Pierre. The same applies to the discovery of America.

The principal goal of cognition is discovery of the law-governed. We perceive the world as an infinite diversity of things and events, of colours and sounds, and of other properties and relations. But, to understand it, a definite order has to be brought to light. For this, we must analyze the concrete forms of chance in which the necessary is manifested. As for predictions of, say, social events, they assume the taking into account of both. Consider history. Is everything rational in it? Is Hegel's dictum, "What is rational is actual and what is actual is rational", true? Of course not. Just as in the behaviour of individuals, there is a great deal in history that is irrational. In any case, the law-governed and the accidental in historical events and in people's individual acts contain elements of wisdom and folly in various proportions.

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Necessity and freedom.

The history of society develops by virtue of its inherent necessity. Chance, however, is manifested here to a greater extent than in nature, since human beings are motivated by ideas, will and passions. This logic of history and the action of necessity as the resultant of the free activity of multitudes of people was called by Hegel the cunning of historical reason. Outside of chance, history would be extremely mystic in character: everything would be fatally predetermined beforehand. But that does not mean that the role of chance and of unlimited freedom of the will must be raised to an absolute in history, as is observed in voluntaristic conceptions. Voluntarism is the view that raises to an absolute the freedom of the will as not determined by anything, as ignoring objective conditions and laws, and bringing manifestations of freedom to the point of total arbitrariness.

While voluntarism lifts the inner aspect of freedom to the point of arbitrariness, fatalism regards each human act as an inevitable realization of some initial predestination excluding any free choice. However, the view of man as an active creative being rules out a purely mechanistic interpretation of absolute dependence of his actions on external circumstances as accepted, say, by Hobbes or Holbach; they asserted that our life is an orbit along which we must follow due to an implacable concatenation of external forces, without being able to depart from that orbit by as much as an inch. If man acted under the impact of external forces only, his lot would inevitably be that of Buridan's ass which, having no objective grounds for choosing one

out of two absolutely identical piles of hay, failed to choose either and died of hunger. This interpretation of the freedom of the will, or rather of a lack of such freedom, degrading man as an active and creatively self-determined personality, relieves him of responsibility for any act, including a criminal one, on the one hand, and on the other, makes it impossible to appreciate his merits. If everything is predetermined, wherein lies the guilt of sinners and the merit of righteous men? This is a profound moral problem that has tormented thinking mankind for ages. As a rule, adherents of the fatalistic view of the freedom of the will confuse predestination with determination, interpreting the latter in the sense of the former. In reality, all man's actions are determined but there is nothing predestined about them.

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The metaphysical position makes it impossible to overcome the artificial opposition of the subject of freedom to the objective conditions of his activity. Marxism proceeds from the assumption that through his activity the subject participates in the determination of events. The law-governed course of historical events is realized through people's will and conscious actions rather than outside them. A correct understanding of determination rules out a purely mechanical, one-sided dependence of man's actions on external influences upon him. This dependence is mediated by man's nature, his total experience, interests, and character of value orientations.

What is, generally speaking, the freedom of the will? The freedom of the will is man's ability to take decisions and perform actions in accordance with his interests, goals, evaluations and ideals, expressed in his selective activity based on his knowledge of the objective properties and relations of things, law-governed links between phenomena and events of the objective world. Each of man's free actions is a fusion of freedom and necessity. It follows from this that the freedom of an individual, a collective, a class or society as a whole does not consist in an illusory independence from objective laws but in the ability to choose or take decisions on the basis of a sound knowledge of the circumstances.

The freedom of the will is a necessary condition of any goal-directed conscious activity whose subject is inherently endowed with a sense of responsibility. Responsibility assumes, on the one hand, an awareness of what must be, and on the other, the possibility of a free choice of the ways of its realization. Further, that means that freedom is not abstract but historically concrete and relative. According to Engels, freedom is man's generic feature and a product of historical development: "The first men who

separated themselves from the animal kingdom were in all essentials as unfree as the animals themselves, but each step forward in the field of culture was a step towards freedom.”³ Freedom is a specifically human mode of existence. The measure of freedom as man’s creative self-realization is determined by the level of development of productive forces and social relations, and also by the degree of knowledge and mastery of natural and social laws. The extent of human freedom has become a measure of social progress, while progress itself depends on the degree of freedom people have in their activity: the individual as such commands a certain measure of real freedom manifested in the freedom of choice out of the series of possibilities offered by society. The measure of citizens’ freedom characterizes both the level of society’s development and its moral health.

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A retrospective view of the history of society shows that its progress is accompanied by a steady growth in the scope of individual freedom and, as a consequence, of the freedom of society as a whole, for “the free development of each is the condition for the free development of all”.⁴

So how is freedom correlated with necessity? The dialectics of freedom and necessity in history is such that, on the one hand, freedom is present in necessity, i.e. necessity is realized only through freedom in the form of an endless chain of people’s free choices which, having once begun, has led to the given social state. That means that necessity is not only realized but also created in the historical process. On the other hand, necessity itself is contained in freedom in the form of objectively given historical circumstances, of the objective conditions of people’s activity. In this sense, freedom is a recognized necessity; but this recognition means not just knowledge but also an ability to apply that knowledge in practice, contributing thereby to the overall progressive direction of the historical process.

The practical realization of historical necessity is possible on the basis of its scientific-philosophical knowledge. Society today is called upon to ensure the objective conditions for the achievement of people’s real freedom: freedom is the basis of a humane society, it is the inmost meaning of society as such. Society and its members must not be mutually alienated; society

³ F. Engels, “Anti-Dühring”, in: K. Marx, F. Engels, *Collected Works*, Vol. 25, p. 106.

⁴ K. Marx and F. Engels, “Manifesto of the Communist Party”, in: K. Marx, F. Engels, *Collected Works*, Vol. 6, Progress Publishers, Moscow, 1976, p. 506.

must not appear as a force external in relation to its members and oppressing them, which is characteristic of closed social systems that cannot stand the fresh wind of freedom. An expression of such alienated societies is a system of bureaucracy: it is a wasting disease which destroys freedom and distorts the individual.

To bring the identification of the law-governed and the accidental, of the free and the necessary as close as possible to concrete practice for the purpose of predicting the future, to make it free of subjective evaluations, it is essential to use such an important pair of dialectical categories as possibility and reality, for necessity, chance and freedom are different modes of the transformation of the possible into the real, man realizing his freedom to the extent of his possibilities.

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5. Possibility, Reality and Probability

The concepts of possibility and reality.

Reality is recorded by everyday consciousness as something existing at the given moment, i.e. in the present. And the present is interpreted as the real, as something that exists, rather than as something that is only becoming, that is in the process or on the path from the possible to the real.

The possible is in this case placed somewhere outside the present and, consequently, outside the real: it does not, as it were, exist really, it is only conceived. At the level of everyday consciousness such an understanding of the possible and the real may be quite sufficient, without doubt. But the scientific or philosophical consciousness does not wish to be satisfied by this level of understanding.

The real is much broader than simply the present, than the "naked" factuality of being. Reality is not only that which has become or is, which has taken place, but also that which is contained in what exists as a possibility of its transformation into something different. Reality is therefore loaded, as it were, not only with the present but also with the past, having realized the past possibilities. However, it is even more loaded with the future, with those diverse processes of unfolding the countless potentialities of what exists without which life, motion, development are in general

impossible. In other words, the real is the unity of the possible and the actual, of that which has become and that which is becoming and, consequently, of that which is dying.

With the aid of the categories of the possible and the real, thought comprehends the fact that matter is active, that it continually acquires more and more new forms of existence, passing from one form or state into others, and that it conceals an infinite number of different potentials. Possibility is not so much a special property of the nonexistent, it is not so much the conceivable as a reality existing in a particular way. Being in possibility is not a fictitious or false being but an independent and extremely important sphere of reality: its store-room contains everything that is fated to happen as well as everything that will never happen, and this lends the present a special meaning which does not at all follow from its "naked" factuality. Possibility is the future in the present, something which does not exist as a given qualitative definiteness but which may appear and exist, which may become a reality under definite conditions.

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The material world is like an endless field planted with the seeds of different possibilities which are not brought from the outside by some external forces but come into being and exist in the field itself, expressing the self-motion and self-development of reality. The category of the real thus covers and embraces all the possibilities, since the latter have no other place to be except in reality. Stressing the unity of possibility and reality, the incorporation of the former in the latter, we must, however, bear in mind that they are not just different but even antithetical. The possibility of something is far from being factual reality, and it may well happen that it will never be such. It is a beginning which includes a programme of that which does not yet exist embedded in something which already exists. Thus a seed is a kind of focus of a plant, its information concentrate, but "no one takes a seed for a plant, no one sits down in the shade of an acorn, although the latter contains more than a whole oak—it contains a series of past oaks and a series of future ones".⁵ The category of possibility expresses the fact that the existence of a phenomenon has begun but has not yet acquired an accomplished form, that it is causally conditioned but has not yet received real implementation.

⁵ A.I. Herzen, *Collected Works* in 30 volumes, Vol. 3, Moscow, 1954, p. 124 (in Russian).

Reality in the broad dialectical sense covers *the possible, the process of creating the new, and its being*, i.e. the creative sum total of the action of all the real forces of the world: it is nature and world history, man and his reason, material and non-material culture, the unity of essence and phenomenon, of the internal and the external, of the necessary and the accidental, of the individual and the general, of cause and effect, of the potentials, of what is becoming and what has become, it is the whole world surrounding us, in all its colourful diversity. To the extent to which it has been consciously interpreted by man, reality is expressed in the total system of concepts, ideas, and images of science, philosophy and culture as a whole, a system equally reflecting both the factually real and the possible.

In the narrow categorial sense related only to the mutual opposition between the real and the possible, *the real* is interpreted as *a realized possibility*, something which has directly become, something living and active. In relation to the possible as potential, the real is a realized possibility and the basis for the forms of existence of new possibilities. It follows that reality is immeasurably richer than possibility, since it embraces not only all kinds and stages of its realization, but also all the results of the process.

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Possibility is a tendency or rather latent tendencies of the development of existing reality. If reality is the past in the present, possibility is the future in the present. Reality is the world of realized possibilities and the world of potential possibilities, and between them lies the process of the transformation of potentialities into actual reality. In terms of time, possibility precedes reality, which, being a result of development, is at the same time its starting point. Development is therefore both a process of realization and of inception of possibilities, and of transformation of one of them into reality. Adherents of mechanistic determinism believe that all that exists is fully predetermined by the past, just as the future is predetermined by the present. That means that everything is given at once, that the future may be read in the present. But if all the possibilities were given once and for all, and no new possibilities could arise in development, the world would be threatened with exhaustion of possibilities, and it would be much like the familiar figure in Balzac's *La Peau de chagrin*, whose days and hours melted away with each wish that was fulfilled. But development is not just an unfolding of the scroll of ready-made possibilities. Just as there is something

more in the consequence than there was in the cause, so in reality ever new possibilities are constantly born.

The kinds of possibilities.

For a possibility to become reality, two factors are necessary: the operation of a certain law and the availability of appropriate conditions.

As everything in the world, possibilities develop: some of them grow, others wither away. In nature, possibility is on the whole turned into reality objectively, independently of the subject. In social life, too, events may sometimes occur of themselves, as it were: some possibilities, which are in keeping with the fundamental laws of social being, are realized independently of us. But history is made by people. And that means that a great deal depends on their will and consciousness. In these troubled days, mankind faces the problem of war and peace, a problem whose importance it is impossible to exaggerate: mankind's continued existence depends on the solution of that problem. It is possible to rid the world of nuclear nightmares and to save the planet; there is no fatal inevitability of a world war. This possibility is an active real force, and all the conditions exist for this possibility becoming factual reality: the rise of mass democratic and antiwar movements has significantly expanded and strengthened the vast potential of reason and goodwill.

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The most essential characteristic of possibility is the *measure* of its potential. Depending on the force of necessity underlying them, possibilities may be promising, they may hold little promise, or no promise at all, being mere formalities. A *real* or promising possibility is a law-governed tendency in the object's development connected with an objective necessity. A possibility *of little promise* is an inessential tendency in the object's development which becomes a reality only under a definite contingency. It is, as it were, a possibility suspended in the air. A *formal* possibility differs from impossibility, from that which is fundamentally impossible, which cannot be realized under any conditions. It is impossible, for instance, to meet Socrates in the street. We can only speak of a possibility when the real existence of that whose possibility is asserted by us does not contain anything impossible. A vast mass of formal possibilities is never transformed into reality because they are governed by chance, not necessity. At the same time a quite real possibility may be wasted or unrealized in view of some

circumstances. It then becomes a formal possibility. But a formal possibility can also become a real one. For example, the possibility of man's flight in space was only recently formal, but now it has become a reality. Or consider the transplantation of the organs of the human body: would it have been possible in the times of Hippocrates? Before it becomes a reality, a formal possibility must turn into a real one. In the presence of antithetic determining factors and polar possibilities, a given real possibility may be reduced to zero. It sometimes also happens that possibilities cancel each other out.

A scientific understanding of the correlation between possibility and reality differs from the fatalistic notion, which identifies possibility with necessity: a real possibility is not seen as an inevitability but as a process that presupposes the influence of chance, deviations and the struggle of opposing forces. Not everything that is necessary is possible precisely at the given moment.

The idea of probability.

The concept of probability occupies a special place in the complex tangle of links between necessity and chance, which, as we know already, are different modes of the transformation of the possible into the real and thus a kind of measure for the possibility of the occurrence of a given event. This concept is linked with statistical laws of being as opposed to its dynamic laws covered by the concept of necessity.

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The concept of probability familiar from antiquity attracted a close attention of various thinkers in the 17th century, and it was first used in the theory of gambling to calculate the degree of probability of certain moves in a game. Until the end of the 19th century, scientists were mostly concerned with the mathematical aspects of statistical processes. Later, researchers became more and more concerned with the concrete implementation of statistical-probabilistic laws in various spheres of life, first in the world of social events (disease statistics, crime statistics, etc.) and later in the natural sciences. The most triumphant achievement of probabilistic methods was the founding of quantum physics, in which the idea of probability reached to the inmost essence of being.

So, what is probability? Probability is a measure of objective possibility, a degree of possible realization of a given event in given conditions and under

a given law. It characterizes the degree to which a certain possibility is grounded, the measure of its ability to become reality, the degree of its closeness to realization, the correlation of favourable and negative factors. Probability indicates the degree to which a certain event is possible or in general impossible.

The probability of some possibility is a number in the interval between 0 and 1. Between these two extreme poles lies a scale of various degrees of probability. A certain scholar carried out the following experiment: he tossed a coin 24,000 times, and recorded 12,012 cases of heads and 11,988 of tails. It is said in such cases that the probability of a coin falling heads or tails up equals 0.5. Probability is thus a property of multitudes of events. For a small number of tosses, and still less for a single toss, it is impossible to predict the result. Chance reigns here completely. Its power, though, is limited by a statistical law: when the number of tosses reaches a sufficiently high value, both possibilities are realized with identical necessity. The coin is symmetrical, and that is the main cause of equally probable result. If the probability of an event is infinitesimal, we ignore it; thus we can sit and listen to a lecture without fear that a meteorite will fall on our head. A one hundred per cent probability is necessity. The absence of any probability is complete unlikelihood and even impossibility of events.

Probability relations have two aspects: the *internal*, connected with the object's structure (in the example cited above, it is the symmetric structure of the coin), and the *external*, connected with the frequency of the event (in our example, the number of tosses).

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The objective link between the internal and the external aspect of probability is expressed in the law of large numbers, which states that the total effect of a large number of accidental factors leads, under certain very general conditions, to a result virtually independent of chance. Each event is the resultant of necessary and accidental causes. The law of large numbers acts as the law of stable causes overcoming the influence of accidental causes. Constancy is manifested within the confines of the conditions and causes that produce a certain phenomenon. In the example cited here, as the number of experiments increases, the principal cause (the coin's symmetry) makes itself felt, acting constantly in the same direction and ultimately leading to the realization of both possibilities. Given a great number of tests, the frequency remains almost constant for a series of chance events. That

was what made scientists assume the existence of laws in phenomena occurrence that do not depend on the researcher.

A statistical law manifested in a mass of individual events, with its specific relationship between the necessary and the accidental, the individual and the general, the whole and its parts, cause and effect, the possible and the probable, constitutes the objective basis on which the mighty building of the statistical methods of the scientific study of the world is erected. The methods of the theory of probability, and the statistical methods directly connected with them, acquire an ever greater importance in all the areas of contemporary science. Absolute elimination of probability from cognition is impossible owing to the immutable fact that probability in our knowledge expresses real probabilistic properties of possibilities.

What does the special meaning of probabilistic concepts consist in? With the aid of these concepts, it is possible to give a new interpretation of traditional philosophical problems—the relationship between chance and necessity, possibility and reality. Earlier, chance was fairly often interpreted as an event whose cause was, for the time being, unknown to man (that is to say, it was actually identified with necessity), and possibility, as depending on the extent of our knowledge of the world. With the introduction of the concept of probability the situation was changed drastically. Probability has ceased to be a purely epistemological concept reflecting the extent of our knowledge of the object, and become an ontological concept reflecting the objective essence of the object itself. Thus in classical mechanics, given precise knowledge of the initial conditions and the forces applied, it is possible to determine unambiguously the position of any element after any period of time (here, dynamic laws obtain, which basically contain unambiguous necessity), whereas in quantum mechanics the values of physical magnitudes are only determined statistically, and the dependence of these magnitudes on unambiguously determined wave functions is probabilistic (here, statistical laws obtain, which basically contain a series of probabilistic magnitudes). Probability is not a consequence of subjective ignorance but is an objective attribute of being itself.

The introduction of probabilistic attributes among the ontological characteristics of being itself does not at all mean that the subject of cognition is completely eliminated from probabilistic theories. On the contrary, it was quantum mechanics based on statistical-probabilistic methods that raised with particular acuteness one of the most interesting

problems, that of combining in scientific theory both the object of knowledge and the knowing subject. Scientific concepts are not mere mirrorlike reflections of the object of reality—each of them contains semantic nuances which are determined by the purely human mode of cognition, by the forms of man's sensuous perception and thought. There is no science that would offer us an unambiguous image of reality: there is always a certain subjectiveness in the system of its concepts and judgements; any concept, even purely ontological at first sight, such as object, cell or matter, contains epistemological elements.

The concept of probability, just as all the categories of dialectics, combines a degree of subjective confidence in the appearance of events (the epistemological aspect) and a measure of an event's objective possibility (the ontological aspect).

6. Part and Whole. System

The historical solution of the problem of the relationship between the categories of part and whole.

If the idea of probability, which has made itself felt only in recent decades, enriches our understanding of the dialectics of the necessary and the accidental, the systems approach (also a child of the 20th century) is a result of an in-depth consideration of the traditional dialectical problems connected with the categories of whole and its parts, and with the relationship between these categories.

On the most general plane, the clarification of the relationship between the whole and its parts has traditionally assumed the solution of such questions as (1) Is the whole a sum of its parts or something qualitatively different? (2) What precedes what, the part the whole or the whole the part? (3) What is the connection between the whole and its parts, and also between these parts within the whole? Is this connection causal? (4) Is the whole cognized through the parts, or can the parts be cognized only on the basis of knowledge of the whole that comprizes them? Until the recent spreading of the systems approach, all these fundamental questions were solved either on the mechanical-summative approach or on the idealistic-integrative approach.

The explanatory principle of mechanical summation primarily developed in the framework of materialist theories oriented towards classical mechanics in which the whole was seen above all as an ensemble of its parts differing but little from their simple sum. To know the whole meant to know the parts of the whole. This answer to the first and the fourth of the above questions unambiguously entailed corresponding answers to the two others: parts were regarded as preceding the whole, and the whole was therefore understood as causally conditioned by its parts.

The idealistic-integrative principle of explanation, which goes back to Socrates and Plato, insisted, on the contrary, on the priority of the whole. The whole was seen not as a sum of its parts but as a unity qualitatively different from the sum which precedes its parts (the idealist basis of this version is obvious here) and is in no causal dependence on them. From this position, to know parts adequately, it is necessary first to know the whole comprising them.

The first principle exaggerated the role of parts and reduced the whole to their sum (this was a reflection of the metaphysical nature of materialism in the 16th to 19th centuries), whereas the second, being basically idealistic and at the same time dialectical (such was the history of the formation of materialist dialectics), stressed the idealist aspect of being so strongly that it recognized integrity as a property of objects of spiritual activity only. The adherents of this principle saw the material world as an unordered and chaotic pile of "dead aggregates".

The merits of these two explanatory principles—the materialism of the first and the dialectics of the second—were combined in dialectical materialism and in the systems approach that gradually took shape in the late 19th and early 20th centuries.

So what is the modern view of the problem of relationship between the whole and its parts?

The dialectics of the whole and its parts.

Let us try to answer the four questions raised in the above from dialectical-materialist positions.

Question one: How are the part and the whole related to each other? The whole is a unity of its parts that has new qualities not deducible from the

parts constituting it. Let us consider a molecule of water. That is an example of a relatively simple system. By itself, hydrogen, of which two atoms form part of this system, burns, and oxygen, of which one atom forms part of the system, boosts combustion. But the system consisting of these elements has brought to life quite a different, integrative property: water extinguishes fire. The atoms of all the chemical elements, forming molecules and becoming elements of such systems as the organs and other structures of the organism of man, acquire new integrative (that is, dependent on the whole that comprises them) properties which raise the structural organization of matter to a different level.

It was Socrates who noticed that the face integrates its parts—the lips, the mouth, the nose, the eyes, the ears, the chin, the cheeks— into a single whole. However different the form and function of all the parts of the face might be, and however similar they might be, in themselves they do not yet form a face. A face is something integral, something whole. It cannot be divided into or reduced to those parts of which it consists without losing its qualitative definiteness as a face. It unites the parts, it comprises all of them and forms a unique whole with new integrative properties. In bisexual biological species, no one separate creature can produce offspring without the participation of an individual of the opposite sex, and that offspring is not a mere sum of previously disjoint properties but a consequence of their integral combination.

Thus the whole is an entity that is not reducible to a mere sum of its constituents.

So what is the relationship between whole and its parts? The whole is more stable than its parts. In relation to them, it functions as a kind of frame with a rather great relative stability.

However, the whole is not eternal, either: being an expression of relative stability of existence, it is not at the same time an absolutely immutable entity. The principle of development contains precisely the idea of qualitative shifts in stable integral structures, whereas the fluidity of the parts of a whole, their material instability and constant changes in their substantive composition are not attributes of development but merely indications of changes taking place in nature. Thus the constant changeability of the material composition of one and the same individual within a biological species (i.e. the successive replacement of some parts of a whole) does not lead to biological development, whereas the emergence of a

new type of organism through adaptation processes and various mutations (i.e. a change of the whole) is an indication of development expressed in the emergence of a new biological species.

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Is any agglomeration of phenomena something integral? It is not. Where no integrative quality is born, there is no whole—rather, there is an unordered and accidental sum of objects united by spatial juxtaposition only (a pile of stones, a crowd of people in the street). In really integral groups of phenomena there is a gradation of the degrees of integrity of its own, coinciding with the levels of structural organization of matter, with forms of its motion. Thus there is the mechanical type of integrity, as illustrated by any machine, such as clockwork. It is not just an unordered sum of parts: we have here a definite principle, and the mechanism works precisely according to this principle, to which the work of all its parts is subordinated. The mechanical type of integrity comprizes all the natural systems whose principles are studied by mechanics, e.g., the movement of planets round the sun. Higher types of integrity are complex physical structures (such as atoms, molecules, or crystals), as well as chemical, geological, biological and, finally, social and spiritual structures. In such high types of integrity, each part absorbs, as it were, the aroma of the real whole: the whole permeates its parts, it is present in them, in their substance, energy, and information. Thus a joke is tragically coloured in a tragic context. Here, the whole affects the part in a meaningful way. In different speech contexts, one and the same word changes its meaning. The concept of part thus expresses an object not by itself but only in its relation to the whole of which it is a composing element and in which it realizes its potential.

Yet another characteristic feature of the higher forms of integrity is self-development and self-reproduction of the parts. The parts of the whole if separated from it not just lose some of their essential properties but cannot in general exist in the given qualitative definiteness. The head is only a head because it is capable of thinking. And it can only think as part not just of the organism, but also of society, its history and culture. An organic whole is not formed through uniting the available parts, like the organs which were believed to be floating in the air by Empedocles: heads, eyes, ears, hands, legs, hair, hearts, etc. An organic whole is born and dies together with its parts, taking shape as an integral whole divided within itself into parts. Thus extremely complex chemical combinations forming the basis of life, the proteins and the nucleic acids, have taken shape as constituent parts of

living systems and cannot exist outside them in inorganic nature. The normal functioning of living systems requires chemical integrity of the constituent combinations. For example, disruptions in the DNA structure lead to genetic consequences ranging from mutations producing terrible deformities to the death of the organism.

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The highest form of expression of integrity is society in its history. The general laws of the social whole determine the essence of any of its parts and the direction of its development: a part behaves in accordance with the essence of the whole, and this behaviour is determined by the entire system of the effective social norms—legal, moral and others.

It is clear from this that the question of what precedes what, whether the part precedes the whole or vice versa, was metaphysical in its very essence, as was noted already by Hegel. The question of precedence can only arise if the whole is interpreted idealistically as something preceding the origin of matter in general, as its source and/or prototype. If the categories of part and whole are equally interpreted ontologically as attributes of being itself, neither the parts (as parts of the given whole) pre-exist the whole nor the whole preexists its parts, nor both exist outside each other. The categories of whole and part are thus *correlative*: they only have meaning in correlation with each other, and this correlation is in the nature of *simultaneity*, which cancels the question of precedence of either the parts or the whole.

This correlative nature of the categories of part and whole, which stresses their simultaneity, also prompts the answer to the third of the questions formulated above—on the character of the connection between the whole and its parts, and also between these parts within the whole. Does this connection have a causal character? Does the nature of the whole follow from the nature of the parts, as we observe in causal genetic dependence? It is a well-known fact that systems function on the principle of symmetric interdependence, which is called in science the principle of functional correlation. Not one part can change without other parts also being changed, and this change is synchronic in character. The feedback obtaining in a systemic whole ensures the stability of the whole within the given qualitative definiteness. Along with correlation, systemic wholes are also subject to subordination connections reflecting the complex inner structure of the system, in which some parts may be inferior to others in their importance, and subordinated to them in the common cause of uniting all the elements in a single whole. Expressing a type of connection between

phenomena that are on the whole coexistent, correlation and subordination do not at all negate the principle of determinism, and causal genetic determinism in particular, which in this case appears as mediated by other systems principles, in view of which its action can be expressed in the form of correlative dependences (which conceal the causal connection).

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Finally, let us answer the fourth question—about the epistemological significance of the categories of whole and part. What is cognized through what: the whole through its parts or the parts through the whole? Here, too, there is a dialectic of a special sort: the parts and the whole are cognized simultaneously. Isolating the parts, we study them at once not as individual phenomena taken by themselves but as parts of a given whole. At the same time, as we study the whole, we bear in mind its dividedness into parts. There is no whole without the parts, and there are no parts without the whole. The whole is *a unified but divided integral entity*. In studying a whole we isolate through analysis corresponding parts in it and establish the character of their connection. However, it is not enough to study the parts outside their links with the whole: he who knows only the parts does not yet know the whole. Thus a separate frame in a film can only be really understood as an element of the picture as a whole. On the other hand, an abundance of particulars may eclipse the whole. That is a characteristic feature of empiricism.

The question of the epistemological significance of the categories of part and whole is most important methodologically, since it permits an adequate interpretation of the principle of reduction (of the complex to the elementary) so that to avoid the extremes of reductionism. This became especially necessary in connection with the development of molecular biology, in which the principle of reduction manifested both its heuristic fruitfulness and the limitations of its applicability. Reductionism is by no means monolithic, it has varied forms, but in all cases one ought to see its limitations and the need for passing on towards integrativeness (i.e. to the systems approach) as a way of reconstructing disrupted integrity. Reductionism may assume correct forms when it knows what it seeks: whether it is the laws themselves of physical realities embodied in biological structures or the essence of the whole through the clarification of its parts; what is important here is the scientist's goal. The image of the whole is invariably present in scientific research, artistic creativity, or the working out of a political strategy—as a preliminary premiss, as the beginning which,

passing through many stages of detailed analysis, will revert upon itself but with a richer interpretation of its particular content.

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Whole and system.

The complexities and nuances of the dialectics of whole and part are reflected in a particular way in the systems approach, which is applied practically in all the areas of knowledge. But the concept of system is not identical to that of whole, or vice versa. Whole and part remain properly philosophical categories with a rich history and a special semantic load. The concept of system has currency in all the sciences, it has a strong natural-scientific flavour and has not therefore become so far part of the principal categories of dialectics. There are various interpretations of the relationship between the concepts of system and whole: they are now seen as genus and species, now as mere synonyms, and now as reflection of different aspects of the being of one and the same object. Thus the view is expressed that the whole is a system at its height, as distinct from systems that are barely organized or already disintegrating. Only the future can show the fate of these concepts: the concept of system may oust the category of whole, or both may occupy their places at the corresponding levels of the semantic and categorial structure of human thought.

7. Content and Form

The history of the formation of the categories of content and form. We shall end our discussion of the categories of dialectics that have not yet been embodied in a clearly formulated law with the categories of content and form; their special complexity is due to the fact that they stand in extremely subtle relations to the other categories, especially those of essence and phenomenon, the individual and the general, whole and part. At first sight, this pair of categories is the same as the internal and external characteristics of objects. It all would appear to be quite simple. In reality, however, the apparent simplicity stops short of the status of the category of content, the leading member of this pair. Does it have meaningful filling only or is it an objective attribute of being? Do we have to look for content as opposed to

form in a crystal, apart from essence opposed to phenomenon, or parts and the integrative wholeness, or its individual and general properties? What is the difference, then, between essence and content, phenomenon and form? It is so complex and ambiguous that essence is often defined in terms of content and vice versa. To sort this problem out, let us turn to the history of the formation of these categories.

It was Aristotle who worked out in detail the category of form and endowed it with a meaning that had been attached to it for two thousand years but now is entirely different from our contemporary interpretation of form.

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Now, how did Aristotle interpret form? For him, it was an ideal principle existing outside matter. Imposed on matter, form lent a thing a concrete image. Considered outside matter, forms had a hierarchy of their own. Thus God was a "form of all forms". Matter designated a constant and immutable substratum of all the transient and changeable phenomena, it occupied the place of contemporary content, and the pair of correlated concepts was "form—matter". Naturally, form interpreted in this way was associated with the essence of a thing, with its idea (Plato), as well as with the concept of the general. This conception of form suited mediaeval theology well, too, because of its interpretation of God as the "form of all forms". In the argument between the realists and the nominalists, in which the concepts of essence and the general were crystallized, form occupied the same place as essence and the general, with the difference that, unlike the latter, it was accessible to sensuous perception.

It was this last element in the interpretation of form, i.e. its link not only with the essence of a thing but also with phenomenon, not just with the general but also with the concrete and individual, that led to the category of form gradually losing its ties with the ideal first principle of the world and being used as an attribute of matter itself. The ideal was now associated only with being not perceived sensuously, and was therefore embodied in the categories of essence and the general (not to mention theological terminology). Things came to be thought of as possessing form by themselves, and this form no longer coincided with the idea or essence of a thing. Kant separated the categories of essence and phenomenon from those of idea and matter, and Francis Bacon performed a similar operation on the category of form, asserting the primacy of matter over form and their unity in a concrete thing. While the essence of a thing, even perceived

materialistically, was seen as concealed from sensuous perception, the form of a thing was in this sense coming closer to phenomenon, losing the status of the essence of the thing, of its meaningful content. In this way the category of form, ceasing to be the ideal first principle of the world, a universal meaningfully organizing principle, became an attribute of substantively organized matter. A new correlative category was therefore needed which would take the vacant place and designate the object's essence. The category of matter was apparently unfit for this role.

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The category of matter, apportioned a strictly defined position vis-a-vis that of idea, gradually disappeared from the system of categories connected with the concept of form, giving place to the evolving category of content. Kant introduced the categories of form and content to describe the process of thinking (what we think about is content, and the way we think and speak of it is form). Hegel, in his turn, asserted the category of content as eliminating the antithesis of form and matter. According to Hegel, content embraces both the material of a thing and its form. In reflecting the objective world, we do not see the material substratum of a thing separately from its form: they are both given to us from the outset in their unity, which is precisely what is called content. But both Kant and Hegel saw the category of content as a purely epistemological concept and not as an objective characteristic of being. Yet purely epistemological, just as purely ontological, categories are an impossibility: in each of them a synthesis of both is inevitable, although attention may of course be focused either on the one or on the other. In the category of content, the epistemological element apparently prevails, but its ontological status must also be clearly defined. Such a deeper understanding of the category of content was achieved in dialectical materialism.

The concepts of content and form.

Accepting the extreme importance of the epistemological antithesis of the concepts of content and form, dialectical materialism also revealed their ontological status. Content is not seen here as a formless material substratum (as in antiquity and the Middle Ages) or an epistemological concept eliminating the difference between the material of a thing and its form but as the inner processes, inherent in the thing, which on the one hand organize the mutual relations of the elements forming the substratum

and therefore have a direct bearing on the essence of the thing, and on the other are expressed, in their totality, in the thing's visible shape. The content of an object is very concrete, it embraces the entire ensemble of its elements (i.e. the material, energy, information, statistical, and dynamic elements), as well as all the real connections and relations within the framework of that object. In complex objects, content is many-sided, effectually passing into infinity, for the properties of the object pertaining to its content are infinite: they are variously manifested depending on the other objects with which the given one interacts. Content comprizes the essential and the secondary, the law-governed and the accidental, the possible and the real, the external and the internal, the old and the new. So how is content to be defined in view of all this?

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Content is the identity of all the elements and moments of the whole with the whole itself; it is the composition of all the elements of the object in their qualitative definiteness, interaction, and functioning; the unity of the object's properties, processes, relations, contradictions and trends of development. It is not all that the object "contains" that constitutes its content. For instance, it would be meaningless to include under the heading of content of an organism the atoms that form the molecules which in their turn form the cells. You will never know what a dove is if you thoroughly study each cell of its organism under an electronic microscope, and neither will you realize the fascination of the pictures in the Louvre or the Hermitage if you subject each of them to chemical analysis. Content-forming elements are the parts of a whole; in other words, they are elements which mark the limit of the object's divisibility in the framework of the given qualitative definiteness. The canvas cannot therefore be included in the content of a picture, and machines, in the content of social life, although neither is possible without them. The content of an organism is not simply the sum total of its organs but something more, the whole actual process of its life activity taking place in a definite form. The content of society is the entire wealth of the material and non-material life of the people functioning in it and making up that society, all the products and instruments of their activity.

Having thus defined content as the identity of the components of the whole with the whole itself, let us now pass on to form. What is form?

When we perceive, and conceive, a certain object, we separate it from the surrounding background, thus fixing in our mind its external form. In the

sense of external shape the form of an object is expressed in the category of boundary. The boundary, indicating the difference of given content as a whole from everything else, is precisely the external form of the object. It expresses the given object's connection with others. Besides, the category of form is also used in the sense of mode of content's expression and existence. Here we are dealing with internal rather than external form. Internal form is connected with the object's qualitative definiteness, the latter being interpreted here not as a material substratum (stone, metal, wood, etc.) but as a certain meaningful formedness pointing to a mode of operation involving the object and determining the mode of its perception and incorporation in a system of a given intellectual and practical sphere.

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Internal form is sometimes interpreted in such a way that it coincides with structure. In a certain sense, structure is inner organization, but the description (or rather definition/description) given above shows clearly, we hope, that the concepts of form and structure cannot be regarded as identical.

If we consider the above definition of content and interpretation of internal form, we shall notice precisely at this point that these concepts are almost identical, so that form indeed emerges as *a mode of expression of content identical with it*.

The fact that the one is manifested in and through the other actually brings us into the sphere of dialectical interconnection of these concepts.

The dialectics of content and form.

Form and content are different poles of one and the same entity, and not component parts. Their unity is revealed in the fact that a given content is arrayed in a definite form. In zero gravity, for instance, a liquid left to itself takes the form of a ball—the most advantageous relation between a body's surface and volume. Processes of life of qualitatively different content gave rise to a great many extremely complex forms of plants and animals. The content of biochemical, energy and information processes comes to life as a well-proportioned organism only when it assumes a definite form. The way something is organized depends on *what* is organized: form is determined by content itself, not by some extraneous force. Each form disappears along with its content, to which it corresponds and from which it originates.

The dialectics of form and content assumes their relative independence, with content being in the dominant position. Abstraction of form from content can never be absolute, for there are no "pure" forms indifferent to content. Each change in form is a reflection of transformations in content, in the object's inner links. Unfolding in time, this process is implemented through a contradiction expressed in form lagging behind content, i.e. in the existence of a state of the system in which a new content does not have an adequate new form retaining instead an old one associated with the content that has already outlived its usefulness. The contradiction is expressed here in the difference in the orientation of these elements of an integral whole, and is always resolved through the breaking down of the old form and the emergence of a new one. Both nature and society are dominated by the principle of given content rejecting form that no longer corresponds to it, and of given form rejecting content that no longer suits it. This is a mutual process, and it is observed in anything that develops through the struggle of its sides, as graphically illustrated by obsolete modes of thought (dogmas, clichés, and stereotypes inherent both in everyday and scientific thinking) lagging behind content, behind the motion of real life.

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Wisdom is a matter of not letting out of sight either the meaningful or the formal aspect of an object. This is especially important in social practice. An inability to balance on the crest of the wave of the dialectics of form and content is in this area fraught with the danger of extremely negative consequences. Indeed, the danger of "slipping down" from the dialectical level is objectively rooted in the fact that only through knowledge of the form of things and processes can one go deep into their content and sort out the infinite diversity of the manifestations of essence. That is why form is often taken for the essence. The metaphysical gap between form and content produces, for instance, such a distorted form of organization in the sphere of management as bureaucratism.

Form must not be raised to an absolute, that is clear; but it is just as unjustified to ignore it: a bad organizational form may discredit even the most brilliant of ideas.

8. Quality, Quantity and Measure

The concepts of quality, property and state.

Let us ask ourselves this question: Is a given thing different from some other thing in some respect? If we think that the given thing is no different from any other, it is impossible to speak of our knowledge of that thing. If we know what a given thing is, then it is something for us, and if it is something, that means that it is the sum total of certain properties. A vase is something made of glass. It is a receptacle for flowers. As such, it has colour, form and the texture of the material of which it is made. The sum total of all these properties of the vase is its quality. Clearly, if we do not perceive this thing as something integral, we shall be unable to distinguish a vase, say, from a rose, or a table from a chair. Yet we fully understand what a vase is, what its structure and purpose are. Therefore, if we really know something as a vase, we have a knowledge of its quality, its definiteness and separation from the surrounding background. The quality of a thing points to a totality of its properties, its composition and structure, its functional purpose both in interaction with other things and with the knowing subject. In other words, the quality of a thing is something essential for its knowledge, for its practical application and manufacture. It is the aspect that permits the differentiation of one thing from another, and thus the identification, opposition, comparison, combination, division, and generally construction of things not only in being, in practice, but also in consciousness. By operating with the category of quality we superimpose, as it were, one object on another, which acts as an instrument for the identification of an object with itself and enables us to know that the given object is precisely this and not something else. Here, the previously unknown object appears as a known one: a flying object is recognized as a bird, and not just a bird but a dove, and not just a dove but a dove of a certain sort.

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The quality of an object is revealed in the totality of its structurally ordered properties. From the epistemological standpoint, a property is a primary, further indivisible structure correlated with just as elementary cognitive phenomenon of sensation, and in more complex cases, with concept, if it is inaccessible to the subject's capacity for sensation. Properties can be accessible to the sense organs or physically accessible to measurement by apparatus, and they can also be extrasensuous, pertaining to the sphere of social-mental reality, characterizing for instance a person's positive or negative qualities to which we refer in such terms as a sensitive

conscience or kind soul. They are known through interaction of objects with one another and with the subject. *A property is thus a way of manifestation of the object's definite aspect in relation to other objects with which it interacts.* A property is precisely that through which something manifests its specific being in relation to something else. Among all possible properties, we can single out properties essential (or necessary) and inessential (accidental) for the given object, and also internal and external, universal and specific, natural and artificial ones. The sum total of properties taken as a whole, as a system, forms the object's qualitative definiteness, reflecting its aspects of integrality and relative stability. Quality is an existing definiteness, the expression of the stable unity of an object's elements and structure.

Properties are manifested with various degrees of intensity, and this expresses the state of the system involved. The state is a stable manifestation of a given property in its dynamic. We speak of the physical, psychical, or moral state of a person or a people, of the state of a given nation's economy, or of its political or military state. The object's other properties are addressed to the outside, while its state is turned towards its inner structure. Properties, states, functions and connections are an object's qualitative features.

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Having established what property and state are, we can tackle a fuller definition of the quality of an object. Quality is an integral description of the functional unity of an object's essential properties, its internal and external definiteness, its relative stability.

The mode of manifestation of the quality of a given object in its impact on another object essentially depends on the latter's qualitative state. Thus a spark falling on a gunpowder store is much more dangerous than the same spark falling on damp ground; the organs of a plant with their different properties take different positions in response to an identical environmental factor, say light: the tops of the shoots curve towards light while the leaves take up a position perpendicular to the direction of the rays. But the mode of manifestation of the quality of a given object also depends on the conditions of interaction with other objects. Consider the interaction between earth and water: under definite temperatures water seeps into the earth as rain while under higher temperatures it evaporates from the earth's surface. Under certain conditions, the interacting objects themselves change their

qualitative state. Properties do not just manifest themselves—they may also be modified and even shaped in these relations.

Any property or quality of an object interacting with other objects is relative: steel is hard in relation to wood but soft in relation to a diamond. Any of the object's qualitative states is relative. A given qualitative state may disappear under different conditions, but it only disappears by being transformed into another. Possessing an ensemble of properties which constitute its quality, an object manifests different aspects of that quality in different contexts. For example, the doctor, the lawyer, the writer, the sociologist, the anatomist, the psychologist all observe different qualitative facets of the human being. Just as matter is irreducible to a set of its properties, so no object is dissolved into its properties: it is their carrier or substratum. The higher the level of the organization of matter in an object, the greater the number of qualities and properties it possesses.

The concept of quantity.

Every group of homogeneous objects is a set. If the set is finite, it can be counted. Suppose we have a herd of 100 cows. In order to see a separate cow as "one", we must ignore all the qualitative peculiarities of every animal. One and the same number 100 is a quantitative characteristic of any set of 100 objects, whether it be cows, books or diamonds. One may subject to quantitative comparison both qualitatively homogeneous things and those that differ qualitatively in one respect but are similar in others—say, in weight, hardness, or in terms of division of an object into parts. Thus a quantity is a set if it can be counted, and a magnitude if it can be measured. *Quantity expresses the external, formal relationship between objects, their parts, properties and connections: number, magnitude, volume, set, class, or degree of manifestation of a given property.* The concepts of number, magnitude, figure, etc., are aspects or elements of the category of quantity.

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In order to establish an object's quantitative definiteness, we compare its constituent elements—spatial extent, rate of change, degree of development—with a definite standard as a unit of computation and measurement. The greater the complexity of a phenomenon, the more difficult it is to study it in terms of quantitative methods. It is far from easy to count and measure, say, phenomena in the sphere of morality, politics or aesthetic perception. It is no accident therefore that knowledge of quality

precedes that of quantitative relations. An understanding of the quantitative aspect of a system is a step towards a deeper knowledge of the whole system. Before counting, one must know what one is going to count. Science moves from general qualitative evaluations and descriptions of phenomena towards the establishment of exact quantitative laws.

The basis of quantitative thinking is the objective discreteness of things and processes. Quantity is expressed by number, which contains two basic meanings: the measure of generality, of membership in the same order of discrete elements juxtaposed with one another, and of the dividedness (real or putative) of an object, of its properties and relations, into homogeneous elements relatively independent of its quality. The number 5 expressing, for instance, a set of 5 persons, is not something fused and indivisible, not just an instance of oneness, but a specifically divisible unity of qualitatively homogeneous five units. Any number is a relatively independent, integral assembly of a certain set, or a divisible unity of quantity. This quantity is not identical to number; one and the same quantity as a magnitude (e.g., extent in measuring length) may be expressed in different scales of measurement (say, in metres or centimetres) and therefore in different numbers. Number is a conceptual form of assimilation of an object's quantitative definiteness.

Measure.

Any quality is expressed in a system of quantitative characteristics that is inherent in this quality. Quantity and quality appear as something separate only in abstraction, while in effect they are different characteristics of definite realities, gravitating towards each other and existing as an indissoluble unity that is their measure.

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Measure is a sort of "third term" that links quality and quantity in a single whole. For example, labour productivity as measure has two aspects: the quality of labour and its productiveness (the quantity of the product produced). If we compare labour productivity in industry before and after the scientific and technical revolution, the measure of dependence of labour's quantitative characteristics on improvement of its quality will become very clear indeed. On the other hand, we know from physics that atoms of various chemical elements differ from one another only in the number of protons in their nuclei. The moment the number of protons in the nucleus is changed, one element is transformed into another.

It is not enough to say, though, that measure is the unity of quality and quantity, and that it is the boundary at which quality is manifested in its definiteness. Measure is profoundly connected with essence, with law and regularity.⁶ *Measure is the zone within which a given quality is modified and varied in keeping with changes in the quantity of individual inessential properties while retaining its essential characteristics.*

The transformation of quantity into quality.

The path of development in nature, society and consciousness is by no means a straight line. Its turns and twists are the nodes of ever new laws whose "rights" stretch from one node to the next: it is a nodal line of measures. The boundaries of these measures are not always clearly fixed, and sometimes they are tentative—as tentative, say, as the boundaries separating childhood from adolescence or youth from maturity, determined by anatomic, physiological, psychical, and social factors.

The process of development presents a unity of the continuous and the discrete. Continuous changes, i.e. gradual quantitative changes, and the changes of separate properties in the framework of a given quality closely connected with them, are designated by the concept of evolution. In a broader sense, however, this concept is applied to designate the development of systems of global order, e.g., evolution of the stars, of the plant and animal kingdoms, as well as of man himself.

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Continuity in the development of a system expresses its relative stability and qualitative definiteness, and discreteness, a transition to a new quality. As water is heated, it remains water, albeit hot or very hot. That means that some of its properties have changed: the velocity of the motion of its molecules has grown. This change is gradual, and it proceeds in phases. But then the critical boiling point comes: molecules of water moving at frenzied speeds rise in clouds to the surface as steam. Water passes from the liquid state into steam.

⁶ Apart from the one given here, the concept of measure is also used in other senses: in the sense of proportionality of parts within a whole (optimum); of the boundary of the permitted; of gracefulness, or freely organized harmony and rhythm in motion; and of a unit of measurement (e.g., a full measure of grain).

The lifting of some element of the development of a system to an absolute is an error of metaphysics which virtually refutes the very idea of development. Indeed, it is clear that the assertion of discreteness and nothing but discreteness leads to disruption of links and interconnections, while the reverse assertion of absolute continuity excludes qualitative transitions. Systems develop rhythmically, and as the "clock of the universe" strikes, it marks each time the birth of the new, being a process of the transformation of quantity into quality. This process is based on gradual accumulation of quantitative changes in the system as well as gradual qualitative renovation of its structural elements. Quantitative changes are extremely varied, covering changes in the number of elements in an object, in the volume of information, the velocity of motion, and the degree of manifestation of a given quality. Any of these quantitative changes leads to the emergence of a new quality.

The appearance of a new quality is in effect the emergence of a new object with new laws of life, a new measure in which a different quantitative law is embedded. The depth of qualitative changes may vary: it may be restricted to the level of the given form of motion or go beyond its limits, as illustrated by the emergence of the animate from the inanimate and of society from the primitive horde. These qualitative changes signify the formation of a new essence. The process of the formation of a qualitative state is contradictory: it is a unity of destruction and renewal, of being and non-being, of negation and assertion. It is a measure expressing the unity of quantity and quality both in relation to objects characterized by mere transformation within the given level of system organization and in relation to the boundaries of transition from one level of system organization to another.

The process of radical change in a given quality, the breakdown of the old and the birth of the new is a *leap*—a demarcation line separating one measure from another. There are different types of leaps determined both by the nature of the developing system and by the conditions under which it develops, i.e. by the external and internal factors of development.

Examples of gradual leaps, or leaps extended in time, in the development of objective reality are the emergence of life on earth, the origin of man and his consciousness, the formation of new species of animals and plants, the replacement of one socioeconomic formation by another, the great landmarks in the development of science, art, etc. Along with these, there have been leaps that occurred turbulently and at a great speed, leaps

attended by explosions, so to speak, of which the characteristic features are clear-cut transition boundaries, great intensity, integrity of the restructuring of the entire system, its rise to a higher level of essence at one go. What happened in the universe during the big bang may be a good illustration of such a leap. In microprocesses, such a leap may take up a billionth of a second. There are thus two types of leap: gradual leaps and instantaneous leaps, the division resting on the time factor of their realization.

In accordance with the nature of quality as a system of properties, leaps are divided into individual or particular and general. Individual leaps are connected with the emergence of new particular properties, and general leaps, with the transformation of the entire system of properties, of quality as a whole.

A social revolution is a special type of leap. Its specificity lies in the fact that it is carried out consciously and purposefully, being implemented in the activities of popular masses, social groups, classes, political parties and their leaders. The character of this revolution depends on the internal and external conditions of the development of the social system, on the acuteness of the contradictions whose intensity makes it impossible for a social system to exist in its old quality. Thus the bourgeois revolutions in France (1789) and in Germany at the time of its feudal fragmentation differed considerably. A revolution as a transition from one social system to another may be realized as an explosion of the social forces, but not always in the form of an instant destruction of the old and construction of the new. As a rule, this transition unfolds in time as a process of breaking down and destroying the old and creating the new.

Expressing a definite aspect of the objectively existing process of development, *the law of the transformation of quantity into quality* has an important methodological bearing both on theory and on practice. Its action is fairly easy to identify in nature and in the study of natural objects, but in social practice it is sometimes hard to discern with a naked eye, and thus difficult to take account of. Conscious construction of new society requires careful study of and con-

sideration for all the principles of dialectics, including the present law, in the context of concrete historical circumstances. According to this law, to achieve a qualitative change in the system, not one measure is necessary but a number of well-directed measures or conditions for its transition to a qualitatively new state.

9. Contradiction and Harmony

The unity of opposites and contradiction.

One of the basic issues of worldview and of general methodology is the question whether the source of the world's motion and development must be sought for outside the world or in the world itself. The religious-idealist worldview proceeds on the assumption that, having created the world, the supernatural force ruling it gave it an impetus and set it in motion, much like a watchmaker may produce a clock, put in a spring and wind it up. However, the scientific worldview is incompatible with such an approach. It finds impulses for the motion and development of the world in the world itself, in the contradictions inherent in reality and generated by the world, which is expressed in the universal law of dialectics, *the law of the unity and struggle of opposites*. In accordance with that law, objective reality, the process of its cognition, and all forms of human activity develop through the division of oneness into different and opposing elements; the interaction of the opposing forces, on the one hand, marks a given system as something integral, and on the other, constitutes the inner impulse of its change and development. All concrete systems go through the test of contradiction in their life.

Lenin saw the law of the unity and struggle of opposites as the nucleus or essence of dialectics: "Dialectics in the proper sense is the study of contradiction *in the very essence of objects...*"⁷ This law permits the identification of the sources, the real causes and forms of motion, and of the types of development of all being: there is no progress outside contradictions.

Since time immemorial, reason has been fascinated both by the contradictions in the forms of being and by their integrity. These modes of interaction in the world, in human relations, and in the states of the soul provide key principles not only for being itself but also for the worldview, and for the methodology of knowledge and action: without them, it is impossible to understand anything in life.

⁷ V.I. Lenin, "Conspectus of Hegel's Book *Lectures on the History of Philosophy*", *Collected Works*, Vol. 38, pp. 251-52.

We argue, we refute and defend things. And we do it not only in argument with others but also with ourselves, with one's alter ego. *Contradiction is a definite type of interaction between different and opposing sides, properties, and tendencies within a given system or between systems, a process of confrontation between opposing tendencies and forces.* The extreme case of contradiction is *conflict*. The history of science, art, technology, and the entire social practice shows that the fabric of the whole of the world's life is woven, as it were, out of strands of two kinds: positive and negative, the old and the new, the progressive and the reactionary, and so on. These are in confrontation and struggle with each other. The ultimate cause of the development of any system is interaction in the form of contradiction between different aspects both within an object and among objects. There are no absolutely identical things: they are different both within themselves and among themselves. *Difference* is a relation of non-identity, of dissimilarity within an object and between objects. Differences have their degrees: they may be either essential or inessential. An extreme expression of an essential difference is an opposite. An apt model of an opposite provided by nature itself is a magnet with its poles facing in opposite directions. We may divide the magnet into as many small parts as we like, but each of them will still have a north and a south pole, illustrating the physical opposition of the lines of force. In this sense, everything in the world may be likened to this model.

Opposites may be described as mutually conditioned and interacting sides of a dialectical contradiction. They oppose each other within the framework of a single relationship: the presence of one assumes the being of another. The dialectical principle of contradiction reflects a dual relationship within the whole: a *unity* of opposites *and* their *struggle*.

The concept of contradiction is only meaningful if the differences and opposites are considered as elements of some integral entity: the principle of contradiction assumes the existence of a unity with opposing sides. Opposites that do not form a unity or do not enter into a common relationship, are not dialectical opposites, and they cannot be regarded as a motive force of the development of a system. There are opposites differing in quality and role— such as black and white, the infinitely great and the infinitesimal, the brilliant and the primitive—which do not appear as parts of a single whole and therefore do not contain in themselves any impulse for

development. Opposites may run into conflict only inasmuch as they form a whole in which one element is just as necessary as the other.

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Signifying the stability of an object, the unity of opposites, and the opposites themselves, are relative and transient, while the struggle of ever new opposites is absolute—which is an expression of the infinity of the process of development. It is also conditioned by the fact that contradiction is not only a relationship between opposing tendencies in an object but also the object's relation to itself, its constant self-negation. Contradictions are embedded in the very essence of things as an attribute of all forms of reality, as a manifestation of the activeness of matter and spirit. They are internally inherent in life, in thought, and in emotion. That is the natural mode of existence of all the hierarchical forms of the organization of being.

Knowledge moves in a constant contradiction between the inexhaustible wealth of the forces, properties and relations in the real world and the subject's desire to reproduce them as fully as possible in the system of scientific knowledge. All essential ideas in science, wrote Einstein and Infeld, were born of a dramatic conflict between reality and our attempts to understand it. Dialectical contradiction in thought is not a contradiction in one's reasoning or absence of logic—it is interaction of conflicting positions, viewpoints, and notions. The recommendations of formal logic, including the rule against elementary contradictions in one's reasoning and against frivolous dancing from one assertion to another without any objective or logical grounds, help to elucidate the real contradictions rather than obscure them. In dialectics, it is not contradictions in man's reasoning that are at issue (although such contradictions may arise spontaneously in any intellectual quest, when mental associations go in a whirlwind round some idea) but contradictions in the object itself and reflection of these contradictions in thinking, where they are consciously fixed and resolved.

A specific form of the existence of dialectical contradictions in cognition are antinomies, or theoretical reproductions of contradictions in scientific theories. The most fruitful way of resolving antinomies is overstepping the limits of their metaphysical opposition (the metaphysical method of thinking discerns in opposites only the mere fact of difference, leaving their interaction in the shadow), discovery of their common basis, clarification of the transition from one opposite to the other, identification of the mediating links of this transition and, finally, establishment of the resultant consequence to which the struggle of opposites reflected in them must lead.

The principal types of contradictions.

The character of contradictions depends on the specifics of the opposites and on the conditions under which their interaction unfolds. This interaction is a relationship between tendencies that are either incompatible and hostile or mutually complementary and enriching. Hence the diversity of the types of contradictions: some of them lead to harmony, others, to disharmony. There are also internal and external, principal and subsidiary, antagonistic and non-antagonistic contradictions.

Interaction between the opposite sides within a given system, e.g., a given species of animals (intraspecific struggle), a separate organism or society, is characteristic of *internal* contradictions, which express the state of a system as a definite whole. Each system exists, of course, in the framework of hierarchically more complex wholes, but internal contradictions refer precisely to concrete systems rather than the world as a whole. It is then obvious that *external* contradictions are the interaction of opposites pertaining to different systems, e.g., to society and nature, the organism and the environment. It is clear, of course, that the concepts of external and internal are relative.

As regards the role of internal and external contradictions in development, it should be stressed that ultimately it is internal contradictions that play the decisive role. Even if the first impulse for the development of a system comes from an external contradiction, the latter must pass, in one form or another, into the inner structure of the system in order to become the true motive force of development, and only after this is development as such possible. For instance, for an organism to adapt itself to the environment (an external contradiction), it works out new qualities which form an internal contradiction with its original qualities, and this contradiction controls the organism's development. The external always acts through the internal. In the set of various internal contradictions facilitating the development of a system, principal contradictions are distinguished from secondary ones.

A *principal* contradiction of a given system is above all an essential contradiction: it is linked with forms of interaction of opposites lying at the very base of this system and constituting its structure. For example, from the very inception of society, the source of its development has been the

contradiction between production and consumption, or needs, or interests. Every day people have to drink, eat, dress, and have a roof over their heads. For that, though, all this must be produced. Production gives rise to fresh needs, which stimulates people to introduce improvements in production. The contradiction is resolved through labour and distribution of wealth; it is not eliminated but reproduced every day and every hour, being connected with the essence of the social form of motion. In different social systems, however, the principal contradiction may appear either as antagonistic or non-antagonistic.

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Antagonistic contradictions involve interaction between implacably hostile forces (classes, social groups, etc.). In society, they usually grow in acuteness until they reach the scale of a full-blown conflict, a socio-political revolution; they may be resolved through armed struggle or, sometimes, by peaceful means. Along with antagonistic contradictions and generally situations of acute conflict there are also *non-antagonistic* contradictions. These contradictions involve interaction between social groups whose interests and goals basically coincide. Let us take, for example, a socialist society. The perfection of socialist society involves constant struggle of the new against the old, not only constructive forces are in action here but also negative and sluggish ones, those that impede progress. Contradictions have come to light, for instance, in the organization of labour and the mode of distribution of wealth. Contradictions between productive forces and relations of production also grow very acute under the conditions of accelerated scientific and technological progress. Contradictions also arise in the sphere of management. The latter include contradictions between centralized management and the independence of the local organs, between the territorial and industry-oriented principles of economic management and planning, between collective and personal incentives for labour, and between forms of distribution relations. These contradictions are a natural phenomenon in any development. For example, the development itself of productive forces gave rise, at a definite stage, to the contradiction between the extensive and intensive forms of economic management. The earlier, extensive form of economic management is no longer in harmony with the new level of science and technology, raising obstacles in the way of their application in production and slowing down the process of the transformation of science into a direct productive force of society.

It is not the glossing over and still less silence about real contradictions, nor the deliberate varnishing of reality to create, cost what it may, an appearance of universal prosperity and harmony, but timely identification and resolution of these contradictions that is the only rational approach to the problem in all the spheres of society's life. As we see, the vast problem of resolution of contradictions arises here. The question is, *how* can they be resolved?

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Contradiction as a source of development.

Contradictions of all types are realized and resolved, they are eliminated and created, they come to life in a new form, and all this constitutes their movement. The movement of contradictions towards resolution is a mode of change of the qualitative state of the system incorporating them. The root of all vitality is in contradiction as the unity and struggle of opposites. The interaction of opposites in the form of contradiction and its resolution—that is what makes a seed grow and a bud unfold into a leaf, a flower, a juicy fruit. Contradictions and their resolution set both great and small things in motion, revealing themselves in the law-governed order of the world. However, contradictions that are not resolved do not by themselves lead to development, they are a necessary but not sufficient condition for development. As a source of development, contradiction is only effective together with its resolution. In the social sphere, contradictions taken by themselves, regardless of their timely identification and effective resolution, may produce not only progressive but also regressive and destructive processes.

The ways of resolving contradictions are varied, they depend on the character of the contradictions themselves as well as on the conditions of their action, including the character and level of organization of the contesting parties, especially if it is a question of contradictions in the life of man and society. In some cases one side of the contradiction in question perishes while the other triumphs, but it also happens that both sides go down in the struggle, exhausting each other. A more or less prolonged compromise between the sides is also possible, as well as their adaptation to each other and a constant revival of the apparently resolved contradiction. Resolution of contradictions may be complete or partial, instantaneous or gradual.

There are two principal types of development of objects on the basis of the contradictions embedded in them, and also two principal ways of resolving of them conditioned by these types: antagonistic and non-antagonistic, or harmonious. The concept of harmony has many aspects, it implies both a desire for achieving concord, reasonable compromise, and a complete merging or coincidence on the basis of some common element, sometimes to the point of complete unity. The antagonistic type of development is marked by the overcoming of an antagonism accompanied by the death of one of the opposing sides.

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Forming a unity, antagonistic opposites have at the same time relative independence: they are qualitatively and quantitatively unequal, they play different roles within a whole, and one of the sides is often the main motive force of development. This is clearly seen if we take the development of capitalism as our example. "Proletariat and wealth are opposites," write Marx and Engels. "As such they form a single whole. They are both creations of the world of private property. The question is exactly what place each occupies in the antithesis. It is not sufficient to declare them two sides of a single whole... Within this antithesis the private property-owner is therefore the *conservative* side, the proletarian the *destructive* side. From the former arises the action of preserving the antithesis, from the latter the action of annihilating it."⁸ Under the antagonistic type of development the "conservative" opposite is overcome.

This principle of inequality of opposites in development is universal, it is valid everywhere where development occurs, although the character of its manifestation qualitatively varies and depends on the level of organization of matter. For instance, mutability in animate nature plays a leading role in the course of the evolution of life in relation to such a factor as heredity, which has a tendency towards preserving the qualitative definiteness of a species, thus playing a conservative role, as it were. It is a fact that our metagalaxy comprising countless galaxies is expanding: repulsion prevails over attraction here. At the same time neither heredity nor the forces of gravitation disappear completely in the resolution of the contradiction leading to the system's development. The contradiction between mutability and heredity is resolved in the harmonious type of system development in

⁸ K. Marx and F. Engels, "The Holy Family, or Critique of Critical Criticism", in: K. Marx, F. Engels, *Collected Works*, Vol. 4, Progress Publishers, Moscow, 1975, pp. 35, 36.

which the resolution of the given contradiction agrees with the needs for the development of the system as a whole. For instance, a living organism is unthinkable without either of the two opposites of heredity and mutability, therefore the resolution of their contradiction is expressed in it in the form of a dynamic harmony between the two tendencies, which leads to the organism's optimal adaptation to the environment.

The struggle of opposites is the motive force both in the harmonious and the antagonistic type of development. While antagonistic development is produced by antagonistic contradictions, harmonious development is obviously associated with resolution of non-antagonistic contradictions. What is harmonious here is the type of resolution of contradictions rather than the type of contradictions themselves. Harmony is an active dynamic state of a system at the moment of resolution of non-antagonistic contradictions but not at the initial moment of confrontation between opposites which have not yet joined the struggle. In its Marxist acceptance, the principle of harmony reflects the dialectics of becoming rather than being that has already become.

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The law of the unity and struggle of opposites, which is the nucleus of dialectics, is not only of great theoretical but also of vast practical and even practically political significance. It implies that increased acuteness of society's internal contradictions may be due not only to objective factors but also to subjective causes: untimely diagnosis and incorrect evaluation of various socioeconomic, ideological and other processes and phenomena. The mastering of the law of unity and struggle of opposites develops a dialectical flexibility of thought, an acute perceptiveness for various nuances of social life; it shapes the ability for timely and adequate evaluation of favourable and unfavourable tendencies, enabling one to reject obstructions and to encourage general progress.

10. Negation, Continuity and Innovations

Negation as a natural element of development.

Everything is finite in this world, and that means that everything goes through its spring and summer, declines towards autumn and finally dies in

the frost of winter. Such is the implacable logic of life, both of nature and of everything that is human or social. Species of plants and animals, generations of men and forms of social life emerge and disappear in the infinite succession of forms that are continually born and wither away. Without negation of the old, the birth and maturing of a higher and stronger new is impossible, and thus the process of development itself is impossible. All that is the scene of struggle between mutually excluding sides and tendencies. This struggle leads to negation of the old and the emergence of the new. As it appears, a new phenomenon already carries in it its own contradictions. The struggle of opposites starts on a new basis, the need arises for a new negation, i.e. for *negation of negation, ad infinitum*. It is this constant negation that realizes the dialectical process of becoming of qualitative definiteness of phenomena, the replacement of some nodal lines of the measures of development by others. For instance, youth negates childhood, and in its turn is negated by maturity, and the latter, by old age. At the same time all these are different stages in the life of a single individual. This process comprises an almost imperceptible interweaving of the new with the old: while remaining what he or she was, a person becomes nevertheless different, being the seat of the extreme elements of the departing and the nascent. Thus there is both similarity and difference between the old and the new, there is coexistence and struggle, mutual negation and mutual transmutation.

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Negation as simple destruction of one thing by another is purely negative, it is fruitless negation which does not contain any positive shoots of the new and more progressive.

Two different and even opposite types of negation have been embodied by Goethe in the immortal symbolic images of Mephistopheles and Faust: Mephistopheles negated absolutely everything and saw this negation as his very essence, while Faust negated in the name of creation, retaining elements of the old that were needed for the new. As a subjective form of manifestation of the principle of negation, critique has that meaning that it contains orientation towards the identification and resolution of contradictions, towards the assertion of the truth and rejection of errors. Such critique must fully reveal all the delusions (rather than consign them to oblivion) to be able to overcome them. If this is not done, the load of oblivion will make the critique useless, while errors that were not overcome will have a negative effect on the entire subsequent development.

The value of negation is thus determined by the measure of its productiveness, by its role in the creation of the new. Negation is at the same time assertion and retention: while destroying that which exists, it retains the positive in sublated form. This retention, the unity of negation and continuity in development, is an important feature of the dialectics of negation as a universal principle of all being. Hegel illustrated this idea with a graphic example: "The bud disappears when the blossom breaks through, and we might say that the former is refuted by the latter; in the same way when the fruit comes, the blossom may be explained to be a false form of the plant's existence, for the fruit appears as its true nature in place of the blossom. These stages are not merely differentiated; they supplant one another as being incompatible with one another. But the ceaseless activity of their own inherent nature makes them at the same time moments of an organic unity, where they not merely do not contradict one another, but where one is as necessary as the other; and this equal necessity of all moments constitutes alone and thereby the life of the whole."⁹

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Continuity in development.

The emergent new cannot assert itself without negation on the one hand and without retention and continuity on the other. We have development where the new interrupts the existence of the old, absorbing from it everything positive and viable. This retention of the positive is precisely the continuity in the discrete, continuity in development. Development is marked by continuity, consistency, orientation, irreversibility and retention of the results obtained. At each present moment, the world is both a fruit of the past and a seed of the future. The past cannot be regarded as disappearing without trace in the flow of time on the principle of "what was has passed, and there is no return to it". It participates all the time in the creation of the present, forming a living link between epochs in the form of traditions. A tradition is a social form of the transmission of human experience. Each subsequent generation is drawn into life, into the world of objects and relations, signs and symbols created by previous generations. In the philosophical sense, a tradition is a definite type of relation between

⁹ G.W.F Hegel, *The Phenomenology of Mind*, George Allen & Unwin, London; Macmillan, New York, 1931, p. 68.

consecutive stages of a developing object, including culture, in which the old passes into the new and productively works in it, promoting its progressive development. The viable traditions are those which contain life-giving forces of creation and promote creation, acting as a necessary link in the continuity.

The achievements of each generation in practical and cultural activity are a precious heritage whose growth is the result of accumulation by all preceding generations. Past grandeur still shines with the living light of the present. Hence the demand for carefully preserving it, which is a measure of culture. Careful preservation does not mean a museum-type attitude—it assumes and demands innovations which mean a progressive development of the tradition. A rationality in inheriting the traditions, combined with innovations, results in society's accelerated progressive development. Why is the link between tradition and innovation so important? The reason is that, if one does not know history, one cannot correctly understand and evaluate the present, and therefore foresee future developments, i.e. one cannot consciously act on the basis of cognized laws.

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The progressive spiral-like nature of development. Criteria of progress.

The development of matter does not follow a single path but a countless multitude of directions. It is an error to present it as a straight line. In the words of Alexander Herzen, nature in its development darts from side to side and never marches forward at a steady pace. That is exactly what conditions the infinite diversity of the forms of the existence of material bodies and phenomena. Man's evolution is only one of the lines of progress of life on the planet. The history of society also provides evidence of the extraordinary diversity of unique human cultures.

Already in remote antiquity the principle was noted by astute minds that development proceeds in circular movements, with returns to the past at new levels of being. For centuries, the *idea of circulation* in the universe dominated the minds. It was expressed, in a profound form, in the transformations of the first elements of being, elements from which everything arises and into which everything is transformed: here the end links up with the beginning. Recognition of circulation is also recognition of one of the really existing facets of development. But this alone is not enough, for recognition of circulation only necessarily leads to the

conclusion that the world is closed, and that everything endlessly repeats itself in it: there is nothing new under the sun. This concept of development is linked with a definite understanding of time, in which the future is a mere projection of the past. This view is a crystal-clear reflection of the idea of absolute predestination: the entire process of development is oriented towards the past, so that, much like a roundabout, it returns the past to the present through the future. This conception leads to the assertion that what exists now existed at some time in the past and, with things coming full circle, will exist in the future. The essence of development is given a metaphysical interpretation here.

But development is not a straight line, neither is it movement in a circle: it is a *spiral* with an infinite number of turns. In this form, forward movement is strangely combined with circular movement. Development leads to a return, as it were, to previous stages, when some features of already outlived forms replaced by others are repeated in the new forms. This, however, is not a simple return to the original form but a qualitatively new level of development. History is a series of turns of an expanding spiral moving outwards and upwards. No subsequent cycle of development repeats the previous one—it is a new and higher level. Such is the objective orientation in the infinite succession of phenomena and processes, in the incessant struggle between the new and the old, the nascent and the withering away, such is the dialectical path of the forward movement of being.

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Are there any *objective criteria* of development, and if there are, what are they? In the first place, a general criterion of progress is perfection, differentiation and integration of the elements of a system: elementary particles, atoms, molecules, and macromolecules. Other objective criteria are a growing complexity of connections within a system and of relations between systems; a growing information content of the system in question; and an expanding range of the real possibilities of further development. All this leads to the systems' growing stability and vital capacity. These criteria are common to any level of the organization of matter, and they are concretized at these levels in accordance with their specificity. Thus the criterion of progress of biological forms is the level of development of organization, above all the nervous system, its adaptation abilities expressed in the wealth of interrelationships between the organism and the environment, as well as the level of development of the psyche, reflection

and behavioural acts. For society, this criterion is the level of development of productive forces and labour productivity, as well as the character of social relations, all of which is concentrated in a single criterion: the level of society's development is determined by the extent to which man is raised to a higher level in this society.

Yet another universal criterion of progressive development is its accelerated rate. Referring to social life, Engels compared the progressive development with "a free hand-drawn spiral, the turns of which are not too precisely executed. History begins its course slowly from an invisible point, languidly making its turns around it, but its circles become ever larger, the flight becomes ever swifter and more lively, until at last history shoots like a flaming comet from star to star, often skimming its old paths, often intersecting them, and with every turn it approaches closer to infinity."¹⁰ With transition from the lower forms of organization of matter to the higher ones, the rate of development grows.

The methodological significance of the law of negation consists in the fact that it offers an understanding of the direction of the development of systems and objects both of the social and the natural world, permitting a correct evaluation of the scope, possibilities and rate of that development.

¹⁰ F. Engels, "Retrograde Signs of the Times", in: K. Marx, F. Engels, *Collected Works*, Vol. 2, Progress Publishers, Moscow, 1975, p. 48.

KNOWLEDGE AND CREATIVITY

Chapter VII. ON THE ESSENCE AND MEANING OF KNOWLEDGE

1. What Does It Mean to Know?

Epistemology and its subject matter.

Mankind has always striven to acquire new knowledge. The process of mastering the secrets of the universe is an expression of the highest creative aspirations of human reason. Throughout the millennia of its development, mankind has traversed a long and thorny path of knowledge from a limited and primitive grasp of the essence of being to an ever deeper and more comprehensive one. On that path, countless properties and laws of nature and social life have been discovered, and pictures of the world succeeded one another. Development of knowledge went hand in hand with the development of production, and with the efflorescence of the arts and artistic creativity. The human mind does not inquire into the laws of the world out of mere curiosity (although curiosity is one of the ideal motive forces of human activity) but with the aim of practical transformation of nature and man to achieve the most harmonious order of life possible in the world. Human knowledge forms a highly complex system of social memory; its wealth is transmitted from generation to generation, from people to people by means of social heredity, of culture.

Knowledge is thus socially determined. We obtain our knowledge of reality only in terms of assimilated culture. Before we continue the cause of previous generations, we must assimilate knowledge already accumulated by mankind, constantly correlating our cognitive activity with it—such is the categorical imperative of developing knowledge.

Man began to ponder on what knowledge is, and what the ways for acquiring it are, already in remote antiquity, when he became aware of himself as something confronting nature. In the course of time, a conscious formulation of this question and attempts to solve it began to take coherent

form, and that was when knowledge of knowledge itself evolved. Nearly all philosophers have analyzed epistemological problems in one way or another.

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Epistemology evolved along with the emergence of philosophy as one of its basic branches. It studies the nature of human knowledge, the forms and laws of the transition from a superficial knowledge of things known as opinion to cognizing their essence, or true knowledge, and in this connection it considers the paths of attaining the truth and the criteria of the truth. But man would not have been able to know the truth as such had he not made mistakes, and epistemology therefore also studies the way man falls into error and overcomes delusions. Finally, the most burning issue in epistemology is, and has always been, that of the vital meaning of true knowledge of the world, of man himself and of human society. All these numerous questions, as well as those that arise in other sciences and in social practice, contribute to the extensive problem range of epistemology. Knowledge of the essence of things permits man to use them in accordance with his needs and interests, modifying available things and creating new ones. Knowledge is the link between nature, human reason and practical activity.

Reflection of objective reality as the fundamental principle of knowledge.

Before it became a fundamental principle of epistemology in dialectical materialism, the concept of reflection had gone through a rather turbulent history in philosophy, which is due to the fact that this concept lies at the core of the basic question of philosophy. Depending on the role this concept played in the substantiation of knowledge, it was variously interpreted, along materialist or idealist lines, and in its turn conditioned the subsequent unfolding of the systems of cognitive activity. The concept of reflection was posited by the thinkers of antiquity, and their interpretations of this concept clearly divided them into materialists and idealists. For example, Democritus regarded knowledge as reflection or perception of images or eidola issued by the things, while Plato sublated, in fact, the idea of reflection by reducing knowledge to the soul's recollection of its former impressions when it existed in the kingdom of pure thought and beauty. The materialists of the Modern Times interpreted the concept of reflection mechanistically: the images of things in the mind were likened to wax imprints or mirror

reflections, and reflection itself was seen as a passive contemplative process. But the shortcomings and limitations of mechanistic materialism in no way detract from these philosophers' merits: they recognized the existence of the objective world irrespective of man's consciousness, seeing it as the source of man's cognitive activity.

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Throughout history, the idealists have always avoided using the concept of reflection, interpreting cognition as a process of generation of a system of categories and ideas from the depth of the subject's mind, his spirit, as a process of self-generation of knowledge. In their interpretation, the objective world emerged therefore as a product of human reason. Depending on the interpretation of the concept of reflection, the world was regarded by some as knowable and by others as unknowable. It should be noted, however, that, despite the overall erroneous interpretation of the nature of human knowledge by idealism, its strong point has been emphasis on the creative activity of the knowing subject and of his reason.

Generalizing all the positive elements obtained by philosophical thought in the domain of epistemology, Marxism raised epistemology to a fundamentally new theoretical level, linking it closely with socio-historical practice and dialectically interpreting cognitive activity as socially determined, practical transforming activity. Marx and Engels believed that all ideas come from experience, that they are reflections of reality, either true or distorted. Lenin creatively developed Marxism, and in his struggle against idealists and revisionists of all kinds he substantiated the dialectical-materialist principle of reflection as the cornerstone of scientific epistemology. It is no accident that it is known as Lenin's theory of reflection.

The unity and diversity of the kinds of knowledge.

Cognition is the process of selective and active functioning, refutation and continuity of progressive forms of accumulation of information historically succeeding one another. Knowledge is the result of the process of cognition of reality tested by socio-historical practice and verified by logic; this result is on the one hand an adequate reflection of reality in man's consciousness in the form of notions, concepts, judgements and theories (i.e. in the form of subjective images), and on the other, it is a mastery of all these and a capacity for acting on their basis. Its reliability varies, reflecting the dialectics

of relative and absolute truth. In its genesis and mode of functioning, knowledge is a social phenomenon recorded in natural and artificial languages.

The relation of knowledge to reality has many levels and is mediated in a very complex manner; it develops both in the course of the history of human culture and in the process of the development of the personality. Animals, especially the higher animals, have elementary knowledge conditioned by biological laws, which is a necessary factor in the realization of their behavioural acts. The knowledge of man, who is social by his very nature, is fundamentally different. Man's knowledge can have various forms—pre-scientific, everyday, artistic, and scientific, the latter functioning at different levels of assimilation of reality as empirical or theoretical knowledge.

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The importance of everyday knowledge, which forms the basis for all the other forms of it, cannot be underestimated. It is based on common sense and everyday consciousness, and it is an important reference frame for people's everyday behaviour, for their relations with one another and with nature. This form of knowledge develops, and is enriched, in the course of the progress of scientific and artistic knowledge. The latter, however, absorbs also the rich experiences of everyday knowledge. Scientific knowledge proper is marked by conscious interpretation of facts in the system of concepts of a given science, and it is incorporated in theories that form the highest level of scientific knowledge. Being a generalization of reliable facts, scientific knowledge discovers the necessary and the law-governed behind the accidental, and the general behind the individual and the particular. Artistic knowledge has certain specific features (e.g. the fact that a rich system of images functions here along with concepts) and plays an enormous and indispensable role in the overall cognitive process providing as it does an integral reflection of man's world and of man in the world, sharpening his ability for creative imagination and fantasy and shaping the aesthetic aspects of all activity, including cognition itself.

On the potential of knowledge: optimism, scepticism, and agnosticism.

Is the world knowable in principle? That is a question which human thought has been concerned with for centuries, and it is not a scholastic one.

Indeed, the universe is infinite, while man is finite, and the cognition of that which is infinite is impossible within the boundaries of his finite experience.

Three principal positions have become clearly differentiated in the attempts to answer this question: optimism, scepticism and agnosticism. The optimists assert that the world is in principle know-able, the agnostics, on the contrary, reject this possibility. As for sceptics, they do not reject outright the knowability of the world but question the validity of knowledge. However, we must not take a simplistic approach to these three positions. When agnostics negate the knowability of the world, that negation is not unfounded or meaningless. The main problem which agnosticism has posited is this.

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In the process of cognition, an object is inevitably refracted through the prism of our sense organs and thought. We only have that information about the object which results from this refraction. We do not know, and neither can we know, what the objects are like in reality. The world stretches before us without beginning or end, and we approach it with our formulas, schemata, models, concepts and categories endeavouring to catch its eternity and infinity in the net of our notions. However cunningly we might tie the knots of concepts, categories and theories, isn't it presumptuous on our part to hope to grasp the essence of the universe in such a way? We are locked within the circle of our modes of cognition and cannot say anything about the world with complete certainty: such is the conclusion to which the logic of this kind of reasoning leads under certain epistemological assumptions.

But the logic of agnosticism is refuted at every step by the development of science and knowledge in general. Thus the founder of positivism Auguste Comte once stated that mankind would never know the chemical composition of the sun. But spectral analysis revealed the composition of the sun even before the ink dried in which these sceptical words were written. Some Machists insisted that the atom is a chimera, a ghost emanating from a diseased imagination. We know now, though, that the atomic theory is the foundation of the entire modern natural science. In these days, too, some trends in Western philosophy are inclined towards agnosticism on the issue of the knowability of the essence of the world and especially of man and society. The range of philosophical doctrines that are prone to agnostic positions is fairly wide—from neopositivism to phenomenology, existentialism and pragmatism. This agnosticism derives not only from

epistemological and social causes but also to some extent from the tradition that goes back to the philosophy of Hume and Kant.

It is usually believed that the essence of Kant's agnosticism is this: there is a fundamental difference between what a thing is for us (the phenomenon) and what it is in itself (the noumenon). Our knowledge will always differ from things as they are. It is this division of the world into phenomena accessible to knowledge and things unknowable in themselves that precludes the possibility of their cognition. But Kant himself would have hardly regarded himself as an agnostic. He believed in infinite progress of knowledge. According to Kant, observation and analysis of phenomena go deep into the essence of nature, and we do not know just how far mankind will advance on this path. The framework of experience is being expanded all the time, and, however comprehensive our knowledge may become, its boundaries cannot nevertheless disappear, just as the horizon cannot disappear. We see that in actual fact Kant's position is much more complex than the generally accepted view of his agnosticism. So what is the difficulty here? A strange lot has fallen to human reason, wrote Kant: it is called upon to consider questions which it cannot decline, as they are presented by its own nature, but which it cannot answer, as they transcend every faculty of the mind.

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First, Kant raised the question here of the basic limitations of human experience, and second, he recognized that reality goes beyond the limits of any knowledge: reality is more cunning than any theory, and it is much richer than any of them. Besides, he stated that the world is only cognized in the forms of its givenness to man. It was this last circumstance that permitted him to assert that a thing is cognized through phenomenon and not the way it exists in itself. But this assertion, regarded as an absolute, leads precisely to agnosticism, which digs an impassable abyss between consciousness and the world. Epistemologically, agnosticism errs in that it ignores the principle of the world's material unity, in particular the unity of being and thinking, dogmatically postulating the existence of the external world absolutely independent of man in defiance of the fact, recorded in agnosticism itself, of the existence of the subject-object (epistemological) relation.

Agnosticism is an exaggerated form of scepticism. As we have said, scepticism recognizes the basic knowability of the world but doubts the reliability of knowledge. As a rule, scepticism flourishes at a time, or on the

even, of a breakdown of paradigms, replacement of one set of values by another, of one social system by another, when something previously believed to be true proves to be false and untenable in the light of new data of science and practice. The psychology of scepticism is such that it immediately begins to trample not only the things that have outlived their usefulness but also the newly born ones. Underlying this psychology is the habit of living in the lee of cosy principles taken on faith once and for all, and not the researcher's thirst for innovation or faith in the power of human reason.

As a doctrine, scepticism undoubtedly does great harm, as it belittles man's practical and cognitive potential. Cheap scepticism is found in narrow-minded people as often as blind fanaticism. In reasonable doses, however, scepticism is useful and even necessary. As a cognitive device, scepticism appears in the form of doubt, which signifies a step towards the truth. Doubt is a restless worm that eats away and destroys obsolete dogmas, it is a necessary element of developing science. There is no knowledge without a problem, and no problem without doubt. As Rabindranath Tagore puts it, reason is like a lamp: the brighter the light, the darker the shade of doubt. Only faith does not bear doubt, while scientific knowledge implies it. Doubt about generally accepted principles may be fruitful, leading to new views of the world.

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Reasonable philosophical doubt, a healthy scepticism is not, in fact, an antithesis of the optimistic view of knowledge positing the basic knowability of the world. The foundation of the philosophy of optimism is the principle of the material unity of the world and the entire experience of the history of scientific knowledge of socio-historical practice.

The subject and object of cognition.

The world exists for us only as it is given to the knowing subject. The concepts of subject and object are correlative. When we use the term "subject", we ask the questions, The subject of what? Of cognition? Action? Judgement? When we use the term "object", we also ask questions like, The object of what? Of cognition? Judgement? Action?

The subject is a complex hierarchy, of which the foundation is the entire social whole. In the final analysis, the highest producer of knowledge and wisdom is the entire mankind. Its development has produced smaller

communities—the separate peoples. Each people, creating norms, ideas and values recorded in its culture, also figures as a special subject of cognitive activity. Historically, society forms groups of individuals whose special purpose and occupation is production of knowledge of special vital value. Of this type in particular is scientific knowledge, of which the subject is the community of scientists. Separate individuals stand out in this community whose abilities, talent or genius produce particularly great intellectual achievements. History preserves the names of these people as outstanding landmarks in the evolution of scientific ideas.

The true subject of cognition is never epistemological only: he is a living individual with his passions, interests, character traits, temperament, intellect or stupidity, talent or lack thereof, strong will or lack of any will. If the subject of cognition is a scientific community, it has specific features of its own: interpersonal relations, dependences, contradictions, and also common goals, unity of will and action. Most often, however, the subject of cognition is interpreted in the sense of a certain impersonal logical concentrate of intellectual activity.

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The subject and his cognitive activity can only be adequately understood in their concrete historical aspect. Scientific knowledge assumes not only the subject's conscious attitude towards the object but also towards himself, towards his activity, i.e. a realization of the conditions, devices, norms and methods of research.

From the standpoint of cognitive activity, the subject does not exist without an object, and the object does not exist without a subject. Thus genes existed in the structure of life at all times, but they were not objects of scientific thought in antiquity and even in the times of Lamarck or Darwin. For a long time scientists have been unable to identify this extremely elusive biological reality as an object of their thought. This was done only fairly recently, when essential changes took place in the overall scientific picture of the world. Or, to take another example, only several decades ago did scientific thought, technological achievements and social conditions enable us to make outer space the object of research.

In present-day epistemology, the distinction is made between the object and the subject matter of cognition. The *object* is seen as the real fragments of being that are subjected to study. The *subject matter* of research are the concrete aspects at which the questing thought is targeted. For instance, man is the object of many sciences: biology, medicine, psychology, sociology,

philosophy, etc. Each of them sees man from an angle of its own; psychology studies man's psyche and behaviour; medicine, his diseases and methods of curing them, and so on. The subject matter thus includes, as it were, the researcher's actual orientation: it is moulded in relation to the researcher's task.

It is a well-known dictum that man as the creator and subject of history creates the necessary conditions and premisses for his historical existence. It so appears that the object of socio-historical knowledge is not only cognized but also created by people: before it becomes an object, it must be shaped by them. In social cognition, man deals with the results of his activity and thus with himself as a practically acting being. As a subject of cognition, man finds himself at the same time in the position of its object. Social cognition is in this sense man's social self-consciousness: he discovers for himself and studies his own historically created social essence.

In view of this, the interaction between subject and object in social cognition is made particularly complex: here the object is at the same time the subject of historical creativity. In social cognition everything turns on the concept of the human: the object is people themselves and the results of their activity, the subject of cognition is also human beings. The process of cognition is impossible without the evidence of eyewitnesses, documents, polls, questionnaires, without the tools and cultural monuments created by people. Nothing is done in society without involving somebody's interests. All this imposes a certain imprint on social cognition, shaping its specificity. The scholar's civic stance, his moral qualities and loyalty to the ideal of the truth is therefore important in social cognition as in no other sphere.

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2. Practice as the Basis and Purpose of Cognition

The unity of theory and practice.

The principal form of the manifestation of human life is activity—sensuously objective, practical, and intellectual, theoretical. Man is an active being rather than a passive spectator at the "pageant" of life. He continually influences things around him, lending them forms and properties necessary

to satisfy the historically evolved social and personal needs. It is in the transformation of the world that man lends definiteness to his way of life.

Practice is the material, sensuously objective and goal-directed activity of men intended to master and transform natural and social objects, and constituting the universal basis, the motive force of the development of human society and knowledge. Practice designates not only, and not so much, the sensuously objective activity of a separate individual as the total activity and experience of the entire mankind in its historical development. Practical activity is social both in its content and in the mode of its realization. Contemporary practice is a result of world history, a result that embodies infinitely varied relations between men and nature and among men in the process of material and non-material production. Being the principal mode of man's social existence and the decisive form of his self-assertion in the world, practice acts as a complex integral system incorporating such elements as need, goal, motive, separate actions, movements, acts, the object at which activity is directed, the instruments of achieving the goal, and finally the result of activity. In practice, somebody always does something to create something out of something with the help of something for some purpose.

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Social practice forms a dialectical unity with cognitive activity, with theory. It performs three functions in relation to the latter. First, it is the source and the basis of cognition, its motive force; it provides the necessary factual material for it, subject to generalization and theoretical processing. It thus feeds cognition as soil feeds trees, and does not let it become divorced from real life. Second, practice is a mode of application of knowledge, and in this sense it is the goal of cognition. Scientific knowledge has a practical meaning only if it is implemented in life: practice is the arena in which the power of knowledge is applied. The ultimate goal of cognition is not knowledge in itself but practical transformation of reality to satisfy society's material and non-material needs through harmonizing its relationship with nature. Third, practice is the criterion and measure of the truth of the results of cognition. Only that knowledge which has passed through the purifying fire of practice can lay claims to objectiveness, reliability, and truth.

We can thus say that practice is the basis for the formation and development of cognition at all its stages, the source of knowledge and criterion of the truth of the results of the cognitive process. Man first cognizes the world to the extent to which he himself acts practically and is

subject to the action of the external world. Practice forms part of the definition of the object in the sense that the object is separated off by the subject, with a definite purpose, from the infinite tangle of things, or else it is modified or created anew.

The main kinds of practice are the *material-production activity* and *social-transforming activity* of the masses (the latter includes people's activity in the social, political and cultural spheres of society's life). Natural-scientific and social *experiments* are special kinds of scientific practice. Scientific theory and practice constitute a unity of opposites in which practice plays the decisive role. It is practice that determines the cardinal structural features of the process of cognition both at the empirical and at the logical level. But theory does not restrict its role to a mere generalization of practice: it creatively transforms the empirical material and thereby opens up new prospects for practice. Theory performs a programming function in relation to practice. In terms of the origin of cognition, practice precedes theory, while at the level of well-developed scientific thought the possibility and necessity greatly increase of intratheoretical, meaningful operation with ideal models of things, their properties and relations, without resorting directly to practice. This helps theoretical thought escape the power of immediate experience and creates the possibility for a "super-range" anticipation of practice.

The history of knowledge indicates that the realization of some discovery in practical life is followed by an efflorescence of the corresponding field of theory: the development of technology revolutionizes science. Practically applied, natural and social disciplines create the mechanism of feedback between theory and practice which becomes the determinant factor in the choice of many directions of research.

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The feedback mechanism permits the implementation of corrective influences of theoretical and practical activity on each other, which ensures the role of practice as the *criterion of truth*.

In pre-Marxian and contemporary Western philosophical thought the essence of practice and its role in cognition are often given inadequate interpretations. It is a well-known fact that the active element in cognition has been closely studied in idealism, of which the essential feature was the fact that creative activity was restricted to the sphere of the spirit. According to Hegel, practice is the "volitional activity of the idea". Subjective idealists interpret practice as activity conditioned by will and intuition, or the

subconscious. For example, William James included religious experience, i.e. a purely spiritual activity, under the heading of practice. Some representatives of revisionism also reduce practice to free, creative, self-conscious activity seen as the only form of reality. The principal drawback of idealist interpretations of practice consists in the metaphysical lifting of the idea or the spiritual element, to an absolute.

Inasmuch as practical activity is conscious, the mental, spiritual element is undoubtedly part and parcel of it. It is absurd to break up integral activity into two hypostases and still more absurd to oppose them to each other, exaggerating the role of the one and belittling or ignoring the significance of the other. The position of isolating the material and practical activity from the intellectual and theoretical one is hostile to dialectical materialism. These kinds of activity form an indissoluble unity. To resort to the dry language of categories, a part is not the whole, and substituting the one for the other is fraught with theoretical-methodological and worldview errors.

The inner logic of the development of knowledge.

Having emerged, and developing, under the influence of society's material needs, scientific creativity is at the same time relatively independent and has an inner logic of development of its own. After the logical basis, the categorial apparatus, of a theory has established itself, the theory acquires the capacity for self-development and the handling of properties and relations which are inaccessible to practice and to sensuous cognition, and which will only appear in the future.

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The relative independence in the development of science is expressed in the systematization of knowledge necessitated by cognition, in the interaction of various branches of a given science and of different sciences, in the mutual influence of various forms of people's spiritual and intellectual activity, and in the free exchange of views. The inner logic of the development of knowledge is taken to mean the impulses emerging in the course of the process of cognition itself, when one discovery entails another or the development of one science contributes to a rapid growth in achievements in other areas. The inner logic of the movement of the total scientific thought of mankind makes it possible to anticipate the immediate needs of practice and to light up the path of practice. "Science, unlike other architects," wrote Marx, "builds not only castles in the air, but may construct

separate habitable storeys of the building before laying the foundation stone.”¹ Society must know more about the world than it can use at a given moment. But there are no useless discoveries! Sooner or later, cognition is followed by practical implementation of all the achievements of theoretical thought.

There are various practical tasks in scientific studies: some of them are aimed at solving the closest and direct needs—these are the tactical tasks of today; others are targeted on a more or less remote future—these are the strategic tasks connected with fundamental scientific research and intended to change drastically the existing practice.

History teaches that the practical significance of ideas cannot be fully assessed at the beginning: even the most abstract and abstruse theoretical constructs, say, those of mathematics, physics, and other domains of pure knowledge, may one fine day prove to be quite useful for resolving the most burning issues of practice. Neither can we ignore the great significance of fundamental scientific studies in the completing and deepening of the properly scientific picture of the world. Besides, mankind’s right to satisfying the “hunger of reason and the thirst for knowledge” cannot be denied, either; after all, this is also practice of a kind that serves the interests of man’s intellectual and emotional ascendancy. But it would also be a mistake to doubt that no science serves its true purpose unless it betters man’s life materially or intellectually.

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3. What Is Truth?

Truth, error and lie.

Truth is usually understood as correspondence of knowledge to object. Truth is adequate information about an object obtained through its sensuous or intellectual perception or report about it and characterized in terms of its reliability. Truth thus exists as a subjective or spiritual reality in its information and axiological aspects rather than as an objective reality. The value of knowledge is determined by the measure of its truth. In other

¹ K. Marx, “A Contribution to the Critique of Political Economy. Part One”, in: K. Marx, F. Engels, *Collected Works*, Vol. 29, Progress Publishers, Moscow, 1987, p. 297.

words, truth is a property of knowledge itself rather than of the object of cognition.

Knowledge is reflection, and it exists as a sensuous or conceptual image of any degree of complexity, e.g., a theory as an integral system. We know that an image does not emerge only as a result of reflection of present being but also of the past embodied in some information-bearing traces. Now, as to the future—can it be an object of reflection? Can an idea in the form of a design, a constructive thought oriented towards the future be evaluated in terms of truth? Apparently not. Of course, a design is constructed on the knowledge of the past and present. In this sense, it relies on something true. But can we say of the design itself that it is true? Isn't it more correct to use such concepts here as the purposive, the realizable, the useful—the socially useful, that which is useful for some class, social group or a separate individual? A design is not evaluated in terms of truth or falsehood but in terms of expediency (backed by moral justification) and realizability.

That is why truth must be defined as an adequate reflection of an object by the knowing subject, which reproduces reality such as it is by itself, outside and independent of consciousness. It is the objective content of sensuous, empirical experience as well as of the concepts, judgements, theories, and finally of the entire integral picture of the world in the dynamics of its development. The fact that the truth is an adequate reflection of reality in the dynamics of its development lends it special value connected with the prognostic dimension. True knowledge enables people to organize their practical activities in a rational manner in the present, and to foresee the future. If cognition had not been from its very inception a more or less true reflection of reality, man would not have been able to transform the surrounding world or even adapt himself to it. The very fact of the existence of man, the history of science and practice confirm the justice of this proposition.

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But mankind rarely grasps truths other than through extremes and errors. The progress of knowledge is not smooth. The history of science abounds in examples of errors being accepted as truths over hundreds of years. An error is an undesirable yet natural zigzag on the path towards truth.

Error is the content of consciousness that does not correspond to reality but is taken for the truth. The whole course of mankind's cognitive activity shows that errors, too, reflect—albeit in one-sided form—objective reality, they have a real source, an earthly basis. There are no, and neither can there

be any, errors that reflect nothing whatever, not even in the most mediated and extremely distorted form. For example, are the images of fairy tales true? The answer is, yes, they are true, but only remotely—they are taken from life and transformed by the power of their creators' imagination. There are strands of reality in any invention, forming quaint patterns woven by the power of the imagination. Taken as a whole, though, such images are not the truth.

The view has currency that errors are annoying accidents. But they have persistently accompanied cognition throughout history as mankind's payment for bold attempts to learn more than the existing level of practice and theoretical thought permitted. Aspiring towards the truth, the human mind inevitably falls into all manner of errors determined both by its historical limitations and the claims surpassing its real possibilities. The errors are also conditioned by the relative freedom of choosing the paths of cognition, the complexity of the problems faced, and the desire to realize plans in a situation of incomplete information. In scientific cognition, errors appear as false theories whose untenability is revealed by further development of science. Such was the case, e.g., of Ptolemy's geocentric system or Newton's interpretation of space and time.

Thus errors have their epistemological, psychological and social foundations. But they should be distinguished from lies as a moral-psychological phenomenon. *Lies are a distortion of the actual state of affairs of which the goal is deceiving someone.* A lie may be both an invention of something that did not exist or a deliberate concealment of something that did. Logically incorrect thinking can also be a source of lies.

By its very essence, scientific cognition is impossible without conflict between various, sometimes opposing views, just as it is impossible without errors. In research, mistakes are often made in the course of observation, measurement, calculations, judgements, or evaluations. As long as man is fighting his way forward, he errs. But gradually truth forces its way to the light.

What we have said here mostly applies to cognition in the natural sciences. The situation is different, and much more complicated, in social cognition. Characteristic in this respect is the science of history. Owing to the impossibility to reproduce the past—the subject matter of history, owing to the historian's dependence on the accessibility of sources, their completeness and reliability, and owing to extremely close ties with ideology

and politics, history is more than any other science prone to distortion of the truth, to subjective mistakes and delusions. In social cognition, a particularly painstaking approach is required towards facts, as well as a critical analysis of these facts. The entire ensemble of facts pertaining to a given question rather than separate facts must be considered in the study of social phenomena, otherwise the suspicion (mostly justified) arises that the facts have been selected arbitrarily, and that some subjective concoction, probably to justify some underhand dealings, is being offered instead of the objective connections between and interdependence of historical phenomena. It is important to take analysis of facts to the point of revealing the truth and the objective causes which condition a given social event.

Absolute and relative truth.

Everyday consciousness operates with absolute truths as with newly minted coins which may, as Hegel put it, be readily used or put in one's pocket. But the system of scientific knowledge, and even everyday experience, is not a stockpile of exhaustive information about being—it is an endless process, a movement, as it were, up a staircase leading from the lower stages of the limited and approximate to a more comprehensive and deep grasp of the essence of things. It is impossible to "imagine truth in the form of dead repose, in the form of a bare picture (image) ... without impulse, without motion".²

Truth is historical. In this sense it is a child of the epoch. The concept of finite or immutable truth is no more than a ghost. Any object of knowledge is inexhaustible, it is constantly changing, it has a great variety of properties and is connected with countless threads of relationships with the surrounding world. It was, for example, believed that the chemical composition, properties and states of water have been studied inside out. But then the so-called heavy water was discovered with heretofore unknown properties. Each stage of cognition is restricted to the level of development of science and practice, by the historical conditions of the life of society. Scientific knowledge, including the most accurate and reliable knowledge, is probabilistic. Truth is relative inasmuch as it reflects the object within

² V.I. Lenin, "Conspectus of Hegel's Book *The Science of Logic*", *Collected Works*, Vol. 38, pp. 194-95.

certain limits and relations which constantly change and develop, rather than does it fully and exhaustively. *Relative truth is limited true knowledge about something.*

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Paradoxical though it may seem, each step forward in science is a discovery of new secrets and of new horizons of ignorance. It is a process that reaches into infinity. Mankind has ever striven to come close to a knowledge of absolute truth, endeavouring to narrow down to a minimum the sphere of the relative in the content of scientific knowledge. But even a constant expansion, deepening and clarification of our knowledge cannot in principle overcome its probabilistic and relative character. One must not, however, veer to the other extreme and regard each scientific proposition as a mere hypothesis.

On the question of relativity of truth, let us stress that we refer to the sphere of scientific knowledge and not at all to absolutely authentic facts like the nonexistence of the king of France today. It is the availability of absolutely reliable and therefore absolutely true facts that is extremely important in people's practical activity, especially in those areas that are connected with decisions affecting human fates. For instance, a court of law cannot pass a sentence on an accused unless it has complete confidence in the existence of the *corpus delicti*. Before operating on a patient or using a strong drug, a doctor must have absolutely reliable data on the disease. Absolute truths include ascertained facts, the dates of events, birth, death, etc.

Stated with complete clarity and authenticity, absolute truths do not encounter any further counter-arguments. In other words, absolute truth is identity of concept and object in thought—in the sense of complete coverage, of coincidence of essence and of all the forms of its manifestation. Of this nature are the propositions of science like, "Nothing in the universe is created out of nothing, and nothing disappears without a trace", "The earth revolves round the sun", and so on. *Absolute truth is a piece of knowledge that is not refuted by the subsequent development of science but enriched and constantly reaffirmed by life.*

Absolute truth in science is taken to mean exhaustive, extreme knowledge of an object, attainment, as it were, of the boundaries beyond which nothing can be cognized any more. The development of science can be presented as a series of consecutive approximations to absolute truth, each of which is more precise than the previous ones.

The term "absolute" is also applied to any relative truth: inasmuch as it is objective, it contains something absolute as one of its elements. Any truth may therefore be said to be absolute-relative. The share of absolute knowledge is constantly growing in the sum total of mankind's knowledge. The development of the truth is accumulation of the elements of the absolute. Each subsequent scientific theory is a more complete and deeper knowledge compared with the previous one. But new scientific truths by no means discard their predecessors—they rather complement the latter, make them more concrete and include them as elements of deeper and more profound truths. An earlier theory is interpreted as a particular case of the new one (as Newton's classical mechanics was interpreted in relation to Einstein's theory of relativity).

The concreteness of truth.

The concreteness of truth, as one of the basic principles of the dialectical approach to knowledge, assumes an accurate taking into account of all the conditions (in social knowledge, of the concrete historical conditions) in which the object of cognition exists. Concreteness is the property of truth based on a knowledge of real connections, on the interaction of all the aspects of the object, of the principal and essential features of it, of its tendencies of development. Thus the truth or falsity of given statements cannot be established unless we know the conditions of place, time, and so on, under which they are formulated. A statement correctly reflecting an object under given conditions becomes false in relation to the same object under different conditions. A correct reflection of some element of reality may become its opposite, an error, unless we take into account definite conditions of place, time, and role of what is reflected in the composition of the whole. For example, it is impossible to understand a separate organ outside a whole organism, a man outside society, and a historically concrete society at that, and outside the context of special, individual circumstances of his life. The statement that "water boils at 100°C" is only true on condition that we refer to ordinary water at normal pressure. This statement will no longer apply if we take the so-called heavy water or change the pressure.

Along with features common with other objects, every object has individual peculiarities and a unique "context of life". For this reason, a

concrete approach to an object, along with the general one, is necessary: there is no abstract truth, truth is always concrete. Are the principles of, say, classical mechanics true? Of course they are—when applied to macrobodies and to relatively low velocities. Beyond these limits, they cease to apply.

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The principle of the concreteness of truth demands that facts be approached with due regard for the specific situation and the real conditions rather than with ready-made general formulas and schemata; it is thus incompatible with dogmatism. The concrete historical approach becomes particularly important in the analysis of social development, since the latter proceeds at an uneven rate and is marked by the specifics of the particular countries.

On the criteria of true knowledge.

What guarantees the truth of human knowledge? What is the basis for distinguishing between truth, error and delusion?

Descartes, Spinoza, and Leibniz proposed clear and distinct apprehension as the criterion of truth. That which is open to the observing mind and is readily accepted as such without causing doubt is clear. An example of such a truth is "a square has four sides". In the same way as light reveals both itself and the darkness around it, so is truth the measure of both itself and of error.

This conception of the criterion of truth relies on the faith in the strength of the logic of our thought and in the correctness of the perception of reality by the mind. Our experience is largely founded on this. This is a strong position in the struggle against all kinds of wanderings in the darkness of the imagined. The obviousness of the sensed and the conceived plays a considerable role in ascertaining the truth, but it cannot be its only criterion.

Time has debunked many truths that once appeared fully obvious and clear. Few things will appear clearer and more obvious than the immobility of the earth. For thousands of years mankind never doubted this immutable truth. Clarity and obviousness are subjective states of consciousness that must be respected for their enormous vital significance, but they obviously require support of something more solid.

Undoubtedly, psychologically important are not only the clarity and obviousness of apprehension but also confidence in its correctness. But

confidence cannot be the criterion of truth either. Confidence in the truth of a proposition can fatally lead into error.

Another criterion that is sometimes posited is general validity: what accords with the opinion of the majority is true. Of course, there is some justification for this, too: if many are convinced of the correctness of certain principles, this in itself may serve as an important guarantee against delusion. However, a long time ago Democritus remarked that the question of truth is not resolved by a majority. The history of science shows that discoverers were mostly loners in defending the truth. Recall Copernicus: he alone was right while all the rest erred about the rotation of the earth round the sun. It would be ridiculous to put to the vote the truth or falsity of a given assertion in a scientific community.

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Some philosophical systems declare practical usefulness as the criterion of truth. For example, for the adherents of pragmatism true ideas are only those that "work". Relying on this conception of truth, pragmatists deduce even the existence of God.

The criterion of truth cannot be found in thought itself, neither does it exist in reality considered regardless of the subject. The criterion of truth lies in practice. "The question whether objective truth," writes Marx, "can be attributed to human thought is not a question of theory but is a *practical* question. Man must prove the truth, i.e., the reality and power, the this-worldliness of his thinking in practice. The dispute over the reality or non-reality of thinking which is isolated from practice is a purely *scholastic* question."³

One of the fundamental principles of scientific thought is that a statement is true if it can be proved that it is applicable to a given situation. This principle is expressed by the term "realizability". Through the realization of an idea in practical action, knowledge is measured against its object revealing the true measure of its objectivity or the truth of its content. That part of knowledge that is directly or indirectly confirmed by practice, i.e. effectively realized in practice, is true.

As a criterion of truth, practice "works" not only in its sensuous "nakedness", as an object-related physical activity, in particular in experiment. It also appears in mediated form—as logic tempered in the crucible of experience. Logic may be said to be mediated practice. The degree

³ K. Marx, "Theses on Feuerbach", in: K. Marx, F. Engels, *Collected Works*, Vol. 5, p. 3.

of perfection of human thought is determined by the measure of the correspondence of its content to the content of objective reality. Our reason is disciplined by the logic of things reproduced in the logic of practical actions and the entire system of spiritual culture. Given the authenticity of the initial propositions, the logic of thought is to a certain extent a guarantee not only of its correctness but also of its truth. Therein lies the great cognitive strength of logical thought. The ultimate foundation of the reliability of our knowledge is the possibility of practical creative work on its basis.

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Of course, we must bear in mind that practice cannot fully confirm or refute any notion or knowledge. "The atom is indivisible"—is this truth or error? Over many centuries, this was believed to be true, and was borne out by practice. From the standpoint of, say, the practice of antiquity (and even up to the late 19th century), the atom was indeed indivisible, just as at present it is seen as divisible, while elementary particles still remain indivisible. Such is the level of practice these days. Practice is a "cunning" creature: it not only confirms truth and denounces error—it also keeps silent on what is beyond the limits of its historically restricted possibilities. However, practice itself is constantly perfected, developed and deepened—primarily on the basis of scientific cognition. Practice is many-sided, ranging from empirical everyday experiences to the most rigorous scientific experiments. The practice of primitive man obtaining fire by means of friction is one thing, and quite another, the practice of mediaeval alchemists seeking for ways of transforming various metals into gold. Contemporary physical experiments involving equipment of tremendous resolving power, and computer calculations—these are also practice. In the course of the development of true knowledge, and of increasing its volume, science and practice form an ever closer unity.

Chapter VIII. THE PHILOSOPHY OF THOUGHT

1. Intellectual-Sensuous Contemplation

Sensations, perceptions, representations.

The subject's direct links with objective reality are established through sensations—the initial sensuous images or elementary facts of consciousness. *Sensation is the reflection of separate properties and qualities of objects which directly affect the sense organs; it is an elementary and psychologically indivisible cognitive phenomenon.* “The very first and most familiar to us is sensation, and in it there is inevitably also *quality*...”¹ This fact is reflected in language: when we name some sensations, we actually mean a quality given in sensation: the red, the blue, the sweet, the spicy, and so on.

The sense organs are a kind of channels or windows open to the world, through which streams of external influences continually come in. The sense organs realize their cognitive function through the medium of a definite system of locomotive acts involving subject and object. Thus the feeling hand reproduces the outlines of an object by actively touching it, while the eye, much like the feeling hand, slides across the surface of an object in various directions.

The difference between external influences determines the diversity of sensations. Sensations have a broad range of modalities, including tactile, visual, auditory, vibrational, temperature, olfactory, and gustatory. A type apart are sensations of processes occurring in the organism's inner environment—organic sensations, as well as sensations of the movements and positions of the body's organs (kinesthesia), the sense of balance, and static sensations.

In the process of life's evolution, special sense organs have developed for only a small number of stimuli. The sense image of other properties of the objective world—as, e.g., of the form, size, and distance of objects from each

¹ V.I. Lenin, “Plan of Hegel's Dialectics (Logic)”, *Collected Works*, Vol. 38, p. 317.

other and from the observer— arises from the interaction of indications of different sense organs.

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Whatever object we may take, it has a great many extremely diverse aspects and properties. Consider a lump of sugar: it is hard, white, sweet, it has a definite shape, mass and weight. All these properties are combined in something integral, and we perceive and comprehend them as a single whole rather than separately. *An integral image reflecting objects affecting the sense organs and their properties and relations directly is called perception.* Perception is a higher stage of cognition, essentially different from sensations. Perception is *thinking, living contemplation*; we look at things with an outward eye but we see them with an inner one. The depth of this comprehension depends on a person's intellectual level, his experience.

Representation is the highest form of sensuous reflection, it is imaginal knowledge about objects that are not directly perceived. The physiological condition of the existence of representations is retention of the traces of past influences and their actualization at the given moment. This function, which ensures the continuity and succession in cognitive activity, is termed memory; without it, recognition would be impossible. Representation is a generalizing synthesis of many sensuous perceptions.

Images with which man's consciousness operates are not restricted to the reproduction of the perceived. Men creatively combine and relatively freely create new images owing to their creative imagination or fantasy. Representations stand, as it were, between sensuous and rational cognition. On the one hand, it is something concrete and graphic, retaining in it the still vibrant life of the object in its real connections. On the other, it is further removed from reality than the latter's direct reflection in the form of sensations and perceptions. It is also further removed from reality in the sense of incompleteness of its content in comparison with thought.

The cognitive meaning of sense impressions.

The question of the cognitive role of sense impressions has a long history. The question actually is: Can we obtain, relying on our senses, knowledge of things as they are in themselves? What does our knowledge relate to, the things or the sensations themselves? Over the centuries, different answers were given to this question depending on the general worldview orientation of the thinkers. On the whole it remained a matter of speculation up to the

19th century, when it became possible to discuss the issue on a firm basis of the natural sciences.

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Analyzing the data of the sense organs, the German physiologist Johannes Muller came to the conclusion that our sensations are not true replicas of the objects but depend entirely on the subject's physiological organization and on the specific energy of his sense organs. Muller correctly noted the dependence of sensations and perceptions on the historically formed functional specifics of our sense organs. From this, however, he made the entirely erroneous conclusion that what we cognize are not the objective properties of things but the state of our nerves. As a result, the sense organs were actually divorced from the action of the external world, becoming a self-sufficient source of cognition.

But the gulf between the image and that which the image reflects inevitably leads to agnosticism. In actual fact, far from hindering correct cognition of the external world, the specifics of the sense organs ensure the most comprehensive and accurate reflection of the objects' properties. Although the image is a product of the work of man's cognitive mechanisms, it is at the same time a result of the action of the object on the sense organs which evolved for the purpose of man's adaptation to the conditions of the environment.

Can we describe, say, colour only as a product of the organ of vision? If we answered this question in the affirmative, that would mean that there is an impassable gulf between sensation and the stimulus that causes that sensation. It would then be impossible, in principle, to distinguish a hallucination from an adequate perception. Metaphysical speculation of sense impressions leads to deliberate neglect for the fact of interaction between object and subject. And it is this interaction or relation that constitutes the essence of life and, moreover, the essence of all being.

2. Thought: Essence, Levels and Forms

Transition from sensation to thought.

Only a small part of what man cognizes can be covered by sensuous contemplation. Mostly, cognition is realized in thought in terms of concepts,

judgements, etc. Man cannot live without thinking. So how is the transition from the sensuous to the conceptual level of cognition to be explained? How is a sensuous image of an object transformed into an act of thought? Thought cannot receive the data of the senses without processing them—any more than an organism can receive food without digesting and assimilating it.

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Cognition is realized by man as an integral being in which only the researcher's analytical scalpel can separate sensuous contemplation from intellectual activity. Living contemplation is not passive thoughtless gaping but conscious perception, even categorial perception. In actual fact the two cognitive levels are inseparable, and an entirely independent sensuous cognition does not therefore exist. Man looks at the world with understanding eyes. When we speak of the acuteness of perception, we have in mind the clarity of the object's conscious perception. Man's cognitive activity is made possible precisely by this unity, by the admixture, so to speak, of thought in sensuous contemplation.

Thought orders the data of sense perception but is by no means reducible to this process; it gives rise to something new—to that which is not given in the senses. This transition is a leap, a gap in continuity. It has an objective foundation in the splitting of the object into the internal and the external, into essence and its manifestation, into the separate and the general. The external aspects of things and phenomena are reflected above all in terms of living contemplation, while their essence and the common in them is perceived in terms of thought. This process of transition realizes what is called understanding. To understand means to bring out the essential in the object. We can understand what we cannot perceive. The structure of our sense organs and their small number do not set an absolute boundary to our cognition precisely because the activity of thought is added to them. "The eye sees far, but thought reaches even farther," says folk wisdom. Our thought transcends the boundaries of the visible world. Thought correlates the evidence of the sense organs with the individual's available knowledge and, moreover, with mankind's entire total experience and knowledge to the extent that these are possessed by the given subject. The transition from the sensuous to the rational does not mean, however, the movement from reality to the empty darkness of the supersensuous. Thought relies on the sensuous material of speech, in the first place of inner speech, and on the symbolized visual images.

The specifics of thought.

Thought is the highest form of rational cognitive activity. *Thought is goal-directed, mediated, abstracted and generalized reflection of the essential properties and relations of things and phenomena realized in terms of concepts, judgements, and theories, and also it is a process of creative production of new ideas.* The goal-directedness of thought is manifested in its orientation towards cognition of truth through the formulation and solution of some practical or theoretical task. It assumes a wide-ranging intellectual activity oriented towards understanding the essence of a problem, i.e. towards constructing a concept of an object. It is a logically organized search process requiring concentration on a single object, on the problem in hand. Such a logically directed process of thought essentially differs from a chaotic play of associations (whether they are images or concepts) releasing a flood of thoughts which immediately become scattered. Thus a tired person will sometimes let his thoughts wander and dissolve in daydreaming. A distinguishing feature of thinking is that its course is not directed by external or accidental connections but by the logic of the objective connections of things as well as the logic of its own content.

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Thought moves towards essence through the latter's manifestations, towards content through its form, towards the general through the individual, and so on. This movement reveals the mediated character of thought, which may be extremely complex, consisting of many stages. The objective basis of the mediated process of thought is the existence of mediated connections in the world. For instance, cause-and-effect relations make it possible to identify a cause from the perception of a consequence, and to foresee a consequence from the knowledge of a cause. The objective basis of the mediated character of thought also rests in man's practical activity in which it is formed and realized. This process is unfolded in the dialectics of objectification (implementation of an idea in an objective result) and de-objectification (correspondingly, a reverse process of extracting an idea or principle of action from an object). This process of mediation assumes the existence not only of personal experience but also of experience accumulated by the entire mankind.

Various acts of these complex mediations serve as the basis for our everyday practical thinking and still more so, of course, for scientific,

theoretical and artistic thinking. Practical thinking is concerned with the solution of particular tasks, whereas theoretical thinking is linked with searching for general laws. The former is directly included in practice and is constantly subject to its control, while the latter is subject to practical verification only in its final results, not at every stage. Practical and theoretical thinking is a unified process.

Besides, thought is mediated by qualitatively diverse forms of man's cognitive activity: sense impressions, symbolic content of images, and language. Language and other systems of signs (artificial languages)—abstract signs, like those of mathematics, and concrete-imaginal ones, like the "language of art"—function as instruments of thought. The elements of these systems ensure such fundamental operations of thought as abstraction and generalization.

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There can be no thought or cognition in general without generalization. It is a necessary condition of both everyday and scientific or artistic cognition, for cognition as such always goes beyond the boundaries of the separate or the individual given at the level of sensuous perception. Only on the basis of generalization is the formation of general concepts, judgements, and inferences, and the construction of theories possible.

The generalizing activity of thought assumes as its premiss abstracting activity—the identification of certain properties and features of objects and abstraction from others. On the basis of the properties thus abstracted, the objects are grouped into classes and sets—which is the gist of the operation of generalization. *Generalization* is mental separation of certain properties belonging to a given class of objects accompanied by the transition, in this process of separation, from the individual to the general, from the less general to the more general.

A distinctive feature of thought is that, on the basis of goal-directed operations of generalization and mediation, thought may not only reproduce essential links and relations of the present and the past but also help to construct the required future. This process of construction manifests the *creative activity* of thought, which is another inalienable trait and an essential feature of cognitive activity. The concept of creative thought stresses the element of its productiveness, its ability for raising new problems and searching for their solution.

To sum up: human thought relies on sense perceptions and represents the highest form of the active reflection and mental transformation of

objective reality; this form consists in the goal-directed, mediated, abstracted and generalized cognition by the subject of essential, law-governed connections and relations between objects, in the prediction of events, and creative production of new ideas. It is implemented in various forms—concepts, categories, judgements, inferences, hypotheses, and theories which record and generalize mankind's socio-historical experience.

The unity of the sensuous and the rational.

Starting with sensations and perceptions, proceeding to representations, and rising to the higher levels of theoretical thinking, cognition emerges as a unified process closely connected with will and emotions. Scientific research demands an acute, clear and deep mind, flights of the imagination, and great fervour: thoughts live in close union with emotions. Sometimes the emotions make man see some desired results in something fervently wished for but very far from reality. At the same time thoughts inspired by feeling may go deeper into the essence of an object than an indifferent thought.

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The dialectics of the sensuous and the rational in cognition overcomes the metaphysical limitations of sensualism and empiricism which exaggerate the role of the sensuous form of cognition and belittle the significance of logical thinking, on the one hand, and of rationalism, which belittles the role of sensations and perceptions and regards thought as the only source of cognition, on the other. The adherents of sensualism believe that only sensual experience is truly reliable, while abstract thinking, being divorced from experience, leads to a long sequence of errors. Adherents of rationalism, on the contrary, distrust the data of the sense organs, believing reason to be the decisive and even the only reliable instrument of comprehending truth. They usually cite errors due to the functioning of the sense organs. For instance, we perceive the moon as a disc of about 30 cm across at a distance of about a mile. Thought has proved, though, that perception is about a million times wrong. Thought has discovered whole worlds of invisible phenomena beyond the visible confines. Rationalism, which strongly exaggerates the rational element to the detriment of the real significance of the sensuous, may lead to idealism—which actually happened in the history of philosophy (recall objective idealism). But Kant expressed a fundamentally different view of this question, stressing that not one of these abilities can be favoured at the expense of the other: without the senses, not

a single object would be given us, and without intellect, not one object could be conceived; thoughts without contemplation are empty, contemplations without concepts are blind.

Logical thinking is impossible if divorced from the sensuous; the former proceeds from the latter, comprizing, at any level of abstraction, elements of the sensuous in the form of visual schemata, symbols, and models. At the same time the sensuous form of cognition absorbs the experience of mental activity. The unity of the sensuous and the rational emerges as an endless spiral in the process of cognition: every movement of abstract thought away from the starting point (from sensations and perceptions) is followed again and again by a return to them and by their enrichment. Every concept is connected, potentially if not actually, with visual representations which appear not only as starting points of abstract thinking but also as the terminal points at which abstract thinking is embodied in practice.

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Stressing the unity of the sensuous and the rational stages of cognition, we must bear in mind that they have a relative independence: thought is a qualitatively independent whole with its specific structure different from the structure of sensuous cognition.

The principal forms of thought.

A form of thought is a definite type of its organization, a type of connection between the elements of its content. The principal forms in which thought emerged, developed, and is now implemented, are *the concept*, *the judgement* and *the inference*. These forms of thought evolved as a result of thousand-year-long human practice of transformation of reality, as the quintessence of this practice, a quintessence that embodies the forms of men's activity in the intellectual sphere. The reason why we can fairly easily realize acts of thinking is that its structure and devices have been worked on by previous generations, which passed on to us this priceless gift through the social mechanisms of heredity.

The concept is a form of thought which reflects the essential properties, connections and relations between objects and phenomena in their contradictions and development; a thought-concept generalizes and singles out the objects of a certain class in terms of definite generic and specific features inherent in them. Concepts are objective in their content and universal in logical form, as they pertain to the general rather than the

individual: of this type are, e.g., the concepts of man, value, or crystal. At the same time concepts not only reflect the general but also analyze things, properties and relations, grouping them in accordance with their real differences. For example, the concept of man reflects both the essentially general (what is inherent in all people) and the difference between man and everything else.

Concepts may be scientific and everyday ones. The latter identify similar properties of objects and phenomena, often on the basis of external traits, regardless of the laws controlling them, and fix these properties by naming them. The former reveal the profound properties, or the general as the essential and the law-governed. Just as the whole is not a mere sum of parts, so neither is a concept the result of a mere combination of some common features: it is rather a stage of penetration into the world's qualitative specificity through abstraction from the inessential to the synthesis of the essential (from the individual to the general). The next cognitive step is the formation on this basis of categories that are nodal points embodying not just qualitative specificity of phenomena but this specificity in relation to the basic forms of being, to the levels of the universal connectedness of all phenomena. Concepts are both the result and the means of cognitive activity. It is due to concepts that thinking can be theoretical as well as practical, since only in concepts is the essence of things reflected. Abstract thinking itself is regarded as a process of operating with concepts.

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But thinking means making judgements on something, bringing out certain connections and relations between the various aspects of an object or between objects. Concepts acquire logical meaning only in judgements. *The judgement is a form of thought in which something is asserted or refuted through establishing links between concepts.* Judgements are verbally expressed in sentences or utterances of the form *S is P*. For example, the utterance "the maple-tree is a plant" is a judgement expressing the thought about the maple-tree that it is a plant. As the solution of a definite cognitive task, a judgement is a cognitive act, and as a mode of solving this task it is a logical operation. Logical operations are ways of establishing necessary connections and relations between thoughts which ensure the cognitive movement of thought from ignorance to knowledge. Thought is impossible without judgements, and judgements are impossible without concepts.

Man can arrive at a given judgement through direct observation of some fact or in a mediated way—with the aid of inference. An inference is a

process of reasoning in the course of which one or several judgements called premisses yield a new judgement (conclusion or consequence) which follows logically from the premisses. For example, “If a body is subjected to rubbing, it will warm; the body has been rubbed, consequently it is warm”. If a person thinks logically, consequences do not follow from premisses arbitrarily but in accordance with the essence of the matter. Judgements are linked in inferences because in objective reality there exist links between objects and phenomena reflected in the judgements. Inferences are also a mental image of the actual connections between things.

Judgements and inferences are operations of thought which man performs all the time: they permeate the entire fabric of mental activity. Let us consider two principal forms of syllogistic activity—induction and deduction, the two most important devices or methods of cognitive activity. As an operation of thought, *induction is a process of derivation of a general proposition from a number of particular (less general) statements or individual facts, while deduction is on the contrary a process of reasoning proceeding from the general to the particular or less general*. Two principal types of induction are distinguished—complete induction and incomplete induction.

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Complete induction is a general proposition concerning all the objects of a certain set or class on the basis of considering each element of this set. The sphere of application of such induction is clearly restricted to the objects whose number is limited and practically accessible to direct observation.

In practice, forms of *incomplete* induction are mostly used, which assume a conclusion about a certain class of objects on the basis of cognition of only a part of the objects of the given class. Incomplete induction, based on experimental research and comprizing theoretical thinking (including deduction) can yield reliable conclusions (or conclusions approximating to reliable ones). Such incomplete induction is called scientific induction.

On the logical quality of thought: dialectical and formal logic.

Our consideration of the forms of thought was at the same time a discussion of its logical quality. What is the essence of the logical quality of thought, in its most general form? In brief, it is this: the content of thought must acquire an adequate form, and in unity with this form it must agree with the essence of the domain of the discourse, with the character of things

and their connections. In the unfolding of thought—and that is a process in time—the results of the mental act modify one another all the time; the act itself retains both its final point as its goal and its starting point which makes this reciprocal modification possible. In the normal case, thought is characterized by semantic integrity of the mental operations: all the connections between its separate structural elements are actualized by our self—the domain of self-awareness. To better explain what we have formulated here, some examples from pathologies of thought can be cited. For instance, medicine has established some facts of the disruption of mental activity—the disintegration of semantic structures and connections—e.g., chaotic thoughts in schizophrenics, the so-called "galloping ideas", i.e. the inability to define the necessary, the most important and decisive elements in the content of thought, which leads to distraction of attention. In all cases of mental disorders the mental act is no longer integral, there is no consistency in its unfolding, no semantic focus or goal towards which thought is directed and which conditions its proper organization.

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Thus we call logical those thoughts which are marked by strict organization of their semantic structure. This, however, is not enough. There are the so-called cases of alogism which are not pathologies of thought. They are often formally correct utterances which, however, do not agree with reality. This is expressed, for instance, in tautologies, in violation of the rules of concept definition, in ambiguous employment of terms, in unconscious contradictions in the subject's own statements, in a lack of substantiation for conclusions, incoherence and semantic inarticulateness of reasoning. The only means of discovering alogisms in thought is concrete dialectical analysis of reality reflected in the utterance. Logical thought grasps the necessary, essential links between objects and phenomena, which makes it possible to deduce the principle of their organization and functioning.

Since antiquity, the logical quality of thought attracted the attention of philosophers, who saw it as a powerful instrument of cognition. Hence their desire to study this instrument closely and, if possible, to improve it; this marked the beginning of the formation of logic as an independent science. Logic as a science studies the structure of thought with the aim of achieving true knowledge. That is the principal requirement imposed on *formal logic*, which deals with structures of thought in terms of their form and in

abstraction from the concrete content of thought. Formal logic studies those structures of thought in which concrete content assumes form and which determine the correctness and coherence of concepts and inferences. It therefore studies the general in thought, that which is constant in it, that which is stable, relatively immutable and generally valid. As it developed, formal logic considerably enlarged the sphere of its problems and research methods. Nowadays it has such subdivisions as modal, intuitionist, mathematical, symbolic logic, and some others.

Despite the rich arsenal of theoretical tools, formal logic does not cover the entire process of the movement of thought in its dialectical opposites and contradictions. This is the subject matter of *dialectical logic*, which studies the principles and laws of the formation, modification and development of knowledge. The subject matter of dialectical logic is creatively cognizing thought, its questing activity, its development through overcoming constantly emerging contradictions, its logical structure, and correlation of elements— concepts, judgements and theories—determined by their concrete content. The subject matter of dialectical logic also includes the predictive function of thought. It studies the entire system of categories and their epistemological and logical functions, as well as the specifically epistemological principles and methods, such as analysis and synthesis, generalization and abstraction, ascendance from the sensuous-concrete to the abstract and transition from the abstract to the conceptual-concrete, the relationship between the empirical and the theoretical, etc. Dialectical logic thus coincides in part with epistemology. That is why the question arises of the coincidence and unity of logic, epistemology and dialectics.

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In the philosophy of Marxism-Leninism, dialectics is regarded both as epistemology and as logic. This follows from the fact that human thought and the objective world are subordinated to identical laws, and their results cannot therefore contradict each other. But the unity of being and thinking, their subordination to identical laws does not mean that this unity is identity. If universal interconnectedness and development of reality exist outside and independently of human consciousness, semantic connections and the development of cognizing thought, reflecting reality, are subject to epistemological and logical principles. Marxist philosophy regards being (natural and social) in its relation to man, to his consciousness and cognition. In analyzing thought, it assumes therefore that it is reality, in

unity with thought as the reflection of the world, that is fully taken into account—reality which constitutes in its reflected form the content of thought—as well as the entire practical activity of man and mankind through which thought draws its content from reality and exerts a reverse impact on the objective world. As Engels writes, it is from “the history of nature and human society that the laws of dialectics are abstracted. For they are nothing but the most general laws of these two stages of historical development, as well as thought itself.”² It is here that the objective basis is to be found for the coincidence of dialectics, logic and epistemology.

Assimilating the results of history and epistemology, and relying on a wealth of concrete connections of the world and on mankind’s socio-historical practice, dialectical logic represents the highest stage in the development of thought. As such, it posits a series of demands, discussed by Lenin: “Firstly, if we are to have a true knowledge of an object we must look at and examine all its facets, its connections and ‘mediacies’. That is something we cannot ever hope to achieve completely, but the rule of comprehensiveness is a safeguard against mistakes and rigidity. Secondly, dialectical logic requires that an object should be taken in development, in change, in ‘self-movement’ (as Hegel sometimes puts it)... Thirdly, a full ‘definition’ of an object must include the whole of human experience, both as a criterion of truth and a practical indicator of its connection with human wants. Fourthly, dialectical logic holds that ‘truth is always concrete, never abstract’...”³ This description does not of course cover all the content of dialectical logic, yet it stresses its fundamental principles.

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3. The Creative Power of Human Reason

What is creativity?

In its highest expression, cognition is a creative process. It may be said, in a sense, that no creativity is possible without cognition and, contrariwise, creativity is always cognition, too. There are constructive elements in any

² F. Engels, “Dialectics of Nature”, in: K. Marx, F. Engels, *Collected Works*, Vol. 25, p. 356.

³ V.I. Lenin, “Once Again on the Trade Unions, the Current Situation and the Mistakes of Trotsky and Bukharin”, *Collected Works*, Vol. 32, Progress Publishers, Moscow, 1977, p. 94.

cognitive act, ranging from everyday moments at the individual level to socially significant ones on a historical scale. The truly creative power of reason is man's privilege, it is the necessity for his existence, an essence-related characteristic.

By its very nature thought is a creative process. Indeed, if thought followed only well-trodden paths, no progress would be possible in any spheres of human endeavour. Creative thinking assumes the ability to formulate and solve problems on one's own, discovering non-trivial methods for the purpose. A sort of division of labour often occurs in this creative act, especially in modern science: a problem is raised by one person and solved by others. It so happens that a scientist's plans and ideas are far ahead of his times, and there are neither the conditions nor the means for their realization. If the means and conditions are adequate to the intention, they mostly also prove to be the results of creative activity. Historically, the process of creation is uninterrupted, being passed on from one generation to the next and involving more people: as society develops, the number of problems and the needs of their solution increases.

Creativity is a practical activity of the mind whose result is the creation of original and unique cultural and socially significant values, the establishment of new facts, the discovery of new properties and laws, as well as of methods for the study and transformation of the world. Creative activity takes various forms in different spheres of material and non-material culture—in science, technology, production, art, and politics.

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Essential for the stimulation of creative thought is the existence of contradictions either in the content of some quest or task or between the task and the existing methods of its solution, between theory and the empirical facts, etc. Contradictions taken to the point of antinomies mostly mark the points, so to speak, at which creative thinking breaks through into the previously unknown. Creation of the new is inevitably connected with refutation of the old: that is the gist of the dialectics of the development of thought. The history of science and technology shows that most discoveries and inventions result precisely from the overcoming of contradictions. Discoveries are sometimes generated in situations in which paradoxes advance science faster than consistent reasoning. So the purifying thunderstorm of refutation appears to be a necessary element of creativity. Conflict is a stimulus to thought leading to discovery.

The productive power of imagination.

The process of cognition and creativity, which demands the mobilization of all of man's intellectual and spiritual strength, is impossible without imagination—an ability to transform the immediately given in concrete-imaginal forms, creating unusual combinations out of ordinary impressions. *Imagination* is a specific form of the subject's activity in cognition and creativity which is connected with reproduction of past experiences (*reproductive imagination*) and constructive creative shaping of a new visual-conceptual image of the desired future (*productive imagination*). Imagination depends to a considerable extent on impressions which may be either linked with the present moment or come from memory, or both. By its very nature it is closely connected with thought, often being woven, as it were, in the very fabric of thought and dominated by its logic. In other cases imagination may assume relative independence, going beyond the limits of ordinary norms of thought. Characteristic of truly creative imagination is "flight" from reality, transcendence of the limits of the immediately given. Of considerable interest in this respect are psychological studies that have shown that any deep penetration into reality demands a freer attitude of consciousness to the elements of this reality, a departure from its visual external side, and greater freedom in operating with its component parts. It is in this state that "concatenations" of images sometimes occur that yield original ideas and results instantly appreciated and taken up by reason. Imagination and thought may be said to develop in unity: independent development of the one is impossible without independent development of the other. Moreover, those forms of imagination which are connected with the mind's creative activity are an absolutely necessary and inalienable element of thought: here the boundary between thought and imagination is almost entirely obliterated.

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The power of productive imagination, its level and effectiveness are determined above all by the degree in which imagination takes into account the measure beyond which it may lose its meaning and the objective significance of its productiveness, and also by the degree of novelty and true originality of the results of this productiveness. If imagination does not satisfy these conditions, it turns into a creatively barren fantasy.

The essence of creative imagination is generalization, but it is not abstracting generalization: the type of generalization we refer to here is close

to the concrete which it transforms and continues to live in. We know that living contemplation and visually graphic thinking form a stage that leads to conceptual thinking. There exists, however, a type of visual thinking which is already mediated by generalizations of high levels of abstraction and symbolization embodied in concrete images. The highest forms of imagination are visual-imaginal thinking filled with profound conceptual and ideological content. For example, the highest product of creative artistic imagination is the image transformed from within by the artist's idea in such a way that, remaining faithfully realistic, it becomes a vehicle of definite ideological content.

The most general role imagination plays in science is in the transformation of a paradigm entrenched in scientific tradition which conditions people to see things in a definite light, and in teaching them to see things in a new light. Here, imagination reveals itself just as strikingly as in art. In designing an experiment, the researcher has to imagine, starting from his hypothesis and the laws established in the given field, a specific situation which will satisfy all these conditions and permit the verification of the formulated hypothesis. This mental construction of a specific experimental situation is an act of creative imagination in scientific research.

Imagination is thus closely connected with thought, amplifying its productive power and permitting it to push apart the limits of being, freely soaring in the space of quest which it creates by itself.

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Intuition.

The process of thought is not always realized in an unfolded and logically demonstrable form. There are cases in which an individual assesses a very complex situation very quickly, almost instantaneously, and finds a correct solution. At times, images striking in their power of insight flood the intimate recesses of the soul, far outstripping systematized thought. The capacity for grasping the truth through direct apprehension of it without any grounds in reasoning is called *intuition*. Intuition is divided into two varieties, sensuous and intellectual.

The concept of intuition has been variously interpreted in the history of philosophy. It was sometimes understood as a form of direct intellectual knowledge or contemplation (intellectual intuition). For instance, Plato regarded intuition as contemplation of ideas (the prototypes of the things of

the sensuous world) which is a kind of direct knowledge coming as a sudden insight but assuming a long preparation of the mind. “By *intellectual intuition*,” wrote Descartes, “I understand, not the fluctuating assurance of the senses nor the fallacious judgement which expresses an arbitrary composition of the imagination, but the conception which arises in an unclouded and attentive mind so readily and distinctly that there can be no doubt concerning the object of our understanding.”⁴ Intuition was also interpreted as cognition in the form of sensuous contemplation (sensuous intuition). “*The absolutely undoubted, the clear as the sun ... is only in the sensuous*”, and the secret of intuitive cognition therefore “is in sensuality”.⁵ Further, intuition was defined as an instinct which determines the forms of behaviour directly, without previous learning (Henri Bergson), and as a hidden unconscious first principle of creativity (Sigmund Freud). Some trends of Western philosophy (intuitivism, etc.) interpret intuition as divine revelation, as an entirely unconscious phenomenon incompatible with logic or living practice and experience.

These various interpretations of intuition in pre-Marxian or non-Marxist philosophical and psychological theories all stress the element of directness in the process of cognition as opposed to the mediated character of logical thinking.

Scientific analysis of various forms of creativity shows that they are not always realized in an expanded, logically and factually demonstrable form. “All that we call invention or discovery in the higher sense is a significant manifestation or implementation of an extraordinary feeling for what is true, which matures over a long time in the quiet and suddenly leads with lightning speed to fruitful knowledge.”⁶ The process of solution is not consciously realized, only its result surfaces in the mind. Only in hindsight, when the task has already been solved, can the course of its solution be realized and analyzed.

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Scientific creativity is sometimes sharply opposed to logic: it is believed that thought subordinated to the rules of logic automatically guarantees success in the solution of a typical task but not of a creative one. This

⁴ Quoted from L.J. Beck, *The Method of Descartes. A Study of the Regulae*, at the Clarendon Press, Oxford, 1952, p. 52.

⁵ L. Feuerbach, *Sämmtliche Werke*, Vol. II, Otto Wigand, Leipzig, 1846, p. 326.

⁶ Goethe, *Maximen und Reflexionen*, Verlag der Goethe-Gesellschaft, Weimar, 1907, p. 122.

question is more complicated than may seem at first glance. We can only point out here that intellectual originality cannot be learned. Logic will no more help a person without a gift for creative thinking than a knowledge of the rules of grammar can help someone to write really fine verse. And yet intuition is closely linked with logical processes in actual thinking, although there are good grounds to believe that its mechanisms differ significantly from the principles and procedures of logic, being characterized by unusual modes of processing and evaluation of information which have so far been very little studied. Intuition is not an autonomous mode of cognition but only a qualitatively distinct type of it, one in which separate links in the logical chain remain at the subconscious level. It is an involute logic of thought, as it were. Logic and intuition each play their necessary role, and both are inevitable. Logic provides correctness and is a tool of proof, while intuition is a tool of invention.

Whether it is a matter of sensuous intuition (presentiment of danger, divining insincerity or kindly disposition) or intellectual (instantaneous solution of a practical, theoretical, artistic or political task), or intuition as clairvoyance, it is always based on experience settled in the subconscious: the elements of experience are often not realized, but they actively function in the system of relationships between subject and objective reality. In this process, there are elements of subconscious perception and memorizing: a person may not even remember where and when he gathered, bit by bit, the experiences which became the starting point of his intuition or creative insight. An important feature of intuition is precisely the ability for noting regularities, something significant, while observing insignificant forms of their manifestation. Thousands of people saw the swinging of the chandelier in the Pisa cathedral, but only Galileo deduced the law of the pendulum from this observation.

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Wherein lies the heuristic force of the unconscious? Above all in the fact that it is free from stereotypes: there is a greater freedom of the formation of associative bonds here, while logical thinking is subordinated to historically established stable norms, to well-trodden paths of thought, although, of course, logical thinking, too, has a definite measure of freedom in its search for the truth.

Creative inspiration is a particular psychological state against the background of which intuition is manifested. Inspiration is a state, very difficult to grasp intellectually, of "conscious immediacy", a kind of being

possessed, an intense flow of emotions, excitement, intellectual enthusiasm capable of anticipating the results of mental work by instantaneously going through and skimming, as it were, some of its links.

It should, however, be stressed that however great the strength of imagination and intuitive insight might be, they in no way confront conscious and rational acts in cognition and creativity. All these essential spiritual and intellectual forces of man work in their unity, and only in individual acts of creativity does now one, now the other prevail.

An understanding of the creative activity of the human mind would be incomplete if it did not cover the problems of creativity and personality.

Creativity and personality.

The first questions which arise in this domain are, Does man create of his own free will or out of necessity? And what is personality considered in terms of creativity? These two questions inevitably give rise to a third: Is man free in his creativity?

Being included in the process of cultural-historical development in various fields of activity, man is subject to the logic of this development, and he is therefore conditioned, in one way or another, by necessity. The historical necessity (interpreted in the narrow sense for the time being) of creative activity is at work here, if one may put it that way. In the broader sense, necessity consists, as it follows from the general conception of creativity, in the need for the realization of the inner potential of man as a social being that inherits the cultural-historical experiences of the previous generations: it is only possible to consolidate that which was achieved by previous generations by advancing it further. But man realizes this necessity freely, having the freedom of choice out of a number of possibilities for its realization. It is only in this freedom that the individual's creative potential can be realized.

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Freedom in creativity is realized as the capacity for raising one's interest to the level of a socially significant interest. This capacity is the first necessary feature of a truly creative personality. Of course, it is no longer appropriate to speak here of the purely internal qualities of a person as a creative being. Essential for the realization of creative potential is a number of characterological and intellectual assets which, combined and mutually mediated, form a definite type of scientist, artist, etc. One of the essential

qualities in this set is critical thinking (which is yet another manifestation of the freedom of creativity). However, there is criticism and criticism: it may be destructive and it may be constructive. Of particular value in creative activity is constructive criticism, for it is closely bound up with self-criticism—an inalienable feature of any creative personality. Critical thought is nothing but independent thought. As an independent creative process, thinking begins precisely with criticism. Where everything is accepted in ready-made form, there is no spark of independence even; here, everything is dominated by an epigonic spirit entirely alien to innovation. Creativity is only fruitful under conditions of free rivalry of ideas, which whips up, as it were, the opposite side, thus increasing the intensity of questing thought and mobilizing the emotional and motivational sphere of consciousness. Creative activity does not assume a ready-made, well-formed personality: on the contrary, the personality evolves and finally takes shape only in creative activity. The one is impossible without the other. Creativity and personality form an integral and indivisible whole.

4. The Operations and Modes of Thought

The norms of a historically shaped culture are reflected in the operations and modes of thought forged by the many ages of the work of reason. At present they have become universal tools of theoretical cognition, taking shape as clear-cut rational devices, a system of principles and methods which, in their ensemble, can give an idea of the content wealth of the structure and modes of human thought today.

Analysis and synthesis.

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The movement from the sensuous-concrete to the abstract and then to the concrete-in-thought includes above all such devices as analysis and synthesis. *Analysis is the division of objects into their constituent parts or aspects in practical or theoretical activity aimed at grasping some complex whole.* However, analysis must not be a goal in itself, since it is impossible to know the essence of an object only by dividing it into constituent elements and considering the parts as such. Thus a chemist may perform

various operations on a chunk of meat and say: "I have found that it consists of oxygen, carbon, hydrogen, etc." But the whole point is that these substances are no longer meat. In every field of knowledge there is, as it were, a limit to the division of an object beyond which we pass into a world of different properties and laws. When the particulars have been studied sufficiently well through analysis, the next stage in cognition comes, which is *synthesis*, that is, *practical or mental combination of the elements, divided and studied analytically, into a single whole*. Analysis identifies primarily the specifics which distinguish the parts from one another, while synthesis reveals the essentially general which binds the parts into a single whole. Analysis which presupposes synthesis has as its central nucleus the identification of the essential. When that is done, the whole does not appear in the same light, either, as when reason first knows it—it now has much deeper content.

Abstraction and idealization.

It is impossible to grasp an object in the entire fullness of its properties. Like a spotlight, human thought throws light at each given moment at a fragment of reality, while the rest sinks in gloom, as it were. At each of these moments we are aware of some one thing only—but this one thing has a great many properties and relations. We can cognize it only in the order of continuity, by concentrating attention on some qualities and connections and ignoring others.

Abstraction is a mental singling out of some object in isolation from its connections with other objects, of some property of an object in isolation from its other properties, of some relation of an object in isolation from the object itself. Abstraction is a method of mental simplification in which only one aspect of a given process is considered. The scientist looks at the variegated colours of the object of cognition through a monochrome glass in order to see it in one aspect which is important in some relation or other. On this approach, the observed picture loses its wealth of nuances but gains in clarity, and the aspect under consideration stands out in relief. But abstraction has its limits: abstraction from content can never be absolute. The question of which aspects of objective reality are isolated by the abstracting work of thought and which are ignored by it, is decided in each

particular case depending on the nature of the object under study and on the tasks set before the researcher.

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The result of the process of abstraction are various concepts of objects (plant, animal, man), ideas on the separate properties of objects and relations between them considered as particular "abstract objects" (whiteness, volume, length, heat capacity).

Idealization as a specific form of abstraction is an important device of scientific cognition. Abstract objects do not exist, and neither are they realizable, in reality, but they have their prototypes in the real world. Pure mathematics operates with numbers, vectors and other mathematical objects that are the result of abstraction and idealization. Geometry, for instance, deals with perfect circles—but no sensuous object is perfectly round. That is an abstraction not to be found in nature. But abstractions are also images of the real: they are born of the generalization from experience. *Idealization is a process of forming concepts whose real prototypes may be pointed out only with a certain degree of approximation.* The results of idealization are theoretical models in which the characteristics and aspects of the cognized object are not only abstracted from the actual empirical diversity but also appear as products of mental construction that are more clear-cut and fully pronounced than in reality. Examples of concepts resulting from idealization are the "point" (an object that has neither length nor height nor width), the "straight line", or the "circle". The introduction of idealized objects into the process of research permits the construction of abstract schemata of real processes, which are necessary for a deeper understanding of the laws of their development.

Generalization and limitation.

It would be impossible to cope with the hosts of impressions swamping us every hour, every minute and every second, if these impressions were not combined, generalized and recorded by means of language. In order to identify the general, abstraction is necessary from what screens it, what veils and sometimes distorts it. *Scientific generalization* is not mere isolation and synthesis of similar features—it is penetration into the essence of a thing: the discovery of the identical in the diverse, of the general in the individual, of the law-governed in the accidental. Illustrations of generalization are, e.g., the mental transition from the concept of spruce to that of conifer, or from

the statement "mechanical energy is transformed into heat energy" to the statement "any form of energy is transformable into some other form of energy".

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The mental transition from the more general to the less general is called limitation. There is no theory without generalization. And theories are constructed to be applied to concrete practical tasks. For example, the measuring of objects and construction of engineering facilities always requires transition from the more general to the less general and the individual, that is to say, a process of limitation.

The abstract and the concrete.

The concept of the concrete is used in two senses. First, it denotes a directly given, sensuously perceived and represented whole. Second, it denotes a system of scientific definitions identifying the essential connections and relations between things and events, identifying unity in diversity. If the concrete is initially given to the subject in the form of a sensuous graphic image of a whole object floating in his imagination and as yet mentally unanalyzed and incomprehensible in its law-governed connections and mediations, at the level of theoretical thinking the concrete appears as an internally differentiated whole with clearly perceived contradictions. The sensuous-concrete is a pale reflection of phenomena, the concrete-in-thought is a much richer knowledge of the essence. The concrete is opposed to the abstract as one of the elements of cognition and is interpreted in correlation with the abstract. Abstraction usually suggests to us something conceptual, in contrast to the sensuously observable. The abstract is also thought of as something one-sided, pale, incomplete, and divorced from the connections of the whole—a property, a relation, a form, etc. Not only a concept but even the most graphic image such as a diagram, drawing, or symbol may be abstract. Knowledge is abstract in the sense that it reflects a purified, refined and thus a paler fragment of reality. The phenomenon of abstraction is contradictory: it is onesided and divorced from the vitally vibrant phenomenon, but it is a necessary step towards the cognition of a concrete fact full of life.

Abstractions are a kind of replicas of integral objects. Human thought works with these replicas. Thought continually returns from separate abstractions to a restoration of concreteness on a new and higher basis. That

is the concreteness of concepts, categories, and theories reflecting unity in diversity.

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Herein lies the essence of the *method of ascending from the abstract to the concrete*. Abstraction realizes the principle of moving back to hit with greater certainty. That is the dialectics of cognition: "flying away" from the sensuously given reality on the "wings" of abstraction, the mind observes the essence of a given object better from the heights of concrete theoretical thinking. Such is the history and logic of scientific cognition. By this method, the mind assimilates the concrete and constructs out of it, through linking up concepts, an integral scientific theory reproducing the objective heterogeneity of the object and the unity of its essential properties and relations. It was this method that Marx made such a brilliant use of in *Capital*. Starting with an analysis of a simple economic phenomenon reflected in the concept of commodity, he then proceeded step by step to analysis of increasingly more complex and meaningful phenomena—money, capital, surplus value, wages, etc., rising as it were to the height of an integral picture of contemporary capitalist society, expressing it in a coherent system of concepts and freeing logic from the countless empirical intricacies of reality. That concrete was already the concrete at a new level enriched by the power of abstracting thought. The principle of concreteness, considered in its inalienable links with the abstract, demands that the facts of natural and social life be treated not with the aid of general formulas and schemata but with due consideration for all the real conditions under which the object of cognition exists in order to identify the principal and most essential properties, connections, and tendencies that determine its other aspects.

The historical and the logical.

The historical is in the first place the process of the evolution of an object and also a method of its reproduction in knowledge in the form in which it really took shape in time—with all the tribulations and zigzags and reverse movements, in the concrete and accidental forms of its manifestation. In other words, the historical method assumes the outlining of the history of an object as it really was, with due attention to the general and the individual or, at any rate, the typically individual.

The logical method reproduces the historical process only in its general form. It is aimed at the identification of the logic of the object's movement, of its general line of development—straightened out, as it were. The logical is a generalized reflection of the historical, it reproduces reality in its law-governed development and explains the necessity of that development. It is the historical freed from the principles of chronology, from its accidental and unique form. The logical method is grasped in the concept of the law of an object's development; that is to say, in applying it we inevitably ignore the accidental and individual nuances of a given event. For example, generalizing the diversity and multidimensionality of the historical life of peoples at different epochs, Marxism put forward the idea of socio-economic formations—the principal stages in mankind's historical development—expressing the logic of this development, i.e. the idea of law-governed movement of world history. But this is only a general schema; in reality, history has moved along much more intricate paths. The real process of cognition, which endeavours to see laws behind chance, relies on both these methods in their unity.

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Analogy.

Analogy is an objective relationship between objects that makes it possible to transfer the information obtained in the study of a given object onto another object resembling the former in terms of a definite set of features. Analogy, which links the unknown with the known, lies at the very heart of understanding facts. The new is consciously realized only through the images and concepts of the old and familiar. The first planes were constructed on the analogy of the behaviour of other objects in flight, such as birds, kites and gliders.

Analogy is a verisimilar, feasible logical conclusion about the similarity of two objects in terms of some feature. The conclusion is the more verisimilar, heuristic and demonstrative the greater the number of similar features in the objects compared, and the more essential these features are. Reliance on analogy may lead to erroneous conclusions; hence the aphorism that the principle of analogy is a technique of cognition that limps on both legs. For example, comparing several features the earth and the moon have in common, Kant came to the conclusion that the moon is inhabited.

Analogy with relatively simple things helps to understand the more complex ones. For example, Charles Darwin discovered the law of natural selection in biology on the analogy of artificial selection of domestic animals. The analogy of the flow of liquid in a tube played a great role in the emergence of the theory of the electric current. Observation of the workings of the brain was an important heuristic step in the invention of logical machines. As a method, analogy is most often used in the so-called theory of similarity, which is widely employed in modelling.

Modelling.

Modelling is the practical or theoretical operating with an object in which the latter is replaced by some natural or artificial analogue whose studying helps the researcher penetrate into the essence of that object. The objective basis of modelling is the principle of reflection, similarity, analogy, and the relative independence of form.

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The construction of the theory of modelling begins with the specification of the model concept, which is often identified with those of theory, hypothesis, or image. *A model is an objectified or mentally constructed system replacing the object of cognition.* Any object reproducing the required features of the original may be a model. If a model has the same physical nature as the original, the reference is to *physical* modelling. When a phenomenon is described by the same system of equations as the modelling object, the modelling is termed *mathematical*. If certain aspects of the modelled object are presented in the shape of a formalized system of symbols, which is later studied for the purpose of transferring the data obtained onto the object that is modelled, we are dealing with *sign and logic* simulation. *Cybernetic* simulation is functional in character: although the model and the original have different material substrata, energy processes and inner causal mechanisms, they are similar to each other in their function or behaviour.

Of course, modelling is always inevitably connected with a certain simplification of the modelled object. But it plays a great heuristic role, making it possible to study processes characteristic of the original in the absence of the original itself.

Formalization and mathematicization.

Formalization is generalization of the forms of processes differing in content, abstraction of these forms from their content. Here form is regarded as a relatively independent object of study. It is often believed that formalization is connected with mathematics, mathematical logic, and cybernetics. That is not correct. It permeates all types of man's practical and theoretical activity. Historically, it emerged together with the appearance of language. Certain techniques of labour activity, skills, and modes of realization of labour operations were identified, generalized, recorded and transmitted from the older generation to the younger in abstraction from the concrete actions, objects and means of labour. Our ordinary language expresses the weakest level of formalization. Formalization is at its extreme in mathematics and mathematical logic, which study the forms of reasoning in abstraction from their content, maximally "denuding" thought, leaving only the framework of its structure intact. A non-specialist is often dumbfounded by the abundance of mathematical and other symbols and formulas in a book or article on physics, chemistry, or astronomy. The employment of special symbols eliminates the polysemy of the words of ordinary language. In formalized discourse, each symbol is strictly unambiguous. The word "water" has several meanings, and the formula H_2O only one. Symbols allow brief notation of expressions that are otherwise cumbersome, and therefore incomprehensible, in ordinary languages. The use of symbols makes it easier to deduce logical conclusions from given premisses, to verify the truth of hypotheses, and to substantiate the scientific statements.

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But there are inner limitations on the possibilities of formalization. It has been proved that there is no universal method that would permit the replacement of any chain of reasoning by computation. Only relatively meagre content is fully formalized. Formalization offers a one-sided picture of a fragment of being-in-flux. For example, a description of facts is not strictly formalizable, and such descriptions are a necessary stage in scientific research. Experience shows that formalization must not be attempted until the essence of the problem has been fully explored.

Today, the problem of interpretation, i.e. of establishment of the objective content of scientific knowledge, is becoming more and more acute. Abstraction becomes meaningless without concretization, while formalization has no meaning without interpretation. If formalization is the

movement of thought from the content of an object to its abstract form, interpretation moves from the object's abstract form to its content. After it is constructed, a formal system again returns to its meaningful basis. Abstraction from content is temporary only.

What is *mathematicization*? It is *the application of mathematical methods to scientific cognition*. There was a time when these methods were applied first and foremost to mechanics, physics, and astronomy, in short, to the natural sciences. Later they began to penetrate into the social sciences, e.g., into sociological, economic and other studies. This was made possible by the achievements of cybernetics. Computers of ever increasing complexity and power are created all the time for performing calculations, controlling various processes, solving non-mathematical problems, and so on. Mathematical methods are improved and adapted to the more complex social forms of the organization of being: it is impossible to obtain adequate knowledge of the laws of social development without taking into account quantitative relations actually existing in all the social spheres.

The extent of application of mathematics in the study of any given object is determined by the measure of abstraction permitted in isolating quantitative parameters from qualitative ones. Under each set of given conditions, this abstraction has its limits. Application of mathematical methods always assumes deep penetration into the content of the domain under study.

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Mathematics is needed by specialists in all fields not only to carry out calculations but also as a powerful heuristic device; it is also needed to introduce greater rigorousness and discipline into logical thinking. At the same time the limitations of formalization and mathematicization of scientific cognition are becoming increasingly clear. Modern science is developing on the path of a synthesis of formal and meaningful aspects of cognition on the basis of materialism and dialectics.

5. The Empirical and Theoretical Levels of Scientific Cognition

The concepts of the empirical and the theoretical.

There are two levels of research distinguished in science—the empirical and the theoretical. This distinction is founded, first, on the modes of cognitive activity itself, and second, on the character of the scientific results obtained. Empirical cognition means the working out of a research programme, organization of observations and experiments, description of observed and experimental data, their classification and initial generalization. *Characteristic of empirical cognition is the activity of recording facts. Theoretical cognition is cognition of essence at the level of high-order abstractions.* Its tools are concepts, categories, laws and hypotheses. These two levels are interconnected and inseparably linked to each other, although historically, empirical (experimental) cognition preceded theoretical cognition. Experience has its limits beyond which it either loses its way or switches to speculation. Research requires analysis, generalization, explanation of facts, formulation of ideas, principles and laws which throw light on the facts, and finally construction of a theory—the crowning achievement of scientific thought.

Providing ever fresh observation and experimental data, empirical research continually poses new problems before theoretical thought, stimulating its further advance: the principle of feedback is at work here. The point is that as theoretical knowledge is enriched, it sets increasingly more complex tasks before observation and experiment, and in general before empirical cognition.

Scientific research assumes not only the movement upwards, towards the elaboration of theoretical apparatus (towards the construction of a perfect theory), but also the movement downwards involving assimilation of empirical information and discovery and prediction of new facts. Research never begins with observation and gathering of facts—it begins with an attempt at a solution of some task underlying which is always a certain hypothesis or surmise; it begins with the formulation of a problem.

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Problem formulation and research programme.

Men endeavour to learn what they do not yet know. But, to begin with, they must first have a notion, even if a very general one, of what they do not know and what they would like to know. "Not all people know what a lot we must know in order to know how little we know," says Oriental wisdom. A problem is a question with which we turn to nature itself, to life, to practice

and theory. The problems that torment mankind are an indication of the level of its development: the problems with which mankind was concerned in antiquity differ greatly from those of today. The fact is that "mankind ... inevitably sets itself only such tasks as it is able to solve, since closer examination will always show that the problem itself arises only when the material conditions for its solution are already present or at least in the course of formation".⁷

It is sometimes just as difficult to formulate a problem as to solve it: correct formulation of a problem largely directs the questing activity of thought, the orientation of thought. When a scientist raises a problem and tries to solve it, he inevitably works out a *research programme*, drawing up a plan for his quest and devising a system of instruments for the attainment of a cognitive goal. In all this, he has in mind the supposed answer to the question he has raised. This supposed answer figures as a hypothesis. The hypothesis determines the area and the angle of viewing the empirically given, forming the framework of the research programme intended to produce a theoretical interpretation of the object under study.

Observation and experiment.

There are two ways of achieving a solution of a problem: one may look for the necessary information, or one may try to investigate the problem on one's own through observation, experiment and theoretical thinking. Observation and experiment are extremely important methods of research both in natural and in social science. There can be no research at all outside observation. *Observation is an intentional and directed process of perception, carried out in order to identify the essential properties and relations in the object of cognition.*

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Observation may be either direct or mediated by various technical devices (for instance, even molecules are now accessible to visual observation with the aid of electronic microscopes). Observation acquires scientific significance if it permits the reflection, in the framework of a research programme, of objects with the maximum accuracy, and if it can be repeated under varying conditions. The important thing is the selection of the most

⁷ K. Marx, "A Contribution to the Critique of Political Economy. Part One", in: K. Marx, F. Engels, *Collected Works*, Vol. 29, p. 263.

representative group of facts. Of the greatest significance are the researcher's plan, his system of methods, interpretation of results, and their verification. When the capacity for observation becomes an individual's constant feature, it is termed keenness of observation; it is a necessary condition of the effectiveness of both practical and theoretical activity. The ability to see and notice the important and essential aspects of things that appear unworthy of attention to most—that is what constitutes the secret of innovation in science and art, and marks a creative and original mind.

But man cannot restrict himself to the role of observer only: observation, as we know, records only that which life itself provides, while research also requires *experiment* through which *an object is either artificially reproduced or placed under specified conditions in accordance with research goals*. The history of scientific thought, and of natural science in the first place, abounds in examples of remarkable experiments which enabled man to look into the deepest mysteries of nature. Through experiment, Faraday discovered magnetic induction, Lebedev, the pressure of light, and so on. Experiment-oriented scientists assert that a well thought-out and skilfully carried out experiment is higher than theory: a theory may be refuted, but reliable experimental data, never.

The experimenter isolates the object under study from the influence of subsidiary factors that obscure its essence; he therefore deals with the object of research in pure form. In the process of experiment, conditions are not only specified but also controlled, modified, and repeatedly reproduced. Any scientific experiment is usually preceded by some hypothesis, a previously formulated mental schema which predetermines the vision of the object in question. The scientist sees the object in the light of these schemata and hypotheses and analyzes its structure in his experimental activity. Without a proper scientific qualification and a good working hypothesis, an observer will see nothing but blobs of light and colour as he looks through an electronic microscope at some physical or biological object. To make our vision meaningful, professional training in the given field of knowledge and some preliminary ideas are necessary.

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These general notions, suppositions and working hypotheses are borrowed from previous observations and experiments, and from mankind's total experience.

The so-called *mental experiments* are also part of scientific cognition: here, a scientist operates with certain mental images and mentally places the

object of study under various conditions which, according to the experimental design, should facilitate the obtaining of a desired result. As a rule, what we have here is a theoretical chain of reasoning in the form of an experiment.

An experiment is two-sided: on the one hand, it permits a verification and confirmation (or refutation) of a hypothesis, and on the other, it contains the possibility of obtaining heuristically unexpected new data. The answer provided by experiments can sometimes be unpredictable, and experiment then becomes the prime source of a new theory. That was how the theory of radioactivity emerged. By itself, experiment establishes and states facts, while thought penetrates into their essence. What the scientist sees through the microscope, telescope or spectroscope, requires a certain interpretation. Experimental activity possesses a complex structure: it includes the theoretical foundation of the experiment—scientific theories and hypotheses; the material basis of the experiment—various apparatus and measuring devices; direct execution of the experiment; experimental observation of phenomena and processes; quantitative and qualitative analysis of experimental results and their theoretical generalization. Experiment thus comprizes both practical and theoretical activity, with the latter predominating.

The role of apparatus in scientific research.

In observation and experiment, scientists rely on the data of their sense organs, whose resolution is considerable but not unlimited. Already in antiquity, scientists increasingly resorted to apparatus to extend and magnify, as it were, the possibilities of the sense organs. Thus a microphone "hears" better than the human ear; the photoelement "sees" a greater part of the spectrum than the human eye, and does it better. Modern telescopes enable man to peer into distances in the universe from which light travels towards us for 140 million light years. At present, it is impossible to conceive of scientific research without apparatus, particularly in the field of natural science. Apparatus enable the scientist to record the very fact of the being of an object in its given qualitative definiteness; without this, there can be no certainty about the object under study.

Apparatus realize all possible connections necessary for transmitting information: nowadays, ordinary language can no longer cope with

avalanches of information, so scientists have developed a giant network of technological information channels ranging from the telephone and telegraph and ending with radar and other signalling devices. Computer technology, and especially personal computers, have acquired enormous significance, enabling us to carry out calculations and logical operations at incredible speed. Computer technology is not just a continuation and strengthening of the sense organs but a continuation and strengthening of the possibilities of the human intellect itself. This type of devices saves time in the reception, selection, storage and processing of information.

Apparatus are a great help in scientific research, but at the same time they inevitably introduce disturbances in the phenomena under study, changing their states, making them different, especially in the study of microphenomena. The experimenter does not deal in this case with the thing as it is but also with his own disturbing effects, i.e. with a kind of resultant rather than with the object in its pristine form, so to speak. The question arises: What does the experimenter study—the object in itself or the resultant of its interaction with the apparatus? Some scientists, even such an outstanding physicist as Werner Heisenberg, interpreted these facts in the sense that the difference between the knowing subject and the object is obliterated in quantum mechanics: the object is subjectivized and the subject, objectivized. And what we observe is a resultant of the two processes. An abstraction is thus necessary from the factor of apparatus interference in order to establish the properties and laws of the object under study. An unambiguous description of a quantum phenomenon proper must therefore comprize a description of all the existing parts of the experimental apparatus. This difficulty sometimes tempts people to assert that the properties of the object are not manifested in the interaction with the apparatus but are produced by this interaction—and this is already fraught with errors in world outlook.

What is a fact?

A necessary condition of scientific research is establishment of facts. Do facts exist by themselves? What is the manner of their existence outside their relation to the subject of cognition? Of course, facts exist outside the subject. But then they are merely objective reality. The word "fact" comes

from the Latin word *factum* "that which has been done". It means an actual, unimagined event in nature, history, everyday life, in the intellectual sphere.

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An arbitrary invention is also a fact, but it is a fact of consciousness recording the fact of invention. A fact is a fragment of being that has moved into the focus of a subject's thought, into the system of knowledge. *A fact is a phenomenon of the material or spiritual world which has become an authenticated part of our consciousness; it is an object, phenomenon, property or relation as it is recorded in observation or experiment.* The importance of facts in science is exceptional: reliable facts constitute the basis of any scientific research, for any science is concerned with the study, description and explanation of facts and nothing but facts. A careless handling of facts inevitably leads to distortion of reality. Mental activity, and the results of mental activity, have no bearing on science if they arbitrarily operate with facts to suit someone's interest and do not rely on life experiences. What does it mean to state a fact? It means to become convinced of the reliability of an observation, historical document, or experiment. For a fact to appear before thought as a fact, it must be recorded—e.g., in the form of a description of an experiment, measuring device readings, or on film. What is observed must be raised onto the pedestal of a scientific fact, of which the most characteristic feature is certainty. A fact must be interpreted and substantiated. Facts are variously perceived depending on the perceiver's position. We never consider facts in pure form. They are always mediated by the nature of their understanding and interpretation. All facts are given us in a rising series of meaningful views. A solid network of stereotypes and generally accepted views may take shape in consciousness, and these permeate the structure of consciousness, becoming the familiar elements of a worldview. Even as the observer simply gazes at an object, the fact in question inevitably changes its colours, not to mention the nuances; light radiates both from the object and from the subject, from his life experiences and position. There is a modicum of truth in the statement that "facts change depending on what light is thrown on them". Recall the unreliability of eyewitnesses' accounts: how greatly they often vary! Although eyewitnesses speak of the same things, they describe them in entirely different ways. And yet all of them swear that what they saw and heard is nothing but the truth. It so appears that obviousness is not a full guarantee of the certainty of a fact.

By themselves, facts are not yet science, just as building material is not yet a building. Facts are woven into the fabric of science only when they are subjected to selection, classification, generalization and explanation, if only hypothetical. The task of scientific cognition is to identify the cause of the emergence of a given phenomenon, to establish its essential properties and a law-governed connection between them. Of particular significance for the advancement of scientific cognition is the discovery of new facts.

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Facts contain a lot of accident. Science is interested above all in the general and the law-governed. That is why the basis of scientific analysis is not just an individual fact but a great many facts reflecting the principal tendency. That means that a reasonable selection is necessary of only some out of the multitude of facts—those that are necessary for the understanding of the problem in hand.

Only in their mutual connection and integrity can facts serve as a basis for theoretical generalization. Taken in isolation and at random, divorced from life, facts cannot substantiate anything. Any sort of theory can be constructed out of tendentiously selected facts, but it will have no scientific value whatever. “The most widely used,” wrote Lenin, “and most fallacious, method in the realm of social phenomena is to tear out *individual* minor facts and juggle with examples. Selecting chance examples presents no difficulty at all, but is of no value... Facts, if we take them in their *entirety*, in their *interconnection*, are not only stubborn things, but undoubtedly proof-bearing things.”⁸

Facts have scientific value if there is a theory interpreting them. When facts appear which cannot be explained in the framework of an existing theory, a contradiction arises between facts and theoretical principles. Scientific thought has to look for new explanations. In such cases, a shortage is sensed of really large-scale theories. Only in these circumstances can the “black market” of all kinds of surmises, sometimes reaching fantastic proportions, arise. It often so happens that something is hard to confirm yet impossible to refute!

Description and explanation.

⁸ V.I. Lenin, “Statistics and Sociology”, *Collected Works*, Vol. 23, Progress Publishers, Moscow, 1974, p. 272.

The course and results of observation and experiment are invariably recorded and described. The description employs generally accepted terms, visual means (graphs, drawings, photographs, film records), and symbolic means (mathematical, chemical and other formulas). The main scientific requirement imposed on *description is reliability, accurate presentation of the data of observation and experiment*. Description may be complete and incomplete. It always presupposes a certain systematization of the material, i.e. its classification and a certain generalization: pure description is left behind on the threshold of scientific creativity.

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Description and classification are the initial stages in the development of scientific cognition (historically, too, they preceded the theoretical, explanatory level of knowledge); they recede into the background when causal connections and laws are established, and an understanding of the essence of a problem is achieved. In other words, scientific cognition does not merely establish facts—it strives to understanding them, to comprehend the causes why these facts emerged and function in precisely this way and not another.

What is explanation? Explanation is a mental operation aimed at establishing the causal dependences of the object of research, at grasping the laws of its functioning and development and, finally, at the discovery of its essence. Explanation occurs where it is shown according to what laws an object emerged, exists, and is developing. Explanation assumes the existence of certain initial data about the object. To explain means to interpret an object in a system of already existing, historically accumulated knowledge, of definite principles, laws, and categories. It is impossible to explain anything without specifying the object's all-sided links with other objects, without taking into account the principle of historicism, the object's genesis, contradictions, and development.

Explanation as an extremely complex searching activity cannot do without all kinds of guesses and hypothetical judgements, that is, without hypotheses. It should be noted that contradictions sometimes arise at the level of explanation of facts: identical facts can sometimes be explained in different ways and in different theoretical systems.

Hypothesis and its role in the development of scientific knowledge.

Not one scientific theory appeared in ready-made form like Pallas Athena who sprang from the forehead of Zeus: at first, a theory exists as a hypothesis. The hypothesis itself does not spring up at once but goes through definite stages of formation. Initially, it is just a preliminary assumption, a surmise which follows from observation of some new phenomena. It is not yet a hypothesis in the proper sense. The surmise may be very unstable and subject to fluctuations, modifications, and reviews of various versions of assumptions. As a result, the hypothesis proper is formulated as the most probable supposition solidly relying on psychological and logical certainty about its verisimilitude and based on a consideration of the possible system of consequences from this supposition. Then the assumptions made are verified by observation, experiment, or documentation, which either confirms the hypothesis, raising it to the level of a theory, or refutes it—entirely or partly. Apart from being confirmed or refuted, a hypothesis may also be clarified or corrected. *A hypothesis is a supposition starting out from facts, a proposition trying to grasp the essence of an inadequately studied sphere of the world.*

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The need for a hypothesis arises, as a rule, in a situation when facts are revealed which go beyond the boundaries of the explanatory possibilities of an existing theory. Science is the scene of conflict of opinions where different and sometimes contradictory hypotheses clash. For instance, Eugène Dubois' discovery of the remains of a Pithecanthropus on Java started a controversy in which more than fifty hypotheses were expressed. To take another example, it has been estimated that there are at present more than 600 hypotheses concerning ball lightnings. Science is sometimes not unlike a detective story: all the facts seem to confirm a definite hypothesis, but ultimately quite a different one proves to be correct. Having once established themselves, hypotheses do not die soon but actively work in science for a more or less prolonged period. It also sometimes happens that a hypothesis is rejected, but decades later it is revived and even becomes a theory.

Hypotheses have a purely auxiliary but extremely great heuristic significance: they are instrumental in making discoveries. As a rule, the formulation of hypotheses is the most difficult part of the work of theoretical thought. So far, not a single method has been discovered which would make the formulation of hypotheses according to definite rules

possible: they are entirely the product of the scientist's intuition and imagination.

Hypotheses are substantiated and demonstrated through analysis of accumulated knowledge, comparison of it with already known empirical facts, with well-established new facts, and facts that can be established in the future. In other words, the substantiation of a hypothesis presupposes its evaluation in terms of its effectiveness in the explanation of the available facts and in predicting new ones.

Just as theories, hypotheses are generalizations of available knowledge. At the same time knowledge contained in a hypothesis does not necessarily follow from previously available knowledge. A hypothesis is basically probabilistic: its truth is on credit, so to speak. Hypotheses should be clearly distinguished from fantasies. The custom is long established in science of permitting hypotheses that seem entirely unfounded at first sight, even fantastic and experimentally unsupported, yet consistent with logic and following from as yet inexplicable and only theoretically conceivable constructs. But here it is the feeling of verisimilitude that is at work, a sense of the permissibility of precisely the given idea or surmise.

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Hypotheses are respected no less than theories. Although the latter are more reliable and even tinged with a halo of infallibility, the history of science shows that in the course of time they are either thoroughly revised or else destroyed or otherwise collapse, and fresh hypotheses are evolved on their ruins.

Theory as the highest form of integral scientific knowledge.

In the broad sense of the word, theory is a system of reliable representations, ideas, and principles explaining some phenomena. In a narrower sense, *a theory is the highest, well-substantiated, logically consistent system of scientific knowledge formulating an integral view of certain essential properties, laws, cause-and-effect relations, and determinants, all conditioning the character of the functioning and development of a definite sphere of reality.*

A theory is a developing system of objectively true scientific knowledge verified by practice and explaining the laws governing the phenomena in a given field.

An elaborate theory is not just a system of knowledge at rest or in the process of being realized: it contains a definite cognitive mechanism of accumulation and development of knowledge and a definite programme of research; it performs a methodological function. A theory is changed through incorporating in it new facts, ideas and principles. Thus if scientific research establishes facts which go beyond the explanatory possibilities of a given theory, they form the basis for the revision and clarification of its basic principles. Confrontation with facts is an extremely dangerous situation, as far as a theory is concerned: if facts contradict the theory, the latter is mistaken.

The core of a scientific theory is its laws. (The history of human knowledge shows that knowledge that does not contain laws is outlawed, as it were: it is treated as something extrascientific.) The following essential elements are singled out in a theory: the initial empirical basis (facts recorded in this domain of knowledge and experimental data that require theoretical explanation); various assumptions, postulates, and axioms; the logic of the theory, the rules of logical inference and proof admissible in the framework of the theory; the ensemble of conclusions and their proofs, forming the bulk of theoretical knowledge; and finally the laws of the science, and also predictions.

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The diversity of the forms of present-day theoretical knowledge is paralleled by the diversity of the types of theories and of their classifications. These classifications include descriptive theories, whose task is the orderly arrangement of usually extremely extensive and heterogeneous material; mathematicized theories, which use the apparatus and models of mathematics; interpretation theories, connected with the problem of empirical interpretation; deductive theories, which strictly fix both the initial propositions and the logical rules of their construction and unfolding. The latter type of theories, in its turn, falls into several subtypes.

Science develops not only through gradual accumulation and augmenting of new knowledge. The turning points in the history of science were scientific revolutions linked with the names of Copernicus, Newton or Einstein. Thus the revolution in physics at the turn of the century marked a breakdown of the principal worldview postulates of classical science and the birth of new cognitive principles. Revolutions in science are expressed in qualitative changes in its basic principles, concepts, categories, laws, theories, methods and the style of thought itself, in the replacement of one

scientific paradigm by another. What is a scientific paradigm? This concept covers the norms and models of empirical and theoretical thinking accepted in a given scientific community which have become convictions; a mode of choosing the object of research and explaining of a definite system of facts in terms of sufficiently substantiated principles and laws forming a logically consistent theory. Each member of the scientific community is aware of, and accepts, a definite standard of scientific theory which forms the core of the paradigm. Paradigms, or systems of knowledge accepted by given scientific communities, arranged in the order of their appearance in different periods in the development of science, may be compared with each other, and the pivotal principles underlying them may be discovered. A paradigm has a certain stability, but that is a relative stability: it is disrupted as its explanatory possibilities are exhausted in the matter of interpreting new facts, and its power of prediction and correspondence to the level of the development of practice decline. In a word, a paradigm is not something completed once and for all. The scientific picture of the world is continually enriched, which ultimately leads to the replacement of one paradigm by another, more meaningful, profound and complete. The characteristic features of paradigms distinguish the *styles of scientific thought*—mechanistic, probabilistic, or cybernetic.

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On scientific prediction.

We live in a predictable world. Both at the empirical and theoretical levels thought has the power of anticipating events. But it is only possible where there is order and objective logic grasped by the predicting subject.

Prediction has a great many modifications; one is presentiment, inherent in living creatures: without anticipation, it is simply impossible to survive in the flow of events. Prediction also appears in the form of divining the future, a kind of complex anticipation stemming from the action of the intellectual mechanisms of the psyche and based on personal life experiences; it has the form of reflexion on the future.

Scientific prediction is an empirically and theoretically substantiated supposition about the future state of natural phenomena, about social, intellectual and spiritual processes unknown at the moment of making the prediction but amenable to identification. In practical activity, prediction is realized in the forms of prognostication and forecast.

Prognostication is a special scientific study of the prospects for some phenomenon, like the prognostication of the development of a country's economy on the basis of a many-sided and careful study of its present state in the context of the greatest possible number of objective and subjective factors of its development. Such a prediction assumes the identification of the real possibilities of the system, attention for the tendencies and rates of progressive movement, and complex scientific planning and management taking into account all the essential links in society's economic life in their contradictory and harmonious interaction.

Forecast is a concrete prediction localized in time and space—e.g., a forecast of a solar eclipse, of the weather for tomorrow, of enemy behaviour during a military operation, or of a diplomatic action.⁹

Learning the causal law-governed connections between things and grasping their essence, man breaks from time to time through the boundaries of the present and peers into the mysterious future, predicting the existence of things as yet unknown, and forecasting probable or inevitable events. Prediction is the crowning achievement of scientific cognition. It opens up before us the prospect of remote natural phenomena or historical events. The study of historical experiences increases the prognosticating power of human thought. There is no theory without history, and there is no true prediction without either. Prediction is a sign that scientific thought subordinates natural forces and the motive forces of society to the needs of mankind.

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Scientific cognition opens up the possibility not only of prediction but also of conscious shaping of the future. The vital meaning of any science can be described as follows: to know in order to foresee, to foresee in order to act.

The difficulty of prediction is especially apparent in the case of social phenomena controlled by laws that have the nature of tendencies. Since the history of human society is subject to statistical rather than dynamic laws, it would be unrealistic to demand a mathematical precision in forecasting the time of the coming and the character of future events, still less the concrete

⁹ Fundamentally different from prediction are all kinds of prophecy, clairvoyance, revelations, and all sorts of fortune-telling based either on accidental coincidences or, as religious people believe, on communion between the chosen ones and the omniscient forces that know everything in advance and organize all that is or will be. In mythological thinking, the legendary figure of Cassandra symbolizes the gift of prophecy.

forms of their manifestation. While prediction can be accurate in relation to events whose coming is determined by the already known laws, causes and conditions, the features of the future determined by circumstances not yet in evidence cannot be accurately foreseen.

QUESTIONS OF SOCIAL PHILOSOPHY

Chapter IX. SOCIETY AND NATURE

1. A Historico-Materialist Conception of Society

Formation of the social philosophy of Marxism.

The idea of history has its origins in remote antiquity; it marked the emergence of a new form of thought—of historical consciousness. Characteristic of pre-Marxian social philosophy as a whole were idealism and a metaphysical conception of history. However, the more outstanding representatives of it created the theoretical basis for further advances in the interpretation of social phenomena.

Marx and Engels applied the principle of materialism to the interpretation of the laws and motive forces of the development of society. That was done "by singling out the economic sphere from the various spheres of social life, by singling out *production relations* from all social relations as being basic, primary, determining all other relations".¹ Marxism does not belittle the role of personalities in history, it does not detract from the significance of their ideas, interests, and motives, but the truth is that all these are not the *initial* but the *derivative causes* of the historical process, ultimately requiring an explanation in terms of the material conditions of life. It was precisely such an explanation that was formulated as the principal proposition of materialism in history. It is not men's consciousness that determines their being, as idealists believed, but, on the contrary, it is people's social being that determines their consciousness; in other words, the real process of material production and production relations underlie intellectual life. Marx and Engels proceeded from a very simple fact clear to anyone: before taking up science, philosophy, art, and so on, people must eat, drink, have clothes and a roof over their heads, and to have these, they must work. Labour is the

¹ V.I. Lenin, "What the 'Friends of the People' Are and How They Fight the Social-Democrats", *Collected Works*, Vol. 1, Progress Publishers, Moscow, 1977, p. 138.

basis of social life. Without labour activity, society would have been unable either to emerge or to continue to exist. Thus *social being—society's material life* and historically evolved objective production relations—was singled out in being in general.

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Briefly, Marx formulated the essence of the materialist understanding of history as follows: "In the social production of their existence, men inevitably enter into definite relations, which are independent of their will, namely relations of production appropriate to a given stage in the development of their material forces of production. The totality of these relations of production constitutes the economic structure of society, the real foundation, on which arises a legal and political superstructure and to which correspond definite forms of social consciousness. The mode of production of material life conditions the general process of social, political and intellectual life."² The establishment of the category of social being promoted a dialectical view of society as the highest—social—form of the motion of matter, one that is essentially *subjective-objective*. Social being forms, as it were, the *substance* of society, the foundation of all the other spheres of its functioning and development.

In contradistinction to the speculations of previous philosophers on society in general, Marx posited the category of socioeconomic formation, i.e. of society "at a definite stage of historical development, a society with a peculiar, distinctive character".³ Primitive-communal, slave-owning, feudal, capitalist, socialist society—that is the classical formation ladder of human history in its progressive development. *A socioeconomic formation is a qualitatively definite and historically concrete type of social system considered in the unity of all its aspects—the mode of production, the state of science and art, the entire diversity and wealth of the intellectual sphere, of family and everyday-life relations, and the whole way of life.*

The structure of a socioeconomic formation is characterized in the first place by the categories of basis and superstructure; these categories are called upon to explain the way in which production relations determine the other aspects of social life (political, legal, etc.) and the way the latter in

² K. Marx, "A Contribution to the Critique of Political Economy. Part One", in: K. Marx, F. Engels, *Collected Works*, Vol. 29, p. 263.

³ K. Marx, "Wage Labour and Capital", in: K. Marx, F. Engels, *Collected Works*, Vol. 9, Progress Publishers, Moscow, 1977, p. 212.

their turn affect society's economic development. The categories of basis and superstructure are set up in socio-philosophical theory in order to concretize the materialist conception of the structure of society and to establish cause-and-effect relations in social life. Specifying these categories, Lenin explained that the principal idea of the materialist understanding of history is that social relations are divided into material and ideological, and the latter are merely a superstructure over the former. *The basis is the totality of production relations constituting society's economic structure which determines the system of the ideological forms of men's social life. Superstructure is taken to mean the ensemble of ideas and ideological relations as well as establishments and organizations (the state, political parties, trade unions, etc.) in which these ideas and relations are embodied and which are characteristic of the given society.*

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The categories of basis and superstructure are employed above all to substantiate the tenet of historical materialism that the principal determining factor in society is social practice, and that the principal form in the structure of social practice is people's material-production activity and the economic relations among them evolving in this process.

Unlike the categories of basis and superstructure, which focus attention on the decisive link in social development, the category of socioeconomic formation is important in that it permits a view, albeit schematical, of the interaction of all society's elements having value as such: economy, politics, science and art, which, strictly speaking, never lie at points equally high on the corresponding curves of the historical trajectory. It is precisely to reflect the qualitative definiteness of social development that the category of socioeconomic formation demands that each constituent part of the whole be taken into account, since neglect for even one of these parts may distort the correct picture of the whole. On the basis of this concept, Marx and Engels showed history to be a single world process.

Human society is the most complex, in its essence and structure, of all the living systems. The concept of society covers not only the men living now but all the past and future generations, all mankind in its history and perspective. The vital basis of society is men's labour activity. That is precisely the difference between the history of society and the history of nature: the former is *made* by people, the latter just *occurs*. Men do not act as blind tools but on the basis of their needs, motives and interests, they pursue definite goals and are guided by different ideas, that is to say, they

act *consciously*. Economic, political, ideological, family and other relations interweave in society in extremely intricate ways. Graphically, society may be represented as a great tree with a huge crown and countless branches. Each concrete social science studies a certain part of it: the roots, the trunk, the branches, the leaves, etc.

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Although in their totality these sciences cover all the aspects of social life, a simple sum of the knowledge obtained by them does not provide an integral picture of society, since apart from the particular laws of social development society is governed by the most general developmental laws. Just as it is impossible to understand the laws of the growth of a tree by studying its separate parts only, it is impossible to understand society as an integral whole without stressing its unity in diversity. The social need to identify this unity, to understand the way in which its diverse manifestations conform with certain objective laws, to grasp the obvious bonds between generations and the diversity of peoples and cultures, gave rise to numerous attempts of theoretical explanation of the historical process, which were finally crowned with the emergence of historical materialism as consistently scientific social philosophy.

Historical materialism is the philosophical theory of the determining role of social being in relation to social consciousness, of the general and particular laws and motive forces of society's development, of the principles determining the connection between the various aspects of social life. Accordingly, its subject matter is the logic or laws of the development of society as an integral social organism, a logic that permits the elaboration of correct criteria of analysis and evaluation of events of social life, an understanding of the complex mesh of historical events, and a clarification of what is basic and what is derivative. This study proves possible on the basis of a particular system of categories worked out in historical materialism, which work as explanatory principles of the history of society: socioeconomic formation, material production and production relations, basis and superstructure, classes and class struggle, nations and national relations, social revolution, state and law, forms of social consciousness, culture, individual and society, and social control. Historical materialism is thus a *theory* and a *method* of social cognition.

Socio-philosophical theory is bipolar: one of its poles is knowledge, the other, the activity of searching for new knowledge. That is what makes it a method, or methodology, which directs and organizes the research. The

theoretical principles of social philosophy act as methodological regulators of research activity, transformed into general-scientific and concrete-scientific methods of research in social science.

The role of the theory of historical materialism as a methodology for the concrete social sciences would in fact be inconceivable if this theory was not guided on the worldview plane by a more general theory—that of dialectical materialism.

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Revealing the general laws of the development of society, historical materialism helps to define correctly the place of each social phenomenon proceeding from the solution of the basic question of philosophy in the sphere of social life, i.e. the relationship between social being and social consciousness; and it helps to see the dialectical interaction between law and chance in history, between objective and subjective factors, between economic and political phenomena, and so on. It provides a scientific understanding of the unity in the entire diversity of social practice.

The links between dialectical and historical materialism.

The philosophical practice of Marxism evolved in such a way that dialectical materialism mostly concerned itself with natural science while historical materialism, focusing on social problems, did not sufficiently rely on general philosophical categories. As a result, social cognition was not as advanced as it should have been, and the levels of general philosophical and socio-philosophical cognition were not properly correlated. At some stage it became obvious that the relatively fruitful independent and isolated existence of these two domains of Marxist-Leninist philosophy became an obstacle to its further development and to deeper penetration into the contemporary problems of both social and natural-scientific cognition. Problems arose in natural science which could no longer be studied outside the context of the social consequences of scientific inquiry; the problem of social determination of general philosophical cognition became very acute; on the other hand, an interpretation of social reality without proper reliance on general philosophical categories was fraught with the danger of dissolving the subject matter of social philosophy in those of other sciences studying society. That was why a clarification became necessary of the relationship between dialectical and historical materialism as parts of the integral Marxist-Leninist philosophical theory.

Historically, the formation of materialist dialectics as a universal method of cognition was realized in Marxism first of all on the basis of the socio-historical sciences, and only in the second place on the basis of the natural sciences. Indeed, could such fundamental philosophical problems as, say, the material unity of the world or the development of dialectical contradictions be understood without a materialist understanding of history? Neither could a unified materialist picture of the world arise without it, and there could be no dialectical materialism, accordingly. Cognition of society is subject to all the principles, laws and categories of dialectics to the same extent as cognition of nature, and this expresses the internal integral quality of the whole of human cognition, which necessarily follows from the material unity of the world.

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However, the specificity of the object of cognition calls for corresponding methodological and epistemological devices and instruments. For instance, a general philosophical approach to the problem of truth assumes rather than excludes special studies in the interpretation of this problem in social philosophy, in particular in history.

Engels regarded historical materialism as part of dialectical-materialist philosophy. Georgi Plekhanov thought along similar lines: "The materialist world-outlook of Marx and Engels embraced ... both Nature and history. In both cases, it was '*essentially dialectical*'. But inasmuch as dialectical materialism deals with history, Engels sometimes called it *historical*. This epithet does not characterize materialism, but merely indicates one of the fields to whose explanation it is applied."⁴

Social development as a law-governed historical process.

Social life in all its fullness, with all its seemingly absurd events is not, after all, a chaotic agglomeration of accidents but an ordered and well-organized system subject to definite laws of functioning and development. Men's life is inconceivable outside social laws, for without the firm support in these laws one could not be sure of anything, nothing could be known or predicted, and nothing could be guaranteed.

⁴ Georgi Plekhanov, *Selected Philosophical Works* in five volumes, Vol. II, Progress Publishers, Moscow, 1976, p. 263.

We must not, however, convey the impression that history developed regardless of human activity. History is made by the joint efforts of men, not by some suprapersonal forces. Definite social relations are products of human activity in the same way as lathes or computers. But, although the laws of history are created by men themselves, men obey their action as if it were something suprapersonal. In this sense, laws are said to guide the course of historical events. So what is the essence of these laws? *The laws of the development of society are objective, essential, necessary, recurrent connections between the phenomena of social life expressing the main direction of social development—from the lower to the higher.* Thus man's needs increase as material and intellectual wealth increases; the development of material production underlies the fact that a socioeconomic formation is replaced by another and higher one; society's progress inevitably leads to the growth of the role of the subjective, human factor in the historical process, and so on.

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The definition itself of the laws of history prompts this question: are they similar to the laws of nature or do they have specific features of their own? And if they do, what are those specifics? Of course the laws of these two kinds have something in common: they all answer the definition of law, that is, they reveal the necessary, the essential in a phenomenon. Their action as laws is objective. The specificity of social laws lies in the fact that they emerged together with the emergence of society and are not therefore eternal. That is point one. Point two: as we have noted already, the laws of nature just *occur* while the laws of society's development are *made*, they are manifested in men's aggregate conscious activity. Point three: this indicates their more complex character, connected with a higher level of the organization of the community as a form of motion of reality. Point four: both in nature and society the law-governed (the general) acts through the singular, individual and accidental, forming an organic unity with this singular, individual and accidental. History is never repeated; it moves along a spiral rather than along circles, and apparent repetitions in it always differ from one another, carrying new features. But there is always something common to all these uniquely individual and accidental concrete events: the fact that the Second World War was not at all like the Napoleonic wars does not preclude a philosophical reflexion on the nature of wars in general. The individual in history is a specific form of the manifestation of the essentially general. In social life, in history in general, the uniqueness of events is more

pronounced than anywhere else; here the general does not level off or obliterate the individual—on the contrary, it can only be realized under the fullest manifestation of unique elements and appears not as dynamic laws (like the law of gravitation) but as a statistical tendency permitting deviations from the mainline of world history. Here, a social law is not just a tendency (which itself may prove to be accidental and transient) but the leading and principal tendency. Individual historical events in all their rich variety determined by chance are, indeed, never repeated. In general, chance plays a great role in the historical process. Chance prevails here to a greater extent than in nature, for men's activities are motivated not only by their ideas and will but also by their passions or bigotry. But even in history there is chance and chance. On the one hand, accidents are more or less adequate forms of the manifestation of necessity; mutually cancelling each other out, they facilitate the identification of a certain regularity. As for the accidents of the other type, they are something extraneous to the historical process and, encroaching on it from the outside, as it were, can produce serious and sometimes fatal disturbances in it.

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Society goes through qualitatively definite stages. Each of these stages knows both general laws pertaining to recurrent and stable elements in history, and specific ones manifested only in limited historical time and space. The former type of laws is illustrated by the laws of correspondence between production relations and the character and level of development of productive forces, of the determinant role of basis in relation to the superstructure, or of contradiction between production and consumption (or needs). The latter type of laws may be illustrated by the law of development through the struggle of classes in antagonistic society. General and particular laws are interconnected and must be studied in their unity, as the latter characterize the qualitative definiteness of each socioeconomic formation, indicating its historically transient, changeable character, while general laws constitute an invisible thread, as it were, which links together all the stages of the movement of mankind in a single whole.

The objective and the subjective in the historical process. The
problem of social determinism.

As we assert the realization of laws in the historical process, don't we thereby negate the role of the subjective factor in it? To answer this

question, we must clearly understand first the content and essence of the objective and the subjective elements in history, and their interaction.

Starting out in life, every fresh generation does not begin history anew but continues what was done by its predecessors. Men's activity is therefore to some extent specified by *objective conditions* independent of their consciousness and will. These conditions mostly determine the character and mode of activity, the direction and forms of social activeness. They include, above all, the sum total of material and technological realia: the instruments and means of labour, various objects, social production skills, definite traditions and customs, the established system of social relations, various social institutions, forms of power, i.e. a definite level of the development of material production and social relations. For the new generation, all this is the real basis and starting point of its life activity. Thus *the objective factor of history includes, in the first place, material production and forms of social relations which are to a considerable extent a crystallization of previous practical experiences.*

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But each generation, far from simply repeating what was done by its predecessors, realizes its own needs and interests and implements its own goals. *Men's varied activity, their living labour*, constitutes the essence of the *subjective factor*. The term refers to the activity of the subject of history—the masses, social groups, classes, parties, and individuals. The aim of their activity is the preservation, development or change of that which exists in society as expressed in various forms of organization—political, ideological, administrative-managerial, etc. A mode of manifestation of the subjective factor is revolutionary transforming practice.

The content of the subjective factor reveals the mechanism of people's influence on the objective conditions of their life, the essence of the *motive forces of history*, manifesting the process of reverse influence of political, social, and ideological relations on the economic structure of society. The subjective factor is very dynamic and mobile, it is subject to various fluctuations, being a range of possibilities of all sorts, from positive, active and creative energy to harmful influences on socioeconomic reality. This factor may be creative or destructive, it may accelerate social development or slow it down.

The real groundwork of history is an interweaving and interaction of these two factors—subjective and objective. Their interaction is characterized by a definite tendency or orientation. The history of mankind

develops in such a way that the practical significance of the subjective factor constantly grows; in other words, its role in history gradually increases. A necessary condition of this is the action of the subjective factor within reasonable limits on the basis of objective laws, correctly and rigorously assessed. Insistence on the law-governed character of the development of social life is the essence or nucleus of Marxist social *determinism*. Far from negating the freedom of man's will, it assumes a conscious choice of the motives and goals of activity. On the other hand, though, social determinism is incompatible with subjectivism and voluntarism, which often border on adventurism and lead either to despotism or anarchism in political practice. No violation of the laws of history remains unpunished: history takes ruthless revenge on any such violators. For instance, neglect for economic laws incurs a retribution in the form of undesirable disproportions in the development of the economy, and sometimes in the form of crises resulting in stagnation in other spheres of society's life.

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The spontaneous and the conscious in history.

The actions of individuals, much like countless streams, form rivers and seas of historical events. In everyday life people act consciously, as a rule, pursuing their goals and foreseeing in one way or another the consequences of their actions. But can we conclude from this that, on the scale of society and its history, the sum total of their actions always leads to results which they themselves realize? No, the ultimate outcome may be one of which no one had the faintest suspicion: the actions may be undertaken consciously but by no means all of their results prove to be predictable, especially the more distant ones. It is in this sense that we speak of spontaneous historical processes.

The capitalist system triumphed over the feudal system through developing industry, technology, commerce, etc. The people who built industrial enterprises, introduced technological innovations, and expanded commercial links, did not at all suspect that their actions promoted capitalism. This objective result took many generations to mature in the dark, so to speak. The masses achieve satisfaction of their needs and interests, but objectively this process also realizes something that is concealed in their motives and actions but is not grasped by them, does not form part of their intentions. It is here that the "cunning of the reason of

history" lies. This cunning was noted by the English economist Adam Smith, who called it an "invisible hand". He also clearly and succinctly described the way in which it acts, revealing what we believe to be the dialectics of the spontaneous and the conscious in history. According to Smith, every individual exerts himself to attain his goals; in this, he neither promotes the public interest nor knows how much he is promoting it. But "he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention... By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it."⁵ The "invisible hand" is the spontaneous action of the objective laws of the life of society. These laws act regardless of the will of individuals and not infrequently against their will.

In history, the spontaneous element is often manifested in the struggle not so much "for" as "against", in the form, so to speak, of absolute negation—of protest, despair, hatred, loss of faith in the immutability of the existing order; it expresses, as it were, a disturbance in the irrational depths of the human spirit. Characteristic of the spontaneous nature of historical development is the fact that men do not realize the objective social consequences of their actions. A necessary feature of spontaneous activity is that, even when it is realized at the conscious level, it pursues the nearest goals, the most pressing interests, or else it does not properly take into account, in pursuing a goal, the means of attaining it or the existing conditions and tendencies of social development present in these conditions as possibilities.

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Conscious historical activity is based on the harmony between the individual goals of the people participating in this activity and the common goals of the members of a social group or society as a whole. This is only made possible by cognition of social laws, by coordination of the goals and instruments of this activity with these laws. Socialism assumes, as a necessary subjective condition of its functioning, cognition of objective laws and their rational employment in the conscious organization of society's entire life. On the basis of cognition of the laws of the historical process and on condition of coincidence of the working people's interests with those of social progress as a whole, the spontaneous forces of social development are

⁵ Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Vol. 1, J.M. Dent, London-Toronto; Dutton & Co., New York, 1929, p. 400.

gradually and increasingly brought under society's conscious control. Not only the immediate but also the more remote results of activity may be taken into account in social prognostication and planning. Life, however, is too complex for it to be reduced to formulas and figures of even the best plans; it inevitably introduces its revisions and corrections, and brings into play a fresh flow of spontaneous creativity of the masses. And then, must this spontaneity be overcome at all costs? Bearing in mind that society's progress involves a dropping of the share of the spontaneous and an increase in the share of the conscious, we must, however, take into account their objective dialectics as well. As an example, let us take here the well-known case of demand and supply, which is marked precisely by this feature of mobile interaction of the two phenomena: the conscious and the spontaneous are mutually correlated and adjusted.

2. Interaction between Society and Nature

The natural environment as a condition of the life of society.

In a sense, the history of human society presents a picture of its changing interaction with nature. Society did not always exist. It has a history of origin inseparable from the history of the formation of man himself. The development of man (anthropogenesis) and the evolution of society (sociogenesis) represent two interdependent and interrelated aspects of a single process.

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Being a part of nature, man was moulded as a social being by labour and communication. This process has as its starting point the isolation of man from the animal kingdom; it signifies the taming of zoological individualism and the formation of the social motives in behaviour. Along with natural selection, social selection comes into play: only those early communities survived and proved to have a future whose life activity was subject to certain socially significant requirements—cohesion, mutual assistance, caring for the offspring, which shaped the rudiments of moral norms. Socially significant elements were consolidated by natural selection and transmission of experience. The development of man gradually switched from the rut of biological laws to the groove of social laws. The

transformation of the primitive horde into human society proper was increasingly dominated by social laws against the background of biological ones. This was realized above all in the process of *labour*, labour skills being gradually improved as they were passed from generation to generation and thus materially embodied in a cultural tradition.

Labour is *a collectively organized, goal-directed social mode of activity*. Labour begins with production of tools, and tools can only be produced and used in a collective. Only in collectives could the pre-labour activity of our primitive ancestors develop into labour—an expression of social activity and formation of the rudiments of production relations. The emergence and development of man therefore signified the evolution of social relations and thus of society. But society always exists in specific historical form only. The first such form was gentile society. The process of the formation of human society was completed with the emergence of the gens, and the formation of man was completed with the emergence of man of the modern type, or *Homo sapiens*.

There is no gulf between the natural and the social: society is a part of nature as the greater whole, but each has specific features of its own.

Man lives on the earth within its thin integument—the geographical environment. It is the area which man inhabits and in which he exercises his potential. It includes rivers, canals, forests and afforestation strips, fields and commons, pastures and meadows, towns and other settlements, climatic and soil conditions, mineral deposits, flora and fauna. *The geographical environment is the part of nature* (the earth's crust, the lower atmosphere, water, soil, the animal and vegetable kingdoms) *which constitutes a necessary condition of society's life being involved in social production*.

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We are linked to the geographical environment by "ties of blood", and our life is impossible outside it: it is the natural basis of man's existence and a premiss of material production. From its very inception human society has been changing the natural environment, and it has itself been changing under its impact. Every society transforms the geographical environment relying on the achievements of the previous generations, and in its turn it passes this environment on to the younger generations, turning the wealth of natural resources into the means of cultural-historical being. Man did not merely move various kinds of plants and animals to other climatic conditions—he also changed them. The impact of society on nature is conditioned by the development of material production, science and

technology, and of social needs, and also by the character of social relations. As the extent of this impact increases, the boundaries of the geographical environment are also extended, and some natural processes are accelerated: new properties are accumulated which bring it ever further from the pristine state. If the present geographical environment were to be deprived of its elements created by the labour of many generations, and if society were to be put back into the original natural conditions, it would not be able to exist, for man has transformed the world geochemically, and this process is irreversible. In its turn, the geographical environment makes a considerable impact on society. For example, as a condition of economic activity, it affects the economic specialization of countries and regions.

Are the natural conditions of society's life restricted to the geographical environment only? They are not. A qualitatively different natural environment of its life is the part of the world in which life can exist, or the *biosphere*, which includes the top layer of the earth's crust inhabited by organisms, the waters of the rivers, lakes, seas and oceans, and the lower atmosphere. The structure and energy and information processes of the biosphere are determined by the past and present activity of living organisms. The biosphere is affected by both subterranean processes and the cosmic environment; it is a giant natural biophysical and biochemical laboratory connected with the transformation of solar energy through the earth's green integument. The long evolution of the biosphere has resulted in a dynamic and internally differentiated system in equilibrium. It does not remain unchanged: being a self-organizing system, it develops together with the evolution of the universe and of everything else that is alive. A characteristic feature of the biosphere is gradual quantitative accumulation of changes which ultimately result in new qualitative shifts. The history of life on our planet shows that there have already been many profound transformations on the earth, and these qualitative restructurings of the biosphere resulted in the disappearance of various kinds of animals and plants and in the emergence of new ones. The evolutionary process in the biosphere is irreversible.

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Apart from plants and animal organisms, the biosphere includes man, too: mankind is a part of the biosphere. Its impact on the biosphere accelerates changes in the latter through increasingly more powerful and intense development of science and technology. With the emergence of mankind, the transition is realized to a new qualitative state of the

biosphere—the *noosphere* (fr. Gk. *noos* “mind”) or the sphere of life and reason. The noosphere is not an abstract kingdom of reason but a historically inevitable stage in the development of the biosphere. It is a new reality connected with more profound and all-embracing forms of society’s transforming impact on nature.

Problems of ecology.

Ecology (fr. Gk. *oikos* “home”) is the science studying the laws of interaction of living organisms with the external conditions of their existence in order to maintain a dynamic equilibrium in the society-nature system.

Human activity is the channel through which the continuous "metabolism" between men and nature takes place. Any modifications in the character, direction and scope of that activity become the basis of changes in the relation between society and nature. Along with the development of practical-transforming activity the scale of interference in the natural connections of the biosphere have also increased, and it is not always possible to take its consequences into account.

In the past, man’s use of the forces of nature and its resources was mostly spontaneous: man borrowed from nature as much as his own productive forces permitted. But the scientific and technical revolution brought us up against the danger of the natural resources running out, of possible disruption of the dynamic balance of the existing system, and this brought home the need for nature conservation. While the past type of society’s attitude to nature was spontaneous (and sometimes irresponsible), the new conditions have given rise to a new type of such attitude—that of global and scientifically substantiated regulation covering both natural and social processes and determining the measure and boundaries of society’s permissible interference with nature in order to ensure its preservation and even reclamation.

It is now clear to all that man’s incursions upon nature must not violate nature’s laws. Man can only master nature on the basis of knowledge of those laws and not in spite of them. Domination over nature gained by violation of these laws can only be a hollow and temporary triumph: in the event, it inflicts irreparable damage both on nature and on society. As Engels warned, we must not "flatter ourselves overmuch on account of our human

victories over nature. For each such victory nature takes its revenge on us. Each victory, it is true, in the first place brings about the results we expected, but in the second and third places it has quite different, unforeseen effects, which only too often cancel the first."⁶ Man does not only adapts himself to the conditions of the natural environment—he constantly adapts this environment to his needs and interests. However, the tendency becomes evident here to disrupt the existing balance of the ecological processes.

Mankind has come up against problems which threaten its very existence. These include, above all, pollution of the atmosphere, exhaustion and spoliation of the soil, and chemical pollution of water. Mankind's own activity brought it into an acute conflict with its environment. We are still fighting a war against nature, when the time has come for a harmonious cooperation with it—not just in the narrow pragmatic sense but also on a wide moral scope: we should not dominate nature or conquer it but love and cherish it as children should love and cherish their mother. Transforming ever greater areas of nature into his immediate environment, man expands thereby the boundaries of his freedom in relation to nature, and this assumes a growing sense of responsibility for what he does. In this, the general philosophical principle—the fuller the freedom, the higher the responsibility—is concretely expressed.

At present, the global character of the problems facing man requires a different type of thought—*ecological consciousness*. That means, above all, that mankind must realize itself as an integral condition of the preservation of equilibrium and harmony with nature; this implies peaceful and reasonable coexistence between peoples, and is closely bound up with indefatigable struggle for peace, for preventing war, against the development of the means of mass destruction which pose a threat both to mankind and nature.

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3. Demography: Socio-Philosophical Problems

The concept of the demographic system of society.

⁶ F. Engels, "Dialectics of Nature", in: K. Marx, F. Engels, *Collected Works*, Vol. 25, pp. 460-61.

Along with the natural environment, another important parameter in dealing with the problem of the development of the human species is population and constant reproduction of people as social individuals. This reproduction is realized in the framework of the demographic system of society and forms the subject matter of demography (fr. Gk. *demos* “people” and *grapho* “I write”). The task of demography is the study of population reproduction (of the world of births and deaths), of the population’s numbers, density and structure (features of sex and age, occupation, nationality, etc.), dynamics, migration, family as the demographic unit, and so on. The character of the functioning of the demographic system largely determines the development of society itself and the process of its interaction with nature. So what is the demographic system? The concept covers people in the context of a whole set of law-governed relations which they form with each other in producing new generations.

The functioning of the demographic system is conditioned by the level of people’s production activity, their social relations, cultural norms, value orientations, and traditions. All this acts as mechanisms for controlling the demographic system with the aim of preserving its state of equilibrium which best accords with the socioeconomic, cultural-historical and natural conditions of society’s life. At the same time the demographic system has great stability and relative independence owing to the inner laws of its development.

Three more or less stable historical types of population reproduction are described in demography: the archetypal one, characteristic of the pre-class period of human history; the traditional one, inherent in pre-capitalist agrarian societies and the early stages of capitalism; and the present-day one, termed rational, which has evolved in the economically developed countries. Characteristic of the archetype is polygamy. The first demographic revolution, linked with the transition from the gathering economy to the reproducing one, resulted in the establishment of the family institution—a new type of demographic relations marked above all by traditional norms of population renewal. Owing to economic, social and territorial isolation, each new generation followed as a rule in the footsteps of their fathers and grandfathers. When the traditional style of social life broke down and the individual acquired a greater freedom of choice, man could no longer be guided by obsolete norms of behaviour in demographic relations either.

Thus the modern type of population reproduction emerged, primarily characterized by rational behaviour in this sphere.

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These global types of population reproduction, marking, first of all, qualitative features of the demographic process, are complemented by a quantitative characteristic, which is most closely connected with the economic sphere of society. Each historical mode of production has its own population laws. Thus characteristic of the primitive-communal formation was an insignificant population growth; life expectancy was low, and death rate high. Under the slave-owning system the population somewhat increased, and under feudalism it became even more considerable. Capitalism constantly produces relatively redundant population.

Apart from the socioeconomic factors, population growth is also affected by the level of science, health care, social welfare, education, culture and its traditions. Of some interest is the overall dynamics of population growth on the planet. At the beginning of the Christian Era, the population of the earth amounted to some 230 million; at the end of the first millennium it was about 275 million; in 1850, a billion; in 1900, 1.6 billion; whereas in 1930 it was already two billions; in 1975, four billions; five billions at the present moment, and it is expected to rise to six or seven billions by the year 2000.

The demographic situation in the world today.

Some scientists believe that the source of social ills lies in a rapid growth of the population, in the increase of its numbers and density. Present-day Malthusians insist that there are too many human beings on this earth, and the earth's resources are too limited, which bodes disaster for society; even today, society is in the position of someone wearing shoes two sizes small. These scientists see the root of the demographic situation in mankind's unchecked proliferation. The most reactionary ideologists view this as justification for high infant mortality, epidemics, and wars as remedies for attenuating the excessive population growth and inadequate production growth.

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But the actual state of the present demographic situation proves the opposite of what Thomas Malthus once posited as his law of population

dynamics.⁷ It must be admitted that Malthus brought to our notice a really important problem of the relationship between population growth and the possibilities of providing subsistence for it. Indeed, it is not ruled out that the numbers of the population living on a limited territory may prove to be so great that it will bring about exhaustion of resources and a drop in labour productivity and in the population's welfare. Malthus' view of the possible demographic catastrophe did not take into account a number of essential elements in the functioning of the demographic system: he regarded the link between population growth and the possibilities of providing subsistence for it as direct and immediate, ignoring its countless mediations through society's socioeconomic, cultural, and axiological norms and orientations pertaining to the social control over demographic processes. The essence of this control lies precisely in the search for possible means of averting a conflict between society and nature.

If we consider the planet as a whole, the growth of population in different regions varies: this process is not equally accelerated in all areas. In the countries with a high level of well-being, the demographic curve is smooth while in the developing countries it soars upwards, as a rule. Some countries take measures to regulate their population, to stimulate or restrain growth rates.

The problem of population is not limited to restricting the total number of the planet's inhabitants. Since society interacts with nature, demography is a part of the global ecological problem and must be considered in this overall context. Undoubtedly, what is essential for the destinies of society and its relationship with nature is not just the fact of the existence of population but keeping it at an optimal level. But even assuming that the population has reached an optimal size and has stabilized at this level, this fact does not in itself resolve all ecological problems. Such an important factor as environmental pollution is almost independent of population growth rates—it rather depends on the growth of industrial production, the

⁷ Th.R. Malthus (1766-1834)—an English clergyman and economist. He formulated the law according to which the population always grows in geometrical progression and thus outstrips the production of the means of subsistence which grows in arithmetical progression; this causes increasing shortages of the latter. This process is fatally inevitable, and no charitable measures can help suffering mankind. Any aid merely delays, and at the same time deepens, the coming catastrophe. In their critical appraisal of Malthus' theory, Marx and Engels showed that there were some grounds for that theory, but its principal defect was the view of the main indices of society's development (mode of production and labour productivity) as immutable.

level of the development of science and technology and the manner of their employment in the conquest of nature.

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There is yet another important detail that has to be taken into account: social progress assumes above all the growth and gratification of man's material needs, and these are connected with qualitative changes in society's attitude towards nature rather than with population tallies. That means that the solution of the demographic problem requires, on the one hand, a significant reorientation of social consciousness, a certain moral position, which is only possible under definite social conditions; on the other hand, it is only realizable along with the solution of the entire ensemble of ecological problems.

The natural conditions of life—natural environment and population—are essential factors of world-historical process. But, although the state of the geographical environment, the density of the population and its numbers, as well as rates of population growth, may significantly affect society's progress, slowing it down or accelerating it, they are not the ultimate determinants of social development: material production is.

Chapter X. THE ECONOMIC SPHERE OF SOCIETY'S LIFE: THE SOCIO-PHILOSOPHICAL ASPECT

Society as an extremely complex whole is divided into certain spheres. Let us single out four principal ones here: the economic or basic sphere, which is the ultimate determinant of all the social processes in their historical development, the social, political, and intellectual spheres. A terminological issue may arise at this point concerning the term "social", which may apparently be used to cover *all* the processes pertaining to society. The practice of socio-philosophical terminology has been, however, to restrict this term to such structures and their functioning as classes and class relations, nations and national relations, the family and everyday life connected with it, education, medical services, leisure, and so on. The properly political sphere includes politics, the state, law, and their relationships and functioning. The intellectual type of activity covers extremely varied forms and levels of social consciousness—political, legal, moral, aesthetic, scientific, and religious.

The concept of sphere of social life is no more than an abstraction permitting the identification and study of separate areas of the activity of the actually undivided integral organism with the aim of deeper investigation of the multiform and intricately interwoven social being. This concept is a category of social philosophy and in this sense a convenient methodological instrument of cognition.

Let us now consider the economy—the decisive sphere of society's life.

Material Production: The Concept and the Main Elements

A general characteristic of social production.

Society could not exist, still less develop, without the continuous process of production. The meaning of social production consists in the fact that man as a social being is reproduced, under historically given conditions, in this process. Social production or, which is the same thing, the production of

social life, has its own structure, covering intellectual production, production of man himself, and material production. Material production is the basic element in the structure of social production, for it is here that the *material conditions of men's being* are reproduced as a fundamental condition of human history proper and men's very ability to make history. The life of society cannot therefore be likened to a river in which all drops play the same role. There is a decisive force in it which ultimately determines everything, including the most sophisticated sphere of the spirit, and that is the production of material wealth. The joint labour of individuals is the first foundation of the social character of production on the basis of which collective relations emerge and progressively develop.

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So what is material production, properly speaking?

In order to live, people must have the necessary means of subsistence. To have that necessary minimum, they must work; as the wise men of antiquity said, man's cares and work create everything for the mortals. Man cannot be satisfied with what nature provides for him in ready-made form. By combining their labour with what is given by nature and using its laws, people create things nonexistent in nature. In the process, material wealth is created. *Material production is thus the labour activity of men who transform nature, using the necessary tools, in order to create material wealth meant to satisfy human needs.*

Needs and interests in the system of material production.

Activity in any sphere of society is directed by definite needs and interests growing out of production and at the same time working as subjective stimuli for its further development. A need is nothing more than the state of an individual or social group, class, or society as a whole reflecting their dependence on the conditions of existence and acting as a motive force of life activity always directed in a particular way; it expresses a subjective query addressed to objective reality, a need for objects and conditions which would facilitate the maintenance of the system's equilibrium necessary for its normal functioning.

The existence of a need is not a sufficient condition of activity. A certain goal is also necessary, for no activity is possible outside *goal-setting* and without the *means* for the attainment of goals. When a goal coincides with the need, activity assumes a strictly purposive character, and the need itself,

which now exists as a certain synthesis, as a goal/need, becomes a stable and conscious interest. An *interest* is in fact a consistently oriented motive of activity coloured with an emotional-axiological attitude. It is interest that helps to discover the means for satisfying the need, that is, for achieving the goal.

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As the subject of socio-historical activity is individuals included in various social systems (groups, parties, classes, etc.), their activity is always based on a hierarchy of interests ranging from personal, individual to the broadest social. Social interests determine the degree of intensity and social significance of the entire scale of interests of the individual or any other subject of activity, beginning with the smallest group or collective, for it is these groups, more than any other subject, that take into account the real conditions and general direction of the development of the social system, ensuring thereby its preservation and progress.

Needs and interests—both personal and social—have a complex historically established structure, ranging from biological and material to the most refined ones—intellectual, moral, aesthetic, and so on. Social needs and interests are, as it were, the spring of the social mechanism: they determine the direction and content of actions of both individuals and society as a whole. The leading role in the ensemble of all the social interests belongs to the interests in material production. The development of the economic sphere of society is the basis of its progress, so that the perfection of this sphere largely depends on progress in the needs and interests in it, and on skillful combination and harmonization of personal and social needs. One of the levers in stimulating the growth of material production is the raising of every individual's material and moral interest in the results of his own labour and that of others. There can be no real involvement with work in the absence of interest.

In their orientation, needs and interests may be *object-related* and *functional*; accordingly, they express the subject's primary concern either with the final *result* of his activity or with the *process*. The functional needs and interests are just as important for activity, for it is here that a powerful incentive lies in the form of the aesthetic, moral, and creative intellectual aspects of the process of labour itself. If activity is outside the sphere of the subject's interests, the result, or the quality of the product, suffers, too. Functional and object-related needs and interests are too closely interwoven and depend on each other. After all, society is not indifferent to the process

through which the appointed targets are achieved. Neither is every worker, who has a natural interest in the final product of his labour, in the quality and quantity of his product, indifferent to that process. When interest is directed to the process of labour itself, the latter ceases to be an external oppressive force, becoming an art and an inner need, sometimes achieving the heights of aesthetic creativity.

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Entombed in the results of activity, interests and needs are revived in activity at a higher level. The dialectics of the growth of interests is such that the very process of meeting them gives rise to new needs and interests, and also produces the means of satisfying them. Identification and strictly scientific recording of, and research into, social and personal needs and interests is an essential condition of correct choices in the development of various branches of the national economy, science and culture. The highest form of the manifestation of social interest is the interest in the growth of productive forces and labour productivity and in the improvement of the entire system of production relations—which is the decisive criterion of mankind's historical progress and of the improvement of man's essential forces, of the tapping and ennobling of his spiritual creative potential.

Productive forces.

Material production has two sides: productive forces and production relations. The people who implement the process of production are the *subject* of labour. They are the principal and the decisive element in the productive forces. Apart from this, the realization of the process of production requires the material with which to begin, or the *object* of labour which is subjected to processing. Land, mineral deposits, metals, etc., can all be objects of labour. But, to process an object of labour in order to transform it into the necessary product, certain implements must be applied. The *implements* of labour are objects created by man in order to transform the external world in the interests of society. The increasing complexity of the implements of labour is an indication of the level of production attained by society and, as a consequence, of the level of its development. Production also requires buildings, warehouses, transport, etc. Together with the implements of labour, all this constitutes the *means* of labour. The means and objects of labour combined make up the means of production. The system of the means of production, in the first place of the implements of

labour, constitutes the so-called *material and technical basis* of society—the part of the productive forces comprising *objects and energy*. This part is past or *objectified* labour. For the means of labour to participate in the process of production, it is necessary to apply, again and again, labour capacity, i.e. *living* human labour. Thus two types of labour—living and objectified—are identified in the structure of production.

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Just as important an element of the structure of productive forces is production *technology*. The solution of technological tasks is largely determined by such factors as the character of labour, the implements of labour, the development of fundamental and applied science and the degree of its implementation in production, the level of scientific organization of labour, and so on. The complexity of production today is such that it is no longer conceivable without scientific organization including rational use of the means of production, management and planning. Science increasingly forms part of the structure of productive forces, becoming a direct productive force, and production increasingly turns into an area in which science is technologically applied.

However, neither the complexity of up-to-date machinery and technology nor the various forms of the organization and management of production should eclipse the most important element—*man*. Man is not just a force on the same level as the machine but the inspiring element of the entire process of social production which has absorbed the experiences of world history. Production is not the goal-in-itself of society's development: it ultimately serves only as a means of development of its principal value—the people. It is through the labour process that they reproduce, perfect and assert themselves.

We can thus say that *productive* forces are human beings (the human factor) who have absorbed the cultural achievements of all the previous generations, who have production skills, and who produce material wealth; further, productive forces cover the means of production created by society, as well as the organization of labour, production technology, machinery, and scientific achievements. An indication of the level of development of society's productive forces is *labour productivity*, measured not only in terms of the quantity of items produced per time unit but also by their quality, and still more, by the degree to which it helps perfect the human factor, i.e. by all those elements that serve to satisfy the constantly growing needs and interests of society.

Technology and the scientific and technological progress. The concept of technology.

Technology (fr. Gk. *techne* "skill", "art") is defined as a system of man-made means and implements of production which also includes devices and operations, the art of realization of the labour process. In technology, mankind has accumu-

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lated its many centuries of experience, the methods of the cognition and transformation of nature and the fruits of culture. The functions of technological means reflect in a specific way the forms of man's effect on nature. Being a continuation of the organs of the human body, whose effectiveness they multiply many times, technological devices, in their turn, dictate the way they have to be used: a bow is used for shooting, a hammer for nailing things down, and a nail puller for pulling nails.

Of the entire totality of technological devices those which function in material production are the decisive ones. Machines as the social man's production organs are a result and at the same time an instrument of human labour and development of knowledge. The level of technology is an indication of the degree of man's mastery over the forces of nature. At the early stages of history, technology in the proper sense of the word was very little developed and production was dominated by living labour, whereas at present, objectified labour prevails in the total labour expenditures per unit of production. As implements of labour develop, man himself changes: the more extensive the technological transformations which man carries out, and the more powerful the forces of nature which he masters, the higher the development of his abilities and knowledge. The historical process of the development of technology includes three main stages: hand tools, machines, automata. Technological progress is a most important factor of labour productivity growth, and thus an indication of the level of society's productive forces.

The scientific and technological progress.

For a long time, the development of science and technology went on slowly and more or less along parallel lines, independently from each other, as it were. Technology mostly developed through improvements in the

devices and methods of empirical experience and the secrets of craftsmanship passed on from generation to generation. In its turn, science developed, as a rule, independently of the needs of production, the development subject to its own inner logic. True, close ties between scientific knowledge and practical needs were manifested in the arts of war, as improvement of military equipment required further development of scientific knowledge—mechanics, mathematics, and so on.

The beginning of the scientific and technological progress is usually set in the 16th to 18th centuries, the time of extremely rapid social and economic efflorescence. The needs of commerce, navigation, and manufacture demanded theoretical and experimental solution of a number of practical tasks of industry. Further improvement of productive forces became impossible on the old basis. Of course, technology as objectified knowledge always included, in one way or another, results of scientific cognition. In this sense, the development of technology assumed from the beginning the development of science. Only with the transition to machine production, however, the task of advancing science, whose results would be used to develop technology, was posed as an independent one.

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Certain major landmarks stand out in the overall course of the scientific and technological progress, landmarks linked with qualitative transformations of productive forces and leading to a sharp increase in labour productivity. They characterize separate stages in the scientific and technical revolution. The first stage, which noticeably stimulated a rise in the development of productive forces, was the stage of mechanization which freed man from exhausting physical labour and increased labour productivity manifold.

The principal direction of the second stage (the present-day scientific and technical revolution) was automation connected with scientific achievements in the field of automatic mechanism theory, electronics, and computer engineering. All this prepared the possibility of transition to higher forms of automation of whole plants, with labour productivity being increased manifold again. Drastic changes in productive forces taking place at present have as their goal total automation of production in society.

The new stage in the scientific and technical revolution which we have now attained involves great progress in microelectronics, informatics, biotechnology, as well as the emergence of robotics and mass computerization. It is conditioned by a close union between production and

the achievements of the fundamental sciences— physics, mathematics, chemistry, biology, as well as sciences which emerged on the borderline of different fields of knowledge, such as biotechnology based on integrating the methods of biochemistry and genetic and cell engineering combined with microbiological synthesis. The essence of the scientific and technical revolution today consists precisely in the qualitative transformation of the present productive forces on the basis of turning science into a direct productive force. What does that mean? First, it means that scientific knowledge becomes an inalienable component of practically everyone involved in production; second, that management of production and its processes (especially where automated control systems work) is only possible on the basis of science; third, that research, development, and design are included in the structure of the production process as its direct components. Production increasingly becomes a sphere of practical application of science. Often, new industries emerge on the basis of scientific achievements.

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As we know, man is the principal productive force. Therefore, when the question is discussed of the transformation of science into a direct productive force, the reference is not only to technical sciences but to social ones as well, as they make a direct impact on the formation of man's spiritual and intellectual world—which is necessary for a conscious and creative participation in material production. The rising standard of technological knowledge demands also greater standards in people's moral qualities, which are largely moulded by the entire ensemble of the social sciences, in the first place by philosophy, as well as culture as a whole. The social sciences are called upon to take part in the organization of production itself—in harmonizing the interpersonal relations in work collectives and in more effectively exploring the individual's possibilities in the interaction with technical systems.

The consequences of scientific and technological progress gave rise to various technocratic theories in the West, based on the idea that the universal spreading of technology can solve all social problems. The theory of post-industrial society (formulated by Daniel Bell and others) has gained wide currency; in accordance with this theory, in future society will be run by organizers of science and technology, by the manager class, and scientific centres will be the determining factor of the development of social life. The error of the principal tenets of this theory lies in the raising to an absolute

the role of science and technology, in the unjustified transference of organizational functions from a separate narrow sphere onto the whole of society; the function of the whole is replaced by that of a constituent part. Neither technology nor science can by themselves solve complex political problems. It should also be borne in mind that technology is only part of the productive forces, and not the most important part either. Man as the principal productive force is completely ignored by the adherents of this theory.

In recent years, technophobic theories directly opposed to the above also became widespread, permeated with the fear of the omnipresent and all-devouring might of technology. Man feels a helpless toy in the iron grip of the scientific and technological progress. It is believed that this progress assumes such a scope that it threatens to go out of society's control and to become a destructive force threatening civilization and capable of doing irreparable damage to nature as man's environment and to man himself. Of course, this is a cause of anxiety to mankind, but the threat must not be viewed as an inevitable doom, as this would belittle the significance of reason inherent in mankind.

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Both these theories reflect real social and worldview problems generated by the scientific and technological progress.

Production relations: essence and structure.

The concept of production relations.

The links between men which take shape in the process of production form a complex structural-functional and hierarchically subordinated and coordinated system; this system forms what is known as *production relations*. It covers the relation to the means of production, i.e. the *form of property* (the basis of production relations); the connections among men arising in the process of *exchange*, *distribution* and *consumption* of the wealth being created; relations between men determined by their production *specialization*, expressing the division of labour; the relations of cooperation, subordination and coordination, or *managerial* relations, and all the other relations in which men become involved, even including the sphere of everyday life apparently remote from the immediate process of production.

In modern production, where the system of management plays an increasingly great role, considerable importance is attached to production

relations emerging from the selection and placing of personnel in accordance with their abilities, experience, interests, and the needs of production itself—the cadre policy as a whole. The system of production relations is extremely great, ranging from individual relations of separate producers to the fundamental relation to the means of production determining the essence of the given social system.

What are the principal elements of production relations? The main type of these are *economic* relations, of which the basis is formed by relations to the means of production: the latter are always somebody's property, which becomes the nodal point of men's relations to one another. If the means of production belong to the working people, constituting social property, production relations are marked by *cooperation* and *mutual assistance*. If society is dominated by private ownership of the means of production, relations of *domination* and *subordination* are established (such as bondage, serfdom, hired labour), and society is divided into antagonistic classes. These relations directly affect the distribution of the wealth being produced. Thus under the gentile system, with its natural economy, the distribution of the products of labour was of the leveling type, while in a class antagonistic society the greater share of wealth belongs to the dominant class.

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Constituting the nucleus of production relations, the economic relations (production, exchange, distribution and consumption) determine the content of other social relations and act as a system-forming factor in society.

Production relations take shape *objectively*, i.e. independently of the consciousness and will of the people, and in their integrality they lend a definite social quality to all the social relations and to society itself. They thus act as an objective criterion for determining the various concrete historical types of society (socioeconomic formations), for it is with the aid of the category of production relations that the general, recurrent, and law-governed elements in the history of different countries and peoples may be fixed. It is this that makes the cognition of the laws of historical development possible.

The system of labour relations in production implements the relations between workers in labour process itself, i.e. their relations to each other and to their work connected with the requirements of the organization and management of production and its technical servicing. Here belong the relations between workers of different trades, between the organizers and

executors in the framework of the same production unit. Interdepartmental, interbranch, and interregional relations also come under this heading. Being as it were on the surface of production relations, they are an immediate expression of the fundamental economic relation—the relation of property. The development of the latter depends on the smooth functioning and improvement of the economic relations in the structure of production. On the personality level they are most intimately connected with the social relations of everyday life, directly determining the character of interpersonal relations and interconnections between people in production and in other spheres of life and conditioning the socio-psychological, moral and ideological state of members of society.

The role of the human factor increases with progress in society and with the growth in the complexity of tasks which it solves. No discussion of production relations should ignore the individual, for it is in the individual that the dialectics of productive forces and production relations is concentrated and embodied. Man is the principal figure not only in the productive forces but also in production relations. It ought to be clear from this that the forms of relations in which man finds himself cannot help influencing, positively or negatively, the state of the productive forces. The action of social mechanisms cannot be studied in abstraction from the concrete personality elements. Today the task of developing the human, socio-psychological factor is shifted into the foreground, for it largely determines the development of material production under the scientific and technological progress.

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The dialectics of productive forces and production relations.

Productive forces and production relations, in their intimate interconnection, form a complex structure of material production, a historically concrete *mode of production*. The motive force of its development is its inherent dialectics of form and content. The starting point of the development of production is in the system of the productive forces, which constitute the most mobile element of material production. Their development is connected in the first place with improvements in the implements of labour, with progress in technology. In this process, man himself develops, and so do his needs, which are the motive force of the development of production itself; men's skills improve, their qualification

risks, professional division of labour becomes increasingly more differentiated, and specialization is deepened and expanded. These changes in the structure of productive forces entail changes in production relations. Progress in productive forces thus determines the development of production relations towards establishing harmony between the latter and the character and level of productive forces: as the content of productive forces is, so is the form of their existence. For instance, the emergence of capitalist productive forces in the womb of feudalism (i.e. the appearance of large-scale production) gave rise to capitalist production relations. But production relations are not a passive element in the system of material production: if they accord with productive forces, they *accelerate* the process of their development, if not, they *slow it down*. This is a manifestation of the active role of production relations: they affect productive forces. *Correspondence between production relations and the character and level of the development of productive forces is the main principle of the development of material production.* But this is a contradictory process, and production relations cannot therefore constantly correspond to the developing productive forces. Owing to the anticipatory development of productive forces, the balance achieved at a certain moment is then disrupted; a contradiction between them again arises and becomes more and more acute, demanding a resolution through social revolution.

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This law obtains in the progress of human society from one formation to another. It is also manifested in the framework of a single socioeconomic formation, of one mode of production, but here its action is modified in a certain manner depending on the state of various elements both in the system of productive forces and in that of production relations. If the social form of production relations on the whole corresponds to the level of development of productive forces, the separate elements constituting it may fail to accord with it. One such element is, e.g., the economic mechanism. This contradiction is not antagonistic, it does not lead to a need for social revolution, but it does require a conscious restructuring linked with definite reforms, with qualitative changes in certain elements causing disharmony in the development of social production and of society as a whole. The principle of correspondence between production relations and the character and level of productive forces within a single socioeconomic formation must be implemented in such a way as to offer greater room for the development of productive forces. Production relations must therefore have the greatest

flexibility and mobility, they must be sensitive to the rate and quality of development of productive forces. Such is the real dialectics of productive forces and production relations, which requires elimination of contradictions. To achieve this, it is necessary to identify in good time the specific elements in the structure of production relations and to undertake their restructuring, bringing them in accord both with the level of science and technology and with the growing needs of the people.

Chapter XI. THE SOCIAL SPHERE OF SOCIETY'S LIFE

1. Classes and Class Relations

A general characteristic of society's social sphere.

The social sphere is a historically established and relatively stable system of connections between the various elements of society as a whole: between separate individuals and communities (gens, tribe, nationality, nation, family), classes, and social groups. Of key significance for the understanding of the social sphere are the categories of socioeconomic formation, mode of production, basis and superstructure, division of labour, as well as attention to the differences between town and country in the mode of life, social being, social consciousness, and so on. The replacement of a socioeconomic formation by another naturally leads to changes in the social sphere as well, but they do not occur automatically, as the social sphere has a relative independence. The determining element of the social sphere in any class society is classes. The question of the structure of the social sphere is linked above all with the problem of interrelations between classes.

The emergence of classes and their principal characteristics.

It has long been noticed that there exist large social groups, or classes, which differ in their position, interests, and aspirations. Extremely varied views have been expressed in various attempts to understand them. Some looked for the causes of the appearance of classes in intellectual and spiritual qualities, or in men's religious views; others, in the level of well-being (considered apart from the individual's place in the system of material production). Now, what is the real origin of classes, and wherein lies their source?

Classes emerged at a time of disintegration of the gentile system. The main premiss for the stratification of society into classes was two processes: the development of productive forces and division of labour. These processes

are so intimately interconnected that they may in fact be described as two aspects of the same phenomenon of which the consequence was gradual formation of classes. The first major division of labour known to history occurred when cattle-breeding tribes became separated off from the bulk of the tribes; exchange between the cattle-breeding tribes and the tillers of land then began, promoting the growth of social wealth and social differentiation. The second, and even greater, division occurred with the separation of the crafts from land cultivation. This intensified exchange considerably, and deepened economic inequality among people. The next step in this direction was made with the separation of mental labour from physical labour. The opposition between these kinds of labour became the determining feature of all class antagonistic societies. These are, in brief, the original sources of the genesis of classes.

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A scientific analysis of the history of mankind made it possible to identify the truly decisive feature of social class, demonstrating that its essence is directly linked with the place occupied by the class in social production: the most important question here is whether the class is an owner of the means of production or not. This determines the class's position in society, the forms of its everyday life, its way of life, and these in their turn determine its psychology, ideology, and worldview. Since material production is the decisive condition of the life and development of society, it is this material production that constitutes the real basis of class division.

In his work *A Great Beginning*, Lenin formulated a classical definition of social classes: "Classes are large groups of people differing from each other by the place they occupy in a historically determined system of social production, by their relation (in most cases fixed and formulated in law) to the means of production, by their role in the social organization of labour, and, consequently, by the dimensions of the share of social wealth of which they dispose and the mode of acquiring it. Classes are groups of people one of which can appropriate the labour of another owing to the different places they occupy in a definite system of social economy."¹

He noted, however, that not only the principal or economic features of classes must be taken into account in their definition but also the ideological and psychological ones. A significant role in the formation of classes is played by the subjective factor: the realization by the class in question of its

¹ V.I. Lenin, "A Great Beginning", *Collected Works*, Vol. 29, p. 421.

basic interests and the setting up of its organizations and political parties. A class that has not yet realized its own interests is a class in itself. Having realized these interests, and having set up its organizations, the class becomes a class for itself. That means that the development of the class has risen to the level of its *self-consciousness*, a level at which it realizes itself as a force opposing other classes.

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The history of class antagonistic societies is full of the struggle of various classes. According to Marxism, the class struggle takes three principal forms: economic, political, and ideological. Economic struggle, that is to say, mostly the struggle for improving labour conditions, was historically the first and largely spontaneous form of the struggle of the exploited. It always involves broad masses of the people and serves as a primary school of political activity and class self-consciousness. It is in such economic struggle that a class directly becomes conscious of its basic interests and goals, develops skills of organization, the sense of class solidarity, dignity, honour and responsibility. But this form of struggle cannot bring the desired liberation, for it is essentially a struggle for partial improvements in the position of the working masses.

Political struggle is a form of a different kind. It is mostly characteristic of a working class that acts as a body along a wide front rather than in separate groups and is marked by higher organization. As the workers' consciousness and organization grow in the course of this struggle, the first class associations take shape, namely, the trade unions; but the highest form of class organization are political parties. Political demands differ from economic ones in that they affect the very foundations of exploitation—property relations and political power. The party of the working class works out its programme, strategy, and tactics of struggle.

Along with economic and political forms of class struggle, there is the *ideological* struggle. Its goal is the liberation of the working class's consciousness from bourgeois ideology and involvement with the socialist one.

Classes and other social groups.

Along with classes, there exist in every society social groups which do not form part of some class depending on their place in the system of social production and on their relation to property, but constitute special strata,

estates or castes. A striking example of estate organization of society is feudal society with its characteristic differentiation between people in terms of economic and legal position. Thus a big landowner as the owner of definite means of production was a representative of a class, and a member of the gentry or aristocracy, a representative of his estate (he might be as poor as a church mouse but he had the privileges of the noble estate). Estates were closed groups of people based on the principle of strict hierarchy fixed in legal norms.

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The social structure of contemporary society includes, apart from the principal classes, certain social groups like intellectuals and public servants. The boundaries between classes and groups are always relative and mobile. That means that for each separate representative of a given class or social group there is the real possibility of a sort of social migration. Thus it is a fact that the socialist intelligentsia mostly developed on the basis of the classes of workers and peasants. In these days, there is a new but increasingly developing tendency: city dwellers, both members of the working class and professional people as well as public servants, leave for the country and start working in agriculture.

2. Nations and National Relations

Gens, tribe, nationality, nation.

The first specifically human form of community which replaced the primitive horde was the gens—an association of people related by blood ties and bound together by joint labour and joint defence of their common interests, as well as by the community of languages, morals, and traditions. A union of several gentes made up a tribe—a type of ethnic community and social organization of pre-class society. Its characteristic features were: common territory; economic community and mutual assistance of members of the given tribe, expressed, for instance, in collective hunting; community of language; community of origin and blood ties. The formation of tribal alliances, accompanied by the strengthening of intertribal economic and cultural links, military conflicts and population migrations caused by the emergence of private property and classes—all this led to a gradual mixing

of tribes, replacement of former ties of blood by territorial relations, and the emergence of a new form of historical community known as *nationality*. A nationality is an economic, linguistic, territorial and cultural community of people which took shape on the basis of slave-owning and feudal modes of production. The emergence of the state promoted the consolidation of nationalities. In the course of historical development, however, nationalities might differ from states both in territory and in language.

With the development of capitalist relations, economic and cultural links strengthened, the national market emerged, economic fragmentation of nationalities was eliminated, and their different parts were consolidated in a single national whole: the nationalities developed into nations. A nation is a community of people which arises at the time of the appearance of capitalism on the basis of community of economic life, territory, language, certain features of psychology, traditions of everyday life and culture. As distinct from nationality, a nation is a more stable community of people, the stability being ensured by profound economic factors.

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Nations emerged both out of related tribes and nationalities and out of groups of unrelated tribes, races and nationalities. The specific features of historical development, of economic structure, culture, geographic and historical environment, everyday life, and traditions impose an imprint on the nation's spiritual image, shaping the national character and national self-consciousness. Every historically formed nation rises to the realization by its most advanced representatives of its common national interests, culture, traditions and prospects of development. It possesses a particular way of thinking and form of expressing the emotions, it has its national dignity. All this makes a nation a unique historical structure. But everything has its measure. Just as a subject's exaggerated concern about himself leads to egoism, an excessive concern of national self-consciousness with its own distinctness may lead to nationalism. Nations have not only distinctive features but common ones as well, uniting rather than differentiating them: some nations speak the same language, some live on the same territory, others have a great deal in common in their history, culture, everyday life, and psychology. The diversity of national features constitutes mankind's wealth, its treasury of values, so to speak.

There are two opposite tendencies in the development of nations under capitalism. One of them is expressed in the activization of national life and national movements against the oppressors, in the formation of national

states. The other is expressed in the expansion of links among nations, the breaking down of barriers between them, the establishment of a unified economy and of a world market.

Nationalism and internationalism.

Nationalism is the ideology, psychology and social practice of isolation of one nation from others and confrontation between nations. It promotes the ideas of national superiority and national exclusiveness. A nation is interpreted as the highest extra-historical and supra-class form of social unity in which all the social groups are connected by common interests.

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Here, the interests of the dominant class, social group or party are presented as the interests of the whole nation—usually by the party which, in the given historical conditions, is the carrier of nationalist ideology and policies.

In the epoch of imperialism, the content of nationalism becomes even more reactionary and aggressive in character. Its extreme form is *chauvinism*, which fosters dislike and sometimes hatred towards other peoples. Close to chauvinism stands racism.² However, a strict line should be drawn between the nationalism of dominant nations (great-power chauvinism and racism) and the nationalism of the oppressed nations. Marxism rejects the reactionary ideology of justifying the dominance of one nation over another but recognizes the progressive tendencies of the nationalism of oppressed nations since they defend their national independence.

Internationalism is voluntary cooperation of the working people of various races and nations which does not rule out their sovereignty and

² Nations should be distinguished from races. All people living on this planet belong to the same biological species, but there are differences between them in secondary physical features, like colour of skin and hair, form of the head, and so on. In other words, each individual is a representative of a definite race. A race is a historically formed group of people united by common origin and inherited physical features. The differences among races are of external nature, while in their properly human spiritual essence all races are equal. Bourgeois ideologists have sometimes attempted to explain the economic, political and cultural level of a given people or concrete individual in terms of its or his racial membership. These racist doctrines, which divide people into the inferior and the superior races, are theoretically untenable and politically reactionary.

equal rights. It therefore does not rule out patriotism— on the contrary, internationalism assumes the feeling of patriotism. Proletarian internationalism is a most important principle of Marxist ideology which serves to unite the efforts of the national units of the working class and to exclude any manifestations of national bigotry in the working-class movement.

3. Family and Everyday Life

Marriage and family.

The family, consisting of the spouses and their offspring, is one of the basic forms of people's social community, a small-scale group in such a community implementing functions that are vitally important for society, above all those connected with the continuation of the human race. The legal basis of the family is a record of the marriage relations between man and woman in accordance with the existing laws. But the highest moral law for marriage is love. This law demands that a marriage should not be contracted without love. Marriage without love is actually dissolved the moment it is made, and he who has entered into such an alliance has broken the law of matrimony. Love is a profound and stable intimate moral-aesthetic individual selective feeling expressed in selfless aspiration for another individual.

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"The true essence of love," in the words of Hegel, "consists in giving up the consciousness of oneself and forgetting oneself in another self, and yet finding and possessing oneself for the first time in this giving up and forgetting."³ The selflessness of love is an extremely rich feeling: a person achieves the highest blooming of his personality only through giving himself

³ G.W.F. Hegel, *Ästhetik*, Aufbau-Verlag, Berlin-Weimar, 1965, p. 519.

overcome at short notice. Love is inherently contradictory: joy is inseparable here from worry and even suffering, and bliss from pain; they are compressed, as it were, at one point, calling forth a remarkable harmony of the motions of the soul. But true love is also work. Love as a moral element of life is the only true love. If constant moral work is taken away from this feeling, it will become something different—a "crush", an infatuation, it will lose its integrity and thus its essence.

up to another and in jointly ascending to the spiritual heights of the soul. The all-embracing depth of this feeling makes a person possessed, as it were, by the presence of another. The ecstasy of "being outside one's own self" appears then as a result of the ascendancy towards a higher relationship and a union with another person, while the tragedy of a broken heart is experienced as the despair of descending into one's former lonely self. The constant presence of the loved one in one's mind and the idealization of that image are essential psychological features of love. The hyperbolization of the merits of the loved one's personality is so great that the shortcomings of the object of one's feelings are dissolved while the positive features, which constitute the essence of the soul, become brightly illumined.

Love is a graphic embodiment of the ideal, a profound aesthetic feeling which gives man the joy of experiencing the beautiful: love may rise to the heights of poetry and music, and poetry and music, just as other kinds of art, can express this feeling in all the fulness of its content. Mankind's moral and aesthetic progress is largely due to this feeling. Perhaps nothing elevates man, in his inmost essence, as does love. Love is one of the highest values, it is society's stabilizing factor carrying the idea of cooperation—an inalienable principle of human progress. Love inevitably includes aspiration and will for constancy, expressed in the ethical imperative of loyalty.

True love is only born as a free manifestation of feeling, as a moment of a sudden impetus from the emotional depth of personality; it cannot be called forth by compulsion, just as it cannot be forcibly

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In love, the spiritual and social is realized through the mechanisms of the biological, and the biological itself as a natural premiss of this feeling, while being unique and intimate, also becomes generally valid. Unfolding against a broad social background, love is a biosocial form of the fulfilment of personality.

Human beings are extremely unlike one another in the manifestation of their gifts. Love is also a gift; just as people's other potentials, it awaits, as it were, its expression and flourishing. In love, human beings are unique and diverse—in keeping with the wealth of the nuances of the qualities of their soul. A person can be brilliant or hopelessly dull in love as in anything else. There is nothing fatally inherited here. The ability to develop spiritual qualities, including the capacity for love, is the rich field in which the culture of personality is cultivated and the facets of its properly human and humanistic essence are polished.

Family is a historical phenomenon. It emerged and developed along with the formation of human society, being modified in the process of replacement of one socioeconomic formation or type of culture by another. "We have, then, three chief forms of marriage," wrote Engels, "which, by and large, conform to the three main stages of human development. For savagery—group marriage; for barbarism—pairing marriage; for civilization—monogamy..."⁴ Marriage and family relations are primarily determined by socioeconomic factors. Yet their impact is mediated by cultural, above all moral, aesthetic, legal, and political values. That is why even in one socioeconomic formation marriage and family relations are differently affected by the influence of the socioeconomic system of a given society, and develop relatively independently.

In antagonistic societies the family is affected by class antagonisms, which is expressed, in particular, in the fact that people belonging to different classes and strata of society find it difficult and sometimes impossible to marry each other. As for the marriages between members of the same (dominant) class, they are often forced rather than voluntary, being motivated by the selfish interests of both parties to marriage and of members of their families.

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The life of a family and its social functions are varied; they are connected with the spouses' intimate life, with the upbringing of the new generation, jointly keeping house, and helping each other with the chores. All this is inconceivable without intimate communication and compliance with moral and legal norms. The family is the demographic foundation of society, and it is the microenvironment whose climate promotes (or interferes with) the preservation and development of man's moral and physical forces, thereby exerting a positive (or negative) influence on the citizens' labour and social activity. The family is thus a most important cell which socially affects the formation of personality: it is here that the growing child acquires the first elementary labour skills, assimilates generally accepted values and rules of behaviour, masters his native tongue and the norms of thinking which make it possible for him to absorb the universal cultural values; it is here that he develops a definite understanding of life as a social phenomenon: the family is the starting point of the *socialization* of man.

⁴ F. Engels, "The Origin of the Family, Private Property and the State", in: K. Marx, F. Engels, *Collected Works*, Vol. 26, p. 182.

The parents' moral health, maintained by the feeling of love (which develops in time from passion to a stable and friendly relation in a solid marriage organized with great care and intelligence), largely determines the education of children. The relationship between the parents, whose individualities contain an element of the universally human, creates the microclimate, the social small-scale world out of which the child steps into the greater world of the community.

Social studies have shown that the psychological state of the members of society is largely determined by the moral-psychological climate of the family. Stresses and psychophysiological strains are one of the most dramatic problems of our times. Hence a very acute and contradictory situation: there is the growing significance of the therapeutical function of the family on the one hand and an increasing number of unhappy conflict-ridden families on the other. Conflicts befall families in which there is psychological incompatibility either between the parents (which negatively affects both the physical and the moral and psychological health of the children) or between parents and children. Conflict situations in the family do not merely have a negative impact on the reproduction of a physically and morally healthy young generation but also on the state of men and women themselves, ultimately decreasing their labour and social activity.

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A solid family is one of the most important pillars of society. It calls for great attention and assistance on the part of state and social organizations in the performance of its social functions, in the upbringing of children, and in improving its material and living conditions. But the sound foundation of the family, and harmony as the basis of its stability, is first and foremost a matter for the family itself. The individuals forming a family must realize that the moral work that is necessary for maintaining mutual love is required in an even greater degree for maintaining a solid family union. Without mutual concern for each other, without a *common family cause*, matrimonial love cannot continue to exist and to create an atmosphere of deep sincerity in the relationships. It is this love between the spouses that discovers the simple yet intimate, earthly yet elevated spiritual mysteries of genuine human existence in the mundane petty details of everyday routine.

The sphere of everyday life.

A modern family constitutes a small social group whose members are linked not only by marriage or kinship relations but also by community of everyday life. What we call *everyday life covers the social sphere outside production relations in which a definite range of the people's needs is satisfied*: the need for food, clothes, convenient dwelling, maintaining health, and leisure—enjoyment of cultural values, sports, various amusements. What we have in mind here is everyday routine in which we realize our needs for communication which go beyond the sphere of production activity.

Everyday life is a socio-historical concept. The way of life varies at different times and in different peoples: they develop traditions, customs and rituals all their own. There are significant differences between the everyday life of the dominant and the oppressed classes, as there are differences between urban and rural ways. Everyday conditions directly depend on the level of material and intellectual-spiritual production achieved in society, on the well-being of the people.

The sphere of everyday life assumes various kinds of domestic chores, a rational organization in doing them, and a division of labour between the members of the family. It is clear from this that the stability of the family is greatly affected by the state's concern not only for improving its material welfare, increasing the wages, offering better facilities for rest and recreation, and medical care, creating favourable conditions for working women, and expanding the network of facilities for children, but also for the organization of the services intended to make easier all kinds of domestic chores and to gain more time for leisure, for improving one's cultural level, and for harmonious development of each personality.

Chapter XII. THE POLITICAL SPHERE OF SOCIETY'S LIFE

Politics, the State, and Law

Politics: content and functions.

In any society, political relations inevitably arise at a definite stage in development, political organizations take shape and function, and political ideas and theories evolve. So what is politics? The meaning of this term is clear from its etymology: Greek *politika* means "the art of running a state". Politics is a special kind of activity which regulates the relations between large social groups (primarily classes), nations and states. Such is the definition of the forms, tasks, and content of the functioning of the state.

It is not any action in the relations between classes that is politics. For example, when a worker is hired by a capitalist and exploited by him, the relations are economic rather than political. But when the working people become involved in issues of power and its forms, they move into the sphere of politics proper. The goal of politics is always the preservation or creation of the most advantageous conditions of the realization of power. Therefore one of the principal goals in politics is the organization of state power: the state is called upon to protect and defend the interests "of the most powerful, economically dominant class, which, through the medium of the state, becomes also the politically dominant class."¹

Politics expresses, in most clearcut and complete form, the basic economic interests of the ruling class consciously defended by the entire system of society's political organization. Politics is in this sense a *concentrated expression of economic relations*. The sphere of politics is a product of the economic basis of society, of relations of material production: economic interests are in the final analysis the social cause of political actions.

¹ F. Engels, "The Origin of the Family, Private Property and the State", in: K. Marx, F. Engels, *Collected Works*, Vol. 26, p. 271.

But politics, in its turn, makes a great impact on the development of the economy. If everyday economic changes usually occur under the direct influence of the developing productive forces, radical changes in the entire economic structure of society, ultimately based on those same shifts in the productive forces, are implemented through the direct medium of politics, political power being used for the restructuring of economic relations. It is a fact that in a socialist revolution the political upheaval precedes the economic one. Politics is thus a premiss for the construction of a new economy.

The sphere of politics has a relative independence: the logic of political actions and ideas is not a mere replica of the logic of economic relations, and this explains why contradictions are possible between the former and the latter, the contradictions often arising from the inability of politicians to comply with the laws of economic development. If politics adequately reflects the maturing of the needs of the economy, it becomes a power facilitating the effective realization of the possibilities of the society's economic system. When politics, however, assumes the form of absolute power (as, e.g., under fascism) intent on obviating economic necessity, this leads in practice to voluntarism and adventurism.

Since politics is the art of government it must be an art in the highest sense of the term: first, it must rely on the achievements of science, and second, it must correspond to the highest criteria of morality, for it is precisely political activity that is the most responsible of all the types of social activity.

What is the structure of political activity? In the most general form, three basic elements stand out here. First, the ability to set the proximate or tactical and the more distant or strategic real goals, and to solve these tasks by properly handling the relations between the social forces and taking account of all of the society's possibilities at a concrete stage. Second, the working out of effective methods, ways and forms of organization of the social forces for the achievement of these goals. And finally, third, selection and placement of personnel capable of solving the tasks facing them.

Political activity is inconceivable without a definite system of political power. This system includes the state apparatus, political parties, trade unions, and various social organizations. All these are the principal constituent elements of a ramified and cohesive whole, of the mechanism which realizes political authority in society.

The state: its essence and origin.

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The state occupies a particularly important position in the system of society's political organization,

for the most vital interests of various social forces are concentrated in the state as the rays of light in a lens. A great many views on the essence of the state have been expressed. Some believed the state to be a divine institution, a mystic force that bears down on the will of the subjects as a heavy load. Others regarded the state as the source of all of men's evils, while still others saw it, on the contrary, as the source of all prosperity and an expression of the will of the people. Some demanded a strong state and state power, while others called for "absolute" democracy. There were also those who believed that the less power there was, the better it was. This diversity of the views of the state indicated that the question of the essence and origin of the state was not thought out consistently and scientifically. A scientific theory of the state only became possible on the basis of the dialectical-materialist understanding of social history.

The state did not exist at all times. It was a result of society's historical development, of the natural differentiation of society into various social groups and classes under the influence of progressive development of productive forces accompanied by the separation of different kinds of labour and the establishment of the institution of private property. The differentiation, and the growing complexity of social life brought about by it, demanded a special organ that would be empowered to regulate and control the various functions of the social whole. There were some premisses for the formation of the state already: the top members of the gens aristocracy had concentrated in their hands the functions of regulation and administration. We can therefore say that the state did not emerge in a vacuum. True, there was a period in history when the social structure was dominated by a system of elected power comprizing the elders of the gens of particular personal merit who could justly represent the common interests.

However, the interests of various groups of individuals, of classes, naturally varied in an expanding society now based on economic differentiation. But society had to function as a single whole: an organ was therefore required to implement the administration of society (often based on coercion), to work out the ways and forms of relations between different

ethnic groups, and to decide on peace and war—an organ with real power. This power was naturally concentrated at one pole, in the hands of the economically dominant classes. The realization of all these functions required special organs—the apparatus of administration, the laws, the courts, the army, and so on; all these organs taken as a whole form exactly what is known as the state. Hence *the state is an organization of the political power of the economically dominant class*.

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Since that class acts on behalf of the whole society, its political organization is a form of the organization of society as a whole, and its activity includes two elements: the performance of the common functions, and the specific functions which follow from the ruling class's opposition to the interests of the people. It would therefore be unjustified to reduce the diversity of the state's functions to the repressive one—the oppression and exploitation of the under class. Even in order to achieve its own interests (which do not, of course, coincide at all times with the interests of all the members of society, especially in antagonistic class societies), the state is clearly compelled to satisfy, in one way or another, the common interests, thus gaining a certain credit; not to mention the fact that when the state is threatened from the outside, it becomes the focus of the mobilization of the whole people for the fight against the enemy. (True, history knows quite a few cases when the powers that be acted in their own interests, not only against the interests of their people but also against the requirements of their own states' historically progressive development.) That means that the state is called upon to perform many functions of which the most important is the economic one. Then, the function spreading culture and education is also inherent in any state.

The main features of the state are *public authority*, i.e. a special system of organs and institutions performing the functions of power; a definite *territory* on which the given state exercises its jurisdiction, and the population's territorial division suited for effective administration; the *laws* which embody the corresponding system of norms sanctioned by the state; and *sovereignty*, or the independence and supremacy of state power within and outside the country. The state has internal and external functions. The external functions naturally follow from the internal ones and are their continuation; at the same time they have a feedback effect on the internal functions.

The concept of law.

An essential feature of the state is its inalienable link with law. The state regulates the relations between people in the economic, social, political, and other spheres of society's life through the medium of special laws which are an official expression of the norms of law and are declared to be obligatory for all. Thus *law is a form of regulating the behaviour of people through an ensemble of norms which are established and sanctioned by the state to preserve the economic, social, political and other types of order existing in society; it is the will of the dominant class raised to the level of law.*

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Just as the state, law did not exist at all times. Under the primitive-communal system, public order was maintained by the force of habit, tradition, and the moral authority of the elders of the gens or the tribal council who represented the common interests of all its members. As soon as society became split into classes, and opposing interests appeared, traditions could no longer regulate men's conduct. The concepts of good and bad, of the just and the unjust became different for the different classes; laws now officially embodied the concepts and moral norms of the dominant class, which became obligatory for all, being identified with official norms and official morality. Class society cannot exist without legal regulation of relations of property ownership, family, marriage, and other relations. The state exercises its legislative function through the medium of various laws.

The principal historical types of the state and law.

States differ above all in terms of classes whose interests they protect, and in terms of the economic basis of society on which they are built. The type of state thus expresses its class essence. History knows three basic types of exploiting states: slave-owning, feudal and bourgeois.

All slave-owning states were dictatorships of slave-owners. Slaves took no part in society's state life. They had no political or legal rights. The law stipulating punishment for murder in Germany and Rome, for instance, protected slave-owners only. A slave could be killed without fear of punishment. Only as a result of an acute struggle against the slave-owning system, and only at the later stages of its existence, did legal statutes appear which forbade the killing of slaves. Just as the state, law had the protection of private property from those who did not have it as its principal goal.

The slave-owning state was replaced by the feudal one with its numerous and much more complex apparatus of power, more prisons, and stronger army and police. At the early stages of the development of feudalism, a state's territory consisted, as a rule, of a great many almost independent principalities, duchies and counties. Gradually the power of kings and czars grew while that of princes, dukes and counts weakened. This was necessitated by economic progress. The states of the feudal epoch were of the same type—they were all of them based on the feudal lords' unlimited authority.

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The feudal state attached peasants to the feudal lords' land and ruthlessly suppressed those of them who refused to work for the landlord. Feudal laws gave the landlord the right to sell or buy a labourer, and to make him work without pay. This was made easy by the peasant's almost complete lack of any rights: a peasant could not marry or acquire any property or buy land without the landlord's permission.

The emergence of the bourgeois state—a new and more progressive type of state in comparison with the feudal one—was a great historical leap forward. The bourgeois state had an interest in the elimination of the estates: the development of the capitalist mode of production required free competition and, by virtue of that, men's formal equality before the law. Under capitalism, the principle of inheriting state power was replaced by the principle of election to the top state positions. Restrictions on the political rights of the oppressed classes under feudalism gave way, under capitalism, to formal legal equality for these classes and participation in the elected organs of state power. In the struggle against feudal despotism and abuse of power, against violation of human rights, the bourgeoisie, which was then aspiring for power, proclaimed the bourgeois democratic freedoms, equality and the power of the people. In political ideology this was expressed in defending the rights of the individual. At the same time bourgeois declarations and constitutions invariably defend and protect capitalist private property and economic inequality.

Unlike the feudal state, the bourgeois one is marked by centralization of power, and laws have as their main goal the protection of private property and of the exploitation of wage labour based on private property, as well as the suppression of the revolutionary movements of workers.

The socialist state is a fundamentally new historical type of state. It expresses the will of the whole people, regulates economic and other social

relations, protects socialist order, establishes the rights and duties of citizens and officials, and protects public and personal property.

There are also transitional states with a complex social and class structure. These emerge as a rule during transitions from one socioeconomic formation to another. For example, we could name several states (primarily among the developing countries) which follow the socialist or the capitalist path but belong to neither of the principal types of state of today.

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The forms of government and of state system. Political regimes.

History has recorded a great variety of forms of state systems. Already ancient Greece knew the differences between the monarchy and the republic, the aristocracy and the democracy, although all of these forms of state were based on slavery. State forms are interpreted above all as the *forms of government*, the structure of the principal institutions of political power. They are variously defined depending on whether the supreme power is exercised by a single person or whether it officially belongs to an elected organ. On this criterion, monarchist forms of government are distinguished from republican ones. A *monarchy* is a state headed by a monarch; in such a state, power, sometimes restricted, is in the hands of an autocrat (king, czar, emperor) and is inherited. For instance, Czarist Russia was an absolutist autocratic monarchy.

A *republic* is a form of government which is exercised by elected organs; according to the law, power is vested here in the majority of the people.

Forms of state systems fall into unitary, as in France, or federal, as e.g. Mexico, the USA, Yugoslavia, which consist of legally relatively independent state formations. Each of them has its own organs of supreme power, government, legislation, and juridical system.

The form of the state is not limited to the form of government: it also implies the political regime—the methods of the state administration of society. Thus the bourgeoisie can exercise its power both by democratic methods and by the methods of totalitarianism in its undisguised form.

Democracy is a method of exercising state power based on the principle of subordination of the minority to the majority and on legal equal possibility for all to take part in the management of public and state affairs. As a method of state government, democracy has a long history closely connected with the entire system of society's political organization and with

politics in general. Democracy is a historical phenomenon. Democracy in general does not exist — there are only concrete types and forms of democracy whose content is determined by a given mode of production. Accordingly, such types of democracy are distinguished as primitive-communal (tribal), slave-owning, feudal, capitalist and socialist.

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Class dictatorship has been variously exercised in the framework of one and the same type of state. Thus slave-owning society went through diverse forms of government: monarchy, or autocratic power; republic, or elected power; democracy, or the power of the majority. Despite these differences, however, the state of that epoch was a slave-owning state. A similar picture is observed in feudal society. The most widespread form of the feudal state was monarchy. But there were also republics—self-governing cities which freed themselves from the power of feudal lords and were run by elected organs. Different types of exploiting state can also have similar forms of government: there were republics both in the slave-owning formation and under capitalism.

Chapter XIII. SOCIAL CONTROL

1. Social Information and Control

Society and the problem of control.

Being an integral organism, society develops as a system of mutually interacting elements or spheres of social life. It follows from this that control of society must be systemic and allround. Control is inherently necessary both for society as a whole and for each of its parts; therefore the degree of the organization of the mechanisms of control may be regarded as an essential indicator of the level of development both of society as such and of its separate spheres.

Historically, two principles of the action of the control mechanism have evolved—the spontaneous and the conscious one. Spontaneous control expresses an interaction of the social forces in which the action of chance cannot be eliminated; it is an averaged result evolving out of a mass of conscious goal-directed actions whose consequences cannot in principle be taken into account in their entirety. This type of control may be modelled, say, by the market.

Socialist society assumes control on the basis of knowledge of social laws. It increasingly becomes a conscious process, which requires comprehensive study and improvement of all its mechanisms.

Social control is now studied in its three aspects: economic (the management of the economy), socio-political, and socio-psychological. This problem is studied most intensively in connection with the development of general theoretical disciplines, in particular of cybernetics, whose two fundamental concepts—information and control—must be considered more closely in order to determine their significance for the sphere of social control.

The concept of social information.

Social information is above all *semantic* information, i.e. information that is processed by the human mind and is realized in human activity: it is

conditioned by the needs and interests of individuals, social groups and classes, which are in constant intercourse with one another in the process of material and non-material production and organization of social life. Social information has certain distinguishing features not only in terms of its nature but also in terms of its circulation in society.

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Innumerable information currents interact here, running along diverse channels, including the memory of the past living in the present, global forms of contacts (between nations, states, etc.), and contacts within society (between different classes, parties, social groups, between the people and the state organs; these latter contacts are implemented in the form of exchanges between public opinion on the one hand and official state decisions on the other, and in the forms of education, training, communication in the process of labour activity, leisure, and so on). In short, social information moves along two planes, so to speak: the vertical and the horizontal.

Social information is thus taken to mean information that circulates as the sum total of knowledge, reports, messages, and ideas about the surrounding world, above all about society, which serve the goals of controlling social processes. Optimal control pursuing reasonable goals requires objective, true and complete information.

The concept of social control.

How are the concepts of social information and social control interconnected? They are a kind of functional twins. Where there is information there is control, and where control is realized information is inevitably present. The starting point of any process of control is reception and processing of information. We are now aware of what the nature of information is; the question then naturally arises, What is control? *Control is a function of an organized system aimed at preserving its qualitative definiteness, at maintaining its dynamic equilibrium with the environment, and at its development.* Control is a kind of response to the entire sum of the system's informational interactions which is intended to impart to it the kind of behaviour and state, the kind of structural organization and tendency of development that would correspond to the sum total of information accumulated by this system, and take into account its objective needs. It is

oriented not only towards the informational past of the system but also towards its future.

Control of society is basically different from control in living organisms and technical devices. Being a complex structure comprising material and non-material processes, it functions as a specific type of human activity. The specificity lies in the fact that control is present in all the spheres of society's life, constituting a special type of social relations. Political, economic, social, ideological, legal, aesthetic and ethical aspects can be singled out in these relations, and each of the aspects has two interconnected sides, *informational* and *organizational*. Relations of control in a class society are always class relations.

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A fundamental role in the mechanism of social control is played by the *feedback principle*. This principle acts continually, since the response actions of the system under control affect the dynamics of the actions of management on the part of the controlling system which continually takes account of the incoming information. For a while, the subject and the object of control switch their roles. For example, a general commanding an army is the subject of control. He acts, however, on the information received from his subordinates—from his intelligence unit, and so on. In this respect he is not only the subject but also an object of control. In his turn, an object of control, say an officer receiving orders from his general, acts as the subject of control in carrying out those orders. Subject and object of control thus perform a dual, subject-object function.

The principal link in the structure of control is the working out and execution of administrative decisions. The most important element here is the *optimum principle*: in working out an administrative decision, it is necessary to take into account the greatest possible number of variants of carrying it out and to select those of them which will maximally ensure the attainment of the goals. An administrative decision is thus worked out by the subject with due consideration for the object of control and for social needs and interests, as well as for the real conditions of the transformation of possibilities into the actual execution of a decision. Without a sufficient and scientifically substantiated knowledge of the people's needs, the principle of optimal administration in the sphere of state control becomes ineffective. Besides, insufficient knowledge of the object by the subject of control leads to the violation of the feedback principle itself, which also makes control ineffectual.

The character of social control in the present conditions imposes on the subject the demand of greater responsibility for decision taking, in view of the great scope of control and the complexity of the object's structural organization.

Social control is thus interpreted as goal-directed or spontaneous action on the elements of society as an integral whole, based on the feedback principle, action that is intended to ensure the social system's optimally organized functioning and development.

The principles of socio-political control of society change depending on the character of the social systems and forms of state power. They can be rigidly determined, when the controlling action is intended to unambiguously programme the addressee's behaviour, or they may be, so to say, non-rigidly determined, when the control programme assumes a fairly broad spectrum of possible variants of the behaviour of the objects of control. But rigid and "soft" principles of control rarely occur in history in pure form: in social systems, management combines both these principles, as a rule. They are combined most paradoxically in systems implementing spontaneous control, which is clearly illustrated by the market model controlled by the "invisible hand" of which Adam Smith wrote. On the one hand, this "hand" directs the free play of spontaneous forces, permitting the flexibility and pliability of the competing sides, and on the other, it dictates harsh and ruthless rules of the game as implacable as fate.

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Subject and object of control.

The entire totality of social interactions ultimately consists of relations between subjects and objects of control.

Both the subject and the object of control have a complex multilevel structure. Subjects of control may be social institutions and organizations, including public ones, and work collectives. However, administrative decisions are actually made by real individuals endowed with appropriate authority¹ which implies a high degree of responsibility. The subject of control must meet high requirements, among them competence and an

¹ As authority, control assumes the forms of either coercion (as in laws) or persuasion (as in propaganda) or recognition of authority (as in faith) or, most frequently, a combination of the three.

administrative turn of mind, which is a product of the entire system of education and training on the one hand, and a kind of natural gift on the other.

As we have already mentioned, a necessary condition of effective administrative decisions being made by the subject, and of rational control over their execution, is a high quality of information, its comprehensiveness, and speedy and timely reception and processing. All this assumes profound and allround knowledge by the subject of the essential properties, states and tendencies of the movement of the object he controls, as well as of the conditions of its existence.

The objects of control in all forms and at all levels (whether it be an enterprise, an organization, an office or even society as a whole) are people—whole collectives and individuals. This reflects a fundamental and regular feature of all the social processes: to be realized, all of them must be "humanized", i.e. implemented in the actions of concrete individuals.

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As we have noted, the subject and the object of control are relative concepts. What appears as a subject in one interaction will be the object of another, and vice versa. Even within one and the same interaction, the subject is also controlled by the object, which in this case acts as the subject of control. Effective control is therefore only possible provided there are effective rational checks on the decision-making process itself and on the execution of decisions, not only from above but also from below: a worker not subject to any control morally disintegrates, as a rule—although the same happens with his superior as well.²

As far as social control is concerned, the feedback principle is expressed not only in execution of orders and systematic checks but, more importantly, implies broad initiative and active participation in creative work on the part of those who are, in the given situation, objects of control. This initiative relies on a high sense of civic duty, responsibility for the cause one is involved with, and complete identity of the will of the leader and the led. This expresses in fact the meaning and content of the democratization of control so necessary for its effective implementation, especially in the economic sphere of society's life which is realized in the work of each

² The feedback principle characteristic of all social control is almost completely excluded in systems of rigid control distinguished, so to speak, by a paralysis of the individual free will of the object of control. This situation prevails in all the administrative-bureaucratic methods of control.

concrete enterprise and work collective. Social control finds its highest expression in the form of *social self-government*, which is impossible without high culture of both the object and the subject of control, embodied in such moral-psychological qualities as honesty, conscientiousness, selflessness, and a critical and self-critical attitude in the evaluation of the results of one's work.

2. Types of Control and Their Impact on Social Development

Types of social control.

On the historical approach, the types of social control may be classified in accordance with the stages in the development of society.

Under the gentile and tribal system, the chiefs of a tribe, endowed with power and enjoying moral authority, coordinated all the principal functions of the tribe's life activity, expressing the common will of its members. A significant role in this mechanism of control was played by group consciousness embodied in traditions; connected with this was the ritual-symbolic form of collective decisions and practical actions characteristic of tribal thought. The spheres of subject and object of control were but indistinctly differentiated here as yet.

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In slave-owning society, the legislative principles of power differentiation and strict delimitation of the spheres of subject and object of control emerged. While the tribal community was controlled by unwritten laws, the slave-owning system saw the emergence of written laws (as, e.g., the Code of Hammurabi). Legislative power first reached its peak in Roman law. It was at this historical stage that control acquired class content. Slaves were mere objects of ruthless control, being treated much like domestic animals.

Under feudalism, the systems of control were thoroughly differentiated: there were the political, legal, moral, religious, philosophical, artistic and other systems all intended to ensure the appropriate principles of the social behaviour of individuals, social groups, and society. Political power was inherited. Under feudalism, the subject of control was a complex hierarchical structure.

Underlying changes in and growing complexity of control under capitalism were the processes of development of material and non-material production, of forms of property, of various types of competition, and, in this connection, of legal relations. At the time of its formation capitalism stimulated the appearance on the historical arena of a great many strong-willed, talented, enterprising men who organized their businesses in the interests of both the development of production and of obtaining profit. The achievements of science and technology were used to the full, and the resources of human abilities were given full play. In each concrete case, the organization of control had a clear orientation, being subordinated at the same time to the spontaneous forces of the market. As social life was generally democratized, political power, forever ceasing to be inherited, became elected, and the ruling elite absorbed men capable of controlling and guiding the various spheres of social life.

At the state-monopoly stage of capitalism, the system of control combines the latest achievements in organization and management with exploitation of the working people. Feedback mechanisms acquire greater complexity, covering direct and indirect forms of control over legislative and executive organs by the citizens, such as elections, public opinion studied by various institutions and taken into account in one way or another, and mass actions by broad sections of the population, above all by fighters for peace, against the nuclear threat, and for the environmental protection.

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Control over various types of material and non-material production has become a separate profession, and a special science of management and control has emerged which relies on economic studies, sociology, psychology, mathematics and cybernetics. The manager has become an institution; this group of workers consists of hired specialists in controlling various fields of activity. Important elements of the system of control in the most advanced countries are the development of the tactics of planning, introduction of effective methods of the organization of labour, of systems of accounting and checks, and wide use of computer technology and informatics.

Social control thus has a concrete historical character, and in a class society, it is class control. Along with general principles of control each social formation has its own specifics manifested in the goals, forms and methods of realization of control. A common element of all the antagonistic formations is the fact that class contradictions determine the specifics of

control: every individual is controlled, but by far not every individual controls; that is to say, one part of society (the minority) controls while the other part, the majority, is the object of control.

Control as a factor of social development.

Control is necessary not only to preserve and maintain the system's functional health but also to develop the system. This aspect of administrative activity becomes especially pronounced under the harmonious type of development which eliminates the tensions between non-antagonistic contradictions. In these cases, administration becomes a strong incentive to, or, contrariwise, an impediment to, this development.

It is not enough for successful administrative activity to form a scientific conception of objective social laws (although this conception is a necessary condition here). The fact is that laws are general tendencies in the development of society, and a concrete historical approach to this development demands a knowledge of the causes of the appearance of certain social phenomena (including negative ones) whose control will in each concrete case be a real factor of the social evolution. If the causes of contradictions are not correctly identified, it is always difficult to find a correct administrative solution, even if the general drift of such a solution is correctly understood.

Apart from the general laws of the development and concrete causes of various social phenomena, a great many other factors are taken into account in drawing up governmental programmes, as e.g. the moral and psychological atmosphere in society, which determines the execution of an administrative decision (that is to say, feedback must be taken into account). It is important to check the governmental programme constantly with the concrete interests of people and with the dynamics of these interests, neglect for which can doom administrative activity to failure.

The art of control thus consists in the ability to revise the general in the light of the particular and at the same time to direct the particular within the framework of the general trends of development. Control is the social practice which severely tests abstract theoretical social ideas.

Chapter XIV. A PHILOSOPHICAL CONCEPTION OF MAN

1. Man. Personality. Society

The general concept of man.

A wise man of antiquity once said that nothing was more interesting to man than man himself.

Philosophy has always striven to grasp the *integral* nature of man, fully aware that a mere sum of knowledge embodied in the concrete sciences of man will not provide the image we are looking for. Philosophy therefore tried to work out its own means of cognizing the essence of man in order to define his place and role in the world, his attitude to the world, and his capacity for "making" himself, i.e. for forging his own destiny.

A great many conceptions of man have been offered in the history of philosophy. The philosophers of antiquity primarily regarded man as part of the cosmos, as a kind of microcosm subordinated to fate as the highest principle. In the Christian worldview, man began to be perceived as an indissoluble and contradictory unity of two hypostases, the spirit and the body, qualitatively opposed to each other as the noble and the base. Thus St. Augustine presented the soul as independent of the body, and it was that soul that he identified with man, while Thomas Aquinas regarded man as a unity of body and soul, a being intermediate between animals and angels. In the Christian view, the human flesh is the abode of base passions and desires, the work of the devil. Hence man's constant attempts to free himself from the devil's grasp and to see the divine light of the truth. This determines the nature of man's attitude to the world: there is an obvious desire not so much to understand one's own essence as to gain access to an essence of a higher order, to God, and thus to gain salvation on Judgement Day. The idea of the finality of being is alien to this mentality: faith in the immortality of the soul makes existence on this earth, often very hard existence, seem less painful.

The philosophy of the early Modern Times, being mostly idealistic, followed Christianity in stressing man's spiritual essence. We still enjoy the best works of this period with their precious and subtle observations on the human spirit, on the meaning and form of the operations of human reason, and on the secret springs of the human psyche and activity going on in the depth of personality. Freed from the ideological dictates of Christianity, natural science was able to create unsurpassed models of naturalist studies in man. But a still greater merit of the early Modern Times was the unconditional recognition of the autonomy of the human mind in the cognition of its own essence.

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The idealist philosophy of the 19th and early 20th centuries exaggerated the spiritual element in man, some scholars reducing his essence to the rational element and others, to the irrational. Although the understanding of man's true essence was already taking shape in various theories and was more or less adequately formulated by some philosophers (e.g., by Hegel, who viewed the individual in the context of the socio-historical whole as a product of intense interaction in which the human essence is reified, and the whole of the objective world around man is nothing but a result of that reification), there was still no consistent and coherent theory of man. On the whole, this process reminded one of a volcano ready to erupt but still tarrying, awaiting the last and decisive bursts of inner energy. Starting with Marxism, man became the focus of philosophical knowledge out of which radiated the lines which connected man, through society, with the entire infinite universe. The foundation of a dialectical-materialist conception of man was laid. The construction of an integral philosophy of man harmonious in all its aspects is a process of human self-cognition which in principle cannot be completed, the manifestations of human essence being extremely varied, comprising reason, will, character, emotions, labour, communication, and so on. Man thinks, enjoys things, loves or hates, constantly aspires for something, achieves the desirable and, unsatisfied with it, aspires for new goals and ideals.

The determining condition in the formation of man is *labour*. In labour, man constantly changes the conditions of his existence, transforming them in accordance with his constantly developing needs, and creates a world of material and non-material culture which is formed by man to the same extent to which man himself is formed by culture. Labour is impossible as a singular manifestation and is from the very outset a collective, *social*

phenomenon. The development of labour activity totally changed the essence of man's ancestors. Labour entailed the formation of new, social qualities, such as language, thought, communication, convictions, value orientations, worldview, and so on. On the psychological plane, it had as its consequence transformation of instincts in two respects: on the one hand, they were suppressed or inhibited, that is, controlled by reason, and on the other, they were transformed into intuition—a qualitative state of purely human cognitive activity.

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All this signified the emergence of a new biological species, *Homo sapiens*, who from the very beginning appeared in two interconnected hypostases—as reasonable man and as social man. (Actually, this is one and the same thing.) Stressing the universal quality of the social element in man, Marx wrote: "...The essence of man is no abstraction inherent in each single individual. In its reality it is the ensemble of the social relations."¹ This view of man had been evolved already in classical German philosophy. Thus Johann Gottlieb Fichte believed that the concept of man was not related to the individual, as an individual human being could not be conceived, but only to the species. Ludwig Feuerbach, who developed the materialist theory of philosophical anthropology which served as the starting point for Marx's discourse on man and his essence, also wrote that an isolated human being was nonexistent. The concept of man necessarily assumed another human being or, to be more precise, other human beings, and only in this respect was man a human being in the full sense of the word.

Everything that man possesses, everything that distinguishes him from animals is the result of his life in society. This is true not only of experience acquired by the individual during his lifetime. A child appears in this world in full possession of the anatomic and physiological wealth accumulated by mankind over the previous millennia. Characteristically, a child who has not absorbed social culture proves to be the least adapted to live in this world out of all living creatures. One cannot become a human being outside society. We know cases of small children falling among animals through some disaster. Remarkably, they failed to master either the erect posture or articulate speech; the sounds they pronounced were imitations of the sounds made by their animal foster parents. Their thought processes were so primitive that they hardly deserved the name of thought processes. The

¹ K. Marx, "Theses on Feuerbach", in: K. Marx, F. Engels, *Collected Works*, Vol. 5, p. 4.

essence of man is concrete-historical, that is to say, its content, while remaining basically social, varies depending on the content of a given epoch, socioeconomic formation, socio-cultural and everyday context. However, at the first stage of an inquiry into personality, the individual elements are inevitably seen as secondary: the main issue is elucidation of the universal properties in terms of which the concept of human personality can be explained as such. The starting point of such an interpretation is the view of man as *the subject and product of labour activity*, on the basis of which social relations are formed and develop.

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Without claiming to be formulating a rigorous definition, let us sum up the essential features of man: man is a reasonable being, the subject of labour, of social relations and communication. The emphasis on man's social nature in Marxism does not imply the simplistic view that only the social environment forms man's essence. The social is here interpreted as an alternative to the subjectivist-idealist approach to man, an approach exaggerating the importance of his individual psychological features. This view of sociality is, on the one hand, an alternative to individualist interpretations, and on the other hand it does not reject the biological component in the human personality, which is also universal.

Man as a biopsychosocial being.

We approach man along three different dimensions of his existence: biological, psychical, and social. The biological is expressed in morphophysiological, genetic phenomena, as well as in the nervous-cerebral, electrochemical and some other processes of the human organism. The psychical element covers the inner spiritual and intellectual world—conscious and subconscious processes, will, emotional experiences, memory, character, temperament, and so on. But not one aspect taken separately reveals the phenomenon of man in its integrity. Man, we repeat, is a reasonable being. So what sort of an object is his thought, then? Is it subject to biological laws alone, or is it dominated only by social laws? Any categorical answer would be an obvious oversimplification: human thought is a highly organized biopsychosocial phenomenon whose material substratum certainly has a biological (or, to be more precise, physiological) dimension, but whose content, the concrete filling, so to speak, is undoubtedly an interweaving of the psychical and the social—an

interweaving in which the social, being mediated by the emotional-intellectual-volitional sphere, appears as the psychical.

The social and the biological, which exist in close unity with each other, refer in abstract form to the extreme poles of the diversity of human properties and actions. Thus if we move towards the biological pole in the analysis of man, we "descend" to the level of organismic (biophysical, physiological) laws oriented towards the self-regulation of the material-energy processes as a stable dynamic system tending to preserve its integrity. On this plane, man appears as the carrier of the biological form of the motion of matter. But man is not simply an organism, a biological species—he is first and foremost the subject of social relations. As we turn to his social essence, moving from the morphological and physiological level on to the psychophysiological and spiritual structure, we reach the sphere of the socio-psychological manifestations of man as personality. Organism and personality are two inseparable sides of man. Man's organismic level is included in the natural interconnection of phenomena and is subject to natural necessity, while his personality level is open to social being, to society and culture.

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When we consider man's social nature, or refer to man as personality, we are not making an abstraction from the biological component in general but only from anthropological features, from the study of the bodily organization and certain elementary psychical processes in their purely natural-scientific specificity. We ignore, for instance, the natural-scientific meaning of the chemical reactions occurring in the functioning living organism, this being the task of the special sciences. Instead we concentrate on properties which can be described in social or socio-psychological terms, where the psychological is considered in its social conditioning and content. Man's bodily organization, regarded as a material substratum of personality rather than as an abstract-scientific construct, undoubtedly affects his psychological features.

The transition from the "bodily aspect" as an object of the natural sciences to the "bodily aspect" as a substratum of man's socio-psychological properties occurs only at the personality level. The biological aspect is determined mostly by the hereditary (genetic) mechanism, while the social aspect is conditioned by the process of the personality's involvement in the cultural-historical community context. Neither the one nor the other taken separately can bring us closer to an understanding of the mystery of man—

only their functioning unity can. That does not rule out, of course, the emphasis being shifted either to the biological or to the socio-psychological element in man for various cognitive and practical purposes. However, the ultimate view must necessarily combine these two aspects, or else the inquiry will leave the domain of the properly human and join either natural-scientific and biological studies with their particular scientific goal, or culturology dealing in abstractions from the directly active personality.

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A limited consideration of man either in the framework of the purely culturological approach or in the narrow confines of biology, in particular of genetics (or physiology, or psychology, or medicine, etc.) often leads to simplified interpretations of the relationship between the biological and the social. This simplification gives rise to different versions of biologism and sociologism. In the former, various social disorders and even distortions are explained in terms of man's intrinsic natural qualities while in the latter the entire complexity of negative social phenomena is reduced to various political shortcomings. The most recent theories of socio-biologism and social Darwinism give an unequivocal answer to the question "Genes or the community?" That answer is firmly, "Genes." Man's biological destiny is variously interpreted here. Some believe optimistically that the existing system of heredity fully reflects the results of his development as a unique biological species. Its stability and perfection are so great that it can serve us practically over an unlimited period of time in the foreseeable future. Others insist that man as a biological species is already moving towards extinction. Thanks to the creation of his own environment and the successes of medicine, mankind has escaped from the harsh action of natural selection and thus has to carry the load of accumulating mutations. The social storms and explosions mark, from this standpoint, the beginning of the extinction of mankind. Still others believe that man, being a biologically young species, is still carrying too many genes from his animal ancestors. The social environment in which man lives is alleged to have been created by the activities of certain select members of the human species only. This view forms the basis for all kinds of elitism as well as for the reverse side of elitism—theoretical racism.

The last two of these doctrines proceed from the assumption that man's genetic nature as a whole needs correction, and that the near future is fraught with the danger of extinction through biological factors; under these conditions, it is said, only genetics can avert this grave menace by taking the

biological evolution in its own hands. On the crest of these ideas there emerges a somewhat renovated eugenics, stating authoritatively that, whether we want it or not, science must deliberately control the reproduction of the human race and introduce some kind of partial selection for the "benefit" of mankind. Leaving aside the purely genetic possibilities of selection, we still face a great many moral and psychological questions: How is it to be determined who possesses the genotype with the desirable features? And generally, who must and may say what is desirable?

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Exaggeration of genetic factors and possibilities of selection characteristic of socio-biologism and social Darwinism has as its premiss the belittling of the social element in man, Man is indeed a creature of nature, but he is at the same time a social creature of nature. Nature gives man considerably less than life in society requires of him. Apart from neglect for the social context, yet another defect of these theories can be pointed out. Biological factors cannot be reduced to genetic ones only. The physiological aspects of individual development should also be taken into account, particularly those that produce pathological effects, for it is these factors that change the biological component of man, who in this case begins to perceive the social factors affecting him in quite a different light.

A few words must be said about the theories which, while recognizing, or seeming to recognize, the importance of the biological factor, express too optimistic a view of the possibility of rapid and irreversible changes in human nature for the better through education alone. History has known a great many examples of social psychology being changed (to the point of mass psychoses) by powerful social levers, but these processes have always been short-lived and, which is most important, reversible. Culturological rush work and short-term exhausting spurts are, historically and socially, senseless and merely disorient political will and undermine the effectiveness of the social levers themselves.

Now, in what way are the biological and the social elements in man combined? To answer this question, let us turn to the history of the emergence of man as a biological species.

Man appeared on the earth as a result of a long evolution which led to a change in animal morphology proper, to the emergence of the erect posture, the freeing of the upper extremities and the attendant development of the articulatory speech apparatus—an ensemble of factors which entailed the development of the brain. Man's morphology was a material crystallization,

as it were, of his social or, to be more precise, collective existence. At a definite level of development, anthropogenesis, stimulated by favourable mutations, labour activity, communication, and evolving spirituality, switched from the track of biological development onto that of historical evolution of social systems proper, as a result of which man evolved as a biosocial unity. That means that man comes into the world with insufficiently formed anatomical and physiological systems, which complete their formation under social conditions; that is to say, these systems are genetically programmed as uniquely human. The mechanism of heredity which determines man's biological aspect also includes his social essence. A newborn baby is not a *tabula rasa* on which the environment draws the fanciful patterns of the spirit. Heredity equips the child not only with purely biological properties and instincts. From the start, the child has a special capacity for imitating adults—their actions, sounds, and so on. He is inquisitive, and that is already a social trait. He can be distressed, and feel fear and joy; his smile is innate—and smiling is the privilege of man. The child thus comes into the world precisely as a human being. And yet at the moment of birth he is only a candidate human being. He cannot become a full member of the human race if isolated: he has to *learn* to be human. It is society that introduces him into the world of people, regulates his behaviour and fills it with social meaning.

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We all have amazingly obedient fingers, with which we can take up a brush and colours and begin to paint. But it is not these actions that make a painter. The same is true of consciousness, which is not our natural birthright. Conscious psychical phenomena are shaped during one's lifetime as a result of education and training, of actively mastering languages and the world of culture. The social element penetrates through the psychical into the biology of the individual, which becomes in this transformed state the basis, or material substratum, of his psychical, conscious life activity.

Thus *man is an integral unity of the biological (organismic), psychical and social levels*, which evolve out of two kinds of elements, the natural and the social, the inherited and the acquired—during the individual's lifetime. The human individual is not a mere arithmetical sum of the biological, the psychical and the social but their integral unity producing a qualitatively new stage, the *human personality*.

Man and his environment: from the earth to outer space.

Just as any other living creature, man has an environment of his own, which affects in various ways the interaction of all the constituent elements within him. Recently, the sciences of man have come to realize more and more the influence of the environment on the state of the organism and the psyche, an influence which determines the feeling of comfort or discomfort. A philosophical view of man would therefore be essentially incomplete without a consideration of the man-environment system. Social environment will be discussed later, and now we shall focus our attention on what is known as the natural environment.

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Our life depends on natural phenomena to a much greater extent than we are inclined to believe. We live on a planet in whose depths countless turbulent processes occur of which we have no idea but which affect us all; the planet itself is hurtling through space as a grain of sand. Most effects of natural phenomena on the human organism are still unknown—science has studied only an infinitesimal part of these effects. Thus we know that if a human being is placed into a non-magnetic medium, death will be instantaneous.

Man exists in the system of interaction of all the natural forces, and is subject to extremely varied actions from these forces. Mental equilibrium is only possible under physiological and psychological adaptation to the natural world, and since man is above all a social being, he can only adapt himself to nature through society. The social organism acts within the framework of nature, and if this is forgotten, the punishment is ruthless. If a community's values are not oriented towards harmony with nature but rather at isolation of man from nature under the sign of a monstrously overblown urbanism, man becomes, sooner or later, a victim of such axiological orientations. Besides, a kind of environmental vacuum or lack of room for activity arises in this case, and no social conditions can compensate him for the psychological losses due to alienation from nature. Man is a biological as well as social being, and just as he will die without the society of other people, so he can die without communion with nature. Both the social and natural forces act in this sense absolutely ruthlessly.

The concept of environment is not restricted to the sphere of the earth—it includes the cosmos as a whole. The earth is not a cosmic body isolated from the universe. It seems to be firmly established in modern science that life on earth sprang into being due to cosmic processes. It is therefore quite

natural that all living organisms interact in one way or another with the cosmos. It has been discovered that sun storms and the electromagnetic disturbances connected with them affect the organism's cells, its nervous and vascular systems, man's sense of well-being and the psyche. We live in unison with the entire cosmic environment, and any changes in it affect our well-being.

Intense work is now being done on the problem of links between living organisms and the energy-information interactions in the universe. The ideas of Konstantin Tsiolkovsky, Vladimir Vernadsky and Alexander Chizhevsky on this subject appear to be quite topical and perspicacious; they insisted that we are surrounded on all sides by flows of cosmic energy reaching us across the vast distances from the stars, the planets and the sun, and that the processes occurring in the infinite spaces of the universe affect in one way or another all organic and inorganic matter on earth. Vernadsky introduced the term of noosphere to designate the sphere of rational life on the planet, man's natural environment and its formative impact on him. The combination of two elements—the biological and the social, life and reason—is the basis for a broader conception of the term "environment". The noosphere need not be regarded as a purely terrestrial phenomenon, it may be extended to embrace the entire cosmos. Life and reason apparently exist in other worlds as well, and man as a particle of the noosphere is thus a social-planetary-cosmic being.

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Since the environment makes such a decisive impact on man, its concept must be subjected to careful analysis, with due attention to its cosmic, natural, and social components.

Man as a personality.

Man as a species concretely exists in real individuals. The concept of individual points, first, to a separate member of the biological species *Homo sapiens*, and second, to a single separate atom of the social community. This concept describes man as separate and autonomous. The individual as a particular singular integral entity has a number of properties: an integral morphological and psychophysiological organization, stability of interactions with the environment, and activeness. The concept of individual is merely the first condition of designating the domain of the study of man, to be further concretized in the specific concepts of personality and individuality.

There are two principal theories of personality: personality as a functional (role-oriented) characteristic of man, and personality as man's essential characteristic.

The first theory relies on the concept of social function or, more precisely, social role. Although this aspect of personality has a great significance for contemporary applied sociology, it cannot bring out man's deep inner world, focusing attention on external behaviour only, which does not always necessarily express his real essence.

A deeper conception of personality is formulated on the plane of essence rather than function: personality is seen as a concentrate of regulatory intellectual-spiritual potentials, the focus of self-consciousness, the source of will power and the nucleus of character, the subject of free action and supreme authority in man's inner life. Personality is the individual concentration and expression of social relations and functions of people, the subject of the cognition and transformation of the world, of the rights and obligations, of ethical, aesthetic and all other social norms. Personality traits appear in this case as derivatives from the social way of life, from reason aware of itself. A *personality* is therefore always a *socially developed individual*.

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Personality is formed in the process of activity, communication or, in other words, of the *socialization* of the individual. This process is realized through inner formation of the individual's unique image. Socialization requires from the individual productive activity, which is expressed in continuous revision of his actions, behaviour, and deeds. In its turn, this necessitates the capacity for *self-appraisal*, which is connected with the development of self-consciousness. In this process, the mechanism of *reflexion*, which is characteristic specifically of personality, is developed and polished. Self-consciousness and self-appraisal form the core of a given personality, around which the pattern of personality is woven, unique in the wealth and variety of the subtlest and highly idiosyncratic nuances.

Personality is an ensemble of three main components: biogenetic predispositions, the action of the social factors (the environment, conditions, norms, and regulators), and the action of the psychosocial nucleus, the self. The nucleus is, as it were, the inner social element of personality which has become a phenomenon of the psyche, determining the personality's character, the sphere of motivation manifested in a definite orientation, a mode of correlation of one's own interests with the social

ones, the level of ambitions, the basis for the formation of convictions, value orientations and worldview. The nucleus is also the basis for the formation of the social emotions: the feeling of personal dignity, duty, responsibility, conscience, moral and ethical principles, and so on. It is the essential element of personality structure, the highest regulative and predictive spiritual, intellectual and semantic centre. An individual as personality is not a certain accomplished givenness but a phenomenon demanding incessant work of the soul.

The main property of personality, the resultant of other traits, is the *worldview*—an indication of a high level of the individual's spirituality. A man asks himself, What am I? What did I come into this world for? What is the meaning of my life, my predestination? Do I live in accordance with the purpose of all being, or not? Only if an individual has worked out a certain worldview can he realize his self-determination in life, acting purposefully and consciously to fulfil his essence. A worldview is a bridge, as it were, between personality and the entire surrounding world.

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Simultaneously with the formation of a worldview, a personality's character is moulded; character is a person's psychological core which stabilizes his social forms of activity. "Only through character does an individual arrive at a firm definiteness."²

The word "character", used synonymously with the word "personality", signifies as a rule will power, which is also a generalized indicator of personality. Will power makes a person's worldview stable, integral, and effective. People of strong will also have strong character. They are usually respected and rightly seen as leaders: people know what can be expected of them. It is recognized that he who achieves great goals has great character, as his acts correspond to the requirements of objective, reasonably substantiated and socially significant ideals, and serve as a reference point to others. Such a person strives for the realization of goals that are justified not only objectively but also subjectively; the energy of his will has a content worthy of itself. If a person's character loses its objectiveness, dissipating itself in accidental, petty, and empty goals, it turns into stubbornness and becomes subjectively deformed. Stubbornness is not character but a parody

² G.W.F. Hegel, *Encyklopädie der philosophischen Wissenschaften im Grundrisse*, A.H. Andriani, Leiden, 1906, p. 792.

of character. It has repulsive force, being an obstacle in a person's communication with others.

Without will, neither morality nor the civic spirit nor the social self-assertion of the human individual as personality are possible.

An important component of personality is *morality*. Social circumstances are often such that a person in a situation of choice does not always follow his own ethical imperatives. At moments like this he becomes a puppet of social forces, which does irreparable damage to his integrity. People react in different ways to such trials: while one is hammered flat by social oppression, another will only be tempered. Highly moral intellectuals will be affected by an acute and tragic sense of "non-personality" in similar situations, i.e. an inability to do what their inner self dictates them to do. Only a personality that can freely manifest itself is able to retain a sense of personal dignity. The measure of a personality's subjective freedom is determined by its moral imperative and serves as an indication of the degree of development of the personality itself.

Personality is thus a measure of the individual's integrity: there is no personality without inner integrity.

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It is important to distinguish in personality not only the unitary and the common but also the unique and the specific. An in-depth perception of the essence of personality assumes consideration of a personality as a social and at the same time individual and original being. A person's uniqueness is manifested already at the biological level. Nature itself carefully protects in man not only his genetic essence but also the particular about him, preserving it in the gene pool. All the cells of an organism contain genetically controlled specific molecules which make the individual biologically unique. Even the external diversity of human individualities is amazing. But the true meaning of this phenomenon is connected not so much with a person's appearance as with his inner spiritual world, with a unique way of being in the world, the manner of conduct, and communication with people and nature.

The uniqueness of personalities has an important social significance. What would society look like if all its members were all alike, with stereotype brains, thoughts, emotions, and abilities? Let us perform a mental experiment: suppose all these individuals were artificially turned into a homogeneous mass of the spiritual and the corporeal, out of which the omnipotent experimenter would mould individuals, having first equally

divided the mass into the male and the female part. These individuals would be all of the same type and equal to one another in all respects. Evidently the two groups of identical individuals would not form a normal society.

A wide variety of individualities is a necessary condition and a form of manifestation of a community's successful life activity. The individual uniqueness and originality of a personality is not simply the greatest social value but also a pressing need in the development of a healthy and reasonably organized society.

Personality. Collective. Society.

Man is shaped and modified under the influence of joint labour, being both the subject and the object of the action of social forces and social relations.

The problem of personality cannot be solved without a clear philosophical formulation of the question of the relationship between personality and society. Now, in what forms is this relationship manifested?

The connection between personality and society is mediated above all by the primary collective: family, or group of students, or labour unit. Only through the collective does each of its members become part of society. The decisive role is clear, then, of this exceptionally important cell of an integral social organism, in which the individual is moulded spiritually, intellectually, and physically, and in which he absorbs, to some extent or other, what was created by his predecessors—through mastering the language and the socially evolved forms of activity.

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The direct forms of communication which take shape in the collective form social links, moulding the image of the person; through the primary collective, the personal is handed over to society, and the achievements of society are passed on to the individual. Just as any personality carries an imprint of the collective, so any collective carries the imprint of its members: being the formative element for the individuals, it is in its turn shaped by the individuals. A collective is not something faceless, solid and homogeneous. It constitutes a combination of various individualities all unlike one another. The individual does not sink or dissolve in the collective but reveals and asserts himself. Performing a definite social function, a person plays his or her individual and unique role—one out of the vast spectrum of various kinds of creativity.

Human society is the highest stage of the organization of living systems. Being a collective of collectives, as it were, it has the highest social authority. The primary collective is a society in miniature, for it is here that the individual and society directly interact. For the individual, society is simultaneously an ensemble of all the social conditions of his life and the result of the development of all the primary collectives and thus of the individual himself, since he is a member of one of them.

2. Man in the Flow of History

The concrete historical conception of personality.

The relationship between individual and society has undergone essential changes in the course of history. The concrete content of personality has also changed in this process. A retrospective view of history reveals to us a great diversity of personality types characteristic of definite types of culture and worldview: antiquity, the Middle Ages, the Renaissance, the Modern Times, and so on. A 20th-century personality sharply differs from a personality of a not too remote historical past, say of the 18th or 19th centuries. This is connected not only with the cultural epochs in the history of mankind but also with the replacement of one socioeconomic formation by another.

Under the gentile system, personal interests were subordinated to the interests of the survival of the gens, and each adult individual played a role strictly prescribed by the gens and by tradition. Society on the whole was guided by rituals, by the customs of forefathers. Man's tribal social essence was organically realized in the primitive, undeveloped forms of his activity. That was the first historical stage in the development of the human personality, whose inner spiritual world was completely filled by a uniform social-natural existence.

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With the emergence of the slave-owning and feudal socioeconomic formations, of the classical and mediaeval cultures, a new type of relations between individual and society arose. In these societies, where classes emerged with their opposite interests, and the state evolved as a result along with officially established legal relations between citizens, the individuals (free citizens in slave-owning society and all citizens in feudal society)

became subjects of law and obligations. That meant recognition of a certain independence of action on the part of the individual and, accordingly, the individual's responsibility for his actions was envisaged. The formation of personality assumed turbulent forms here, the personality being affected, on the one hand, by estate collectivism, and on the other, by class narrow-mindedness; all this ultimately determined the personality's content, the forms of social activeness or passiveness, mode of life and worldview.

However, despite the fact that both these socioeconomic formations were essentially exploiting types of society, the individual of the classical epoch differed sharply from the individual of feudal society: the two lived under different types of cultural conditions. Classical society was a pagan society. Man himself, and the community as a whole, were perceived in the likeness of the cosmos: hence the view that man's fate was predestined. The individual could, of course, be independent in the conduct of his terrestrial affairs, but in the last instance he still perceived himself as a tool of the cosmic world order embodied in the idea of fate. Everyone had a fate of his or her own, and no one could change it of one's own free will. The classical individual's worldview remained essentially mythological.

In the Middle Ages, Christian religion developed the view of personality as an integral autonomous structure. The personal spiritual world became more complex and more differentiated: the individual established intimate contacts with the personified God. The worldview of the Christianized individual was permeated with eschatological motifs; hence the orientation towards a spiritual life in seclusion, perfection of the soul, and education of the individual in the spirit of meekness and nonresistance. The physical was in a way sublimated into the spiritual, by way of preparation for afterlife. The religious element imbued all aspects of human existence, which determined the appropriate mode of being. The individual's intense inner life, in which the psychical self was concentrated in the moral and worldview focus, left little room for the biological and social components.

In the new cultural environment connected with the transition from feudalism to the capitalist forms of the economy, the personality of a new type evolved. In the epoch of the Renaissance freedom of choice became a matter for acute reflexion; the autonomy of God was interpreted as autonomy for man himself: man was now declared to be the master of his own destiny. Man's dignity lay in his involvement in all things terrestrial and celestial, from the lowest to the highest. Freedom of choice meant that

man's position in the cosmos was not fixed, and that he had the freedom of creative self-determination: the individual had tasted the ecstasy of the unlimited possibilities of his essential forces and felt that he was master of the world. Reason now held the dominant position: everything that could not stand the test of reason was subject to doubt and criticism. This determined a considerable rationalization of all the spheres of social life and caused science to flourish. A mediating link in the form of technology wedged itself in the relations among people. Universal rationalization meant the narrowing down of the emotional and spiritual side of the inner personal world. Value orientations and the worldview also were changed. As capitalism asserted itself, the highest value was attached to such personal qualities as will power, enterprise, abilities; all this, however, had its reverse side—egoism, individualism, ruthlessness, and so on. Further development of capitalism led to a total alienation of the individual. The personality of the individualistic type evolved, with a pluralist worldview and an orientation towards objects. Such an individual's spiritual values were supplanted by rationalist and pragmatic ones. The principle of utilitarianism permeated human relations. The psychology of individualism inevitably created an acute sense of loneliness and an alienation of man from man.

The alienation phenomenon.

The phenomenon of alienation ought to be studied in closer detail. In the broadest sense, alienation is a social process in which the results of man's activity turn into an independent force hostile to him and dominating him. Historically, alienation was conditioned by the social division of labour and the emergence of private property with all the consequences of that development: the state as an apparatus of oppression of one class by another; social inequality and exploitation; the view of man's spiritual powers as something absolute and supernatural (religion and idealism); and, finally, a development of science and technology that ultimately turns hostile to man himself.

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On the socioeconomic plane, the phenomenon of alienation is manifested as objectified labour prevailing over living labour, and the direct producer being prevented from controlling the conditions, means and products of labour. Not being the subject of property, the direct producer cannot perform a number of functions characteristic of the producer/owner.

The effect of alienation is, in fact, a by-product of the process of reification or objectification by man of his own essential forces and abilities; under the conditions of the division of labour and the social relations taking shape on this basis, the said process leads to the alienability of these relations, of which a fetish is then made. Social relations looked upon as fetishes are reflected in a specific manner in social psychology as well as in the individual's consciousness. There emerges a gap between the individual's expectations and the norms prescribed to him by the social structure, which leads to his perception of these norms as alien and hostile to himself, and to the feelings of isolation and loneliness. All this assumes (rather than rules out) violations of the norms of social behaviour.

Alienation, which accompanied mankind's entire history (with the probable exception of gentile society), was manifested in its sharpest forms under capitalism. In his comprehensive analysis of the essence and content of capitalist society, Marx identified a number of characteristic features of the phenomenon of alienation. He showed that the conditions of labour, both material and intellectual, are alienated from labour itself and opposed to the worker as capital, and that for this reason the worker, engaged in a one-sided labour process, feels impoverished and ravaged by this process. The results of labour are also alienated from the wage labourer. Marx further traced the way in which social institutions are alienated and turned into hierarchically constructed bureaucratic systems. As a result of all this, ideology is totally alienated from the working people's actual life, and a level of expectations is formed in members of the community which does not accord with its real possibilities.

The activization of the human factor and harmonious development
of personality.

The role of the human factor in history is constantly on the increase. The reasons for this apparently lie in the fact that as the sphere of man's activity expands, as the kinds and forms of this activity become more complicated, and the interdependence of man, nature and society assumes global proportions, progress can only be achieved through conscious control over the creative process on the social scale.

Socio-historical practice is in effect the development of man's freedom, of his essential forces. As we know, freedom implies choice. Man is truly free

when he realizes that choice independently, without pressure from outside forces or alien opinions being thrust on him, through cognition of the laws of the real world, including history. But man is only free to the extent to which the conditions of social being permit him to be free.

And what does man gain from freedom? Above all a right to labour, a just distribution of material and non-material wealth, participation in social affairs, application of his abilities as a realization of his basic needs, and the right to leisure. Freedom of the individual is expressed not only in his rights but also in the obligations and responsibility: the citizen's rights do not exist without obligations, just as there are no obligations without rights. Responsibility is the reverse side of the individual's free activity, the socio-moral regulatory principle of interconnection between individual and society. The greater the social role of the individual, the more responsible he must be.

The basis of social and political freedom is economic emancipation of labour from the oppression of alienated capital. But that is not all. A reasonable organization of the economy is necessary, a system that would envisage a natural rather than enforced need for revealing the individual's essential forces, i.e. a real rather than imaginary realization of his freedom.

Chapter XV. THE SPIRITUAL AND INTELLECTUAL SPHERE OF SOCIETY'S LIFE

1. Social Consciousness: Essence and Levels

Social consciousness and its transforming power.

Speaking generally, the meaning of this concept is clear from the materialist solution of the basic question of philosophy. However, as far as the relation between social being and social consciousness is concerned, mere "primariness and secondariness" on the general philosophical plane are not enough. That is just not sufficient. Indeed, social consciousness did not emerge some time after social being but simultaneously with it. Without the human mind, society would have been unable either to emerge or to develop. Since society is a subjective-objective reality, social being and social consciousness are, as it were, loaded with one another: without the energy of consciousness, social being is static and dead. Even the process of material production, the basis of social being, which in one of its elements exists independently of consciousness, determining the latter, has a merely relative freedom from the power of consciousness. There is no idealism about this assertion whatsoever, as we merely say that consciousness is realized in two hypostases—in the reflective and actively creative abilities. The essence of consciousness consists precisely in the fact that it may reflect social being only on condition of its simultaneous creative transformation. The function of anticipatory reflection characteristic of consciousness is most clearly realized in relation to social being, which is essentially linked with orientation towards the future. This has been repeatedly borne out in history by the fact that ideas, in particular socio-political ideas, outstripped the contemporary state of society and even transformed it, as is illustrated by the ideology of progressive classes and especially by the fact of the socialist revolution. Society is a material-ideal reality. The ensemble of generalized notions, theories, emotions, mores and traditions—of all that forms the content of social consciousness, the intellectual and spiritual reality—is part of social being, since it is given to the consciousness of the separate individual

But, while stressing the unity of social being and social consciousness let us bear in mind their characteristic differences, their separateness and relative independence. Historical interconnections between them were realized in such a way that, while at the early stages of the development of mankind social consciousness was shaped by direct influences of social being, later this action became mediated—through the state, through political and legal relations, and so on. The reverse influence of social consciousness on social being becomes, on the contrary, more direct. The very possibility of this lies in the ability of consciousness to reflect being correctly.

Thus consciousness as reflection and as active creativity is a unity of two inseparable aspects of a single process: it evaluates being revealing its secret meaning, it predicts being and transforms it through people's practical activity. This expresses the historically established function of social consciousness, which makes it an objectively necessary and actually existing element of any social structure.

The fact that social consciousness includes different levels (everyday consciousness, theoretical consciousness, social psychology, ideology, etc.), with social being reflected at each of these levels in different ways, presents a real difficulty in understanding the phenomenon of social consciousness.

Social and individual consciousness.

What is the relationship, in this light, between individual and social consciousness? Some believe that the real sphere of social consciousness, and its only carrier, is the concrete individual Others think, on the contrary, that social consciousness is something suprapersonal, so that a conception of it need not take the individual into account at all. To sort it all out, let us go back a bit, and let us repeat: social consciousness is a socially conditioned phenomenon—not only in terms of the mechanism of its inception and realization but also in the nature of its being and historic mission. It is an *attribute of society* and is comparable, as a special type of reality, with society's being.

The space in which social consciousness exists must be designated like this: it is the man-activity-communication-history-language-culture system. This system is in a state of constant dynamics of functioning and development, continually introducing countless individuals coming into this

world to the cultural treasures of mankind. Outside world history, the individual's brain would not have been able to think in the human way. When people learn to consciously perceive the world in the framework of social life, they are learning at the same time to express in the process of communication their ideas, recording them in language which takes individual consciousness into the arena of social being. The individual is both finite and limited. His consciousness lives and dies with him. In the system of society, though, his consciousness becomes immortal, in a way. Social consciousness, which is ultimately generated by the brain of the individual as an element of social being, is now making a powerful impact on the individual during his entire lifetime.

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At this point it is very important to note that consciousness, both social and individual, cannot be derived just from the process of reflection of the natural world: the subject-object relation does not generate consciousness. For this process to take place, the subject must be included in the intricate network of social practice. As we come into this world, each of us inherits a multifaceted culture which has to be absorbed so that we might acquire a truly human essence and be able to think. We start a dialogue with social consciousness, and this opposing consciousness is a reality, just as much as, say, the state or law (a reality, of course, that has specifics of its own). We can rebel against it, but our rebellion may prove to be not only meaningless but also tragic, unless we take into account the forms and methods of the historically established intellectual-spiritual system. In order to transform this system, it is necessary first to master it.

This does not mean, of course, that social consciousness is viewed as a sort of impersonal kingdom of abstract ideas free from man and oppressing him with their global historical weight. Social consciousness is *suprapersonal*, but that does not mean that it is *extrapersonal*. It is inherently of the same nature as man: everything in it has been created and crystallized precisely by man and not by some extrahistorical force.

Social consciousness is not, however, a quantitative sum of individual minds—it is a qualitatively novel hypostasis of these minds, an ideal-objective reality organized within itself in a special manner, a reality whose demands and will the individual must take into account in the same way as he takes into account natural phenomena. However, social consciousness does not exist for individuals as an external mechanical force. Each of us equally confronts this consciousness, but each absorbs this force, reacts to it,

and acts on it in his own way, depending on the personality-related, individual specifics. Each individual consciousness also has its own sources of development, so that every individual is unique despite the unity of the human culture embracing all individuals.

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The carriers of social consciousness are not only individuals but also social groups and society as a whole. If the individual alone were the carrier of social consciousness, all differences between individual and social consciousness would actually disappear: the problem cannot be solved by separating social consciousness as something averaged and typical from individual consciousness as the nuances and liberties determined by the individual's specifics. Can we in this case form a conception of social and individual consciousness as two distinct entities? What will be left in individual consciousness if we take away the entire content of social consciousness? Nothing but the freaks of biopsychology. On the other hand, what will the so-called social consciousness look like—a mere collection of simplified statistical views in their depersonalized and lifeless form?

Failure to distinguish between individual and social consciousness is fraught with such dangerous diseases as dogmatism and voluntarism. Indeed, dogmatism deifies a system of ideas accepted at one time, regarding it as given once and for all, as the ultimate and immutable truth. A dogmatic person gives up his personal view in favour of the generally accepted one. As for the voluntarist, he will, on the contrary, ignore social consciousness in favour of the individual one; his reasoning runs along these lines: if my actions are motivated by the best of intentions, these intentions coincide with the objective imperatives of history. The possibility of a subjective error is disregarded, and all his initiatives are no more than dreamy utopias. Voluntarism holds back historical progress just as much as dogmatism, nurturing countless illusions in social consciousness.

Social consciousness has an objective nature and immanent laws of development, and it can either lag behind or anticipate being in the framework of an evolutionary process that is natural to a given society, acting either as a powerful stimulant or as a mechanism of retardation. The powerful transforming force of social consciousness can affect being as a whole, revealing the meaning of the ongoing evolution and predicting its future. It differs in this respect from subjective individual consciousness, which is finite and limited to a single individual. The power of the social whole over the individual is expressed in the obligatory acceptance by the

individual of historically established forms of cultural assimilation of reality, of those means and ways with which spiritual and intellectual values are produced, of the semantic content which humanity has accumulated over the ages and without which the formation of the individual is impossible.

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Just as any other phenomenon, social consciousness is amenable to study, although this study has to be carried out from within social consciousness itself and cannot therefore be absolute, for it is impossible to lift oneself without a point of rest outside oneself. Social consciousness is generally divided into different levels on the vertical plane and *forms* on the horizontal one.

The everyday practical and the theoretical level of social consciousness.

The division into the everyday practical and the theoretical level is based, as is clear from the terms themselves, on the antithesis of an *integral understanding of life* that is *practical and unsystematized* (although not entirely spontaneous) on the one hand, and ideas that have been subjected to *creative elaboration and rational systematization* (in the special sciences, in art, philosophy, socio-political, ethical and other doctrines), on the other.

This division is usual in all the forms of social consciousness, although the relations between the two levels are by no means the same everywhere. "Everyday" does not mean "philistine" or "inferior"; this concept reflects an objectively existing and necessary level of social consciousness filled with a vast and vital content; it undoubtedly has its drawbacks, but at the same time it has definite advantages as well. As distinct from the systematic, rational, and clearly intelligible quality of the theoretical level, everyday consciousness has a fullness and integrity of life perception that is uncharacteristic of the theoretical forms of consciousness. That is one of the main indications of its viability. A person may have no knowledge of any theoretical system, no familiarity with any philosophical constructs, and yet feel no serious psychological discomfort if that person's everyday consciousness is internally harmonious and knows no conflicts; but even if one is a highly qualified specialist in a particular field, one cannot do without an integral worldview, even if it is of the everyday kind. If not, such an individual will inevitably feel discomfort.

Everyday consciousness is closer to the immediate realities of life than its theoretical forms, and it therefore more fully reflects the specifics of a situation with all its concrete details and semantic nuances. The experiences of everyday consciousness are the treasure-trove from which the special sciences, philosophy and art draw their content. Everyday consciousness is thus the primary form of society's understanding of the social and the natural, a form that is objectively conditioned by the very nature of man. Its qualities are historically variable. If, for instance, everyday consciousness of the Middle Ages was virtually free from scientific notions, society's present-day practical consciousness is no longer a naive religious-mythological reflection of the world: on the contrary, it is permeated with scientific knowledge—yet at the same time it generalizes this knowledge in a kind of unity with its own means irreducible to scientific ones.

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Social psychology and ideology.

The relationship between the everyday and theoretical levels of consciousness is transformed in a specific manner in the relation between social psychology and ideology. *Social psychology* is a partial analogue of the everyday level of consciousness; it embraces various scientific and nonscientific views and assessments, aesthetic tastes and ideas, mores and traditions, inclinations and interests, images of fantasy and the logic of common sense. *Ideology* is a partial analogue of the theoretical level of consciousness; it systematically evaluates social reality from the positions of a definite class or party. Ideology accumulates the historical experiences of definite groups or classes, formulates their sociopolitical tasks and goals, and builds a system of authoritative ideals. A significant feature of ideology as a specific form of consciousness is that it reflects reality in a mediated form, and not integrally and directly as social psychology does; ideology develops its own categorial tools which, being fairly abstract, are more remote from reality; this holds the danger of ideology becoming self-contained and inclined towards scholastic theorizing.

Because of this, social psychology and ideology can reflect identical realities in different ways. The very fact of their antithesis leads not only to ideology lagging behind everyday consciousness but to a destabilization and undermining of social psychology itself. When the structure of social consciousness is undermined by disharmony reaching the point of an acute

conflict, social consciousness gradually loses its stability and unity. A great role in the resolution of this contradiction is played by the study of public opinion, which is interpreted as the statistically averaged evaluative attitude of various social strata to current events.

Such are the most general features of the principal levels of social consciousness on which all of its forms function. The forms in question are as follows: philosophy, politics, law, morality, aesthetics, religion, and science. All forms of social consciousness with the exception of philosophy can be divided, somewhat arbitrarily, into two cycles. The first cycle includes politics, law and ethics; underlying all of them there are various modifications of the primary relations between subjects (relationships among people, in ethics; the relationship between individual and society in law; and relationships between social groups, including states, in politics). The second cycle includes aesthetics, religion (or atheism), and science. The focus here is the basic relation between subject and object, i.e. the various forms of the reflection in human consciousness of man's complex relations with the world.

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2. Political Consciousness

The concept of political consciousness.

Political consciousness emerged in antiquity in response to the real need for interpreting new phenomena (above all, the state and state power) produced by the split of society into antagonistic classes. Political consciousness reflects the understanding of the relationship established between people's immediate practical activity, on the one hand, and socially regulated conditions under which this activity takes place, on the other. As the social division of labour leads to the formation of classes, and thus to sharp differences in the conditions of their existence, the need arises for supporting the established class structure through state power expressing the interests of the ruling class. *Political consciousness is a reflection of the economic, social and production interconnections between classes in their overall relation to state power.* This conditioning by the immediate

economic and class interests constitutes the specificity of political consciousness, within which the political interests proper evolve.

The political consciousness of society cannot naturally be homogeneous, covering as it does the “sphere of relationships of *all* classes and strata to the state and the government, the sphere of the interrelations between *all* classes”.¹ A political evaluation of reality depends on the position the subject of that evaluation (an individual, group or class) occupies in the given social structure. In an antagonistic class society political interests come constantly in conflict in the struggle for state power. The structure of state power is the central problem of political thought. The political struggle for determining the structure, tasks and content of activity of the state assumed extremely varied historical forms—from open discussion of social problems in parliamentary debate and economic demands leading to partial reforms, to violent state upheavals or social revolutions. The evolution of political doctrines ultimately reflects progressive development of socioeconomic history.

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Political interests are objective, and they therefore concern every individual, whether openly expressed or concealed. In effect, the life of every society (with the exception of the primitive-communal one) is permeated with political interests in which acute social contradictions are focused. It is precisely political interests that are mostly at the centre of all socially active associations and, even more so, of social conflicts. In this struggle, anything—science, art, religion, philosophy—can become an object of political consciousness, and anything may be drawn into the sphere of ideological discussions.

This does not mean that every cultural phenomenon is either a reflection or a victim of political interests; genuine creative work is selfless regardless of the political situation. At the same time the creators of the new always think along politically progressive lines. If dependence of culture on direct political goals leads to the loss of culture's independence and specificity, this slows down its development and, moreover, makes for a violent rejection of spiritual and intellectual wealth already accumulated by society.

¹ V.I. Lenin, “What Is to Be Done?”, *Collected Works*, Vol. 5, Progress Publishers, Moscow, 1977, p. 422.

As long as classes exist, and so does the problem of state power, all the other aspirations of the human mind will inevitably, consciously or forcibly, be involved in the whirlwind of political contradictions.

Levels of political consciousness.

Apart from the decisive, class criterion of evaluation of political consciousness applied in social philosophy, it generally subdivides this consciousness into two levels—the everyday practical level and the ideological-theoretical one, in accordance with the division, described earlier, of social consciousness as a whole into social psychology and ideology.

Everyday practical political consciousness emerges spontaneously, growing out of people's practical activity, their social background and immediate environment. Without theoretical reflection, this consciousness combines the rational and the emotional, fresh experiences of everyday life and traditions, the mood of the moment and the stable stereotype. It is often unstable, fluctuating with the emotions and the changing immediate experiences, but it is also largely static, as the acting stereotypes make thought lose its flexibility. In view of the community of the economic position, the members of one class develop similar forms of everyday practical political consciousness. There is no generalizing intellectual work here, nor broad historical perspective, nor theoretical formulas or philosophical categories.

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At the same time it is precisely everyday consciousness that, owing to its direct dependence on objective economic reality, contains an embryo of a *theoretical political ideology* of the given class. Critically analyzing the content of everyday consciousness, theoretical ideology works out a clear-cut, historically and sociologically substantiated political programme. Ideology is not a passive study of the existing attitudes but a strategic and tactical system aimed at active reverse influence on social consciousness. To join in real political struggle, the interests of a class must assume the form of a coherent ideological theory, a system of views not only on contemporary reality but also on future social development—and this is already the prerogative of ideological thought.

Ideology is shaped by a special and independent group of people—the "ideological estate", or the ideological element of a class. Each class produces its own ideologues whose duty it is to present the political interests of the

class in theoretical form. Here, the personality of the ideologue himself also affects to some extent the ideology that is being shaped: it is enough to recall the tribunes of the French Revolution to perceive the difference between the emotional and intellectual fervour of basically similar political demands. If the form of the expression of ideas is infelicitous, a class may reject the ideologue and temporarily follow another speaker even if his goals are the opposite of its own. The complexity of the relationship between ideology and everyday consciousness is the source of numerous political collisions, beginning with excessive anarchist tendencies in the masses and ending with extremely rigid ideological forms of totalitarianism. This relative freedom of ideology from everyday consciousness is sometimes widely used as a means of deliberate manipulation of public opinion, with alien ideas being implanted in the minds under the guise of vital class interests.

The great possibilities of the impact of political ideology on social consciousness are also explained by the fact that it is not only a system of ideas but also a definite social institution, that is to say, it has administrative state authority. Every ideology has its organization, its type of propaganda, and specific forms of ideologically influencing the masses. Under the conditions of broad democratic openness, the uncontrolled influence of the dominant ideology is checked.

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A great role in the theoretical substantiation of politics is played by philosophy. Historically, politics has often dominated philosophy, making it an apologist of the existing social relations. But objective development of history makes it necessary to realize the dream, cherished since the times of Plato, of a state controlled by philosopher-politicians. Politics requires objective scientific recommendations of philosophy, otherwise erroneous or openly voluntarist tendencies develop in it. Truly scientific philosophical analysis brings into the open objective causes of social events, and helps to work out ways for regulating political interests in order to harmonize them gradually and in a planned manner.

3. Legal Consciousness

The concept of legal consciousness.

Legal consciousness is the form of social consciousness which expresses the knowledge and evaluation of the normative regulations—accepted in a given society as juridical laws—of the socioeconomic activities of various subjects of law (the individual, the enterprise, the work collective, the organization, the official). Legal consciousness occupies, as it were, an intermediate position between political and moral consciousness: as distinct from political consciousness, it deals above all with individual-personality categories; it does not treat the state as the subject of political power but as an external regulating force demanding unconditional subordination yet at the same time being judged in one way or another. As distinct from moral norms, the concepts of what is proper and just are conceived in legal consciousness as elevated to the level of state law whose violation entails legal sanctions. While political consciousness is formed by objective socioeconomic interests, legal consciousness relies more on rational and moral judgements. Thus at the everyday practical level of legal consciousness the existing laws are evaluated in terms of their correspondence to moral requirements, whereas theoretical legal consciousness regards the existing laws in terms of their political meaning and agreement with the requirements of reasonable social order.

There are historical causes for the inner affinity between legal consciousness and rational-moral categories. In classless primitive-communal society, with its mythological worldview, laws were regarded as a moral tradition; in Hegel's words, they "had the form of divine laws sanctioned by the gods". With the division of society into classes, and with the formation of the state, moral and legal consciousness were differentiated. The idea of law proper made its first appearance here—as a force defending the individual from the state and different from the obligatory moral tradition. The idea of law was that individual laws ceased to be perceived as incontestable divine injunctions, passing into the domain of human reason's competence. However, already in antiquity the idea of reasonable law was firmly linked with that of just law, so that the legal and moral forms of social consciousness continued to develop along parallel lines. Mutually affecting each other, they were not identified since the reasonable desire, inherent in legal consciousness, to merge together law and justice could not be realized.

In class society, the laws in force express, as a rule, the will of the dominant class, so that the ideal of social justice underlying legal

consciousness has continually been in a state of evolution concurrent with the development of the socioeconomic structure. Thus in the mediaeval worldview the social inequality of the estates was sanctioned by "divine right" carrying in itself transcendent justice, while the nascent bourgeois worldview linked justice with natural law, in accordance with which each individual, regardless of his membership in any of the estates, had to have the same rights as anybody else. This ideal of social justice reflected the objective demands of developing capitalist production which made it necessary to release the personal initiative bound by the fetters of feudal estates. This marked the birth of formal law, which asserted juridical equality of all members of society. That is the historically progressive significance of bourgeois legislation.

Bourgeois equality, however, is an equality of a special kind—it is merely nominal, as equal standards are applied to objectively unequal individuals, which paradoxically consolidates the original inequality. Under legal equality, unequal individuals "are measurable by an equal standard only insofar as they are made subject to an equal criterion, are taken from a *certain* side only ... everything else being ignored".² So from what angle, common to all, does juridical law consider all individuals?

Juridical law determines the *measure* of the individual's *social freedom*, it acts as the boundary of that freedom which receives official state protection owing to legislative recognition. The measure of the individual's freedom determined by the state is conditioned by the mode of production accepted in society, and has socio-class nature. At the same time law regulates the *normative obligatory* elements of social activity, which is the reverse side of the measure of social freedom. Understandably, legislation itself considers these relations from the point of view of the state, proceeding from the needs of the functioning of the social whole, while social consciousness in its legal everyday practical form sees the same situation from the individual's standpoint, and judges it in accordance with the moral ideal of social justice. Theoretical consciousness attempts to unite both ideas—of the state and of the individual—in a single harmonious whole.

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Any juridical law is therefore historical, appearing at first as a theoretical ideal and then being consolidated as law in keeping with the socio-historical

² K. Marx, "Critique of the Gotha Programme", in: K. Marx, F. Engels, *Collected Works*, Vol. 24, Progress Publishers, Moscow, 1989, p. 87.

causes that engendered it. Society's legal consciousness is therefore also historical; it functions as knowledge of and judgement passed on developing legislation.

4. Moral Consciousness

The concepts of moral consciousness and ethics.

Moral consciousness is the principal axiological form of social consciousness reflecting generally accepted normative statutes and evaluations of human activity. As distinct from political consciousness, which reflects the principles of interrelations among social groups, and from legal consciousness, in which the individual plays a much greater part yet is considered in his relation to society as a suprapersonal generalized social force, moral consciousness reflects the relations between individuals and those positions from which a person evaluates his own self.

If, for instance, the norms of legal consciousness are formulated and implemented by state bodies, the norms of moral consciousness both evolve and function in people's immediate practice, in the process of communication, being a reflection of individual and historical experience. They are consolidated through public recognition of their universal value for a given collective or social group, although they do not have legal force. But not all aspects of man's activity and behaviour are directed by legal and moral norms. There is also an extremely ramified network of collective regulation which does not pertain to morality as such: customs, rituals, various unwritten statutes in force within groups, passing styles of mass behaviour, and so on. The norms of moral consciousness evolve as a historically definite result of people's united will, forming a system of well-tested rules and judgements, social requirements and social opinion, i.e. *a system of social norms which regulate interpersonal communication and behaviour of people to ensure the unity of personal and collective interests.*

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The sources of moral consciousness go back to customs which incorporated acts that proved their value, in the experience of several generations, for the maintenance and development of society and man, being in agreement with their needs and interests. The specifics of moral

consciousness, its structure and historically changing forms are studied by the special philosophical discipline of ethics. Society's moral consciousness is manifested in various social interdictions called upon to prevent acts impermissible in terms of social interests. But morality is also reflected in the category of the obligatory—of that which the individual must do when moved by a sense of duty. The special effective force of moral norms lies precisely in the fact that they are not fixed in law. Such moral categories as conscience or the sense of dignity and honour reflect the individual's possibility to determine and direct independently (that is, freely) his behaviour without constant control on the part of society and attendant sanctions.

Being a manifestation of man's social essence, morality is a fundamental feature which determines the image of man as such. It is, consequently, man's generic trait without which society's being is impossible. Moral consciousness is in this sense a necessary factor of socio-historical progress. Morality serves as a means of mankind's elevation; it is probably the most important of the forces that mould man.

Just as in other forms of social consciousness, modern science generally distinguishes between the two levels in moral consciousness, everyday practical and theoretical. The everyday practical level reflects the real morals and manners of society, the widespread norms and judgements supported by the socioeconomic structure of society. The theoretical level formulates the ideal anticipated by society, the sphere of abstract obligation which, for obvious historical reasons, has never coincided with actual reality. The ideal theoretical level of moral consciousness is termed *ethics*. Ethical consciousness was separated from the immediate moral one at the same time when political and legal thought evolved—with the emergence of the state. Systems of ethical imperatives as ensembles of concrete irrefutable truths always opposed to the real morals and manners are historically variable; most often ethics reflected in transformed shape the hidden interests of the dominant class. The very fact of the emergence of ethics must be regarded as a significant turn in social consciousness. As distinct from the everyday level of moral consciousness, ethics is a system of views, close to philosophy, which does not simply reflect the existing conditions and actual norms of behaviour or appeal to traditions and customs but critically evaluates the existing state of things and finds in it the first shoots of the anticipated ideal, promoting its realization in further social practice.

Morality and freedom of will as an ethical category.

The fact that moral norms are not fixed in law explains the origin of such a fundamental ethical category as *freedom of will*, which reflects the possibility of man's conscious choice of the line of his behaviour and responsibility for it. Of course, not all our actions are determined by moral choice only: man is also affected by legal interdictions and objective conditions of social being. Therefore the sphere of moral choice is not absolute.

Human actions are only moral in the full sense of the word when they are not performed as a result of external coercion or out of purely egoistic motives but out of an inner impulse to do good freely and selflessly, and in accordance with the goals of the collective and of society. But freedom of will is not unlimited, otherwise it would degenerate into anarchy for which there are no social norms, including moral norms.

What does freedom of will mean, then? "Freedom does not consist," wrote Frederick Engels, "in any dreamt-of independence from natural laws, but in the knowledge of these laws, and in the possibility this gives of systematically making them work towards definite ends. This holds good in relation both to the laws of external nature and to those which govern the bodily and mental existence of men themselves... Freedom therefore consists in the control over ourselves and over external nature, a control founded on knowledge of natural necessity..."³ As the basis of the individual's moral consciousness, this control is manifested in three aspects: as a measure of his real freedom depending on the attained historical level of the knowledge of the laws of nature and society, and on the nature of the existing social relations; as the dependence of personal freedom on the degree of spiritual development, civic maturity, and axiological orientations; finally, as a practical capacity for freely choosing a definite line of conduct, that is to say, as a capacity for expression of will. True and complete freedom can thus be realized only on condition that necessity is cognized and internalized as the content of personality. Cognized necessity is the basic regulative principle for the individual, it is the moral imperative or *duty*. The criteria of morality are such ethical categories as the good, humanity, justice, honesty, for moral

³ F. Engels, "Anti-Duhring", in: K. Marx, F. Engels, *Collected Works*, Vol. 25, pp. 105, 106.

consciousness, as we have already pointed out, reflects the laws of social development in axiological form, and the ideas of the good and of humanity belong among the most fundamental values. A person devoid of the inner moral core, a person entirely at the mercy of external circumstances passes through life like a frail boat on turbulent seas.

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The structure of moral consciousness and the categories of ethics.

What makes up the structure of moral consciousness? Its principal elements are, in the first place, the system of values and value orientations, ethical feelings, moral judgements, and ideals. Here also belongs the historically established system of categories of ethics.

The significance of the *value orientations* of moral consciousness lies in the fact that they ensure the content and functional unity of its entire structure, of which the general tendency they express. Both history and present-day spiritual life provide instances of varied systems of values which have different general orientations depending on the elements dominant in them. Of this nature are, for instance, religious systems of values (with their orientation towards faith in transcendent absolutes), humanism, pragmatism, scientism, or existentialism.

An essential element of moral consciousness is *ethical emotions*. The formation of the individual's moral convictions and principles is only possible if they are emotionally experienced; without this moral concepts and ethical categories, rationally acquired knowledge of the good and evil perceived only at the level of information processing, cannot become a basis for motives of behaviour. Ethical emotions either stimulate or inhibit the realization of various acts; they are a sensitive barometer indicating the acceptability or otherwise, in the eyes of the individual, of the moral basis for a certain design and the mode of its realization. Only in an organic unity with ethical emotions can moral norms and principles determine the motives and the entire line of conduct in relation to public duty.

The *categories of ethics* form a logical framework or intellectual apparatus which throws light on the moral cross-section of given social reality and its possible prospects. Both the content of these categories and their structure do not therefore remain invariable, given once and for all: depending on historical conditions, now one, now another category, filled each time with new content and sometimes even with individual psycho-semantic meaning,

is shifted into the focus of this structure, arranging the entire system round itself and thus creating a definite type of the moral consciousness of the epoch.

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The most universal moral values which permeate the whole of world history, all peoples and types of culture (albeit modified at different historical periods), are the concepts of the good and evil, and the related notions of meaning of life, happiness, justice, and conscience. They are rooted in the very nature of man and society. Throughout history, man has always striven towards preservation of the species, towards maintaining the health of the younger generation and his own, towards spiritual perfection, development of his abilities, and enjoyment of the beautiful—in a word, towards everything that figured as the good and that objectively promoted society's progress. Everything that interfered with it was judged to be evil. Man did not realize at once that he himself was the creator of both the good and evil, ascribing them to the action of supernatural forces of creation and destruction which were reflected in religious mythological consciousness as ideas of God and the devil, or Satan.

With the emergence of the theory of ethics in the well-developed social consciousness, the good, which gained the status of a category, was consciously linked with the ideas of humanism, universal equality and social justice. But what about evil? Is it always unambiguous and absolute? Reasoning in this way means falling into metaphysics, it means a failure to see the real dialectics of the good and evil and their transmutations. According to Hegel, evil can act not only as a destructive but also as a constructive force of history, for any new step forward along the path of progress is inevitably a rejection of the old that has objectively outlived its usefulness, and in this sense evil becomes the good. And Engels wrote once that evil is a form in which the motive force of historical development is manifested.

The formation of other categories of moral consciousness, such as the category of justice, which embodied the idea of reward for goodness and retribution for evil, was closely linked with the categories of the good and evil. Man's aspiration for complete self-fulfilment is realized only through labour, especially through creative labour, and also through the struggle for attaining personal and public well-being. All things that are inseparable from the meaning of an individual's life are necessarily evaluated by him in terms of happiness, and happiness is only genuine when his actions win social

recognition and have social value. When engaged in creative work, a person realizes that he gives away in the process a particle of his own self which becomes a drop in the sea of general culture as something more profound and lasting than personal being. Happiness is thus moral satisfaction gained from the awareness of the correctness, greatness and nobility of the main line of one's life. Labour and struggle for the good and against evil ennoble a person, make his or her life socially significant, meaningful and happy. As Goethe wrote,

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Freedom alone he earns as well as life,
Who day by day must conquer them anew.

Historical types of moral consciousness and ethics.

The history of the development of moral consciousness knows several basic kinds of such consciousness correlated with the principal socioeconomic formations, since each social form of property ownership produces its own theories of ethics.

In primitive-communal society, moral consciousness still ran along the channel of age-old traditions and customs, maintained by the power of public opinion without theoretical reflexion whatever. It would be more correct to say that only the premisses for moral consciousness proper were taking shape here. With the emergence of slave-owning society, a two-level moral consciousness evolved based on a common fund of moral tradition yet sharply polarized into the ethics of the master and the ethics of the slave.

Feudal moral consciousness reflected in minute detail the essence of the corresponding social structure; it incorporated those axiological orientations and regulative norms and principles of behaviour with which the individual could best realize social communication and get his bearings in the complex links and connections among the social statuses. All the complexities and contradictions of the corporative social order based on status, estate, and the principle of hierarchical subordination, were reflected in the ethical consciousness of those times in the formula "a place for everyone, and everyone in his place", the places in question determined by origin. This stand morally justified social inequality, which was also supported by religion with its own interpretation of the moral antinomy between the good and evil. A fundamental feature of the moral consciousness of the feudal epoch was the fact that it was expressed and functioned above all in the form

of religious worldview; it was thus not just subordinated to the hierarchical structure of earthly existence but also soared up into the heights of the cosmic order in the universe. Being a universal form of spiritual life, religious consciousness also embodied universal principles of moral consciousness connected with the relevant conception of the good and evil, which, according to the Bible, fight each other over supremacy in this world. Therefore there are no ethically neutral forces in the mediaeval model of the world: they are all correlated with the cosmic antithesis between the good and evil and involved in the world history of salvation.

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The dominant or focal point of the system of feudal moral consciousness was the concept of honour as a value which, on the one hand, embodied the morally good, and on the other, determined a most important rule of the hierarchy of personal dependences. The concept of honour served as an ethical criterion for the individual's realization of his position in the social pyramid, a mode of asserting his status and moral dignity associated above all with nobility of origin. In feudal ethics, the principle of honour was a kind of moral imperative which often required that man should act contrary to other virtues— magnanimity, kindness, humanity and even common sense, compelling him to discharge his estate-related obligations thoughtlessly. Thus feudal mores compelled men to fight duels, contrary to all wisdom, where a conflict could be resolved by other means. People's behaviour in these circumstances was determined by moral etiquette. The principle of honour prevailed over all the other orientations of moral consciousness: courage, generosity, hospitality. For the working people, the dominant principle of honour had quite a different content, which was determined by the way of life of these classes. For them, the highest moral values were industry, conscientious service, the dignity of a fine worker, and respectability. The religious imperative of sticking to one's "place" in life assumed, together with the principle of honour, such a virtue as loyalty, which compelled the inferiors to submissively serve the superiors. This virtue was nurtured by the religious ideas of the immortality of the soul and attainment of the kingdom of God, which, according to Christian ethics, demanded from man inner perfection through love and loyalty to one's neighbour.

The bourgeois epoch was characterized by a different conception of man and his predestination, and consequently, by a different ethical ideal. Lenin pointed out that in the epoch of the formation of capitalism, bourgeois

freedom and the complex of ideological and moral ideas connected with it signified an enormous progress. What were the manifestations of that progress? In the first place, the emancipation of the individual from the feudal estate fetters, his psychological liberation and realization of himself as a self-sufficient value.

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The objective basis of the altered state of the individual were changes in the production, economic, and social spheres of life. The development of industrial production demanded, first, a rapid development of science and technology; second, a rejection of the division of society into estates; third, expansion of the overall field of activity; these demands taken as a whole led to new requirements imposed by society on man. All this moulded such qualities as enterprise, initiative, creativity, as well as ruthlessness and capacity for militant competition with other individuals. In order to develop these qualities, the individual had to be free—if only formally, i.e. legally. Energy, a calculating mind, and persistence in achieving personal aims were given high moral marks, shaping the ideal of an active, self-assertive individual and at the same time a system of axiological orientations of a moral consciousness dominated by utilitarian individualistic ethics. Bourgeois consciousness proved to be adapted to the market relations among men of property, the principle of bargaining being transferred to the moral relations among people. The main vector of moral judgements and axiological orientations of the bourgeois system is a moral equivalent of commodity exchange (the give-and-take principle), which is at the same time seen as the highest expression of justice. This "market orientation" in moral consciousness leads to the consequence that ethical qualities manifested in interpersonal relations do not have value in themselves but only as equivalents of exchange or sale in the social "personality market". It is a kind of moral arithmetic, calculating in a dry, businesslike manner the useful effect of all the decisions taken.

Characteristic of bourgeois consciousness is also a general axiological orientation towards wealth, which is seen as the highest value and the meaning of life. The bourgeoisie lives for gain alone, "it knows no bliss save that of rapid gain, no pain save that of losing gold".⁴ We find a striking and apt description of the moral consciousness of the new, bourgeois type in

⁴ F. Engels, "The Condition of the Working-Class in England", in: K. Marx, F. Engels, *Collected Works*, Vol. 4, p. 562.

Charles Montesquieu: "Men are less esteemed for frivolous talents and attainments than for essential qualities; and of this kind there are but two, riches and personal merit."⁵ Loss of wealth is equated with loss of personal dignity, not only in the eyes of the surrounding individuals but often in the person's own eyes.

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Personal success in attaining wealth is valued as a boon in itself (as the good), while failure, as evil. Personal moral merits thus interpreted include in the structure of moral consciousness a personal responsibility for success. Underlying this original interpretation of responsibility is the formally perceived principle of equality; in view of this, the role of the individual's personal qualities in competition is lifted to an absolute, while social responsibility for the individual's real position in society—his oppression, humiliation, and suffering—is discarded, all the blame being shifted onto the individual himself. The objective basis of the concept of responsibility is thus removed, and its real moral meaning is emasculated.

The concepts of honesty and duty, in a specific interpretation, are the focal concepts in the structure of bourgeois moral consciousness. The essence of honesty is that it determines the conditions of the normal flow of enterprising activity, of maintaining a business reputation; this put the finishing touches to the concept of duty as the controlling mechanism of moral consciousness. The category of duty concentrates the system of obligations which society imposes on the individual, and also the controlling psychological mechanism of self-consciousness ensuring compliance with various norms and interdictions which follow from the inner moral experience of the individual himself. The paradox of bourgeois moral consciousness is that, although it made man the focus of all its dispositions, it treated man merely as a means rather than the end.

In the 20th century, the bourgeois system of values has been partly modified. The reaction to the 19th-century view of man as a "material means" sharply raised the value of a separate human existence (in existentialism and various ideas of personalism). But the alienation of man from social being inherent in capitalism, his moral loneliness in the technocratic world of plenty is expressed in the fact that none of the

⁵ Ch.-L. Montesquieu, *The Spirit of Laws*. Translated by Thomas Nugent. Vol. 1, Collier and Son, New York, 1900, p. 314.

personalistic trends in the West can escape the prevailing tragic tenor of world perception.

Thus bourgeois moral consciousness is characterized by a dualistic gap between the actual state of morality (the everyday practical level) and the system of ethics (the theoretical level) formulating the principles of abstract moral obligation which come into an acute conflict with society's real morals and manners. This contradiction is insoluble without a socio-historical analysis of the social relations prevailing under capitalism which conceal mystified forms of oppression under the guise of apparent legal justice in exchange between labour and capital. An objective critique of these relations requires more than just abstract moral arguments resorted to by liberally minded intellectuals; the latter see the imperfections of the system not in the mode of production but in the individuals participating in it, and blame not society but man with his innate egoistic instinct.

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Marxist positions on this issue are fundamentally different. Class oppression through the mechanism of surplus value is an immanent law of capitalist production, and neither the fact nor the extent of exploitation of labour depend on the good or ill will of an individual capitalist. To exclude capitalist forms of oppression, it is necessary to overcome its objective economic causes rather than educate a magnanimous exploiter. Marxism accuses society and defends the individual, without absolving him from moral responsibility, of course, but merely defining the circumstances outside his reach.

We have considered here the first group of the forms of social consciousness, of which the main content are the social relationships among individuals in all their historically complex manifestations (i.e. not only interpersonal relationships but also those between personality and society, between different social groups and, in a wider context, between states). We have come close to the second group of these forms in which the principal relation is between subject and object rather than between subject and subject. The boundary between these two groups is not rigid, being largely conventional.

5. Aesthetic Consciousness

The nature and functions of aesthetic consciousness.

Aesthetic consciousness occupies a special position in the second group of forms of social consciousness. It constitutes the spiritual foundation that ensures the harmonious unity of and deep interconnection between various manifestations of the spiritual life of man and of society as a whole.

It is necessary to clearly distinguish between the two largely coinciding but not identical concepts—*aesthetic consciousness* in general and *art* as the highest but partial manifestation of that consciousness. Aesthetic consciousness is found in each human act, whether it be scientific thought or sensuous contemplation, production activity or the sphere of everyday life. A person makes aesthetic judgements on every act of his self-expression, every objective phenomenon confronting him—in a word, everything that is brought into the sphere of his experience. As for art, it is a professional sphere of activity, in which aesthetic consciousness is no longer an attendant element but the primary goal.

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Two opposing conceptions of the nature of aesthetic consciousness were formulated in the history of culture. The first, or ontological one, goes back to the classical view of the world; it interprets aesthetic thinking as a reflection of the particular principles of being itself. The second, or epistemological conception, which took shape in aesthetics separated off as a special science, interprets aesthetic thinking as an attribute of human consciousness manifested in art alone; any attempts to put beauty back into the objective world, into other kinds of human activity, are regarded here as vulgarization of beauty, as its socialization or politization, as negation of the self-sufficient and closed nature of art.

From the positions of the dialectical-materialist worldview, both these conceptions are extremes elevated to absolutes; at the same time both contain grains of truth. On the one hand, aesthetic qualities are so basically "human" (or, to put it in more philosophical idiom, their epistemological content is so great) that they cannot be regarded as first principles of the world existing independently of man: for something to be aesthetically expressive, it must not only be such but it must also be perceived as such, so that the existence of human beings and of society is a necessary condition of transforming an aesthetic value from the possible into the actual. Hegel stressed that nature does not exist in the categories of beauty. On the other hand, this dependence of aesthetic qualities on man does not mean that they

can only be manifested in aesthetic activity proper, that is in art, for we find aesthetic expressiveness in nature, in other human beings, and in all products of human activity. Although aesthetic categories do not describe the nature of the world considered outside its relation to man, they are nevertheless objective, as they reflect the objective nature of man himself, which takes shape in his diverse relationships with the world. In this sense, aesthetic categories are just as objective as the categories of cognition.

This dual dialectical nature of aesthetic consciousness which equally depends on the subject and the object of "aesthetic contemplation is in need of a special interpretation. What demonstrates that aesthetic sensation depends on the object of contemplation? The fact that aesthetic sensation, being sensuous in its nature, is impossible without an external stimulus, whether it be a landscape, a human face or a work of art, which always has a definite material form. The expressiveness of outward form is a necessary source of aesthetic enjoyment. And what proves the dependence of aesthetic sensation on the subject of contemplation? The fact that in making judgements on the expressiveness of an object's outward form, the subject will inevitably have to make a spiritual effort to bring out the ideal/semantic significance of the contemplated object. To be expressive in form and thus aesthetically significant, the object needs more than just to be perceived (perception alone makes the subject a decisive condition of the aesthetic act); the object must also have semantic content, and expressiveness has meaning only in relation to that content. The object's inner life must in a sense become humanized, i.e. it must pass through the crucible of the exacting reflexion of the human spirit, it must be adequately perceived and accepted in it. Only where the two conditions (the object's outward form and its humanized spiritual meaning) are present, can the aesthetic event occur.

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It is not only the object, however, that is humanized in the aesthetic act—it is also the human being that is objectified. Bringing out the object's inner meaning (which is a condition of an aesthetic experience), man thereby imparts to nature, as it were, a particle of his spirit. Aesthetically, man contemplates himself in the world he has created. In its most concrete and graphic form, this objectification of the human essence is manifested in the process of labour and in the aesthetic enjoyment of its results. As man became involved in the creation and transformation of the world of objects, he transferred his essence onto the objects he created; the measures of

correspondence between the effort expended and its result observed by him gave rise to the need for aesthetic evaluation. The formation of the capacity for aesthetic perception, i.e. its primary genesis, was paralleled by the improvement of the forms of man's object-related and social activity. It was due to labour that "a musical ear, an eye for beauty of form—in short, *senses* capable of human gratification"⁶ emerged and further developed at the dawn of human history.

The statement of links between the genesis of the forms of labour activity, communication between people, and aesthetic consciousness belongs among the fundamental propositions of Marxist aesthetic. At the same time these links must not be raised to an absolute. It would be a great error to transfer the idea of genealogical kinship between these phenomena onto the entire sphere of aesthetic sensations. Having emerged in the process of labour, aesthetic consciousness later ruptured its links with its parent domain and became isolated from practical purposive activity.

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To well-developed social consciousness, the aesthetic differs from the pragmatic precisely in that it assumes a selfless enjoyment without any rigid connection with the category of usefulness. An aesthetic experience does not have value because it leads to some goal which is necessarily practical: it has value in itself. That does not mean, of course, that the beautiful and the useful are in principle incompatible within a single object (classical works of architecture are an irrefutable proof of the possibility and fruitfulness of such a synthesis); there simply is no imperative demand that beauty must exist only in the obviously useful. If that were so, neither Raphael's canvases nor Wagner's music nor high poetry could be regarded as works of art. Art as such would have disappeared, and our environment would consist entirely of well-designed cars and convenient computers with bright keyboards, while man would have turned into a pragmatist hedonist for whom nothing but the economically useful and sensuously pleasant existed.

The aesthetic is thus the immediately given sensuous expressiveness of the object's inner life embodying the process of objectification of the human essence and humanization of the natural world, an expressiveness that is perceived and emotionally experienced by man as a vital value in itself.

⁶ K. Marx, "Economic and Philosophic Manuscripts of 1844", in: K. Marx, F. Engels, *Collected Works*, Vol. 3, p. 301.

Although the aesthetic is sensuously objective being, it is not, however, a purely material givenness or naturalist objectness only. All material characteristics of the aesthetic function as carriers of meaning, and it is therefore not only material but also ideal. In the dialectical view, the aesthetic is the unitary and indivisible integrity of all those aspects which were often opposed to one another in the history of culture. The aesthetic combines essence and phenomenon, the subjective and the objective, the active and the contemplative, the intellectual and the emotional and the volitional, the conscious and the unconscious—that is to say, all of man's spiritual forces in their harmonious integrity. Thus interpreted, the aesthetic is related to any phenomenon of reality and any kind of activity, and it also has a bearing on the entire wealth of the human spirit. In this sense, aesthetic consciousness is universal; it is different from the *artistic quality*, which is found in art as a special embodiment of the aesthetic.

So, what is art as the highest kind of aesthetic activity that we find in creative work and its perception?

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Art: its essence and social functions.

The aesthetic relation to reality inevitably became an object of independent cultivation. Art is a special kind of human activity in which the aesthetic, embodied in the artistic, is content and mode and goal.

Art came into being and developed its principal features in antiquity. Before Plato, this term was used to denote a great many things—the skills of building a house, of navigation, of curing diseases, of running a state, and also poetry, philosophy and rhetoric. The process of isolation of aesthetic activity proper, that is, of art as we now understand it, began in the crafts (in which it resulted, e.g., in the creation of ornaments) and was then transferred to the intellectual and spiritual sphere, where the aesthetic was also at first inseparable from the utilitarian, ethical and cognitive.

For the reader today, Homer's poems are primarily works of art, while for antiquity they had such great encyclopaedic significance that they were regarded as a philosophical generalization, as an ethical standard, as a presentation of a religious system, and as a work of art. The fact that the novel, so widespread in the Modern Times, was not highly developed in antiquity, was due to the low profile of art as such in classical culture. Literature as art proper was mostly represented by poetic works, while

prose, despite its aesthetic form, was as a rule philosophical or historical in its goals.

As distinct from philosophy, science, religion and ethics, art as such begins where the goal of aesthetic activity is no longer cognition or transformation of reality, nor presentation of a system of ethical norms or religious convictions, but artistic activity itself creating a second, imaginary world parallel to the world of objects; in this second world everything is aesthetic creation. What does man need this second world for, if it is apparently a replica of the first? The point is that art, unlike all the other types of activity, is an expression of man's inner essence in its integrity which disappears in the special sciences and in any other concrete activity in which man realizes only one aspect of himself, and not himself as a whole. In art, man freely creates his own world in the same way as nature creates its own world, that is to say, as a master. If in practical activity and in science man is opposed to the world as the subject to the object and thus has his freedom restricted, in art he transforms his subjective content into a generally significant and integral objective being. Aesthetic perception of a work of art, just as its creation, engulfs man entirely, for it includes the highest cognitive values, ethical tension, and emotional perception. This inner unity of all the spiritual and intellectual forces in the creation and perception of works of art is ensured by the syncretic power of aesthetic consciousness. In reading works of science or political journalism, we mentally prepare ourselves for a sort of fragmentary thinking about the world, forgetting everything that we will not need in the perception of the given text. In preparing to read an artistic work, on the other hand, we mobilize all our spiritual forces: intellect, intuition, emotions, and ethical concepts. There is not a single element in our inner spiritual life that might not be elicited and heightened by art. Art is called upon to ensure an integral, full-blooded and free perception and re-creation of the world, which is only possible through combining cognitive, ethical, aesthetic and all the other elements of the human spirit.

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The synthetic nature of art largely explains the fact, which caused so much wonderment among philosophers, that there is nothing to compete with art, among the entire diversity of intellectual and spiritual activity, in terms of social impact on man.

This fact was thoroughly realized already in antiquity. Sometimes art and its mysterious power even seemed frightening to people. Thus the view was

expressed that any state aspiring for order must forbid music (as well as all the other arts), for it softens the mores and makes strict subordination impossible. In the first centuries of its ascendance, early Christianity banned theatre and painting as running counter to the harsh asceticism imposed by its ethical dogmas. Even in the more developed society of the Modern Times, when there was no longer any question of banning the arts, the state continued to impose harsh censorship on progressive literature, demanding that it obediently sing the praises of official ideology.

In the 19th and 20th centuries, the problem of the relationship between art and ideology was pushed into the foreground. Ideological systems, which absorb the political, moral and other orientations of a given society, often tend to suppress the freedom of art and to politicize it. Naturally, the semantic aspect of artistic works is in the process simplistically identified with a certain logically ordered system of political ideas, which results in neglect for the specificity of artistic thinking as such, and in utilitarian approaches to aesthetic feeling. As a result of this ideological dictate, the so-called mass culture flourishes, in which the aesthetic standards are set so low that actually the borderline between such averaged-out art (which is, in fact, pseudo-art) and ideology disappears.

Aesthetic consciousness and its highest form, art, is a necessary element of social consciousness ensuring its integrity, mobility, a questing spirit, and psychological stability.

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However, art ensures not only the health of society but also the age-long continuity of culture and its increasingly universal character. By producing universally valid ideas in image form, world art at its best expresses the meaning of all historical development. Oedipus and Antigone, Hamlet and Don Quixote, Don Juan and Candide, Pushkin's Boris Godunov and Dostoevsky's Prince Myshkin, Bulgakov's Master and Margarita—these are more than artistic images, they are symbols of mankind's culturally significant values. Art absorbs the achievements of mankind, transforming and changing them in its own way. Without using the traditional cultural symbols that live on for centuries, it is impossible to join the line of the continuity of cultures, it is impossible to feel history as a unified process which has a definite past and only by virtue of that, a definite present and, most importantly, a future.

The specifics of art.

Art serves as a means of mankind's self-expression. It follows from this that its subject matter is both the relationship between man and the world, and man in his integrity, in all the dimensions—psychological, social, moral, and even that relating to his everyday life. Art touches on all the deepest layers, still unexplored by science, of this amazing phenomenon, the mystery of mysteries of nature.

Art speaks to us in a *language of its own*, which has to be studied before it becomes comprehensible. Art reflects reality just as science or philosophy do, but it does so in special forms that are not amenable to dry analysis in terms of rational vivisection. All attempts to “test harmony by algebra” (Pushkin's phrase. — *Tr.*) resulted in algebra being harmonized while harmony eluded all algebra.

In the most general sense, the specificity of artistic devices can be defined as follows. In science, thought is realized in terms of concepts, which generalize singular events until they become incorporeal categories, whereas artistic generalization proceeds in terms of images of events which retain their *graphic immediacy*. Thinking in singular categories based, however, on symbolic artistic generalization, lends extraordinary force to art, equating it with life. According to Hegel, the image “brings before our eyes concrete reality instead of its abstract essence”.⁷ However, the sensuous reality of the artistic image is valuable not in itself but precisely because it personifies an artistic *idea*.

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It is clear from our above definition of the aesthetic that it is precisely this quality—the *unity of sensuous objectness and ideal meaning*—that is essential in the aesthetic. As we look at Raphael's *Madonna*, the aesthetic enjoyment comes not from the appearance of the subject but from the expressive power in conveying the idea of motherhood. The sensuous image of the Madonna is the height of expressiveness, and the image assumes the dimensions of a symbol, i.e. of a *unity of image and idea* impossible to divide into separate concepts. Artistic symbols are capable of going beyond the confines of art proper and of merging with the general cultural values with which the spiritual and intellectual culture of the epoch as a whole operates. Where these symbols prevail in culture over logical concepts, and begin to determine the general axiological background, the symbol develops into a

⁷ G.W.F. Hegel, *Ästhetik*, Vol. II, p. 366.

myth, and society feels that the ideal form of its own expression is mythology (of this nature was the mythological worldview of ancient Greece). However, images, symbols and myths do not function in mythological societies only—they figure in all societies, including those of today. Along with scientific concepts and pragmatic knowledge, our consciousness also includes various images, symbols and myths reared by the cultural aesthetic environment. By no means all of these images play a positive role.

Art, which has such a significant impact on social consciousness and takes such a great part in the creation of the symbols and images of social mythology, can advance social evolution, but it also may retard it; this is true, of course, only of low-grade toadying mass culture, not of true works of art.

To go back to the specificity of the language of art, to the concept of the artistic image, we must touch on yet another point here, which often makes it difficult to understand this phenomenon. The question we would like to ask is this: Are there only images, say, in prose or poetry and nothing else? Aren't there any logical concepts there, or everyday, non-metaphorical uses of words? Indeed, the concept of image is absolutely clear as far as sculpture or painting are concerned, but image in verbal art needs some explication. The point is that the concept of the image nature of verbal art is complicated because of the material of that art, that is, natural language; here, the very concept of image undergoes a certain change. The essence of this change is as follows: in the perception of scientific, everyday or journalistic speech or writing, which contains various images and symbols here and there, we are always primarily concerned with the direct, logical, conceptual and referential meaning of words, without trying to make out something bigger behind these words and merely attempting to understand them precisely and unambiguously; in the perception of the artistic text, our position must be quite different. Here, we have to discover a certain additional meaning, for the sake of which the author uses words in their direct sense.

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This clearly shows the error of trying to discover the meaning of a work of art in its plot, in the story line or the words coming from the mouth of various characters. The attitude to art as a formal account of events points to a failure to master its specific language which can actually damage its development.

Let us also point out yet another specific feature of art. In all the other kinds of spiritual-intellectual activity (e.g. in science) fantasy is in conflict with the aims of this activity, while in art it is one of the most effective aesthetic devices. There's one thing that has to be done here by all means: fantasy as an artistic device must be distinguished from false generalization; fantasy depicts a natural but not necessarily really occurring connection between singular events which artistically typify in a singular image a great many actually existing phenomena.

Apart from properly realistic devices re-creating in imaginary singular events the recognized connections between phenomena, art also has other means at its disposal, which do not just change the outward individual manifestations of characters and situations but radically transform the very type of connection between events. In other words, art transforms both the "lexicon" of life and its "syntax". Thus, if real life unfolds before us as a sequential kaleidoscope of events and persons accompanied by our mental comment, events in fiction can be presented now on behalf of the various characters, now on behalf of the author, and now from a certain impersonal, epically neutral position. In science, this is impossible: the viewpoint is assumed there to be immutable and unique; it is conceived as an impersonal description of the object in terms of a logical unfolding of the text. Despite the possibility of constantly changing the angles, art as probably no other sphere demands that the author take up a definite position: without it, art is devoid of the inner spring, and does not move the reader.

"Poetry," Fyodor Dostoevsky wrote, "needs passion, it needs *your idea* and, by all means, the pointing finger raised in fervour. Indifference and a real re-creation of reality is worth nothing, and, most importantly, it means nothing." This statement clearly expresses a distinctive feature of art which is not to be found in other forms of social consciousness: using a special type of generalization, namely the artistic one, and thus reflecting the *generally significant* aspects of man's spiritual world, art at the same time implements this generalizing activity in *subjective personal form*. It cannot be otherwise, since it expresses the general semantic elements in terms of the directly perceived, expressive singular ones, and the choice of the singular is always personal. There is a very apt saying: "Science is we, while art is I." In science, the more general and absolute the conclusion, the less chance of identifying the author judging by the form of the conclusion, for the language of science is impersonal; in art, it's the other way round: the more significant a work,

the more clearly the personal imprint of its creator emerges. If Darwin and Mendeleev had not discovered their laws, the latter would still have been discovered by other scientists. But no one could have replaced Shakespeare or Dostoevsky. Art would not have ceased to exist, of course, but we would have been deprived of the discoveries and generalizations associated with these names.

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It is clear from the above that the formal aspects of art also belong among its distinctive manifestations. Thus, as distinct from the non-artistic use of language, in which the main semantic load is on the direct meanings of the words used, the semantic wealth of a literary text grows immeasurably not only due to the fundamental orientation towards the image but also due to the highly varied formal devices. The latter, apart from everything else, have independent aesthetic value, that is to say, they lend the work the elusive tonality which is precisely the source of aesthetic pleasure. Only in recent times, for example, has science come close to the solution of the mystery of rhythm, which has always been used for aesthetic purposes. The perfection of the formal devices of art is often transferred to other spheres of human activity. Many scientists have held the view that a true theory cannot be anything but beautiful: when a scientist grasps a fragment of reality, it is always embodied in perfect form. The rhythmical, harmonious and other formal laws used in art have often facilitated scientific discoveries. It was no accident that mathematics emerged at first as a theory of musical laws. Art thus has a great heuristic power.

Art cannot be imitated, and this is largely explained by the fact that art is an artistic form of the cognition of the world. Imitations of art are mostly inept attempts to squeeze in an idea, which may well be correct and ethically impeccable, into an artistically impotent form. Art in this cases takes revenge on the author: instead of aesthetic empathy, the reader feels nothing but irritation at the profanation of noble ideas.

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Art and philosophy.

The relationship between art and philosophy has changed over the ages. In the Renaissance, it did not at all seem provocative to the public that Leonardo da Vinci called painting the "true philosophy", since painting, to use his words, independently embraced the first truth. Poetry and

architecture were also believed to play a similar role. In that epoch, art comprized all of the fundamental ideas about the world, and it therefore went hand in hand with philosophy.

The isolation of aesthetics, on the one hand, and the emancipation of philosophy from theology, on the other, resulted in the need for a clearer differentiation between them, just as between art and science. In the 19th century, the problem of the hierarchical structure of the edifice of the humanities became all-important. Thus Schelling and the Romantics in general placed art (especially music) above science and philosophy, while Hegel, on the contrary, saw philosophy as the highest form of the self-cognition of the Absolute Idea, although he attached great importance to the aesthetic element.

But the crisis of rationalism changed the meaning which Western philosophy associated with the relationship between art and philosophy. The desire to clearly differentiate these forms, and to establish a hierarchical subordination between them was replaced by a return, as it were, of the historical tendency towards combining or even identifying them with each other. However, this rapprochement between art and philosophy had a basis that was quite different from the previous historical epochs. It was no longer poetry, painting or music that was seen as the natural sphere of this affinity but prose; and it was no longer art that was likened to philosophy (which assumes, after all, philosophy's greater importance at some deep level)—it was philosophy that was now compared with prose, which implies basic superiority of art (a continuation of the Romantics' line). Arthur Schopenhauer and Friedrich Nietzsche, followed by Heinrich Rickert and Henri Bergson, combined philosophy and art as integral contemplative insights into life equally remote from practice and employing not so much the logic of concepts as irrational intuition. That combination produced a new genre of literature, the intellectual novel, as represented by Thomas Mann and others. Naturally, this rapprochement was only realized in those philosophical trends which postulated the impotence of logical conceptual means of cognition, and which therefore inevitably had to rely on the "supraconceptual", artistic modes of truth perception. Of this type was, e.g., the existentialist trend, as represented by the work of Albert Camus, Gabriel Marcel and Jean Paul Sartre; their philosophical works were artistic through and through, and the artistic ones were permeated with philosophy.

There is undoubtedly a profound affinity between art and philosophy, but there is no inner identity here. They are inseparable but they are not fused with each other. At the present stage in cultural development philosophy and art, neither of which has a concrete object of cognition, are opposed to science, which does have such an object; yet these forms of intellectual activity, art and philosophy, are also opposed to each other in terms of their cognitive instruments, final goals and language. Philosophy is in this respect closer to science: it gravitates towards a logical conceptual apparatus, towards systematicness, towards testing its conclusions against the light of rationally reproducible forms of reasoning. As for art, it is fundamentally oriented towards imaginal-symbolic forms of cognition and expression, which do not assume rational reproducibility. The meaning of an image or symbol can only be revealed or commented on in terms of another image or symbol. It is just as impossible to dissolve the meaning of an image in concepts as it is impossible to deprive it of a personal-individual colouring through generalizing abstraction. Only a relative rationalization of the meaning of an image or symbol is possible, but the cognitive paradigm will immediately be changed in the process: subjected to rationalization, this meaning will at once pass from the sphere of art into that of science or philosophy.

Art and philosophy are interdependent but different forms of social consciousness which, despite the affinity (though not identity) of their domains and equal concern with most general issues of the spirit and being, differ in the method of cognition and expression. Philosophy can in fact be dissolved in concepts and presented in an impersonal form (e.g., for pedagogical reasons), whereas art is not amenable to this kind of pedagogical dissolution and depersonalization. Different modes of human consciousness are apparently embodied here, its different states and forms of functioning. This diversity of spiritual states is one of the most valuable properties of human consciousness. The unification of the senses, their reduction to a single denominator waters them down and makes the subject that does the unification poorer in spirit.

This does not mean, of course, that literary prose must not be philosophical or that philosophy should operate with dry rational schemata only. Any rapprochement between opposites produces a new, third quality without cancelling the original pair of opposites.

Thus intellectual romanticism associated with the names of Thomas Mann and Jean Paul Sartre contributed to the wealth of European culture but did not cancel out "non-novelistic" philosophy or non-philosophical prose. Culture lives in extremely diversified forms and varieties, and it is only enriched by their recurrent crossing. The higher needs of the spirit are met by art and philosophy in different ways, and therein lies their value. The more many-sided and free society's spiritual and intellectual life, the more naturally and organically it develops.

6. Religious Consciousness

Religion. Religious consciousness. Atheism.

Religion is not an accidental branch of cultural evolution but a naturally evolved and historically, socially and psychologically conditioned form of the realization by people of the surrounding reality and of themselves. It is a complex aggregate concept incorporating a certain mythology, a system of dogmas, cultic and ritual actions, socialized religious institutions, forms of relationships between believers and religious organizations, and many other issues. In each religion, all these issues have a very specific semantic content, a history of emergence and further development different from all the others, and a specific colouring set against various ethnic, national, class and individual backgrounds. The study of these semantic and organizational features in the emergence and functioning of religions and their historical varieties forms the subject matter of a special science, which also deals with specific philosophical problems of theology.

At the same time this problem range has a different, general philosophical aspect, connected with the study of social consciousness. There is not a single people without religion; the emergence and development of religious views as such is connected with certain socio-psychological properties of the masses. That is why *religious consciousness* is seen as one of the forms of social consciousness. The fact is thus underlined that the existence of religious views corresponds to people's objective spiritual needs. Until they are fully satisfied by other forms of social consciousness (which would be ideal in terms of social order), religion will remain a source of ethical values for certain strata of society, a source of

psychological consolation and support, and a guarantee of justice that will triumph in the future. But the objectiveness of the needs themselves does not yet signify the truth of the religious means of satisfying them.

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Religion was the central form of social consciousness for over two thousand years, up to the epoch of the Enlightenment, when first philosophy and later science and ethics began to compete with it, offering their own solutions of the principal questions of being. Thus atheism arose as a doctrine refuting religious views, which continue to make a profound impact on culture even in these days. Atheism is not an independent form of social consciousness but a socially sanctioned counterpart of religious consciousness, as it were. Without this opposition to religion atheism would have no meaning at all, for it functions as a means of scientific refutation of certain propositions of religion. But a mere rational, scientific analysis of religious postulates cannot provide a final solution of the problem of religious consciousness: it must be accompanied by the formation of a system of values that would meet the corresponding psychological needs of man.

Religious consciousness: the causes of its emergence and stability.

The essence of religious consciousness is an illusory doubling of the world, i.e. the view that along with the real natural and social being there exists a second, or "the next" world in which, according to the world religions, all contradictions of earthly being that trouble the human spirit are ideally resolved. The other world of religion is, in the words of Marx, the secular basis which "lifts off from itself and establishes itself as an independent realm in the clouds..."⁸ There is no logical proof of the existence of this world, therefore a specially cultivated moral and emotional act of faith becomes an attribute of religious consciousness. Faith is a property of human consciousness which is manifested in many other forms of consciousness as well (e.g., faith in ideals in any type of worldview). The specifics of religious faith is determined by its role as a fundamental spiritual act termed "religious experience": in this act, a person actually feels his involvement with the divine, being psychologically linked with it as an absolute moral guarantor.

⁸ K. Marx, "Theses on Feuerbach", in: K. Marx, F. Engels, *Collected Works*, Vol. 5, p. 4.

The central object of religious faith is the idea of God, the principal self-valuable idea from which the rest of the content of religion is derived. It is difficult to find another idea in the history of mankind that would compare, in terms of sheer duration of its impact, with the idea of God, with the complex of sensations, emotions and motivations which are connected with it and which constitute the basis of the integral religious perception of life.

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For the bulk of believers, the idea of God has always been not so much a philosophical or, generally speaking, a rational principle explaining, say, the origin of the world from the divine first push (a view to which the deists were inclined), as an idea connected above all with the moral sphere, with the problem of the meaning of life. "Religion," wrote Leo Tolstoy, "is nothing but an answer to the question of the meaning of life." According to Dostoevsky, to seek God means to try to solve for oneself the problems of the good and evil. According to religious beliefs, if a person has realized in himself an act of faith, i.e. if he has accepted the idea of God, he has thereby endowed his own life with meaning, overcoming its spontaneous character and the fact that it disappears without a trace; he has found a basis for the idea of the good and justice. For religious consciousness God is, despite all the imperfections of earthly life, a guarantor of inevitable triumph of the powers of light in the eternal antinomy between the good and evil, justice and injustice, all-permissiveness and morality. He who has faith in God lives in fear of God, while absence of faith, on this approach, equals loss of all the high, moral principles, leading thus to confusion and nihilism. Lenin particularly stressed Ludwig Feuerbach's idea that Christianity made a God out of *morality*, that it created a *moral* God. Even if there were no God, certain ideologists insist, it had to be invented in order to reinforce the people's striving for morality. The history of culture does indeed furnish numerous examples of believers, inspired by the idea of God, performing high moral feats (suffice it to recall here Archpriest Awakum or Joan of Arc).

In its generalized sense, religious consciousness is thus intended to meet the need of man for a system of absolute and unquestionable moral values which have to be adhered to. It seeks to attach meaning to the individual human existence and to guarantee the inevitable triumph of justice. At the same time religion satisfies these needs in an illusory manner and in fact absolves man from conscious responsibility for the surrounding reality, promoting, in principle, a passive contemplative attitude to life.

This question must be approached in a historical context: one must realize both the fact that the high ideals of Christianity were never implemented in practice (on the contrary, they often resulted in unethical acts, like the crusades and the Inquisition), and the fact that, despite their non-fulfilment and fundamental unrealizability, despite their abstract character and impotence in the face of the real motive forces of the social mechanism, religious moral values retain their attractiveness precisely because they are openly axiological and have an antipragmatic, intimate and profoundly psychological basis. Religion, said Marx, is the heart of a heartless world.

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Having emerged as a consequence of a definite stage in social development, when the whirlwind of alienated social forces, overwhelming the individual, aroused in him an unquenchable need for a moral absolute, religion can only disappear when its social causes are overcome, when the individual's social life is demystified entirely, to the very end, and when the alienated social forces become consciously realized and morally sanctioned forms of human relations. To overcome religious consciousness, it is not enough to mobilize the efforts of scientists in the cause of enlightenment; still less effective are the dry rational slogans of atheism; moral or aesthetic education is not enough either; above all, the material and economic causes must disappear which divide and oppose people to one another, producing insoluble moral conflicts.

Religion and philosophy.

The relationships between religion and philosophy are historically changeable and varied. If the materialist line in philosophy consistently opposes itself to the religious world-view, various directions in idealism have often joined forces with theology, producing highly refined forms of religion.

The division of philosophy and religion into isolated forms of social consciousness only occurred at the watershed between the Middle Ages and the Modern Times; this division assumed not only the existence of philosophical and religious works proper (such works had been written already in antiquity) but also recognition of this isolation at the level of official ideology. Philosophy, just as the modern European science that emerged in that period, did not begin an ideological competition with religion at once: religion continued to occupy the focal position in the

structure of social consciousness; philosophy and religion divided, as it were, the spheres of influence between them, with religion retaining supreme authority. The idea of two truths was officially accepted: one truth came from God (here belonged everything that was connected with the eternal questions of being and spirit) and the other, from man himself (here belonged everything that resulted from the cognitive activity of human reason, i.e. philosophy and science). This marked the beginning of deism—the view that, having created matter and established moral absolutes, God does not interfere in world events any more, and man thus has to study nature scientifically and reason philosophically on the concrete embodiments of the absolute in historical reality independently of God.

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Gradually, philosophy acquired such a powerful potential that it laid claims to the leading position which religion occupied; this was particularly true of materialist philosophy and Marxism in particular. According to Marxism, religion is a residual form of social consciousness, which will continue to exist until the development of society's socioeconomic structures produces, in other forms of social consciousness and in the first place in philosophy itself, a system of values which will meet the objective needs of the spirit underlying the stability of religious views.

The attitude to religion in the idealist trends of philosophy took a different form. Most of these trends do not insist on a separation of religion from philosophy at all; on the contrary, they strive for a new synthesis. There are two main groups of causes for the desire for such a synthesis in contemporary philosophies: one is related to epistemology, the other to axiology.

The epistemological causes are connected with the difficulties of philosophical interpretation of the fundamental achievements of the natural sciences. We know already that various natural-scientific hypotheses concerning the structure of the world constantly reverted to the idealist interpretation of the first cause of the world, as happened in the energism or physical idealism of the late 19th century, or in the modern cosmogonic hypotheses. A noncontradictory materialist picture of the world can only be based on the principle of the self-motion of matter; any other solution inevitably leads to the idea of first push, either spiritual or energy-related, and from this there is but one step to religion.

But, however serious the epistemological difficulties might be, the main cause of the synthesis of modern idealism and religion in the West is, of

course, the axiological sphere. The crises of rationalism in the late 19th and mid-20th centuries, the dry tone of the pragmatist trends in philosophy, the narrow-mindedness of scientism-oriented thought, the tragic conflicts of our epoch with its two world wars, the "futureshock" caused by the danger of a nuclear catastrophe, the unpredictable manifestations of mass psychology, which has lost its system of solid spiritual values, the rebirth of nihilism—all this inevitably affected the philosophical quest of the Western intellectuals. A rejection of religion without compensation in the form of new values makes the individual accustomed to live in a Christian atmosphere feel lonely in the universe, deprived of his moral foundations, and unfairly treated by the scientific or vulgar-materialist, pragmatist worldview.

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Idealist philosophy tries to fill this emotional gap, restoring the psychological equilibrium characteristic of religion. The beginning of the century was marked by the emergence of various philosophical trends which placed the main emphasis on the individual's inner self-awareness. Of this type is the philosophy of life (Henri Bergson), existentialism (Martin Heidegger, Karl Jaspers), and the system of views of Pierre Teilhard de Chardin—philosopher, scientist and theologian who endeavoured to evolve a notion of man as the goal of nature's evolutionary development. Various personalistic platforms (as, say, those of Leon Chestov or Paul Ricoeur) evince a similar tendency for a synthesis with religion. Significantly, axiology began to develop vigorously in the 20th century, in the works of Max Scheler and Max Weber; this discipline is especially concerned with substantiating the need for spiritual absolutes and norms in philosophical knowledge.

Dialectical-materialist philosophy also includes an axiology, with that basic difference that, instead of reviving religious values, it creates a system of fundamentally new ideals both of the personality-related and social nature. This system is designed not as abstract but as historically concrete and adequately reflecting the present-day social-spiritual situation, and also as capable of absorbing the perennial values of the cultural tradition, including aesthetic and ethical values, and of giving them a fresh worldview interpretation.

7. The Scientific Perception of the Universe and the World of Science

The concept of science.

Science is the historically established form of human activity of cognition and transformation of objective reality, and of intellectual production yielding purposively selected and systematized facts, logical hypotheses, generalized theories, fundamental laws, and research methods. This is at one and the same time a system of knowledge, its intellectual production, and practical activity on the basis of that knowledge.

Significant for any type of scientific cognition is the answer to two questions: What is studied? And—How is it studied? The answer to the first question covers the *subject matter* of science, while the answer to the second question deals with the *method* of research.

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The qualitative diversity of reality and of social practice determines the multidimensional character of human thought in different areas of scientific knowledge. Contemporary science is an extremely ramified ensemble of separate scientific branches. The subject matter of scientific study is not only the world outside man and various forms and kinds of the motion of matter but also their reflection in consciousness, that is to say, man himself. The subject matter of science falls into the domains of the natural and technical sciences studying the laws of nature and the modes of its mastering and transformation, and the domain of the social sciences concerned with various social phenomena and the laws of their development, as well as with man as a social being. Among the social sciences, the ensemble of philosophical disciplines concerned with the most general laws of nature, society and thought occupies a special place.

The subject matter of science influences its methods—the devices and ways of studying an object. Thus one of the principal devices of research in the natural sciences is experiment, and in the social sciences it is statistics. The boundaries between sciences are largely arbitrary. Characteristic of scientific cognition today is not only the emergence of disciplines on the borderline between two sciences (such as biophysics) but also mutual enrichment of scientific methodologies. Induction, deduction, analysis, synthesis, the systems approach, the probabilistic approach, and a great deal

else, are all logical devices valid in all the sciences. In every science, the distinction is drawn between the empirical level, that is, the accumulated factual material—the results of observations and experiments, and the theoretical level—generalization of empirical data in terms of corresponding theories, laws and principles, factually based scientific assumptions, and hypotheses requiring further verification by experience. The theoretical levels of the separate sciences may produce a common theoretical, philosophical explanation of the principles and laws discovered by these sciences, and jointly develop the worldview and methodological aspects of scientific cognition as a whole.

An essential component of scientific cognition is philosophical interpretation of the data of a science, which forms its worldview and methodological basis. The very selection of facts, especially in the social sciences, assumes the researcher's theoretical and philosophical schooling. The present stage in the development of scientific knowledge requires not only a theoretical interpretation of facts but also an analysis of the mode of obtaining them, and reflexion on the general ways of searching for the new.

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The social functions of science.

Science is a complex and many-sided phenomenon: it cannot either emerge or develop outside society, but society at a sufficiently advanced stage of its development is inconceivable without science, either. The needs of material production affect its development and direction of research, but science in its turn makes an impact on social development. As scientific discoveries are put to use, technology increasingly revolutionizes the productive forces. The great scientific discoveries, and the technological inventions closely connected with them, have made an enormous impact on the fate of mankind.

The role of science at different periods in history has varied. In antiquity, science existed as the result of the division between mental and physical labour that occurred in the slave-owning socioeconomic formation. It began to function as an independent form of social consciousness in the epoch of Hellenism, in which integral culture was differentiated into separate kinds and forms of intellectual activity. The emergence of properly scientific forms of knowledge separated both from philosophy and religion is usually associated with Aristotle, who laid the foundations of the classification of

different areas of knowledge. In that epoch, however, scientific knowledge had but a weak influence on production; the latter was mostly a sphere in which slaves toiled using manually operated tools on the basis of empirical knowledge and skills inherited from the preceding generations. In the feudal world, when cognition of reality was seen by religious ideology as something sinful, science could not develop normally. This was particularly true of the position of natural science. Hence the relatively insignificant role of science in feudal society, whose natural economy continued to use manual implements only, and primarily relied on the individual skills and experience of craftsmen. However, the Middle Ages also witnessed certain developments in scientific knowledge, though often in latent form (e.g., chemical thinking developed in the form of alchemy).

The role of science in production increased along with its expansion and socialization. Practical problems which could be solved by science alone arose only under capitalism, which began to evolve in the bosom of feudal society: here, production reached a scale that necessitated application of mechanics, mathematics, and other sciences.

"...The bourgeoisie," wrote Engels, "for the development of its industrial production, required a science which ascertained the physical properties of natural objects and the modes of action of the forces of Nature. Now up to then science had but been the humble handmaid of the Church, had not been allowed to overstep the limits set by faith... Science rebelled against the Church; the bourgeoisie could not do without science, and, therefore, had to join in the rebellion."⁹ Science became the spiritual content of the productive forces, its achievements being implemented in technological innovations. The entire subsequent course of history was a steady process of "scientization" of production, of transformation of science into a direct productive force. This process takes on various forms, the major emphasis being laid on creating a theoretical basis for constructing more and more perfect instruments and machines.

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Along with an unprecedented progress in the natural sciences, the humanities also received a new impetus. A gradual emancipation from theological doctrines stimulated greater interest in the cognition of both the material world and the laws of spiritual life. The first systematic attempts

⁹ F. Engels, "Introduction to the English Edition (1892) of *Socialism: Utopian and Scientific*", in: K. Marx, F. Engels, *Collected Works*, Vol. 27, Progress Publishers, Moscow, 1990, p. 290.

were made at psychological research; the development of art led to the founding of the special science of aesthetics, living languages began to be studied, too, not just the Latin language canonized by the Church.

Further development of science was conditioned by the growing needs of capitalist production and expansion of the world market. In the process, society's intellectual functions were separated from the subject of labour and concentrated in the work of the dominant class as well as of the rapidly evolving social group of intellectuals. Besides, scientific work was separated from organization of production and became a sphere of purely scientific activity. Specialization among scientists themselves increased. That process had a progressive significance, as it created the requisite conditions for obtaining deeper knowledge. At the same time it had a negative aspect as well: narrow specialization restricted the scientists' horizon, which, apart from decreasing the productiveness of scientific work itself, had a destabilizing effect on culture. It is precisely at this time that the gap appeared, and began to grow, between the natural sciences and the humanities, between science in general and moral-aesthetic consciousness. From the inception of capitalism to the present day, regardless of changes in social structure, the interdependence of scientific and material production has constantly strengthened and improved.

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Today, this process is manifested in increasing automation of production, even including partial replacement of the work of the human brain by cybernetic devices, the computers. Increasing the sphere of objectified labour, science permits the achievement of greater results in material production at less expenditure of living labour. Science is also transformed into a direct productive force through improvement of the methods of production, e.g., through replacement of mechanical methods of processing various materials by electrical and chemical ones, as well as through reducing the time needed for producing the items; creation of society's wealth becomes less dependent on working time and the amount of labour expended and more on the general state of science and the degree of development of technology, or on application of science in production. Production power is also increased through improvements in the management of the economy, these aspects being studied by the appropriate sciences. Cybernetics, which was initially a purely natural science, developed into a new social discipline, the science of management.

The fruitfulness of the combination of science and production depends on the character of the social system. The social purpose of science consists in making the life and work of man easier, in increasing the reasonable power of society over nature, improving social relations, and developing a more harmonious human personality. Through its discoveries and inventions, modern science has done a great deal to ease man's life and work.

Science, philosophy and worldview.

The development of science, its unprecedented penetration into all the pores of the social organism necessitated a philosophical interpretation of a great many problems, not only properly scientific but also worldview problems. This restless power of science, so disturbing to the human mind, began to tell the moment it started to revolutionize society. First, scientific thought destroyed the religious picture of the world, which had existed for thousands of years, and in which man was offered universal and immutable knowledge of the principles underlying the way of life and the order in the universe. It is one of the paradoxes of scientific thought that, destroying the naively holistic view of the world offered by religion or by any of the directions in religious philosophy, doubting every postulate previously taken on trust, science does not formulate instead a world outlook that would be just as integral and axiologically convincing: all its concrete truths cover a fairly narrow range of phenomena. Science has taught everyday consciousness to doubt everything, and it immediately produced a worldview vacuum which could be filled now by philosophy alone. Philosophy immediately joined battle with science in the worldview sphere; this battle changed its form in numerous ways throughout history, and it cannot be said to be over even today.

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Essentially, the ongoing conflict between science and philosophy is a struggle for the right to ultimate truth. It must be stated at once that the battlefield of this struggle was not so much the studies of the scientists and philosophers themselves as social psychology, the worldview sphere. Inasmuch as philosophical propositions cannot be confirmed in the same sense as scientific propositions are, they cannot lay claim to being true in the eyes of certain segments of population. The transference onto science of those expectations of guidance in life which were earlier satisfied by the religious world outlook became the basis of the ideology of scientism, which

gained wide currency in the 19th and 20th centuries, positing science as the only "shepherd".

The ideology of scientism was engendered during the Enlightenment and later developed in positivism—in the philosophical trend which, while nominally remaining a philosophy, essentially ceded its positions as philosophy to science as the new demiurge and the only agent responsible for all the vital questions. Characteristic of positivist philosophy is the desire to reject all doctrines using arguments that cannot be verified scientifically, that is, experimentally or empirically. Included here were not only the political ideologies actually using "naked rhetoric" but also philosophical systems touching on political questions, such as Marxism.

The question of the correlation of philosophy and science is very complex; various interpretations and solutions and nuances of solutions have been offered. Any formulation of this correlation in too rigid terms is fraught with serious worldview consequences. A fine worldview analysis is necessary here. Both extremes—the rigid control of philosophy over science and the positivist rejection of the possibility of achieving the truth by philosophy—are dangerous. Where philosophy gains the political authority to dictate the concrete paths of scientific development, delays in the advance of new trends, highly dangerous to science, often occur. In the USSR, this kind of extremes resulted in the past in the treatment of cybernetics and genetics—disciplines which later proved their worth so dramatically—as "false sciences". In the West, similar causes resulted in the considerable retardation of the development of scientific sociology.

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Just as harmful is the unchecked praise for the achievements of the natural sciences as opposed to the social disciplines and the humanities. Despite the fact that Marxism-Leninism is inherently a profoundly humanistic doctrine, the ideology of scientism, basically bourgeois, has deeply penetrated into the socialist consciousness. Boundless faith in the natural sciences and in their apologists has had its impact on the state of the environment (chemical pollution of the soil, the air, the water reservoirs, and so on), and resulted in the dominance of extensive methods of production, in the primary orientation towards commodity production to the detriment of the social environment, in the sharp deterioration of the ethical and aesthetic standards of culture, and in the increasing influence of technocratic psychology which largely fostered the tendency towards consumerism.

Why does all this happen? Why does the ideology of scientism lead to a deterioration of ethical culture? The point is that scientism as a worldview orientation is based on cold reasoning, and where there is a pragmatic goal, the cold mind will strive for it despite all possible ethical complications. The individual feels lost and helpless in the scientism-oriented world. Science has taught him to doubt spiritual values, it has surrounded him with material comforts, and it has taught him to look for a rationally attainable goal in everything. From the positions of scientism, man himself is no more than natural material whose spiritual nuances, rationally studied, leave no residue that could not be dissolved in the "acid of scientism". The individual taking up this stance towards himself and others inevitably becomes a cold and calculating pragmatist; if he does not accept this logic, he falls into the opposite extreme, rejecting civilization with its "false" benefits and turning to religious values. The ideology of scientism in its extreme version is thus a contemporary form of antihumanism.

The logic of the development of history has led us to the realization of the cultural-historical fact that neither scientific knowledge nor morality nor art taken separately (not to mention politics or law) can ensure an organic integrity of social consciousness and thus of mankind's progress. Science and the aesthetic and ethical forms of social consciousness determine the level of development of both material and non-material life of every society. Their effective role is determined by their harmony. This harmony must achieve a level at which the primacy of one of them cannot lead to the destruction of social processes or the inner spiritual and intellectual world of man himself. As we have seen, the ethical is closely interwoven with the aesthetic, science strives to grasp the mysteries of art, and the latter employs scientific achievements. An allround and profound harmonization of the forms of social consciousness is the ideal of the future which can only be attained through the people's creative activity.

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8. The Philosophy of Culture

The concept of culture.

There is no universal definition of culture. Various functional descriptions of the cultural sphere, formulated to suit the goals of research, are possible but there is no integral definition of culture that would express its essence and be generally recognized, although the semantic extent of this concept is believed to be intuitively clear. The concept of culture (fr. L. *cultura* “tilling”) is basically connected with something that is done well—not only what is done but also how and what for. Doing is a mode of mastering the world. Culture is a kind of magic crystal that focuses all being. It is the creative principle of the life of the individual and of society as a whole; it is not just an ability taken to the point of art but a morally sanctioned goal.

An ensemble of material and non-material values and of methods of creating them, and the ability to use them for the advancement of mankind and to transmit them from generation to generation, constitute culture. The starting point and the source of the development of culture is human labour, the forms of its realization, and its results.

Material culture includes, above all, the means of production and the objects of labour drawn into the circle of social being. It is an indication of man's practical mastery over nature. Non-material culture incorporates science and the extent to which science is applied in production and everyday life; the state of education, enlightenment, health services, art; the moral norms of the behaviour of the members of society; and the level of people's needs and interests.

Culture is the embodiment of mankind's reason, which functions as a semantic augmentation of the natural world. The non-material phenomena incorporated in it are not confined to some definite historical period but have an eternal nature: Plato's thought today is just as real as it was more than two thousand years ago. Even if they originate as individually subjective and historically concrete, in the course of time these phenomena assume the status of socially objective and even, as it were, supratemporal spiritual factors, forming an uninterrupted universal cultural tradition outside the individual's control.

What is the essence of present-day philosophical reflexion on the fate of culture? Our discussion of these problems will be limited to those aspects which will permit us, first, to correlate culture with other phenomena of life, and second, to outline the controversy concerning the prospects of mankind's cultural evolution, its direction, drawbacks and crossroads, its hopes and fulfilment.

The world of values.

Man is faced with a whole ocean of cultural values created by world history, as well as with the incalculable riches of nature which he constantly makes use of and enjoys as far as his talents, education and upbringing permit him to do so. The functional distribution of the concepts of culture and value coincides: where a value relation arises, a cultural process, positive or negative, inevitably emerges, too.

How can the concept of value be philosophically defined? *Value is a fact of culture, and it is social in its very essence.* Further, it is a functional and a necessarily objective-subjective phenomenon. Things and events as such, outside their relation to man and the life of society, do not exist in terms of value categories. This applies not only to humanized nature, i.e. to the entire area of civilization, but even to celestial bodies.

The concept of value is correlative with such concepts as significance, usefulness, and harmfulness. Significance characterizes the degree of intensity or tenseness of a given axiological relation: some things move us more than others, and some leave completely indifferent. Usefulness may be purely utilitarian. Material and non-material values—clothes, dwellings, tools, skills, abilities, etc.—can all have usefulness. Harmfulness is a negative axiological relation. We speak of truth as a cognitive value which is highly useful to human beings yet can also do them harm. Truth is not always rewarded—people have been burnt at the stake or sentenced to hard labour for speaking the truth.

The all-pervasive system of *symbols* constitutes a vast stratum of cultural values and, generally, an essential form of their expression. Symbols are absolute value phenomena coded in a given culture. Aesthetic values occupy a special place in this system.

The concept which unifies all cultural values is the humanistic idea of morality, without which all kinds of values would lose all meaning except for a crudely consumerist one. The moral imperative lends axiological sensations a stimulus for active expression and supplies them with spiritual energy without which culture itself would not exist.

Culture and nature.

The problem in the relationship between the natural and the cultural is that no clear-cut boundary can be drawn between them: culture is man's essential property, and man has not only a cultural but also a natural dimension. The cultural and the natural merge in a single whole in man, and the relations between them are so complex that they are not fully understood even now. What is stronger in man, the cultural or the natural element? Are cultural influences positive or negative? At different periods in history, different answers to these questions were offered.

This dilemma did not exist in mythological thinking, in which natural and cultural elements were not yet opposed to each other. In antiquity, which inherited the harmony between the corporeal and the cultural established in the mythological world perception, the cultural element in man, despite the growing realization of its importance, continued to be secondary in relation to the natural element. The material cosmos confronting man was perceived as absolute perfection, as distinct from the frequently imperfect human physical nature that did not always meet ideal requirements. For this reason, culture for the Greek was a means of bringing his own physical state (which included intellectual potential as well) to a level of perfection which the world of nature had from its very origin.

In the Middle Ages, on the contrary, the cultural element began to be seen not as a means of ennobling the corporeal but as a goal in itself; the natural and corporeal was placed here so far below the cultural that it actually became a symbol of evil impeding the cultural evolution of the human spirit (the doctrine of original sin). The rehabilitation of the natural element in the human individual began in the epoch of the Renaissance, but, because of the nearly one-thousand-year-long domination of the idea of spirituality residing outside nature, nature, restored to its rights, was actively opposed to culture which was seen as the source of all the social and psychological ailments of society's life. This apology of naturalism in its turn provoked a reaction from the proponents of the idea of purely cultural progress. The conflict between the two trends led to a situation in which the cultural and the natural were thought of as completely divorced from each other; one of them was regarded as artificial and false and the other as man's only natural state and therefore as true.

This conflict was most clearly expressed in the polemics between the French philosophers of the 18th century and Jean Jacques Rousseau. In the view of the former, all the evil of the world and all human vices flowed from

man's natural essence which had to be cultivated through education and upbringing; without these, man's nature was nothing but egoism pure and simple. It was therefore quite natural that these philosophers' thought was directed above all towards socio-political improvement of society which would automatically lead to the triumph of cultural elements in man over the basically vicious natural ones. In the Rousseau tradition, on the contrary, man's nature possessed a great and perfect potential, and it was only false culture with its poorly thought-out educational programmes based on the formulas of the Enlightenment, and all kinds of social conventions and false ideals supported by the State that could, and did, distort this potential. Rousseau called for a return back to nature, to natural, harmonious human existence.

These are the extreme positions, briefly outlined. This issue is so complex and essential that it still provokes heated debate. Contemporary adherents of the Enlightenment ideas are often disappointed by abstract political formulas for improving social life, suspecting human nature, which stands in the way of the realization of political reformers' plans, of basic inclination towards evil and rejection of all cultural remedies. This disappointment, known as cultural pessimism, struck the souls of liberal intellectuals in bourgeois society, who were amazed to find that various reforms did not lead to expected purity of morals and manners. Moreover, some theoreticians, confronted with the difficulties of actual implementation of socialism, also began to see insurmountable biological imperfections in human nature.

No wonder that an alternative idea immediately emerged here. Couldn't we blame, it was asked, the cultural programme itself, and the political reforms which were not worked out and thought out thoroughly enough? In any case, if in the late 18th century the potential of reason and of the cultural activity of the Enlightenment were seen as a panacea against all ills, ever since the late 19th and throughout the 20th century, the cultural formulas of the Enlightenment have been treated with doubt and even apprehension.

The pessimistic attitude towards human nature could not dominate social consciousness for long, for the power of light had to triumph sooner or later in it. No viable society cultivates the idea of ineradicable defectiveness of human nature for long. The pessimists' critical stance is no longer directed against man but against culture, which is seen as the source of the tragical

failures of history, such as the phenomenon of fascism, which literally overwhelmed everybody. Philosophers now scrutinize culture, wondering if it is not here that the causes of the gloomy metamorphoses of the 20th century are hidden. Extremely different variants of critical attitude towards cultural innovations have evolved. Thus some philosophers reject only the last two centuries in the development of European culture which have brought a complete triumph of soulless rationalism and a "marriage between science and revolution" which, in their view, leads to destruction. The crisis of culture, they believe, can only be overcome by a return to the true culture of Christianity. Other philosophers go even further, blaming the present cultural crisis on the last twenty centuries; in other words, they believe that it is Christianity that is to blame for the gradual cultural degradation. From their point of view, a return is needed to the Indo-European roots of European culture, muddled up by power-seeking philosophers—beginning with Socrates.

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However, Rousseauism, just as the Enlightenment attitudes, has undergone substantive changes in our times. If the followers of the bourgeois Enlightenment have been nonplussed by the dark political events of this century, the followers of orthodox Rousseauism have, on the contrary, been confounded by various optimistic facts of history, such as rapid development, under the impact of various ideologies, of countries that even a hundred years ago were at the lowest stage of socioeconomic progress. Under pressure from indubitable facts, the Rousseauists' complete lack of faith in the possibilities of cultural enlightenment work and political innovations gave way to acceptance of this possibility in principle, with the essential reservation that the socio-political programme of man's cultural transfiguration proposed by society must not contradict certain fundamental qualities of his nature.

The culture-man-nature triad is constantly present in philosophical works. It would be frivolous and naive to expect an unambiguous solution of the question, but the history of the development of this problem range permits the identification of certain obviously erroneous tendencies. When culture and human nature are absolutely opposed to each other, complacent, utopian, and essentially dangerous political tendencies often emerge; when culture and human nature are identified with each other, culture loses all independence and becomes a mere attribute of nature. Man is here simplistically perceived either as a purely cultural or purely natural

phenomenon; he now controls the cultural process consciously and rationally, now becomes its unconscious and passive object, the plaything of anonymous symbolic structures of a given type of culture.

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Culture and civilization.

As distinct from the 18th and 19th centuries, when culture and civilization were mostly regarded as synonymous, characteristic of 20th-century philosophy of culture is gradual separation of these two concepts, of which the former continues to symbolize all the positive elements in this previously indivisible area while the latter is mostly used with neutral or downright negative overtones.

Civilization as material culture and mastery over the forces of nature undoubtedly carries a powerful charge of technological progress and promotes material affluence. The beneficial effect of the spreading of technological inventions is too obvious to need proof. At the same time technology and material affluence do not in themselves signify cultural and spiritual efflorescence, they cannot be regarded as absolutely moral or absolutely immoral: they are, in fact, neutral. The cultural value of technological achievements depends on the axiological context in which they are used, and this context may include, say, irrigation of formerly barren areas but also development of advanced weapons of mass destruction.

For this reason, the concept of civilization is mostly associated with the development of technology which is inherently neutral in relation to culture and may be used for all sorts of purposes, while the concept of culture is on the contrary seen as intimately linked with that of spiritual-intellectual progress. Civilization is a world of material objects outside man transformed by man, while culture is man's inner property, an estimate of his spiritual development, of his oppression or freedom, complete dependence on the surrounding social world or spiritual autonomy. The attitude of some Western philosophers to civilization is flatly negative. The view of civilization as the "agony of culture" was formulated by Oswald Spengler, and it has only grown stronger since his time. The negative qualities usually ascribed to civilization are a tendency towards standardization of thinking, an inclination to treat generally accepted truths as absolutely correct, and a tendency to play down the independence and originality of individual thinking, which are seen as socially dangerous. From this standpoint, culture

moulds the perfect personality, while civilization, the ideal law-abiding member of society content with the benefits offered him. Civilization is more and more often regarded as a synonym of urbanization, lack of living space, the tyranny of machines, and a source of the dehumanization of the world. Indeed, man may have penetrated deeply into the mysteries of being, but his own spiritual and intellectual world still largely remains a mystery. By themselves, civilization and science cannot ensure spiritual progress: what is needed here is culture as an aggregate spiritual-intellectual structure comprizing the entire spectrum of intellectual, moral and aesthetic achievements of mankind, which are not passive attributes of material being but an active and independent stratum in the objective historical process.

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Characteristic of some trends in Western philosophy is a revival of the Rousseauistic tradition in a more acute form than at any time before. Thus Claude Levi-Strauss believes that the development of civilization, far from improving human life, makes it more difficult as it brings countless negative consequences. We have attained civilization, he writes, only at the price of turning man into a machine. Man today is unhappy in principle, only the primitive man was happy as his external self (his social life) was closely linked with his inner self (his psychical, inner spiritual life). The layer of civilization was still thin (which in this context is regarded as a positive fact), the ties between man and nature which gave birth to man, and of which he was part, could still be discerned. The invention of writing, increased complexity of social structures, the forging of symbolic "fetters of culture" tying down free manifestations of the human self, led to man's alienation not only from nature and society but also from himself. Mankind must learn how to go back to the natural forms of psychical contact with the world, otherwise it may die, not only from uncontrolled technological inventions (that is merely physical death) but also from psychological tension, from cultural schizophrenia—and that is spiritual death. The harmony of classical world perception, which did not know morbid self-reflexion, cannot be restored in the "broken bell" of contemporary culture which only produces jarring sounds.

Bourgeois philosophers differ in their views on what the causes of the crisis of culture are. The psychological stresses in it are blamed not only on depersonalized technology and "anti-human" science but also, e.g., on Christianity and art, which have allegedly made man prisoner of symbolic structures through which he can no longer discern his true nature. It is

believed that the diverse cultural traditions imposed on man by society with the help of language and other sign systems deprive him of a natural attitude to life, disorient his will, distort the sensations and create an artificial system of values in which the individual has to perceive not only external events but also his inner psychical experiences. Thus the cultural atmosphere of the Middle Ages forced man to treat himself as a naturally defective creature incapable of being directly connected with the supreme absolutes of religion, the path to which led invariably through the Church.

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Naturally, the individual could not develop his creative potential in such a situation; he regarded the demands of his spirit and his flesh as sinful errors, subordinating his will to Church authority. According to the Rousseauistic conceptions, this had a pronounced negative impact on the human soul, narrowing down and deadening its natural resources and depriving it of any chance to perceive life deeply and directly. Western philosophers find the same kind of negative consequences of cultural conventions in every historical epoch, and contemporary society, in their view, enslaves man more than any other, as the present high level of purely material civilization increases manyfold the dictatorial power of average cultural stereotypes. We see that such cultural theories are based not only on a particular conception of culture and civilization but also on a particular conception of man himself. Man in this sense is merely a puppet in the sign-symbolic cages of culture.

According to Marxism, man is largely unaware of his dependence on the cultural and other stereotypes established in society. But the degree of this dependence diminishes rather than increases in the course of history. The historical optimism of Marxism stems from its socio-philosophical doctrine, which postulates the establishment of proper social relations as the only possibility of man's breakthrough to his true self, and therefore strives for the attainment of this social state.

In order to better understand the entire complexity of the phenomenon of culture and its interconnections with material civilization, let us turn to yet another dilemma—the problem of correlation between culture and consciousness.

Culture and consciousness.

Can all cultural phenomena be reduced to the rational level of human consciousness? With all due respect for the achievements of reason, the

answer to this question can only be negative: culture is a manifestation of man's properties in all their fullness. Can our emotional experiences in connection with some work of art, or our moral reaction to some event, be fully conveyed in the rational form of a scientific statement? Is the culture of emotions subject to the dictates of reason? The reverse is true: where reason usurps autocratic rights, culture degenerates into an ornamental pattern on the groundwork of life, instead of being its hidden essence.

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This does not mean, of course, that the area of culture must be forbidden ground for rational research; this merely means that this area, as a real object, is not the content of the mind's conscious activity only. One must go deep into the hidden mechanisms of culture in order to realize, even in a very small degree, one's dependence on its objective force. Culture has often been subjectively perceived as a tool of progress entirely in our power, whereas objectively we have been hostage to its laws. It is no accident that the 20th century is characterized by a powerful development of culturology, the science of the forms and types of culture, of those mechanisms which underlie the interaction of culture, society and personality. This century has seen the beginning of fundamental studies in the structure of the unconscious, of the layer in man's psyche which is concealed from direct reflexion but incorporates archetypal components of culture. Culturology studies different historically variable mythological systems, which function in each given society, and reveals their underlying symbols and values, which also do not always have a clearly expressed form.

The culture of a society is its aggregate collective property. In class societies, it includes those essential differences which, owing to differences in social being, arise in the self-consciousness of every class. At the same time there is a fund of cultural values which not only all the members of a given society may have in common but also other societies outwardly entirely different in their structure, if they had parallels in their historical-cultural development.

There is yet another aspect of the relation between culture and consciousness that has to be discussed here. If culture cannot be equated with consciousness, can we then equate the structure of culture and the structure of the human spirit as a whole, which includes, along with others, irrational, unconscious, intuitive phenomena? Many researchers are inclined to think that the structures of culture and of the human spirit coincide in principle. Of course, there must be a correspondence between the two, and

of course, the structure of the spirit reproduces in one way or another the structure of material being that gave rise to it. But if we go in this direction, each subsequent step will take us further away from the specificity of culture as an independent trace of the body of evolution. The greatest value of cultural phenomena lies not so much in the community of their inner structure as in the unique content of these structures in each variety of culture. Here we have come to the central problem of the philosophy of culture—cultural typology.

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The problem of the typology of cultures.

It should be pointed out at once that science today does not have a complete classification of cultures, let alone their exhaustive typology. There are several different approaches to this problem, each of which has its own goals. Let us first of all note those classifications which reckon mostly with differences between major cultural entities, such as Western and Eastern cultures taken as a whole. Naturally, no attention is paid here to the specific features which are characteristic of the lesser cultural traditions within an integral cultural-historical type. However, the particular value of these generalized classifications consists precisely in the fact that they indicate at least some of the fundamental features of each such entity, and identify components of culture as a common human phenomenon.

How is the question of the correlation between Western and Eastern cultures solved now? If 19th-century culturology considered their systems of terms and symbols as basically closed, in the 20th century emphasis was laid on the culturological affinity of these traditions earlier perceived as disjoint. An indication of the tendency towards a synthesis between Western and Eastern cultures is the crossing of the two branches and the resultant new cultural varieties (of this nature is, e.g., the culture of Japan today or the cultural pluralism of numerous Buddhist communities in Europe and America).

The differences between European and Oriental cultures go back to remote antiquity. Of all the antithetic features distinguishing them that have been pointed out by culturologists, let us stress such basic elements as the attitude, first, to the human personality, second, to the possibilities of reason, and third, to socio-political activity. As distinct from Christian Europe, which deified the absolute personality of the Creator, and thus of

man as the Creator's likeness, oriental religions are mostly based on the idea of falsity of the individual forms of spiritual life. The East cultivated the idea of rejection of the personal self in favour of the impersonal absolute. There is also a difference in the attitude to the possibilities of reason. On the whole, Europe has moved towards rational and pragmatic knowledge, seeing it as the highest value, whereas the East places rational knowledge lower than introspective and intuitive one, and therefore has a greater range of devices for meditation and autosuggestion at its disposal. Finally, as distinct from the European emphasis on social action, the traditional Orient has preached the doctrine of refraining from action; in accordance with this doctrine, the existing state of affairs in earthly life, however bad it may be, is retribution for past sins apportioned by the absolute, and man must not therefore strive for social transformation.

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Even this brief outline indicates not only the basic differences between the two cultural traditions but also the bridges or points at which they have been brought closer together in the 20th century. Thus on the issue of the attitude towards man, some trends in European philosophy critical of bourgeois individualism are inclined towards antipersonalism uncharacteristic of Christian culture, subordinating the idea of self-valuable personality to the idea of depersonalized society, on the Confucian model. On the other hand, interest for individual-personal forms of being is gradually growing in the countries of Oriental culture. On the issue of the potential of rational knowledge, Europe today takes into account the achievements of Oriental meditative psychology, while the East, in its turn, ceases to ignore the natural sciences, without falling into the extremes of scientism, of course. On the issue of social activity, one cannot fail to notice the role played in the East by the idea of active involvement in life, as indicated by the scope of political struggle in these countries. It should also be noted, though, that the Oriental doctrine of refraining from action has partly penetrated European culture as well, especially those strata of the liberal intellectuals which have been disappointed by the failure of partial political reforms and have become engrossed in inner existential experiences of the individual human soul.

Apart from this classification of cultures, there are smaller subdivisions, including the concept of subculture, which reflects the specifics of a certain stratum in a single society (e.g., the youth subculture).

Of special interest here is the problem of national cultures. Their specificity is largely connected with the territorial, climatic, and ethnic situation of a given people, with its system of values that has been historically evolved and handed down from generation to generation. The preservation of the national originality of cultures is one of the most painful problems of the 20th century. The first decades of this century were dominated by the ideas of rapid consolidation of nations into a single cultural group, whereas the recent years are characterized by a rehabilitation of national self-consciousness confronting the tendency towards unification. However important the formation of global planetary thinking may be for the solution of such universal problems as the strengthening of peace and restoration of the ecological balance, this universal consciousness must not be built at the expense of cultural diversity. The greater and richer the range of cultural traditions, the richer the spiritual life of mankind as a whole.

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Of great significance for the classification of various cultural communities is the question of the value of these cultures in relation to one another and determination of the stage of their historical development. Various unitary models of cultural development play an entirely negative role here. Thus the adherents of the "modernization theory" (developed by Walt Rostow and others) reduce cultural-national and ideological differences to differences in the stages of growth, which ultimately leads to the idea that the West plays a pilot role while the Second and Third Worlds always lag behind. The Anglo-Saxon model is presented as the universal model of cultural development to be accepted by all the other countries. If the national-cultural specifics of some society is incompatible with this model, this society is regarded as marking time at one of the earlier stages of the common path rather than following its own.

All types of unitary cultural development are fraught with negative consequences for, despite the growing process of internationalization, the desire for national and cultural separateness, far from weakening, is increasing. In view of this, political thought cannot avoid being modified by the cultural specificity of the soil on which it is planted. This must not be seen as its defectiveness but, on the contrary, as a sign of its universality since, despite differences in cultural contexts, each specifically national version of its implementation retains its fundamental propositions.

There is yet another concept in present-day culturology which reflects the specificity of the cultural processes in this century—the concept of mass

culture, highly popular these days. It is usually used in a derogatory sense—meaning something like "a weak solution of culture for the masses". But the concept of mass culture can also be given a positive interpretation: socialism brought culture to millions of people who had previously led miserable lives in ignorance and illiteracy. The negative meaning of the expression "mass culture" comes from the fact that it is not the masses that are often given a chance to rise to the level of real culture but, on the contrary, culture itself caters to the primitive tastes of the backward strata of the population and thus, becoming simplistic and distorted, descends to the level of primitivism which is shocking to the truly educated: something stupid is offered to the intelligent masses under the guise of culture. This is highly insulting to the greatness of the historical mission of culture.

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It should be noted in conclusion that in reality culture exists as a historically established system which has its material forms, its symbols, traditions, ideals, orientations, axiological reference points and, finally, a mode of thought and life—the central force and the living soul of culture. In this sense, the being of culture becomes supraindividual, although it exists at the same time as the individual's deeply personal experience. The subject of culture is mankind, nation, social group and the individual. The material forms of the being of culture are the fruits of the people's creative activity, the masterpieces of men of genius and talent. Taken by themselves, though, the material and sign-symbolic forms of the being of culture are only relatively independent; outside man and his creative activity, they are dead.

There was a time when cultures were closed. In the course of their multidimensional development they become more and more open to all kinds of influences: they interact, and life works out flexible mechanisms of this interaction, which facilitates the general growth of culture. Right before our eyes, the process unfolds of the formation of civilization of the whole mankind retaining at the same time the individuality of each culture. Despite the uniqueness of the finest fabric of each given culture, whose threads always go back to remote antiquity, different types of culture are in principle comparable, and a dialogue between them leading to mutual understanding is not only possible but actually realized both in remote past and nowadays. I believe that further progress of mankind will be achieved through growing rational mutual enrichment of cultures. This beneficent synthesis, aspiring towards humanistic ideals, the principles of social justice, the individual's harmonious development, new thinking, and a consistent scientific

worldview, is apparently necessary. World culture will only reap benefits from it as it accelerates its ascendance along the path of progress, without depriving local cultures of the unique intensity of their own colours.

Chapter XVI. HISTORICAL PROGRESS AND THE GLOBAL PROBLEMS OF OUR TIMES

1. Progress as a Historically Necessary Direction of Society's Development

The history of the idea of social progress.

Any theoretically constructed schema of historical progress is simpler than real history, which always abounds in zigzags and profound contradictions. Mankind has traversed a long and thorny path from the primitive horde to the present epoch, from the stone chisel to nuclear energy, from the roaming gangs of savages to the present-day forms of state, from the childishly naive mythology to the exploration of the secrets of the universe by the power of intelligence and experiment. Countless dramas, great and small, heroic and ugly, noble and evil, have been enacted on the boards of history. The power of some groups burned itself out in the fire of social battles, and the power of others came into being instead. Royal thrones were overthrown and broken, crowns were torn off royal heads, and the heads themselves often rolled off the shoulders. Mankind moves forward in a constant struggle between opposing forces, between the old and the new. We cannot say that history is always right. It has sometimes happened that the progressive forces of society were defeated, while the reaction triumphed. But, although many rebellions and revolutions were drowned in blood and suppressed, the fate of world civilization was still decided by the victories of progressive forces. Such is the implacable logic of history.

Today, mankind faces a turning point. Never before has the historical situation been so dramatic. The socio-philosophical thought today, both Marxist and non-Marxist, is concerned with the essence, character and direction of history which will determine the future destiny of mankind. Problems of war and peace, of the environment and the demographic situation, of the threatening exhaustion of natural resources, conquest of space and of the World Ocean—all these reflect with the utmost clarity the contradictions of our epoch's social and spiritual development, causing great apprehensions and giving rise to numerous questions. What are the moral

and cultural prospects under society's total industrialization? Will society be able to integrate within itself the general and the specific elements of the individual historical and national cultures? What is it doing today to create a basis for a better future? All these questions are variations on one global problem: Is there a meaning and a goal in the peoples' historical activity? And if such a meaning and such a goal do exist, what are they?

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The idea of social progress is not an issue which suddenly emerged at the present stage in history. It has deep roots. At all times, reflexion on the fate of mankind was concerned with such questions as, What does the future have in store for mankind? Will it bring happiness? Or do misfortunes, suffering and evil await it? Men were either pessimistic or optimistic in the way they perceived the world and assessed the future, and there were also those who accepted the idea of cyclicity, or eternal rotation inevitably going through the same phases over and over again. It is at this point that certain instructive things come to light.

Many thinkers insisted that the past is always better than the present. However paradoxical it may seem, mankind, though it developed steadily, was mostly distrustful of the possibility of a more reasonable and just order. For centuries, mankind was haunted by the idea that happiness is somewhere far in the past, and hopelessly lost. The nostalgic stories about the Golden Age were vague echoes of the primitive state when all people were poor but equal. This idea was artistically expressed by Hesiod in his poem *Works and Days*. According to Hesiod, mankind went through five principal stages, going at each stage, as it were, one step lower down the ladder of history. Beginning with the Golden Age and passing through the Silver one, as well as others, it reached the Iron Age. The original state of the human species, the Golden Age, was an era of unclouded happiness: all things were plentiful, and labour was not obligatory at all, everyone lived carelessly, spending his time in feasts and prosperity. The Iron Age, which ultimately became the lot of mankind, was quite a different story. Men spend their days now in labour, cares, and sadness. Evil triumphs over good everywhere, violence holds the upper hand, and justice is flouted. But not only the primitive-communal epoch was idealized: so was antiquity. As it receded into the past, it came to be regarded, in the epoch of the Renaissance, as the apex of historical progress; while the Romantics of the 19th century worshipped the Middle Ages with their chivalrous spirit, nobility, selfless motives, and great spirituality. But, if the Golden Age is

placed now in one epoch, now in another, the question naturally arises whether it existed at all, or whether it is just a product of human fantasy.

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The historical pessimism which was on the whole characteristic of antiquity (although some thinkers, such as Protagoras, Democritus, Lucretius, did have faith in historical progress) was most strikingly embodied in the ideology and philosophy of Christianity: world history evoked in Christian thinkers a feeling of pity for the vanity and frailty of human being, for the paradise irretrievably lost. Their pessimism was linked with eschatological motifs, i.e. with the doctrine of the end of the world, of original sin and inevitable punishment. In terms of time, mankind's life was conceived as stretching from Adam and Eve to Judgement Day. But this pessimism was not tragically hopeless, it held the trembling light of hope for salvation in the other world. From the *psychological* point of view, it is difficult to say what prevailed in this world outlook, pessimism or a kind of optimism.

The optimistic idea of historical progress is connected with the epoch of the Renaissance, with real achievements in science, art, the crafts, and with a general revival of social life. The world had a feeling that it was heading for a rational and just future, and that it had the strength to attain that future. The social thinking of the rising bourgeoisie was imbued with historical optimism. Social progress was focused on the idea of the ascending development of human reason. This idea was most distinctly expressed by such philosophers of the 18th century as Anne Robert Turgot, Marie Jean Condorcet, Johann Gottfried von Herder, and others, and in the 19th century it became the most popular and fascinating idea. Scientists delighted in progress, poets wrote verse about it, and politicians made it a pledge of a better future.

Hegel occupies a special place in the treatment of the problem of historical progress in pre-Marxian philosophy. He saw history as a unified and law-governed process in which each epoch, being unique, presented at the same time a necessary step in the overall development of mankind. But what was Hegel's conception of the criterion of progressive development? Since he considered history as a unified world process, he necessarily had to face the question of a criterion—and it would have to be a single general criterion which would warrant the description of that process as unified. For Hegel, such a criterion was freedom; he stressed that the development of society was progressive to the extent to which it manifested progress in the

awareness of freedom. But awareness of freedom is not yet real freedom, therefore progress based on an awareness of freedom only is not yet real progress.

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In the 20th century, theories of the cyclicity of the historical process were revived in the works of Oswald Spengler, Pitirim Sorokin, Arnold Toynbee, and others. Spengler rejected the possibility of any progress out of hand, while Toynbee was not so categorical in his judgements. He accepted the possibility of a certain progress in various aspects of the social whole which, in his view, was like the cartwheel whose monotonous rotatory movement became the translational movement of the cart.

In view of the real advances in science, technology, management, and so on, progress as a whole would be hard to refute. It is therefore absolutely necessary to study the possible and optimal directions in mankind's future development. Various futurological theories are developed in the West purporting to explore these directions. Some of them invoke the unlimited possibilities of technological progress, predicting the advent of a technotronic era (as in the works of Zbigniew Brzezinski or Herbert Kahn); others propound models for convergence of socialism and capitalism, also on a technological-economic and managerial basis (as in John Kenneth Galbraith and Raymond Aron); still others calculate the future of mankind under the conditions of a possible global catastrophe that may be caused, first, by the increasing population of the planet and, second, by the progressive exhaustion of the natural resources (as predicted by the Club of Rome). All these theories reflect, in one way or another, the real position in the modern world of man who, in the words of Henri Bergson, is groaning half-crushed by the weight of progress which he himself called to life.

While paying tribute to all these theories for the contribution they make to elucidating the real state of the world and its future, we cannot help noticing that no attempt is made here to solve the deep social problems or to search for a humanistically oriented criterion of progress valid for all mankind.

The Marxist conception of progress and the problem of its criteria.

As Marx and Engels critically overcame one-sided idealist and metaphysical theories, they evolved a scientific dialectical-materialist explanation of social progress based on the conception of development as

irreversible and law-governed movement in nature and society. As opposed to all the other theories, Marxism gave up the idea of progress as a primitive rectilinear process or as movement along a closed circuit. It was clearly realized in Marxism that, along with progressive movement of society, there are also regressive destructive movements, too. "It is undialectical, unscientific and theoretically wrong to regard the course of world history as smooth and always in a forward direction, without occasional gigantic leaps back."¹

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Society is a complex organized system whose parts develop at different rates and within different time periods, are ultimately subject to the laws of the systemic whole, and have a logic of their own. Marxism stressed the contradictory character of historical process, showing that its vital source and motive force lie precisely in this feature. History has constantly brought thinkers face to face with the problem of contradictions in social progress; each and every epoch in history has been marked by cataclysms, upheavals, and revolutionary acts. At the same time history is a necessary process of mankind's law-governed progressive movement from given forms of social organization to others that are more perfect. This irreversible process results in a steady rise in the qualitative state of society.

To understand social development, Marxism did not turn to some other-worldly forces outside mankind but to man himself, to the immediate subject of his own life activity. Human activity emerged not as a one-sided abstraction of an individual considered in isolation but as an empirically perceived real factor of aggregate socio-historical practice falling into two kinds: production practice and social-transforming one. On this basis, a truly scientific criterion of social progress was worked out.

As we have already pointed out, the essence of progress has been variously interpreted by philosophers, and these interpretations largely depended on the criterion selected as its basis—awareness of freedom, the degree of development of human reason, and so on. Marxism did not reject these criteria *in toto* but subordinated them to the real, ever present, empirically certain and never interrupted process of human life activity—practice in all the inexhaustible wealth of its purely human manifestations. The nucleus of this practice is the development of productive forces as the

¹ V.I. Lenin, "The Junius Pamphlet", *Collected Works*, Vol. 22, Progress Publishers, Moscow, 1977, p. 310.

highest criterion of social progress. However, it would be a mistake to interpret this criterion, as people often do, from a narrow technological-economic standpoint, as the main element of productive forces is, after all, man himself. This explains the fact that the given criterion embodies the achievements of science, principles of management, society's socio-political state, level of education and standards of health services, as well as the mode of life including moral consciousness and worldview as a whole, which affect the efficacy of social production in a mediated way, through labour discipline and standards of work. That is why the development of the productive forces of mankind means, in the words of Marx, above all the *development of the riches of human nature as a goal in itself*. Now, although the nucleus of the criterion of social progress is productive forces, this concept alone is not enough, and it will inevitably give rise to erroneous, narrow technicist interpretations as long as productive forces remain an abstraction, an unspecified structure of various production relations. When the situation is changed, the *mode of production* will appear as a real criterion of social progress or, better say, its real nucleus.

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The criterion of social progress discovered and elaborated in Marxism made it possible to present world history as a unified process of the existence and successive replacement of one socioeconomic formation by another. Moreover, it was shown that the replacement is not chaotic or kaleidoscopic but accords with the principle that the new society is qualitatively superior to the previous one in terms of economic, social, political and cultural parameters.

Social progress unfolded as a contradictory process in which Marxism identified definite types depending on the main character of the mode of production and the existence or absence of antagonistic contradictions in it. As contradictions basic to a given mode of production are resolved, history progressively passes through the primitive-communal, slave-owning, feudal, capitalist and communist formations.

Characteristic of all the classes of antagonistic societies is the narrowing down of the field of real possibilities of progressive development. As a result, progress always involves some things developing at the expense of others. Marx expressed this tendency under capitalism in a deliberately paradoxical form: "The new-fangled sources of wealth, by some strange weird spell, are turned into sources of want. The victories of art seem bought by the loss of character. ... Even the pure light of science seems

unable to shine but on the dark background of ignorance.”² He brought out the ruthless essence of progress under capitalism by using the symbol of an ugly pagan idol refusing to drink nectar from anything but the skulls of the dead.

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The emergence of a fundamentally different type of progress signifies the arrival of socialism, the beginning of a new era in which this type of progress is fully realized. What does that mean? It means in the first place an expansion of the field of real possibilities of social development through the creative historical activity of the masses. The content of that activity is the realization of the principle of social justice, which assumes a high level of social well-being and a completely free play of man’s qualities and potential.

Social revolution as a motive force of historical progress.

A social revolution means a radical upheaval in all the spheres of society’s life in which a transition is realized from one socioeconomic formation to another and more progressive one. The revolution is a motive force of social progress. It is both *destruction and creativity*; it opens up a new period in history, which calls for new thoughts and emotions, for new singers and songs. The deepest cause of social revolutions is a conflict between productive forces and relations of production.

The fact that social revolutions are not accidental, that they are law-governed phenomena brought about by the development of production as historical necessities, does not mean that they occur automatically. Objective and subjective premisses are necessary for a revolution to take place. Irreconcilable contradictions in the mode of production manifest themselves in the fierce struggle between progressive and reactionary classes. Class struggle is the political basis of a revolution. The *subjective* form of the expression of this struggle is conflict of class interests, aspirations and ideas. A social revolution is the highest form of the class struggle of the oppressed. The ensemble of objective conditions leading to society’s economic and political crisis creates a *revolutionary situation* characterized by the following features: it is a situation “(1) when it is impossible for the ruling

² K. Marx, “Speech at the Anniversary of *The People’s Paper* Delivered in London, April 14, 1856”, in: K. Marx, F. Engels, *Collected Works*, Vol. 14, Progress Publishers, Moscow, 1980, pp. 655-56.

classes to maintain their rule without any change; when there is a crisis, in one form or another, among the 'upper classes', a crisis in the policy of the ruling class, leading to a fissure through which the discontent and indignation of the oppressed classes burst forth. For a revolution to take place, it is usually insufficient for 'the lower classes not to want' to live in the old way; it is also necessary that 'the upper classes should be unable' to live in the old way; (2) when the suffering and want of the oppressed classes have grown more acute than usual; (3) when ... there is a considerable increase in the activity of the masses, who uncomplainingly allow themselves to be robbed in 'peace time', but, in turbulent times, are drawn both by all the circumstances of the crisis *and by the 'upper classes' themselves* into independent historical action."³

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It is not every revolutionary situation that leads to a revolution. Revolutions only flare up when subjective conditions are added to the objective ones. The subjective factor includes the will to fight, a skillful organization of this fight, the consciousness of the fighters, a clear understanding of the goals and tasks of the struggle, and the resolution of the fighting classes to wage the battle to the end. Given all the necessary objective premisses, the subjective factor becomes decisive: the old government will not fall if it is not made to fall.

The *motive forces* of the revolution are those social groups and classes which have a vested interest in the breakdown of the old order and in establishing the new one, and which carry out the revolution. During relatively peaceful periods, popular masses are, as it were, behind the scenes of politics or in a state of historical slumber, whereas revolutionary events push the people onto the proscenium of world history as they create the new order.

The fundamental question of any revolution is the question of state power. When the fire of the revolution flares up, it engulfs first of all the principal defender of the old world—the state. Taking political power in their hands, the classes carrying out the revolution reorganize society's entire socio-political mechanism: the new organs of the revolution are born in its own fire. The seizure of power by the revolutionary forces becomes an act of political revolution. That is the revolution in the narrow sense.

³ V.I. Lenin, "The Collapse of the Second International", *Collected Works*, Vol. 21, Progress Publishers, Moscow, 1974, pp. 213-14.

The type of social revolution is determined by the socio-political contradictions which it resolves, the social system it overthrows and the system it creates anew. These aspects cover the conception of revolution in the broad sense—as society's transition from one qualitative state to another (e.g. from slave-owning to feudalism, and from feudalism to capitalism), i.e. as ascendance to the next historically determined stage of its development. A special type of revolution are those which involve a given individual sphere of social life (e.g. scientific, technological, or cultural revolutions).

The highest type of revolution is the socialist revolution which has the interests of the working people as its aim. As distinct from the previous social revolutions restricting themselves to changes in political power and to aligning it with the new economic relations already established, the socialist revolution is characterized above all by the creative element—the assertion of socialist relations of production. The socialist revolution, as no other type of upheaval, presupposes a long period of profound transformations of all the aspects of social being: it is by no means a one-time act of the overthrow of old political power and establishment of the new one.

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The meaning of history and progress.

To go back to the question posed above: What is the meaning of history? What is the direction of its movement? What is progress? The answer to this question is far from simple or obvious. The reason is that the very concept of progress considered only as an abstract category will inevitably, and paradoxically, contain an insoluble contradiction in any attempt to apply it to a concrete historical evaluation of specific events. What was regarded as absolutely progressive at one time proves to be devoid of progressive content at another; moreover, what is indubitable progress in one area proves to be regress in another.

Of considerable interest in this respect are certain facts noted by historians. The replacement of the bow and arrows by firearms, of flintlocks by automatic rifles, the transition from face-to-face combat with equal danger to both sides to murder from afar, when one side is in relative safety, are doubtless indications of technological advances, and not only advances in technology but also in all knowledge, in all the sciences connected with this area. Is this progress? The possibility of destroying great masses of people with nuclear weapons is also due to the development of science and

technology of the highest order. But can this be called progress?! The replacement of red-hot tongs by electric current as an instrument of torture was made possible by the discovery of electricity—is this progress, too? Strange as it may seem, unprecedented achievements of technology bring in their wake unprecedented destructive forces threatening mankind. Almost all positive elements emerging in history have their negative counterparts, and what is positive in one respect is negative in another.

These contradictions reveal the dramatic quality of history. Is all the drama inevitable? What is its essence? It appears that the principal protagonist in this historical drama is man himself. Evil is inevitable, so to speak, for man sometimes gets results which he did not desire at all, which were not his goals. In objective terms, the point here is that practice is always richer than, and superior to, the level of knowledge achieved, which makes it possible to use the results obtained in different ways under different circumstances. Evil always pursues the good like a shadow.

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History reveals to us that man is not just an active being but also—and this is highly important—a reasonable social being. The properly human element in man is determined precisely by these two features: man is reasonable and man is a social being. These two features must dominate all of man's historical activity, and only those elements of his activity should be regarded as progressive which accord with these features and bring them out more fully. The combination of these two features is *humanism*—a property that is unique in nature. Human history itself has thus provided a criterion for defining what is truly progressive. This criterion, humanism, covers both the specific features of human nature and evaluation of these properties as the highest element of social life. All that accords with humanism is progressive; moreover, it is not just a matter of accord: all that promotes and elevates humanism is progressive. Metaphorically, the elevation of humanity and true humanism can be presented in the image of a powerful tree with life-giving sap running along its trunk and branches and feeding the luxuriant foliage personifying human wealth and dignity, the meaning and the ideal of history.

Humanism is the real basis of the being of mankind which makes possible real coexistence, cooperation, mutual understanding and mutual respect of various nations and cultures. Figuratively speaking, the reason of history reveals itself in the fact that the continuous process of life on earth does not proceed in a single pre-established or predestined direction but in a

diversity of the paths of development and forms of organization of societies in which distinctly individual historical types of culture are realized. Indeed, even a cursory look at the various areas of this planet will show the extreme diversity of geographical conditions, natural and manpower resources, economic structures, national, cultural and political traditions of different countries. Despite the enormous variety, human history is an integral whole developing in two opposite directions at once, as it were: towards unity and towards preserving the distinct qualities of different societies. This may be said to be a manifestation of the dialectics of social development, of unity through diversity, and it acts as a historical necessity. It also reveals the profoundly humanistic essence of social progress.

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2. The Dialectics of World Development in the Present Epoch

The distinctive features of the present historical situation.

In the present epoch, mankind is merged into a single whole with common vital problems and a common historical fate. In the past, many politicians believed that historical progress is only connected with the Western world, whereas today all realistically minded statesmen realize the simple truth that the West has no future without the East and mankind as a whole.

In other words, the world we live in is interdependent if contradictory, it is an integral world in which societies coexist that belong to different socioeconomic formations with different socioeconomic, political and cultural characteristics (apart from the capitalist and socialist systems, the semi-feudal order, and in some places the primitive-communal one, have survived in some areas). A special term has appeared in the literature reflecting the state of the present-day global realities. The term is *world order*. It designates the principles and laws of the structure and functioning of the world community. The world order inevitably results from an aggregate of historically natural processes of development of various societies and is characterized, on the one hand, by expansion and strengthening of interconnections (scientific and technological, economic,

political, cultural, etc.), and on the other, by the existence of global problems of the modern times. The dialectics of the epoch is such that increasing "planetarization" of social phenomena is now intimately linked with a strong tendency towards the preservation of independence and sovereignty, of the national interests of individual states. Bearing all this in mind, it must be realized that no country can lay claim to being the only one entitled to mould the principles of the present world order, still less of the future one. Only coordination of efforts of all the countries concerned can ensure a future harmony of interests, a truly balanced strategy of world progress.

The global problems of mankind and the future of social progress.

Mankind is at a stage in its development when the solution of the eternal question, to be or not to be, depends on mankind itself. A level of knowledge and mastery of the forces of nature which enabled mankind to explode the first atomic bomb became fatally dangerous to its future, as it opened up the evil prospect of a suicidal nuclear disaster, and thus produced the superglobal problem of *war and peace*. Human history has been the scene not only of the good but also of evil. Evil was mostly concentrated in wars which destroyed everything created by people, but the bitterness caused by this evil was even more acute because it destroyed people themselves. Unfortunately, evil grows in complexity and under definite conditions becomes a Moloch consuming an increasing share of the products of industry and intellect, taking a growing toll in lives and happiness. But man must not remain defenceless in the face of war as an organism remains defenceless in the face of a malignant growth.

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In the modern world largely dominated by new laws which have emerged in the last decade or two, a new logic of progress is now in the making. A rejection of war as a continuation of politics is insistently prompted not only by the individual peoples' subjective aspiration for peaceful coexistence but also by objective causes: there can be no winner in a nuclear war. This makes the very idea of war absurd. A situation has arisen in which the confrontation between capitalism and socialism must only take the form of peaceful competition. Mankind has not the slightest chance of survival unless it realizes the reality of the danger threatening us all, and unless it takes measures to avert its own death. The only victory that is possible here

is the victory of reason. Since time immemorial, mankind has placed its hopes on reason. Ancient Indian philosophy formulated a great many propositions indicative of a profound humanistic grasp of the meaning of life and human capacity for self-improvement on the basis of love for one's neighbour. One of Buddha's dictums is this: "Only that victory is a true victory in which all sides are victorious and no one is defeated." It is to mankind's credit that it realizes more and more clearly the danger that threatens it, and takes various steps (individual forms of protest and organized mass actions) intended to prevent the destruction of civilization.

Apart from the nuclear threat, there are other global problems resulting from the critical state of the relationship between nature and society brought about by scientific and technological development. Of the greatest significance here is the ecological crisis manifested in universal *pollution* of the environment concurrent with progressive *exhaustion* of the planet's resources, of its mineral deposits and fresh water. Man has developed a sense of infinite power over nature, and now he has to realize, willy-nilly, his own and nature's finiteness: nature is not inexhaustible, it has proved more vulnerable than has been believed. Today, calls are heard on all sides for preserving the fragile balance of the biosphere. Mankind is forced to look for a way out of a situation that is extremely unfavourable for normal existence. One of the rational methods of organizing properly the use of natural resources in the foreseeable future consists in changing production technology, which embodies the material interrelations between nature and man. To achieve these changes, it will be necessary to alter value orientations as well, shaping a new, ecological way of thinking and ecological ethics.

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Man's physical and moral *health* is yet another distressing global problem. Information stresses, the general constantly increasing tempo of life, especially in the giant conurbations, abuse of medical substances whose negative consequences are, as often as not, unpredictable, adversely affect man. All this is only a small fraction of all the factors causing the obvious undermining of the psychical health of a regrettably growing number of people.

Effective solution of global problems which will require an interdisciplinary approach and the working out of an interstate and even planetary strategy will determine the future of social progress.

It is clear already, though, that a strategy that would maximally combine the interests of each people with those of the whole mankind cannot be formulated without an understanding of the new features of social international development, without an appropriate adjustment of political and economic practices of various states, and without accepting unified moral norms and principles of interaction between society and nature. Mankind may and must find ways of becoming a constructively and consciously acting subject of undivided world history.

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