HANDBOOK OF PHILOSOPHY

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FROM THE *Short Philosophic Dictionary*

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EDITOR'S INTRODUCTION

This handbook of philosophy possesses a number of features which distinguish it from the ordinary philosophical dictionary. They make it, indeed, considerably more than a dictionary. The usual type is made up of definitions by a variety of writers who have no common approach or viewpoint, whose work therefore contains no internal integration, and hangs together merely by virtue of what someone has aptly called "alphabetic disorder." The entries in this volume, although presented alphabetically, possess a certain fullness and interconnection which unifies them and makes the whole not merely a mechanically arranged but an organically interrelated structure of knowledge. It is the philosophy of dialectical materialism which makes such a common viewpoint and integration possible. At the same time, the recognized body of factual information and historical data pertaining to the various aspects of philosophy is not neglected. Such information is given as fully and accurately here as it could be in any dictionary of like scope and size.

There are many readers and students of Marxism who have wanted to know whether Marxism has any particular attitude towards this or that philosophic concept or doctrine, and if so, what it is. There are many other students of Marxism for whom philosophical concepts have been difficult to grasp and who need help in finding their way about among the philosophical terms prevalent in the whole body of Marxist writings. For both of these groups the publication of this work creates a unique opportunity. We must keep in mind, however, that this handbook is of the brief, abridged type, and that it was written with wide circulation in view.

Dialectical materialism is now, as it has always been, a developing and growing body of doctrine. Therefore, it would be a mistake to conclude that anything left out of such a volume must be deemed by Marxist philosophy to be unimportant, or that what is stated about the items includes all that is deemed important about them, or that what is stated is in every case final and

unchangeable. No one could study closely any considerable number of entries in this handbook without realizing that there is a basic Marxist philosophical position which is held unyieldingly. Dialectical materialism is, in fact, the only philosophy of our time which has not only resisted but fought all attempts, open or disguised, to compromise the issues between idealism and materialism. It is also the only philosophy which consistently opposes mechanistic thinking in every field. At the same time the reader will find that given formulations are not final but subject to change and development, in accordance with the principle stated by Engels, that "with each epoch-making discovery even in the sphere of natural science it [materialism] has to change its form." (*Ludwig Feuerbach and the Outcome of Classical-German Philosophy, p.* 36.)

One who reads or consults this volume should bear in mind three fundamental features of Marxist philosophy which distinguish it from all other positions. First, is its partisanship. It is not above the battle of humankind for a better life, but holds, on the contrary, that the one great task of philosophy should be to contribute to the winning of that battle. It is partisan to socialism as against capitalism; it is partisan to the working class as against the capitalist class; it is partisan to materialism as a world view as against all forms of idealism, spiritualism, and mysticism. Second, unlike all other positions which see the history of philosophy simply as the progressive unfolding of thought, Marxism sees it as the "history of the struggle of materialism with idealism," for the history of philosophy "is the history of the origin, rise and development of the scientific materialist world outlook and its laws." (A. A. Zhdanov, "On the History of Philosophy," *Political Affairs*, April, 1948.) Third, Marxism sees dialectical materialism as marking a revolution in philosophy. This means that although its roots are in the past, in the whole history of philosophy, and that it especially builds on the great progressive systems of the past, there is a qualitative change, a leap to something decisively new. It differs in kind from all other philosophies—in its starting point, its class orientation, and its social-historical goals.

These three distinctive features are reflected throughout this volume, in all its entries. But if the reader understands them beforehand he will avoid certain difficulties which arise from the fact that this is *necessarily* a different kind of philosophical dictionary from all others. It is partisan as well as integrated. It is calculated to take the reader ever further into philosophic thought and at the same time to lead him out to progressive action in the world around us. This itself is but one manifestation of the fact that Marx and Engels created a new philosophy qualitatively different from all that preceded.

This dictionary was first published in the Soviet Union in 1939; it appeared in a revised edition in 1940, and has since been further revised.

It is a remarkable testimonial to the interest of the Soviet public in philosophy that a single printing of the second edition totaled 150,000 copies and that no fewer than two million copies have so far been sold.

This work is subject to further revision and enlargement. In its adaptation for this edition the effort has been made to speak the language of students of Marxism and of the broad reading public of our country, and to add terms pertinent to the thought of our country. As the volume stands it is only a beginning. Through the help of individual readers, through class discussions where Marxism is being studied, the editor and publishers should receive valuable criticisms and suggestions for future editions. In short, to serve the purpose for which it is designed, it must be a continually developing project, responsive both to the needs and interests of students of Marxism and to the development of the sciences and changing social situations.

Although this handbook will be used primarily for reference purposes, in which a bothersome term will be looked up, it is so organically constructed, and contains such cross references, that no matter where one begins, one can go from term to term, from concept to concept, until not only is the volume read, but the reader has acquired the foundations of Marxist philosophy—an integrated world-view and guide to conduct of inestimable value.

With the help of this handbook it is now possible for the person without technical training to guide himself through the great classics of Marxist-Leninist philosophy. This philosophy cannot be understood apart from the Marxist critique of, and challenge to, capitalism. For the study of dialectical and historical materialism it is essential that the reader should know at least as much of the basic political principles of Marxism-Leninism as are contained in the following four booklets: *The Teachings of Karl Marx*, by V. I. Lenin; *The Communist Manifesto*, by Marx and Engels; *Socialism, Utopian and Scientific*, by Frederick Engels; and *Foundations of Leninism* by Joseph Stalin.

With this as a foundation, the reader can go through the following works in the order given:

Dialectical and Historical Materialism (pamphlet) by Joseph Stalin. This is a brilliant summary of the basic principles and guiding ideas of Marxism-Leninism as they relate to the nature of the world, of man, and of the laws of the historical development of society. Originally written as Chapter 4 of the *History of the Communist Party of the Soviet Union.*

Ludwig Feuerbach and the Outcome of Classical German Philosophy, by Frederick Engels. This work is the best single presentation of both the fundamentals of dialectical and historical materialism and of the contribution and limitations of mechanistic materialism. Includes Marx's famous "Theses on Feuerbach."

The German Ideology, by Karl Marx and Frederick Engels. Written in 1845-46, this is the first full-length organized expression of the basic features of what has come to be known as Marxism. Highly instructive for the development of the materialist interpretation of history.

On Historical Materialism, by Frederick Engels. Written in 1892 as an introduction to the English edition of *Socialism, Utopian and Scientific*, it presents new aspects of dialectical as well as historical materialism.

Anti-Dühring (Herr Eugen Dühring's Revolution in Science). One of the richest of the basic Marxist works, this was written as a polemic against the philosophical, scientific, and social views of Dühring, a contemporary of Marx and Engels. The major philosophical materials are to be found in the Introduction and in Part I.

The Selected Correspondence of Marx and Engels. Although all of this correspondence is exceedingly useful, the following letters enrich considerably our understanding of Marxist philosophy: Nos. 2, 40, 59, 82, 88, 96, 105, 158, 212, 214, 216, 221, 227.

Dialectics of Nature, by Frederick Engels. This volume was not published in Engels' lifetime. It consists of several completed essays and copious notes which Engels had planned to use. Mainly written between 1872 and 1882, it remained incomplete largely because Engels was occupied after Marx's death in 1883 with editing and publishing Vols. 2 and 3 of *Capital*.

Materialism and Empirio-Criticism (*Selected Works, Vol. XI*), by V. I. Lenin. This is unquestionably the most important single work to date in the field of Marxist philosophy. It develops and enriches the meaning both of materialism and of dialectics in relation to, and in criticism of, the popular twentieth-century trends of positivism, pure empiricism, and pragmatism that are merely new forms of the idealist philosophy originally set forth by Berkeley and developed in more subtle form by Hume.

Absolute Idealism. (*See* Idealism; Hegel.)

Absolute, the. A metaphysical category, especially of nineteenth-century philosophy, which is another name for God represented as pure, unconditioned being. In this sense it is beyond the possibility of experience and knowledge, since these can grasp things only in their relations to other things. It is thus reality-in-itself as opposed to the conditioned, the relative, or the analyzable. In other words, from Schelling to Bergson, it is *reality* conceived as a whole without parts, as a mystic oneness in which all things are contained. Used in this same sense as an adjective, something is conceived as absolute only if it is static, final, complete, and without relations either within itself or to anything else. Dialectical materialism repudiates any such absolute whether in nature, knowledge, or ethics. On the other hand it equally criticizes pure or absolute relativism, such as that of John Dewey, which denies any objective reality, any but relative truth, and any human ethical goal or ideal. Absolute and relative are both metaphysical categories when not taken in their dialectical interconnections. (*See* Idealism; Hegel; Absolute Truth.)

Absolute Truth. The metaphysical or idealistic conception of absolute truth is connected with the view that changelessness is the proper ideal for human knowledge. In this conception all subject matter is given once and for all, and each truth is regarded as static, complete, and final. Dialectical materialism (*see* Materialism, Dialectical) denies the existence of absolute truths of that sort. Knowledge represents an historical process, a process in which the unknown becomes the known, in which the knowledge of separate phenomena and isolated aspects of nature becomes deeper and fuller and leads to the discovery of nature's basic laws of development. Each step along the path of knowledge can be taken only within the limits set by the existing level of science and by the historical conditions of social life. These circumstances inevitably make our knowledge of nature relative, that is, incomplete. But the truths attained by it, while relative, contain in themselves a grain of absolute truth, in so far as they correctly, albeit incompletely, reflect the objective, external world. Hence the progressive development of incomplete, relative truth can bring us closer to absolute truth, that is, to the complete, many-sided knowledge of our world. An exhaustive knowledge of the whole objective world at any one historically limited moment is inconceivable. Such an exhaustive knowledge would mean that human cognition had *stopped* in its evolution, whereas it never stops, but is continuously deepening and improving its grasp of the nature of things. Moreover, such exhaustive knowledge of the objective world at each given moment is impossible because the world itself is undergoing constant change and transformation. Consequently, knowledge, which is the mental reflection of the ex-

ternal world, possesses inexhaustible possibilities of further change, just as the world itself does. V. I. Lenin, in his *Materialism and Empirio-Criticism*, gave a dialectical characterization of absolute truth: ". . . Absolute truth . . . is compounded of a sum-total of relative truths. Each step in the development of science adds new grains to the sum of absolute truth, but the limits of the truth of each scientific proposition are relative." (*Selected Works*, Vol. XI, p. 197.)

Abstraction. (1) The process of mentally selecting a certain aspect of things or events to be dealt with as a unit distinguishable from the total complex of which it is a part in nature. (2) The resultant idea (abstract idea) formed by such a process. Any scientific concept (*see*) is an example.

Accident. (*See* Necessity and Chance; Determinism and Indeterminism.)

Agnosticism. Gr., *agnôstos*—unknowing, unknown). Originally, with reference to theology, agnosticism was the doctrine that we cannot know whether or not there is a God. In the nineteenth century the term came to be applied to the doctrine of epistemology (*see*) which held that we cannot know the cause of our sensations and hence that human reason is limited and can never attain to a knowledge of the basic nature of things. This general position is shared by Hume, Kant, Comte, Spencer, Mach, Dewey, and various other thinkers of idealistic tendencies. Among contemporary schools, logical positivism leans heavily in this direction. The position of agnosticism is undermined and refuted by experience and practice. Science every day extends and deepens our knowledge of the content of existence. Nothing which exists can be regarded in principle as unknowable; the only valid distinction is that between what is already known and what is not yet known.

Analysis and Synthesis. Analysis is the breaking down of ideas or phenomena into their component elements. Synthesis is the putting together of the components of ideas or phenomena; the consideration of a given subject as a whole, in its unity. While the metaphysical tendency is to regard analysis and synthesis as mutually exclusive, dialectical materialism holds that: "Thought consists just as much in the analysis of objects into their elements as in the synthesis of related elements into a unity. Without analysis, no synthesis." (Engels, *Herr Eugen Dühring's Revolution in Science* [*Anti-Dühring*], 1939 ed., p. 49.)

Accordingly, it is necessary to employ both analysis and synthesis as constituent parts of the method of materialist dialectics. For example, we cannot attain to an adequate, a sufficiently well-rounded or complete conception of exploitation unless we clarify, through analysis, certain other concepts, such as labor, value, unpaid surplus labor, surplus value, and the like. (*See* Method, Marxist Dialectical; Formal Logic.)

Ancient Philosophy. Philosophy of the epoch of ancient Greece and Rome, from the sixth century B.C. to the fifth century A.D. The significance of this philosophy in the history of human thought is very great; within its manifold forms are contained the rudiments of nearly all later types of world view. The struggle between idealism (Plato) and materialism (Democritus) is already clearly manifested. Among ancient Greek philosophers were many "natural-born dialecticians," as Engels put it, who apprehended nature as a stream of change, of coming into being and passing away. Genuine elements of dialectics in connection with a naively materialistic world

view appear especially clearly in Heraclitus (*see*).

However, the dialectical view of the world held by ancient philosophers, while correct in essence, was not sufficiently developed for an explanation of the separate phenomena of nature. It did not attain to that detailed analysis of natural phenomena without which a genuinely scientific understanding of the world is impossible. Three periods may be distinguished in the evolution of ancient philosophy:

(1) Philosophy during the period of the definitive growth of slave society (sixth century B.C.). To this period belong the Milesian school—primitive materialists seeking the basis of all things in water (Thales), in the "unbounded" (Anaximander), in air (Anaximenes); the Pythagoreans, asserting that number is the essence of things; Heraclitus; the Eleatics (Xenophanes, Parmenides, and Melissus) holding that "true being" is one and motionless.

(2) Philosophy during the period of maturity and decline of the Greek city-state (the fifth century B.C. and the first three-quarters of the fourth century B.C.). During this period appeared such philosophers as Empedocles, teaching that over the four "roots of all existence" ("elements"—earth, water, air and fire) rule the two forces: love and hate; Anaxagoras, speaking of "mind" (Nous) as "the thinnest and lightest substance" which sets in motion the "mixture" of tiny particles of matter; the Sophists, transferring the center of philosophic research from nature to man (*e.g.*, Protagoras, with his assertion that "man is the measure of all things," and Gorgias, holding that nothing exists, nothing can be known, and nothing can be communicated). The most prominent philosophers of this period were: Socrates, master of dialectics in the ancient sense of the word, as the art of reaching truth by revealing contradictions in the arguments of one's opponents, and then overcoming these contradictions; Democritus (*see*), the great materialist philosopher who created the atomic theory which was to have so significant a future in the history of science; the objective idealist Plato (*see*), philosopher of aristocracy, creator of the doctrine that ideas are the essential and eternal reality of all things; Aristotle (*see*), oscillating between materialism and idealism.

(3) Philosophy of the epoch of Hellenism, when the problems of ethics came to the fore. In this period appeared such philosophers as Epicurus (*see*), reconstructing with originality the natural philosophy of Democritus by the introduction of the concept of the "accidental" swerve of the atoms; the Stoics (Zeno, Chrysippus, Cleanthes), seeing in the world the manifestation of one substance—fire (*for them fire was both reason and God*), and putting forward virtue as the leading principle in ethics in opposition to the Epicurean principle of pleasure (conceived as the absence of pain); the Sceptics (Pyrrho, Carneades, Sextus Empiricus) denying the possibility of genuine knowledge of things and advocating "abstaining from judgment" (*see* Scepticism); finally, the Neo-Platonists (Plotinus, Proclus), mystics, calling for a melting into oneness with the Absolute, God, and constructing a visionary ladder of being rising above the sensible world. Roman philosophy grew up under the influence of Greek thought from approximately the middle of the second century B.C. (Lucretius, Cicero, Seneca, Marcus Aurelius). The decline of ancient philosophy is connected with the decline of slave-holding society. Ancient philosophy exercised profound influence on the later development of science and philosophic thought.

Animism (Lat., *anima*—soul). The tendency of thought characteristic of that level of the development of humanity, represented by primitive food-gathering societies, in which the individual imagines that the whole surrounding world is filled not only with material bodies but with a special sort of entity. He believes that these entities are either concealed within the bodies (as souls) or divorced from any material vehicle (spirits). Animism as a faith arises out of the social relations of primitive society, out of the impotence of the savage confronted by hostile forces of nature, an impotence which is a natural function of the low level of development of the productive forces. The complete subordination of the individual to natural and social forces at the dawn of human history received fantastic reflection in the form of belief in spirits, including the spirits of ancestors. Various phenomena associated with sleeping, dreaming, and fainting provided a soil for the growth of animistic views. There is an animistic element in all religions, which manifests itself in different notions of gods, angels, devils, saints and the like; in less direct ways, a similar element plays a part in all idealistic philosophy.

Anthropomorphism (Gr., *anthropos*—man; *morphé*—form). The transference of man's traits and attributes to the external forces of nature. Anthropomorphism is connected with animism (*see*), and manifests itself especially strongly in the cult of polytheism in ancient Greek religion. Xenophanes (*see* Ancient Philosophy) early expressed the view that man created gods in his own image, and that if oxen could create gods they would certainly conceive of them as oxlike, while lions would consider them leonine. The analysis of anthropomorphic tendencies has suggested the conclusion that all forms of spiritualism are manifestations of anthropomorphism inasmuch as they read into natural events, plans, aims, or purposes similar to those of men.

Antinomies (Gr., *anti*—against; *nomos*—law). A term signifying two contradictory or mutually exclusive theses, each of which is sustained by logical proofs. The concept of antinomy plays an important part in the philosophy of Kant (*see*). According to Kant, when human reason attempts to grasp the essence of things, it inevitably falls into insoluble contradictions with itself. Kant noted the following four antinomies: "(1) Thesis: The world has a beginning in time, and is limited also with regard to space. Antithesis: The world has no beginning and no limits in space, but is infinite, in respect both to time and space. (2) Thesis: Every compound substance in the world consists of simple parts, and nothing exists anywhere but the simple, or what is composed of it. Antithesis: No compound in the world consists of simple parts, and there exists nowhere in the world anything simple. (3) Thesis: Causality according to the laws of nature is not the only causality from which all the phenomena of the world can be deduced. In order to account for these phenomena it is necessary also to admit another causality, that of freedom. Antithesis: There is no freedom, but everything in the world takes place according to the laws of nature. (4) Thesis: There exists an absolutely necessary Being belonging to the world, either as a part or as a cause of it. Antithesis: There nowhere exists an absolutely necessary Being, either within or without the world, as the cause of it." (*Critique of Pure Reason*, Translated by M. Müller, pp. 344-78.)

Since from Kant's point of view we

can logically demonstrate either the theses or the antitheses, he concludes that reason is self-contradictory. To him it is impossible that contradiction should be an essential part of things themselves. He thus comes to the conclusion that human reason is incapable of knowing things as they really are. In his doctrine of antinomies Kant came close to dialectics, but he did not go far enough to reach an understanding of the conception that the dialectical contradictions in thought are but reflections of the contradictions in being. Thus materialist dialectics acknowledges the antinomial character of all the concepts of our thought. "Indeed, *every* concept, every category . . . is antinomial." (Lenin, *Philosophical Notebooks,* p. 115, Russian ed.) This circumstance, however, does not serve to prove the inherent incommensurability of thought and being. It points rather to the fact that all the phenomena and processes of nature contain in themselves dialectical contradiction.

Antithesis. (*See* Thesis, Antithesis, Synthesis.)

A Posteriori. (*See* A Priori and A Posteriori.)

Appearance and Reality. (*See* Reality or Essence.)

A Priori and A Posteriori (Lat.). *A priori*—prior to, that is, prior to experience, independent of experience, in contradistinction to *a posteriori*, which means after experience, as a result of experience. (*See* Empiricism.) Dialectical materialism (*see*) rejects the notion of *a priori* knowledge, that is, knowledge that claims a validity independent of any connection with experience, with observation, experiment, or practice. *A priori* conceptions flourish in idealistic philosophies. (*See* Idealism; Kant.)

Aristotle (384–322 B.C.). Greek philosopher, the founder of formal logic (*see*), a scholar of encyclopedic genius, whom Marx characterized as the "greatest thinker of antiquity." Aristotle was the pupil of Plato, but he rejected Plato's idealistic theory of Ideas, subjecting it to severe criticism. Aristotle pointed out that Plato, in separating the general concept, the "Idea," from the concrete individual thing, transformed it into an independently existing entity. According to Aristotle's view, Ideas (in his terminology, "Forms") are significantly connected with observable things.

Nevertheless, his position is basically idealist, despite many materialist elements and tendencies in his thought. Each subject, each individual thing, according to Aristotle, is made up basically of matter and form. A wooden box, for example, is not just wood, but wood which assumes a definite form (not merely shape), a form that expresses the requirements which define a box. In this view, matter, in its basic sense, exists only in abstraction, as something that can be made determinate only by forms that are themselves non-material. Matter is identified with possibility, potentiality; form with actuality, reality. The possibility becomes the actuality thanks to motion: matter assumes some particular form; the form becomes possessed of material embodiment.

Although Aristotle thus connects form with matter, he is none the less of the opinion that there exists a pure (*i.e.*, devoid of matter) "form of all forms." This is God, pure mind or thought which thinks itself. God plays the part of "unmoved mover" of the world, one and eternal. Although Aristotle was essentially conservative and doctrinaire in his physics and astronomy, in biology and certain other fields he carried on scientific research on a large scale. In his

theory of knowledge (as well as in numerous problems of natural philosophy and mathematics) Aristotle approached closely to materialism, defending, in opposition to Plato, the view that knowledge originates from sense perception. During the Middle Ages the teachings of Aristotle were of predominant influence, but the scholastics "killed everything that was living and venerated everything that was dead in Aristotle." (Lenin, *Philosophical Notebooks*, p. 331, Russian ed.) Among his principal works are *Metaphysics*; *Physics*; *On the Soul*; *Ethics*; *Politics*; *Categories*; *Prior Analytics*; *Posterior Analytics*; and a number of biological treatises.

Atheism (Gr., *a*—no; *theos*—God). Non-belief in God and in associated religious ideas such as miracles, life after death, and the like. Atheism, which is historically connected with the growth of science and the scientific attitude, arose in ancient Greece. Materialists like Democritus (*see*), Epicurus (*see*) and the later Roman philosopher Lucretius (*see*) noted for their approach to the natural world in a manner which we now term scientific (they had actually attained to a theory of the universe as composed of material atoms) are also known for their anti-religious conceptions and teachings. During the sixteenth and seventeenth centuries, in the period of the struggle of the rising bourgeoisie against feudalism, the scientific work of Copernicus (*see*), Galileo (*see*), Giordano Bruno (*see*), and others dealt a devastating blow to unenlightened religious conceptions of the world and its laws. Spinoza in Holland and Hobbes in England also struck powerful blows at narrow and intolerant religious dogmatism.

An especially severe and widespread struggle against the religious world view took place in the period of the preparation for the bourgeois revolution of 1789 in France. The leading representatives of French materialism of the eighteenth century, Diderot (*see*), Helvetius (*see*), Holbach (*see*), Lamettrie, and others, relentlessly exposed the ecclesiastics who were exploiting the ignorance of the masses. But the atheism of the period prior to Marx suffered from certain shortcomings. It looked upon religious belief as a product of the fraud of the clergy and the ignorance of the people. Bourgeois atheism considered it possible to overcome religious belief exclusively by means of enlightenment, education.

A scientific approach to the connections between religion and exploitation was developed only by Marxism. The founders of Scientific Socialism, Marx and Engels, applying materialistic methodology to the realm of social phenomena, revealed the actual material roots of religion, the nature of its connections with class society and with the ruling and exploiting classes. Marxism showed that religion is a weapon in the spiritual enslavement of the toiling masses. In contradistinction to bourgeois atheism, Marxism emphasizes the class significance of religion and its vital relation to the problem of exploitation in class society. It looks upon the struggle against religion as subordinate to the struggle against capitalism in general.

Avenarius, Richard (1843-1896), German philosopher, one of the founders of the school of thought known as empirio-criticism (*see*). According to Avenarius, thought and being, the perceiver and the world are mutually dependent—neither can exist without the other. They exist in a constant, necessary interconnection ("essential co-ordination") in which consciousness is the

decisive factor. Therefore, it is impossible for the world to exist without a thinking individual. Hence, "the 'essential co-ordination' of Avenarius amounts to subjective idealism" (Lenin). It contradicts the scientific view that consciousness represents the product of a protracted evolution of matter, and that there was a time when man and his consciousness did not exist on the earth. Attempting to avoid the absurdity to which his doctrine of "essential co-ordination" led him, Avenarius advanced the theory of the "potential central term" (an imaginary thinking being effecting the co-ordination). According to this theory, we "pre-think" ourselves, that is, we imagine ourselves as having existed at a time when man did not exist, but the terrestrial sphere did. The philosophy of Avenarius was thoroughly criticized in Lenin's *Materialism and Empirio-Criticism.* Avenarius' chief work is *Critique of Pure Experience.*

Bacon, Francis (1561-1626), an outstanding philosopher whom Marx called "the real progenitor of English materialism." Bacon severely criticized the medieval thought which prevailed in his day, holding that scholastics and theologians should not interfere with the development of science. He exposed a great many of the unwarranted assumptions and false conceptions concerning nature which were entertained by the Schoolmen (Scholastics) and which were obstacles in the path of science. Devoting his energies to the development of a genuinely scientific method, Bacon taught that true philosophy must "work works," which it can do only by basing itself on actual observation of the phenomena of nature and drawing its conclusions therefrom. Bacon made an outstanding contribution to the empirical method in philosophy. According to him "Man . . . can do and understand so much and so much only as he has observed in fact or in thought of the course of nature." (*Novum Organum I.*) In his conception, all science is based on experience and consists in subjecting the data furnished by the senses to a rational method of investigation, involving induction, analysis, comparison, observation, and experiment. Man can know and "command" nature only by "obeying" her; that is, by discovering and following her laws. In Bacon's view, motion is an inalienable property of matter; natural phenomena are always in motion. Bacon acknowledges the qualitative richness of the universal motion and does not conceive of it in terms of mere mechanical transference of bodies in space. Bacon, however, could not adequately solve the problems of the forms of motion and his philosophy as a whole suffers on account of its mechanistic tendencies. Bacon is noteworthy as one of the first thinkers in the history of science to present a rich and detailed conception of inductive methodology. Bacon's philosophy was not consistently materialist. Its essential materialism was weakened by various theological encumbrances. Bacon asserted a belief in the existence of God, in the conventional and orthodox sense, and in the immortality of the soul. Some of his beliefs in the field of social and political problems are likewise conventional and are connected more with idealistic than with materialistic tendencies in philosophy. But in spite of these historical limitations, Bacon's philosophy was a great step forward in the development of materialism. The founders of Marxist thought valued highly the progressive role of Bacon's work which influenced in greater or lesser degree such philosophers as Hobbes, Locke, and the French materialists of the eighteenth century.

The chief works of Bacon are *Novum Organum; The Advancement of Learning; The New Atlantis.*

Base and Superstructure. The mode of production, *i.e.*, the productive forces (*see*) and the system of economic relations corresponding to them form the economic base or foundation of society out of which arises the social superstructure — political institutions and forms of social consciousness such as morality, science, religion, philosophy, and the like. "Whatever is the being of a society, whatever are the conditions of material life of a society, such are the ideas, theories, political views, and political institutions of that society." (Stalin, *Dialectical and Historical Materialism*, p. 21.) But the superstructure, directly or indirectly determined by the economic base, is not, as the vulgar economists think, merely a passive effect of the play of economic factors, and these economic forces by no means represent the only active factors in the evolution of society. On the contrary, the superstructure in its turn exercises an active influence on the base, expediting or delaying the process of social evolution.

Being. Nature, matter, objective reality, frequently distinguished from consciousness, thought, and sensation in which being is reflected. In accordance with whether being or thought is regarded as primary, philosophers are considered materialists or idealists.

Berkeley, George (1685-1753), British bishop and philosopher of subjective idealism. According to Berkeley nothing exists but thinking beings, minds and their ideas. The surrounding world has no existence external to and independent of mind. Things exist only in so far as they are perceived by mind. Berkeley held that the mind of God perceived everything. Here he approached an objective idealism, that is, an idealism objective at least to the human mind. Berkeley contended against materialism on the ground that it was the philosophical foundation of atheism. Thus he wrote: "For, as we have shown the doctrine of matter or corporeal substance to have been the main pillar and support of Scepticism, so likewise upon the same foundation have been raised all the impious schemes of Atheism and Irreligion. . . . How great a friend *material substance* has been to Atheists in all ages were needless to relate. All their monstrous systems have so visible and necessary a dependence on it that, when the cornerstone is once removed, the whole fabric cannot choose but fall to the ground. . . ." (*Treatise Concerning the Principles of Human Knowledge*, Part I, § 92.) The philosophy of Berkeley represents the reaction on the part of conservative circles among the English bourgeoisie of the eighteenth century to the materialist trends of the seventeenth century. In *Materialism and Empirio-Criticism* Lenin criticized the views of Berkeley and his followers. The chief works of Berkeley are *Treatise Concerning the Principles of Human Knowledge*, 1710, and *Three Dialogues Between Hylas and Philonous*, 1713.

Brain, the highest (most complex) part of the nervous system which reaches its fullest development in humans, and which is responsible for the emergence of thought and consciousness. The brain structure can be divided into several parts, among which there is a measure of localization (division of labor), each part predominantly regulating a different phase of animal and human activity. This is particularly true of simpler activity such as involved in sensori-motor

functions. However, essentially the brain works as a unit or pattern, as illustrated by the fact that one part of the brain will take over the work of another injured or removed part, provided the area of trauma is not too extensive.

The most important part of the brain is the cerebral cortex with its billions of nerve cells. It receives stimuli coming from the outside world through the organs of sensation and makes us aware of them (perception). It co-ordinates motor responses to these stimuli. But it is not merely a transmission center but rather an active organizer and mediator between stimulus and response. It interprets the one and so determines the other. It also accumulates experience or reinvokes it, thus making possible the generalization of perceptions and providing the physiological foundations of the processes of thought and consciousness.

Classical researches on the higher nervous activity of animals contributed by Pavlov and others have established that psychic phenomena, *i.e.*, perceptions, impressions, thoughts, and consciousness, are products of the activity of the physical brain responding to the action on it of the outside world. In this field contemporary physiology and psychology have decisively rejected idealistic conceptions of the independence from matter of mind or thought and consciousness. It has been demonstrated with exhaustive thoroughness that "our . . . thinking, however supra-sensuous [it] may seem, [is] the product of a material bodily organ, the brain." (Engels, *Ludwig Feuerbach and the Outcome of Classical German Philosophy*, p. 31.) Since consciousness and thought are nothing else than the reflection (not merely passive photographic duplication) of the phenomena of nature and society in the brain of man, "one cannot separate thought from matter without committing a grave error." (Stalin, *Dialectical and Historical Materialism*, p. 16.) Human thought has developed then as a dialectical product of the highly organized form of matter called the brain—"mind is the supreme product of matter organized in a particular way." (Lenin.) Human thought is the totality of our experience and has developed on the basis of the actual historical activity of the human race, particularly activity revolving around its working needs.

Bruno, Giordano (1548-1600), Italian philosopher of the Renaissance who exhibited great courage and persistence in his struggle for a new view of the world against the tyranny of the church and the backwardness of scholastic philosophy. Bruno built upon the scientific teachings of Copernicus (*see*), developing the view that the sun is not stationary, but changes its position in relation to the stars, and that the atmosphere of the earth revolves along with that body. Bruno's valuable extension of Copernicus' work was bitterly fought by the religious authorities. Bruno's leading idea, which has played a very significant part in the development of a scientific view of the cosmos, is the conception of the universe as a limitless aggregate of worlds, or solar and planetary systems, of which ours is one. Bruno developed the notion of an evolution of worlds and the significant belief that there were constant geological changes taking place on our earth. Trained in early life as a Dominican monk, he was excommunicated by the church. He was regarded as a pantheist, as one who identifies God with nature. His opposition to religious dogmas and his advocacy of scientific conceptions brought him into sharp con-

flict with the ecclesiastical authorities who used their power to burn him at the stake after eight years of imprisonment. His chief works are *On Cause, Principle and Unity; On the Infinite Universe and the Worlds.*

Campanella, Tomasso (1568-1639), Italian utopian communist. In 1586 he entered a Dominican monastery, studying philosophy there. In 1590 Campanella went to Naples, where he published two books directed against medieval philosophy. For his literary activities Campanella was arrested and sent to prison for about a year. The materialistic tendency of Campanella's natural philosophy is combined with vestiges of scholastic thinking, from which he never completely emancipated himself. Campanella was not an armchair philosopher. Italy at that time was under the yoke of Spain and Campanella, entering into the struggle against Spanish oppression, became the leader of a secret organization which set itself the aim of freeing Italy. The organization was betrayed and Campanella was imprisoned for some twenty-seven years. It was in prison that he wrote his well-known *City of the Sun*, in which he depicts his dream of a utopian communist society. The communist ideals of Campanella were greatly influenced by the work of Plato. In his book Campanella offers a criticism of exploiting society in which "poverty makes people worthless, roguish, sly, thieving, lying, callous, perjurous and the like, and riches makes them haughty, proud, rude, perfidious, deceitful, pretentious, bragging, unfeeling, offensive and the like." Communist society "makes everyone at the same time rich and poor; rich because they have everything, poor because they possess no property—hence they do not serve things, but things serve them."

Campanella advanced the idea that a society which had no private property, social inequality, or oppression would become the soil for an unprecedented growth of science, technology, and art. In order to lighten human labor the dwellers of the City of the Sun utilize highly developed technics in all fields of production. From a burdensome duty, labor becomes for them an inner necessity of personal freedom "because each one, to whatever service he is called, renders it as a mark of Honor. Among them, slaves and people of corrupt morals are unnecessary and do not exist; people are self-sufficient and serve themselves in all things."

Campanella's ideal of a communist society can by no means be identified with the scientific communism of Marx and Engels. Campanella developed the notion of an ascetic and equalitarian communism in which all the members of society were at the same level in point of needs and mode of life. Marxism teaches that equality in the sphere of requirements and individual life is an "absurdity worthy of a primitive sect of ascetics." (Stalin, *Selected Writings*, p. 344.)

The communist ideal of Campanella was a reflection of the moods and hopes of the urban and rural poor and the lower strata of Italian intelligentsia at the close of the sixteenth and the beginning of the seventeenth centuries.

Categorical Imperative (in the philosophy of Kant), the unconditional command directed towards right conduct, and considered by Kant as inherent in human nature. In conformity with the demands of the categorical imperative, man must act so that the rule of his conduct (*i.e.*, the higher principle of its internal motivation) could become the universal rule. Such a categorical

imperative has a purely formal and abstract character. Not attaining to the conception that norms of morality are historical, and that each social class in each epoch possesses its own ethical viewpoint, Kant set up a system of morality allegedly universal in character, mandatory for all times and places, but which in reality constituted a reflection of the limited ethical ideals of the bourgeoisie. Engels calls the Kantian categorical imperative impotent, something demanding the impossible and therefore not consonant with human activity. The teaching of Kant regarding the categorical imperative lies at the basis of many subsequent liberal-bourgeois theories of morality. The Kantian theory of ethics, along with Kantian ideas generally, spread among Social Democrats at the end of the nineteenth century, and gave support to various reformist movements. (*See* Ethics.)

Causality. The necessary connection between phenomena, in terms of which one (the effect) is always brought about by another (the cause). There is nothing uncaused; every object or event has its natural, material cause. Cause and effect are found in interaction. The cause produces the effect, but at the same time the effect is not passive, but reacts on its cause. Thus, for example, revolutionary theory is produced as a function of the class struggle, but it reacts on this struggle in a very important way. In such interaction cause and effect change places; the effect can become the cause, and vice versa. Cause and effect are "only moments in the universal interconnectedness and interdependence of events, links in the chain of evolution of matter." (Lenin, *Philosophic Notebooks*, p. 155, Russian ed.) Idealistic philosophy looks upon causality as a subjective category, as something introduced into nature by the human consciousness. (*See* Hume.) Many representatives of contemporary bourgeois philosophy try to set up, in place of causality, a so-called functional dependence, which recognizes the evident sequence of phenomena but does not wish to acknowledge objective causal connections. Denying the objective character of causality, bourgeois philosophy denies the possibility of such knowledge as enables man to change the world, and gives tacit support to anti-scientific and teleological doctrines according to which the movement and evolution of nature and history represent the fulfillment of some spiritual design or plan.

Chance. (*See* Necessity and Chance.)

Civilization, the stage in the evolution of human society following the period of "savagery" and "barbarism." It is marked essentially by the transition from the food-gathering or the sporadic small-scale cultivation of the soil to systematic agriculture through irrigation, fertilization, etc.; it involves the use of copper and bronze, the social division of labor, and the rise of large urban centers. In the epoch of civilization a rapid growth of productive forces takes place; commercial production assumes a predominant role, and society becomes divided into classes. Thus the state based upon exploitation arises. Slavery, serfdom, and wage labor—"these are the three great forms of servitude, characteristic of the three great epochs of civilization; open, and in recent times disguised, slavery always accompanies them." (Engels, *The Origin of the Family*, New York, 1942, p. 160.)

The victory of socialism lays the foundation of a new civilization, without class oppression or exploitation, one which opens up unlimited prospects for

the progress of technology, science, and art, and hence for the development of all the physical and spiritual potentialities of man.

Class (Social). "Classes are large groups of people which differ from each other by the place they occupy in a historically definite system of social production, by their relation (in most cases fixed and formulated in laws) to the means of production, by their role in the social organization of labor, and, consequently, by the dimensions and method of acquiring the share of social wealth that they obtain. Classes are groups of people one of which may appropriate the labor of another owing to the different places they occupy in the definite system of social economy." (Lenin, *Selected works*, Vol. IX, pp. 432-33.)

The historical origin of classes is connected with the rise and development of the division of labor and the appearance of private property in the means of production. Slave owners and slaves—these were the fundamental classes in that ancient world which has come to be referred to as "slave" society. Landowners and the oppressed and exploited serfs were the fundamental classes of feudal society. Capitalists who own plants and factories, and proletarians who work in such plants and factories, are the fundamental classes of capitalist society. The exploited classes through their labor create all social wealth, the lion's share of which the exploiters none the less appropriate to themselves. The contradictions among classes lead inevitably to a struggle between them. The key position in the history of class society and class struggles is occupied by the proletariat. The struggle of slaves and slaveowners, and of serfs against feudal landowners, merely served to replace one form of exploitation by another. The proletarian revolution, abolishing the capitalist system and establishing socialism, ends private property in the means of production and thereby ends forever the exploitation of man by man.

Class Struggle, the struggle between exploiters and exploited, a manifestation of the irreconcilability of antagonistic class interests. The history of all societies, with the exception of primitive communal groups, is a history of class struggles. These struggles represent the driving force of social evolution in class society. The bourgeois revolution destroyed the feudal system, as the proletarian revolution destroys the capitalist system. The class struggle penetrates the economic, political, and ideological fields of class society and assumes the most varied forms. Virtually no aspect of class society can be understood apart from the underlying and persistent struggle of classes, and this includes developments and movements in religion, art, philosophy, science, and every other field. The struggle for the heliocentric hypothesis (that the earth goes round the sun and not vice versa), was, for example, inseparably linked with the class struggle of its time. The conflict between formal genetics, with its doctrine of a hereditary substance totally removed from the conditions of life of the organism, and the teachings of the Soviet scientists Michurin and Lysenko that changed conditions of an organism's life can change its heredity, is one reflection in science of the class struggle of our day. The most fundamental form of the class struggle is the struggle for political power, which, in the case of the working class today, is the struggle for the establishment of the dictatorship of the proletariat. This is the necessary precondition

for the emancipation of the working class and of all society from exploitation. With the establishment of the dictatorship of the proletariat the class struggle does not cease but takes on new forms. But its goal and ultimate end is the abolition of class struggle through the elimination of classes, thus raising society to a new and higher level where the good of all is the good of each.

Classical German Philosophy, German philosophy at the end of the eighteenth and beginning of the nineteenth century. The founder of this movement was Immanuel Kant (*see*) and his followers Johann Gottlieb Fichte (*see*), and Frederick Wilhelm Schelling (*see*); the system of Hegel (*see*) represented the culmination of German philosophical development in the period after Kant. Classical German philosophy reflected the enlightening influence of the revolutionary movement in Europe at the end of the eighteenth and the beginning of the nineteenth century. However, the light of this influence had to pass through the prism of the backward social-economic conditions of Germany at that time. The weakness of the German bourgeoisie, and its tendency to compromise with the feudalism on which it depended, is manifested in the works of Kant, Fichte, Schelling, and Hegel: in their hostility to materialism, attachment to religion, mystical-idealistic modes of thought, and the like. However, German classical philosophy made a noteworthy contribution to the history of thought. Germany in the later eighteenth century, although retarded in its economic and political evolution, occupied first place in literature and philosophy. Kant and Hegel, Goethe and Schiller, and such representatives of the Enlightenment as Herder and Lessing played a significant role in the ideological evolution, not only of Germany, but of all Europe. The teaching of Kant, Fichte, Schelling, and Hegel represented successive steps in the formation of dialectical concepts. But their attempts to work out dialectics were founded on philosophical idealism and thus could not be wholly successful. Hegel's work brought dialectics to a new and higher level, but he still conceived it idealistically. Out of the Hegelian School, however, emerged the materialistic tendencies of Feuerbach (*see*). By means of his penetrating critique of idealism Feuerbach exercised great influence on Marx and Engels. However, the latter thinkers, in working out their own philosophy of dialectical materialism, not only rejected the idealism of Hegelian dialectics, but also the metaphysical limitations of Feuerbach's materialism and his idealistic conception of history. Thus classical German philosophy was one of the sources of Marxism. Engels presents a penetrating analysis of this philosophical movement in his book, *Ludwig Feuerbach and the Outcome of Classical German Philosophy.*

Cognition. (*See* Reflection, theory of.)

Comte, Auguste (1798-1857), French bourgeois philosopher and sociologist, the founder of positivism. Comte held that his philosophy was "above" both materialism and idealism, and that it really represented a "science." In actuality, however, Comte reworked various reactionary, idealistic doctrines: the impossibility of going beyond subjective sensation, the unknowability of the essence of things, and the view that "ideas rule the world." According to Comte, humanity passes through three stages in its evolution, the first two of which, the theological and the metaphysical, have already been consummated. The third and highest

stage, characterized by the full fruition of scientific or positivistic knowledge (the positive stage) dates, in his opinion, from the appearance of his own theories. Comte tried to prove that gradual development is the only "normal" evolution, denying the significance of revolutions and "leaps" in history, and called for a decisive struggle against revolutionary theories. Marxism always opposed the anti-scientific, reactionary, and philistine character of the theories of Comte. Comte's chief work is *Course of Positive Philosophy*, 1830-42.

Concept, that unit of thought in which the general characteristics of a given object of thought are expressed. Any adequate definition expresses the concept of that which is being defined. The process of gaining knowledge begins with sense experience, with direct perception of natural phenomena. But knowledge does not stop at this first level; it is raised to the higher level of formation of concepts, categories, laws. The concept is the result of the generalization of a mass of individual phenomena. In the process of this generalization we select and abstract from accidental, unessential properties certain aspects of the phenomenon and form a concept which reflects the fundamental and decisive properties and connections. In the process of constructing concepts, the danger always arises of divorcing them from actuality. For example, the concept of number arose by means of abstraction from separate, individual aggregates signifying this or that quantity of concrete things. However, idealists maintain that the concept of number and other mathematical concepts are *a priori*, that is, exist prior to, and independent of, any human experience. Dialectical materialism holds the view that the genuinely scientific generalization of actuality in concepts contains in itself all the wealth of the particular, the individual. Scientific concepts, verified by practice, reflect reality and present objective truth. In his *Philosophical Notebooks* Lenin defines the role of scientific concepts in the process of knowledge: "Thought, ascending from the concrete to the abstract is (if *correct*) not getting *away from* truth, but is approaching it. The abstract concept of matter, of a law of nature, of economic value or any other scientific (*i.e.*, correct and basic, not false or superficial) abstraction reflects nature more deeply, truly, fully. From sensory experience to abstract thought, and *thence to practice* —such is the dialectical path to a knowledge of truth, of objective reality" (p. 166).

Copernicus, Nicholas (1473-1543), noted Polish astronomer, creator of the modern heliocentric system. The theory of Copernicus that the earth revolves around the sun and rotates daily on its axis marked a decisive break with the theological conception of the earth as placed in the center of the universe by God (in accordance with the Ptolemaic system). Copernicus' work played a very important part in the subsequent development of science. Engels regarded the Copernican theory as "a revolutionary act by which natural science declared its independence. . . . The emancipation of natural science from theology dates from this act. . . . Thenceforth, the development of the sciences proceeded with giant strides." (*Dialectics of Nature*, p. 4.) Many progressive thinkers made the Copernican theory a standard around which to rally (Kepler, Bruno, Galileo). The ecclesiastical authorities conducted an obdurate struggle against it, utilizing all the weapons of the Inquisition. A true representative of pro-

gressive science, Copernicus did not fear to strike out against the old and outmoded. His chief work is *On Celestial Revolutions.*

Cosmology (Gr., *kosmos*—the world; *logy*, from *logos*—word), the study of the origin, development, and structure of cosmic systems (the solar system, stellar systems, *etc.*), and the hypotheses associated with this branch of knowledge, now generally referred to as astronomy. Scientific or materialistic cosmology takes its point of departure from the natural law that nothing arises from nothing, that matter can neither be created nor destroyed but is eternal. Any given solar or stellar system exists only for a definite period of time, not eternally. The problem of the exact origin of particular worlds and solar systems, such as our own, has not yet been decisively solved.

Hypotheses concerning the origin of solar systems can be divided into two groups: nebular and catastrophic. To the first group belong hypotheses based on the evolution of great gaseous masses or nebulae, while the catastrophic hypotheses explain the origin of solar systems as a result of such things as the passing near each other of gigantic suns (*i.e.*, stars) and the resultant pulling out of masses of matter of which planets and their satellites are formed.

The most noteworthy nebular hypotheses are those of Kant (*see*) and Laplace. Before Kant, our solar system, in accordance with the classical physics of Newton, was regarded as eternal and changeless. The revolution of the planets around the sun was "explained" as the result of a "first impulse" communicated to the world by God. Kant considered the solar system to be a result of the evolution and gradual condensation of gaseous vapors which led to the formation of suns, planets, and satellites.

Kant's hypothesis, with certain modifications, was further developed and given a mathematical basis in the work of Pierre Simon Laplace in 1796. This work possesses a great philosophical significance. In the first place it did away with the notion of supernatural forces—the world arose as a result of the natural movement of matter. (When Laplace was asked why he did not refer to God in his work he replied: "I had no need of that hypothesis.") In the second place, it carried into science the idea of evolution, and this dealt a severe blow to the metaphysical (static) outlook.

Nebular hypotheses, however, proved inadequate to explain a whole series of facts, and various catastrophic hypotheses arose. That of Sir James Jeans, for example, asserts that a star, traveling close to the sun, caused it to throw off a continuous stream of matter which, dragged on by the moving star, spread out for a considerable distance and then formed into separate concentrations, affording the basis for the origin of the planets. But this hypothesis still presents certain serious difficulties to astronomers.

Other questions in the field of cosmology concern the finitude or infinity of the universe, the origin of new stars and the process of their aging, the extent, origin, and nature of the stellar galaxies (that is, vast systems of stars like our own, but at great distances from us and from one another, of which thousands have already been charted). For dialectical materialism, these, and all other such cosmological studies and speculations, lie in the province of astronomy rather than philosophy so long as dynamic and materialist principles are adhered to.

Cosmos (Gr., *kosmos*—world, in the sense of an order or system). This term signifies a world order or universe, the

constituent parts of which function according to determinate laws and form an integrated whole. Dialectical materialism teaches that the world is one and that its unity is a function of its material content. The term cosmos first occurs in the work of the ancient Greek philosophers Pythagoras and Heraclitus (*see* Ancient Philosophy; Heraclitus), of the sixth century B.C. In contemporary science "microcosm" signifies a "little world"—a world of atoms and electrons, in contradistinction to "macrocosm," signifying colossal masses of matter, the stellar world or universe. Similarly, a distinction is made between macro—or astro-physics and micro-physics (the study of the structure of the atom). (*See* Cosmology.)

Culture, the complex of material and spiritual goods created by the activity of mankind in the process of its social development, often used as synonymous with civilization. Material goods, in particular the forces of production, belong to the realm of material culture. All that is created in terms of the social superstructure (*see* Base and Superstructure) makes up the realm of spiritual culture —political institutions, productions of science, and art, customs, manners, ethics, and the like. Material and spiritual culture are closely interconnected. The level of development of spiritual culture depends on the level of material culture, particularly on the productive forces of society (*see* Historical Materialism). Culture in class society inevitably possesses a class character. The direction of its development is determined by the interests of the ruling class. The proletariat, constructing its own culture, utilizes all that is valuable in what has been created by preceding generations, critically developing and testing it in the light of social practice. "Proletarian culture must be the result of the natural development of the stores of knowledge which mankind has accumulated under the yoke of capitalist society, landlord society, and bureaucratic society." (Lenin, *Selected Works*, Vol. IX, p. 471.) Proletarian socialist culture becomes radically different from the culture of all other social classes, by virtue of its wider appeal, its organic connection with the masses of the people. The process by which the toiling masses gain possession of culture represents in itself a whole revolution, a cultural revolution, which constitutes one of the most important aspects of the construction of communist society. The path to the universal human culture of communism lies through the growth of culture national in form and socialist in content wherever the proletariat has attained power.

Darwinism. Charles Darwin (1809-1882), celebrated English scientist, is the father of the modern science of evolution. His work put an end to the view that the different species of plants and animals are unrelated and immutable. Although others before him, *e.g.*, Lamarck (*see* Lamarckism) had advocated the concept of evolution, it was Darwin who first collected the mass of scientific evidence which conclusively established its validity. The evidence from all fields of biology—comparative anatomy, palaeontology, embryology, comparative physiology, and animal and plant geography—demonstrated that plant and animal species are constantly changing and giving rise to new forms. Thus Darwin showed the origin of species to be the result of the process of evolution and not the mysterious act of divine creation, as religion taught. And Darwin showed further that evolution,

and the resulting adaptive character of plants and animals, could be explained in *natural* terms, without recourse to divine action; they were the end result of countless generations of natural selection.

Darwin was led to his theory of natural selection by his observation that the enormous reproductive potentialities of plants and animals were never realized in nature because of limitations of food, light, water, and other essentials. In the competition among organisms for these necessities of life, in "the struggle for existence," some individuals survive better than others in the particular habitat. This natural process—in which a greater number of individuals with favorable variations reproduce and survive than individuals with unfavorable variations—is natural selection (as opposed to "human selection" represented in the work of animal breeders, etc.) Since many of these variations are inherited, the effect of natural selection will be cumulative from generation to generation. Thus, through the appearance of new inheritable variations and the action of natural selection, species slowly evolve. And always those species surviving are adapted to the environment in which they live. (*See* Social-Darwinism.)

Deduction. (*See* Induction and Deduction.)

Deism (Lat., *Deus*—God), the doctrine which asserts that God exists only as an impersonal first cause of the universe, which then operates solely in accordance with the laws of nature, conceived also as God-given. It thus repudiates all belief in miracles and divine revelation. Deism can claim England as its native land. In the struggle against feudalism, the revolutionary bourgeoisie of the seventeenth and eighteenth centuries demanded freedom of thought and repudiated a whole series of ecclesiastical dogmas and ceremonies. Under conditions in which the feudal ecclesiastical world view held a ruling position, Deism often represented a veiled form of atheism (*see*), a convenient means of breaking away from religion, at least for the materialist. One of the first English Deists, Lord Herbert of Cherbury (1581-1648) held that superstition and priestcraft were responsible for Christianity and the other historical religions. Another representative of Deism, Shaftesbury (1671-1713), argued that morality was independent of religion and that religion impelled people towards immoral behavior. Among the eighteenth-century representatives of Deism in France were Voltaire and Rousseau. In our time Deism serves as a meek apology for religion. (For Deism in American history see Herbert M. Morais, *The Struggle for American Freedom: The First Two Hundred Years*, 1944.)

Democracy (Gr., *demos* — people), rule of the people, people's government. The break-up of the feudal system and the rise of capitalist economy was accompanied by a series of popular revolts which initiated the modern struggle for democracy. The British revolution of the mid-seventeenth century and the American and French revolutions near the end of the eighteenth century were great bourgeois-democratic upheavals. The emergent capitalist classes in these countries sought to replace feudal institutions and feudal power by a system of political liberty placing state power in the hands of the bourgeoisie and freeing the new capitalist economy from all feudal and monarchical restrictions upon its development. The people who did the actual fighting in these revolutions fought

for democratic rights which would give them political freedom and provide for their economic welfare.

The bourgeoisie were never wholehearted champions of democracy. Their conception of democracy has never gone beyond the abolition of the class privileges characteristic of feudal society and the establishment of formal equality before the law, leaving economic and political power in their hands. For this reason the workers and their allies have had to wage stubborn and protracted struggles, such as the right to public education and the right to vote free from property qualifications. It has been the modern working class of the cities that has proved to be the most consistent advocate of and fighter for the preservation and extension of democracy.

In a society split into classes of oppressors and oppressed, exploiters and exploited, and dominated by the exploiters, democracy will always be class democracy, never a people's government in the fullest sense. This is as true of bourgeois democracy as it was of the "democracy" of some of the city-states of ancient Greece, in which a small percentage of "free men" ruled a large population of slaves. The bourgeois world adopts a constitution, sets up a congress or parliament and other representative bodies, introduces (under pressure from the masses) "universal suffrage," and formal political freedom. However, the possibility of utilizing all these political rights and institutional forms, so far as the broad masses of workers and farmers are concerned, is restricted in many ways and requires them to struggle unceasingly, often merely to defend the rights they had previously acquired through struggle. The entire state apparatus of the bourgeois republic is such that it can be easily adapted to paralyzing the political activity of the masses and depriving the masses of working people of effective participation in political affairs. Even when the people have registered important democratic gains, parliamentary discussion serves as a smoke-screen (literally and figuratively) behind which antidemocratic policies can be carried out quietly by professional bourgeois politicians in collaboration with the industrialists and bankers. And, as the rise of fascism in various countries has indicated, whenever the bourgeoisie find democratic institutions a means through which the masses can challenge their power, they destroy these institutions and continue their rule by unconcealed force. And even where such an extreme is not necessary, bourgeois class rule is maintained through the most rigorous control of all instruments of education and "public opinion," accompanied by the suppression of any opposing thought.

Thus it is that there is an essential and irreconcilable contradiction between the forms and ideals of democracy and the existence of class society based on the private ownership of the means of production. Democracy can be tolerated by such a society only up to the point when it challenges existing property relations and hence the exploitation of the masses of people. The rise of democratic forms and institutions is one of the outstanding achievements of the modern bourgeoisie, second only to the vast development of the forces of production. But just as these forces of production have long been in conflict with the capitalist production relations, so have capitalist production relations come into conflict with the forms and concepts of democracy. Only through the socialization of the means of production, only through the abolition of classes, can the ideals of democracy be realized and fulfilled. For only when the people are in

full control of their economy, and can carry on production as well as all the ideological and cultural activities of society solely for their own interest, can there be talk of real democracy, of *people's rule*. A precondition of this is the achievement of political power by the proletariat and the abolition of all capitalist economic relations.

Democritus (about 460-370 B.C.), the greatest materialist philosopher of ancient Greece. Democritus (a follower of Leucippus) is one of the founders of the atomic theory. According to Democritus, the two primary existences are atoms and empty space. Atoms, that is, indivisible particles of matter, are unchangeable; they exist eternally and are in constant motion. They are distinguished from one another only by shape and size. Qualities, such as sound, taste, color, and the like, are not intrinsic to the atoms. Such qualities exist, according to Democritus, not "in nature" but only in human opinion. Such a view contains in embryo the mechanistic doctrine of "primary and secondary qualities of things" (*see*). Out of the union of atoms a material body is formed; their dispersal marks the destruction of the material body. The soul, according to Democritus, also consists of atoms, fine atoms which are spherical and possessed of the highest degree of activity. An infinity of atoms moves through infinite space, sometimes colliding and forming vortexes of atoms, sometimes dispersing in different directions. From the vortical motion of the atoms arise innumerable worlds, coming into being and dying away as a result of natural laws, not by divine or supernatural action. Democritus is an advocate of determinism (*see*) verging upon fatalism (*see*). He denies chance, regarding it as a fiction invented by people who do not know how to explain the causal connection of phenomena. In his political views Democritus was an advocate of ancient democracy and an opponent of the slaveholding aristocracy. Followers of Democritus in materialist philosophy were thinkers like Epicurus, the Greek (third century B.C.) and Lucretius, the Roman (first century B.C.).

Descartes, René (1596-1650), outstanding French philosopher and scientist. Descartes was a dualist. He held that two substances exist: material substance, possessing the attributes of extension, and mental substance, possessing the attributes of thought (*see* Dualism). In this way he asserted two basic factors independent of each other—the material and the mental. Body and soul, according to Descartes, are conditioned to exist by a third substance—God. Descartes developed his physics along materialistic lines. Nature, he taught, is made up of material particles in a continuous stream or combination: the outstanding property of matter is its extension. The motion of the material world is eternal and proceeds in accordance with the laws of mechanics, that is, it may be reduced to simple change of place by particles. Descartes put forward the law of the quantitative conservation of matter. Marx remarked that "within the bounds of his physics, matter appears as the one substance, the one foundation of being and of knowledge."

Arguing against medieval philosophy and rejecting ecclesiastical authorities, Descartes believed firmly in the powers of human reason. He resorted to "doubt" as a method of thought, by means of which it was possible to avoid all preconceptions and assumptions and arrive at genuine truth. But, doubting everything, he is forced at the same time to acknowledge one thing: that he doubts,

that is, that he thinks. Thus Descartes arrived at his well known conclusion: "I think, therefore I am." Proceeding from this verification of his own existence, he proves the existence of God and thence concludes that the rest of the world likewise exists. Descartes was one of the founders of rationalism (*see*). He maintained that sensation gives us only confused ideas of things, and was thus led to the untenable position that truth is grasped directly by reason in which intuition is inherent, and that the criterion of truth is not experience or practice but the clearness and distinctness of our ideas. In other words, the criterion of truth is within the mind itself.

Descartes was one of the outstanding scientists of his time—a physicist and mathematician. Engels pointed out that "the turning point in mathematics was the Cartesian concept of the variable, thanks to which movement and dialectics entered mathematics." Descartes is the founder of analytical geometry. He laid the basis for the materialist physics of modern times and of rationalism in philosophy, thereby exercising great influence on the subsequent development of science and philosophy. The chief works of Descartes are *Discourse on Method*, 1637; *Meditations on the First Philosophy*, 1629-40; *Principles of Philosophy*, 1644; *Rules for the Direction of the Mind*, 1701.

Determinism and Indeterminism. *Determinism*—the doctrine that all phenomena and events are the product of causation. (*See* Causality). To determinism idealists often oppose *indeterminism*, which holds that the course of things is not governed by law or causality, but that chance, free will, spontaneity exist and operate independent of causal considerations, or that purpose governs all things. Dialectical materialism (*see*), acknowledging causal necessity in all the phenomena of nature, at the same time rejects absolute metaphysical determinism, the doctrine which holds that the admission of necessity leads to the complete denial of any kind of chance or accident in nature or society and renders unnecessary active and deliberate intervention on the part of man. Such a conception of determinism leads to fatalism (*see*) and quietism, to the preaching of inaction. Acknowledging necessity, Marxism does not deny the kind of accident (*see* Necessity and Chance) which represents a manifestation of objective causal connection; neither does it deny the relative freedom of the human will (*see* Freedom and Necessity). Marxism calls for the active and deliberate participation of the individual in the shaping of events.

Dialectical Materialism. (*See* Materialism, Dialectical.)

Dialectics (Gr., *dia* + *legein* — discourse). In antiquity certain philosophers understood dialectics to mean the art of gaining truth by means of revealing contradictions in the arguments of an opponent and then overcoming the contradictions. Later on, dialectics came to signify the study of basic changes, interconnections, evolution. Dialectics looks upon all phenomena as constantly moving and changing, and considers the evolution of nature a result of the conflict of opposites taking place in all things. Many ancient Greek philosophers were, to use the expression of Engels, natural-born dialecticians. Heraclitus taught that things both exist and do not exist during the same instant, since any given thing is in a continuous process of change. However, in Greek philosophy, dialectics appeared in a simple, primitive, and naive form. It could not demonstrate in detail

the universal connection of all phenomena.

In subsequent centuries, the metaphysical (essentially static) conception of the universe, as opposed to the dialectical, became predominant. Certain aspects of dialectics appeared in the philosophies of Descartes (*see*) and Spinoza (*see*), but on the whole the outlook of both these philosophers was metaphysical. Only in the second half of the eighteenth century did the metaphysical world view begin to show signs of giving way. The first breach was made by Kant (*see*) with his theory of the evolution of the solar system. Modern philosophy reached a culminating point in Hegel (*see*). "Its greatest merit was the readoption of dialectics as the highest form of thinking." (Engels, *Anti-Dühring*, p. 26.)

Hegelian dialectics was the first philosophical method to conceive the whole world of nature, society, and thought as a process, as in continuous motion, change, evolution. The internal contradictions of the process constitute the basis of its self-movement, its self-development. Hegel, however, interpreted the dialectical method in a completely idealistic fashion. Dialectics became scientific only when Marx (*see*) and Engels (*see*) freed it from its idealistic Hegelian encumbrances and developed it further as a doctrine of evolution naturalistically conceived, thereby creating dialectical materialism (*see*). Dialectics, as expounded by Marx and Engels and developed further by Lenin (*see*) is a science of the basic laws of evolution and nature, human society, and thought. (*See* Method, Marxist Dialectical.)

Dialectics, Laws of. (*See* Unity and Conflict of Opposites; Transition from Quantity to Quality; Negation of the Negation.)

Diderot, Denis (1713-1784), French materialist philosopher; leading ideologist of the French Revolution; celebrated writer, founder, and editor of the French Encyclopedia. A materialist and an atheist, he asserted that matter exists objectively, independently of mind, and that it is characterized by eternal motion. He taught that matter is composed of molecules. Each molecule is possessed of an internal source of motion, a force the external expression of which is mechanical change of position in space. All changes in nature are governed by the law of causality; the phenomena of nature are related in uninterrupted continuity. There is no impassable gulf between living and non-living matter; they can be transformed into each other.

In Diderot's work there are numerous elements of dialectics, especially in his treatment of the evolution of living things. "It is necessary," he wrote, "in the classification of things, to begin with the inert molecule, if there is any such thing, then to go to the living molecule, then to the microscopic animal, then plant-animal, then the animal, and then man." Sensation is a property of matter. From Diderot's point of view all matter possesses sensibility. In this connection he distinguishes between the inertia of inorganic nature, where the sensibility is obscured, and the active sensibility of organic nature. Mind is the product of a complex evolution of matter. The source of human knowledge is sensations which arise as a result of the action of objects and natural phenomena on the sense organs. Not only sensations, but also complex conclusions, deductions, reflect the actual objective interconnection of the phenomena of nature. Experience is considered the criterion of truth.

Diderot emphatically denied the existence of God and subjected to severe criticism religious dogmas concerning the

immortality of the soul, the freedom of the will and the like. Rejecting feudal religious morality, Diderot held that the basis of moral action in the individual was the striving for happiness in this life. Diderot preached a rational combination of personal and social interests. Although Diderot approached nature materialistically, he was unable to make a materialistic interpretation of history. Like other French materialists of the eighteenth century, he maintained that the character of the social system depended on the political organization of society which further depended on the prevailing legal system, which in turn depended on the ruling ideas in the given society.

Diderot suffered repression because of his radical views. Contemporary reactionaries frequently attack him and the whole development of eighteenth-century materialism which made such a powerful contribution to democracy on the eve of the French Revolution of 1789. Diderot is also noted for his work in the field of esthetics and in literature. Among his chief works are *Thoughts on the Explanation of Nature*, 1754; *Rameau's Nephew*, 1762; *Conversation Between D'Alembert and Diderot*, 1769; *Elements of Physiology*, 1774–1780. Jonathan Kemp's *Diderot, Interpreter of Nature*, contains the best selection of Diderot's philosophical writings available in English.

Dietzgen, Joseph (1828-1888), German worker, self-taught philosopher, who arrived independently at certain basic principles of dialectical materialism. After the German Revolution of 1848, in which he participated, Dietzgen emigrated to America. Later, from 1863 to 1869, he lived in Russia, working in a tannery in St. Petersburg. Here he wrote *The Nature of Human Brain Work* and his review of the first volume of *Capital* which attracted the attention of Marx and Engels. In his philosophical works Dietzgen expounded and popularized dialectical materialism, devoting particular attention to the theory of knowledge. He held that the world is not a product or attribute of mind, but that on the contrary mind, thought, ideas are the product of the material world, of nature. Dietzgen persistently emphasized the necessity of a many-sided investigation of phenomena in their evolution, interconnections, and unity. "Dietzgen is an enemy of theologism and agnosticism. He held that the doctrine of the 'limitations' of human reason is the last vestige of religious charlatanism. However, emphasizing as he did the element of relativity in human knowledge, Dietzgen often becomes confused and makes incorrect concessions to idealism and agnosticism." (Lenin, *Collected Works*, Vol. XVI, p. 379, Russian ed.)

To such mistakes is related the attempt to identify matter and mind, the notion of the innateness of certain concepts, and the like. After the death of Dietzgen, reformists, seizing upon these errors, tried to set his thought over against Marxism. Lenin emphatically repudiated such attempts, pointing out that "only by seizing upon such incorrect passages in Dietzgen's works can one speak of a specific philosophy of Dietzgen differing from dialectical materialism." (*Selected Works*, Vol. XI, p. 198.)

Dogma, Dogmatism (Gr., *dogma*—opinion). Dogma is an unproved assertion, taken blindly on faith. Dogmatism is characteristic of all religions and of all systems of thought resting on the outmoded, the old, the reactionary, and which are engaged in a struggle against the new and the newly developing. Especially dogmatic are reactionary social theories which do not find support in the

actual course of events, in changing reality. A judgment or theory which may be correct enough in itself if taken undialectically without regard to changing circumstances and concrete surrounding conditions can become a dogma. It was in this sense that Marx and Engels constantly emphasized that "our teaching is not a dogma, but a guide to action." Lenin and Stalin decisively rejected the dogmatic vulgarization of Marxism, which was undertaken by opportunists of all types with the aim of blunting the revolutionary and critical edge of this theoretical weapon of the proletariat. Genuinely revolutionary Marxism is *creative* Marxism continually enriching, by means of new data, the theory of social development and the revolutionary practice of the masses.

Dualism, philosophical tendency which holds that the world is composed of two independent, mutually exclusive substances. Descartes (*see*), for instance, held that reality consisted of a material and a spiritual substance, that is, of matter and of mind. Most religious doctrines are based on the same notion. As a philosophical tendency, it is opposed to monism which, whether idealist or materialist, looks upon the world as constituted by one principle or substance. "The materialist theory of Marx," wrote Stalin, "absolutely rejects both dualism and idealism." (Quoted by L. Beria, *Stalin's Early Writings and Activities: On the History of the Bolshevik Organizations in Transcaucasia,* p. 101.)

Dühring, Eugen (1833-1921), German lawyer and writer on philosophy, political economy, and the history of science. Although basing himself on Kantian and positivist principles Dühring was an inconsistent mechanistic materialist who frequently came close to an idealistic position. He argued against Hegel and also against the materialistic dialectics of Marx and Engels. Engels gave a devastating critique and refutation of his views in the book called *Herr Eugen Dühring's Revolution in Science* (*Anti-Dühring*).

Eclecticism (Gr., *eklegein*—to pick out, to choose), the tendency to combine, in mechanical fashion, ideas, theories, and conceptions which have originated in different schools and movements. At its best, eclecticism is an impossible attempt to create unity among disparate and irreconcilable philosophies, such as, for example, to combine "the best features" of materialism and idealism, or of Marx and Freud. At its worst it is a deliberate effort to confuse issues by indiscriminate borrowing which results in a hodgepodge of nonsense.

Economic Basis of Society. (*See* Mode of Production.)

Economic Determinism. This term is sometimes used to indicate any theory which holds that the economic base of society determines other social phenomena. However, many such theories conceive of the economic factor in a narrow sense and consider that social causation proceeds in only one direction, from the economic to the non-economic. Theories of this type likewise tend to deny the role of the individual in history, as Plekhanov shows in his essays on *The Materialist Conception of History* and *The Role of the Individual in History*. Historical materialism (*see* Materialism, Historical) avoids the shortcomings of these theories.

The most popular form of economic determinism among bourgeois historians, of whom Charles Beard is a leading representative, is expressed in the view that all history is to be explained in terms of the economic "motives" of individ-

uals. This school tends to overlook and ignore the major movements of class forces and relationships and thus reduces history to the conflicts of individual economic aims.

Economics and Politics. Marxism looks upon economics and politics in terms of their interacting evolution, as an interconnected whole. "You must not separate politics from economy, just as we cannot move away from politics.

"For convenience in study, people usually separate the methodological questions of economy from the questions of politics. But this is done merely from the standpoint of method, artificially, only for the convenience of study. But in life, on the contrary, politics and economy are in practice inseparable. They exist together." (Stalin, *Mastering Bolshevism*, p. 30.)

The economic system of society conditions the political and ideological superstructure (*see* Base and Superstructure), while politics in its turn also exercises important influence on the development of the economic system. An outmoded political system must be removed before further development of productive forces, of the economic basis of society, can take place. Accordingly a fundamental question of every social or economic revolution is the question of political power. (*See* Materialism, Historical.)

Empiricism (Gr., *empeirikos*—experience), the philosophical theory which considers sense experience the sole source of knowledge, as opposed to rationalism which relies on reason alone to give us real knowledge. There is an idealistic as well as a materialistic empiricism. The idealistic variety (Berkeley, Hume, Mach, Avenarius) limits the concept of experience to a complex of sensations or impressions, not acknowledging the fact that objective material nature lies at the basis of experience. Materialistic empiricism (Bacon, Hobbes, Locke, the French materialists of the eighteenth century) considers independently existing objects, or matter, to be the source of sense experience. Dialectical materialism rejects idealistic empiricism and considers the older materialistic variety correct only in its starting point. It rejects the general narrowness and one-sidedness of empiricism, which is to be distinguished from pre-Marxian materialism by its undervaluation of the role of general theories and scientific abstractions. Recognizing that sense experience of objective and independent nature lies at the basis of knowledge, dialectical materialism at the same time emphasizes the very significant role of general theories, scientific concepts, and ideas.

Empirio-Criticism, the philosophy of "critical experience" or Machism (*see*), a reactionary tendency in the direction of subjective idealism which arose in the second half of the nineteenth century in Germany and Austria. Its founders were Avenarius (*see*) and Mach. They held that at the basis of all phenomena lie the "elements of the world" or what is the same thing, "elements of experience." Each thing is a "complex of elements." By the use of the term "element" Avenarius and Mach obscured the fact that as the basis of phenomena they posit nothing but sensation, for their "element" is in fact identical with sensation. Thus empirio-criticism in general accepted the same fundamental premise as the subjective idealism of Berkeley (*see*).

Developing their subjectivistic view of nature, Avenarius and Mach took the position that the object (the world) is impossible without the subject (con-

sciousness, sensation); that the laws of nature do not possess objective significance, being forms of consciousness; and that objective truth is impossible. Because of Mach's work, empirio-criticism gained some currency among natural scientists. Following this position many of them interpreted modern discoveries in physics (the breaking up of the atom into electrons and protons, the electromagnetic nature of the atom) as signifying the "disappearance of matter" and "the impossibility of attaining true knowledge." Lenin (*see*) in his *Materialism and Empirio-Criticism* revealed the roots of empirio-criticism and severely criticized it as reactionary idealism and a form of veiled theologizing. In recent years, although the name "empirio-criticism" has disappeared from philosophy, a similar trend of thought, known as logical positivism or scientific empiricism, which derives partly from the teachings of Mach, has attained a considerable following among bourgeois philosophers both in Europe and America. (*See* Positivism; Pragmatism.)

Energism (metaphysical) (Gr., *energia*—active), reactionary tendency in philosophy and natural science, appearing at the end of the nineteenth and beginning of the twentieth centuries, the founder of which was the German chemist and philosopher Wilhelm Ostwald. With the relatively sudden breakdown of the older theories of matter in physics towards the end of the 'nineties, the tendency arose among natural scientists to cast aside the concept of matter altogether. Energism represents one such attempt. Matter as objective reality is to be replaced by the concept of energy. Energism divorces motion from matter, maintaining that energy has no need of a material vehicle, and that what is called matter is only a manifestation of energy. In fact, Ostwald maintained that the concepts, matter and spirit, are both subordinated to the concept, energy, thus suggesting "neutral monism" which Bertrand Russell later popularized. Lenin in *Materialism and Empirio-Criticism* showed that energism leads to the denial of objective reality, to agnosticism, that it is "confused agnosticism stumbling into idealism."

Engels, Frederick (1820-1895), cofounder with Marx of scientific socialism, was born on November 28, 1820, at Barmen, Germany, the son of a textile manufacturer. In 1841 he joined the circle of "Left-Hegelians" (*see*), radically inclined students of the philosophy of Hegel (*see*). In March, 1842, appeared Engels' brochure, *Schelling and Revelation*, in which he subjected to a devastating critique the reactionary and mystical doctrines of Schelling, which attempted to "reconcile religion with science." By the end of 1842 Engels had definitely turned to communism. In 1844 he joined Karl Marx in writing *The Holy Family*, directed against the Left-Hegelians. In 1845 he published in Germany his famous *Condition of the Working Class in England in 1844*, the materials for which he had painstakingly gathered while working in his father's textile mill in Manchester.

In the spring of 1845 Engels went to Brussels, where Marx was staying. Here they prepared their joint work, *The German Ideology*, in which they criticized the shortcomings of the philosophy of Feuerbach, the views of the Left-Hegelians and so-called "true socialism" which denied the class struggle and preached universal reconciliation. Like Marx, Engels combined his scientific pursuits with practical activity among the workers, and, like him, participated in the work of the secret Ger-

man Communist League, doing extensive work in preparation for its second congress, for which it was necessary to set up a program. Engels wrote *Principles of Communism* as a rough draft of this program and then, together with Marx, wrote the world famous *Manifesto of the Communist Party* (*Communist Manifesto*).

From 1864, the time of the founding of the First International (International Workingmen's Association, *see* Marx), Engels together with Marx carried on a struggle against the Proudhonists, Bakuninists, and all the other enemies of the International. In the autumn of 1870, Engels moved from Manchester to London where he served on the General Council of the International. After this organization terminated its existence, Marx and Engels continued to lead the socialist movement, and the burden of the struggle against anti-Marxian tendencies fell upon Engels' shoulders, since Marx was doing his most intensive work on *Capital*. At this time Engels wrote his articles in opposition to Eugen Dühring (*see*), from which the celebrated work *Herr Eugen Dühring's Revolution in Science* (*Anti-Dühring*) was composed. During this period Engels also devoted himself to a profound study of natural science and mathematics, the results of which can be seen in his important but unfinished work, *Dialectics of Nature*.

After the death of Marx, Engels turned to the work of editing and preparing for publication the second and third volumes of *Capital*, which Marx had not completed. In 1885 Engels published the second volume, and in 1894 the third. In this work on *Capital* Engels set up a lasting monument to his great friend, a monument on which he involuntarily inscribed his own name. To this period also belongs the classic, *The Origin of the Family, Private Property, and the State*, which Lenin called one "of the fundamental works of modern socialism." In 1888 appeared Engels' work, *Ludwig Feuerbach and the Outcome of Classical German Philosophy*, which, together with his *Anti-Dühring*, equipped generations of Marxists with the fundamental principles of dialectical and historical materialism.

Engels died on August 5, 1895.

No better and more correct statement on the relations of Engels to Marx in the creation of Marxism can be given than that which Engels himself gave. He wrote: "I cannot deny that both before and during my forty years' collaboration with Marx I had a certain independent share in laying the formulations, and more particularly in elaborating the theory. But the greater part of its leading basic principles, particularly in the realm of economics and history, and, above all, its final, clear formulation, belong to Marx. What I contributed—at any rate with the exception of a few special studies—Marx could very well have done without me. What Marx accomplished I would not have achieved. Marx stood higher, saw farther, and took a wider and quicker view than all the rest of us. Marx was a genius; we others were at best talented. Without him the theory would not be what it is today. It therefore rightly bears his name." (*Ludwig Feuerbach*, p. 52, note.)

Epicurus (342-270 B.C.), materialist philosopher, follower of Democritus, whose work was one of the most powerful sources of public enlightenment in the Greek world. The universe, according to Epicurus, consists of atoms and the void (empty space) in which the atoms form an infinity of worlds. Gods do not take part in the life of our

world, but reside undisturbed in a realm apart from human beings. Epicurus introduced essential changes into the teachings of Democritus. According to Epicurus, atoms ordinarily moving in a straight line are also capable of "swerving." This swerving is not caused by anything external and takes place by chance. By introducing the concept of chance, Epicurus endeavored to get rid of the fatalism which followed from Democritus' teachings. He ridiculed, in fact, the notion of fate or destiny as sovereign over all things, holding instead the dialectical view that "some things happen of necessity, others by chance, others through our own agency."

Emphasizing the role of sensations (*see* Sensationalism) in his theory of knowledge, Epicurus also took the position in his ethics that a rational utilization of sense pleasures marked the good life. This circumstance afforded an opportunity to various enemies of materialism to defame Epicureanism on the assumption that it lent encouragement to debauchery. The aim of the wise man, however, according to Epicurus, is the attainment of "ataraxia," or tranquility of soul, which is gained by knowledge, and freedom from the fear of gods and death. The work of Epicurus and his Roman follower Lucretius exercised considerable influence on the development of materialism in the modern period.

Epistemology (Gr., *episteme*—knowledge), the philosophical study of the possibility and extent of human knowledge, and of its origins (sense data, reason) and development (ideas, concepts, judgments, and so on). The materialist theory of knowledge takes the position that a world of objects, things, bodies, exists external to and independent of us, that our sensations represent the action of the outside world on our sense organs. Idealistic philosophy asserts either that our knowledge has its source in objectively existing ideas (Plato, Hegel—objective idealism) or that it coincides with existence itself, which is thus regarded as exclusively mental, internal to mind (the subjective idealism of Berkeley and the Machians) or in principle denies the possibility of true knowledge of reality (the skepticism and agnosticism of Hume and Kant). In the last analysis, the epistemology of idealism is invoked in order to set certain boundaries and limits to human knowledge. Dialectical materialism opposes all hypotheses which negate science and its potentialities.

Equality. The concept of "equality" means very different things to different social groups under different conditions. In the bourgeois conception equality refers only to the legal equality of citizens, their status before the law. At the same time the exploitation of man by man is legally protected and economic and political inequalities are extremely widespread. Bourgeois equality is therefore formal. The slogan of equality, which played a progressive role in the period of the revolutionary struggle of the bourgeoisie against feudal forms of inequality, was transformed after the victory of the bourgeoisie into a means of deceiving and oppressing the masses. During the first half of the nineteenth century, when the formal and hypocritical character of bourgeois equality began to reveal itself with special force, petty bourgeois theories of equality received wide currency. Such champions of these theories as Proudhon, Stirner, and others did not understand the problem of the abolition of private property and the socialization of the means of production. Equality was understood by

them as equality within the sphere of private property, and came to mean everybody having exactly the same remuneration for his work. Marx criticized such views in his work, *Critique of the Gotha Programme.*

The classic definition of equality in the Marxian, proletarian sense was given by Stalin: "By equality Marxism means, not equalization of individual requirements and individual life, but the abolition of classes, *i.e.* (a) the equal emancipation of all working people from exploitation after the capitalists have been overthrown and expropriated; (b) the equal abolition for all of private property in the means of production after they have been converted into the property of the whole of society; (c) the equal duty of all to work according to their ability, and the equal right of all working people to receive remuneration according to the amount of work performed (*socialist* society); (d) the equal duty of all to work according to their ability, and the equal right of all working people to receive remuneration according to their needs (*communist* society). Furthermore, Marxism proceeds from the assumption that people's tastes and requirements are not, and cannot be, identical, equal, in quality or in quantity either in the period of socialism or in the period of communism.

"That is the Marxian conception of equality." (Stalin, *Selected Writings*, p. 344.)

In the U.S.S.R. the conditions of socialist equality mentioned by Stalin have been attained. All citizens have been freed from exploitation through abolition of private property in the means of production and through the establishment of collective ownership; by virtue of the abolition of unemployment, all are assured that they will be able to work according to their capacity, and receive according to the level of their production. However, in the first phase of communist society (socialism) it is not possible to realize complete equality in the sense of an application of the principle of receiving according to needs, since the productive forces have not yet been sufficiently developed. The realization of complete equality is only possible in the higher phase of communist society, where the productive forces will have been developed on a gigantic scale and utilized to the full by all humanity.

Equilibrium, Theory of. Based on a vulgarized conception of mechanics, this theory attempts to explain evolution in nature and society solely by means of the laws of equilibrium in mechanics. In opposition to dialectics it holds that rest (equilibrium) is the natural and normal condition of things, and that motion or evolution is temporary, transient. The theory of equilibrium denies that motion is ultimately self-motion, self-evolution. The application of this theory to society leads to the conclusion that the evolution of society depends on its interrelations with its surrounding natural environment, that the dynamic of this evolution is not the internal contradictions of society, not the class struggle, but its external contradictions with nature. The theory of equilibrium stems from Comte, Spencer, Dühring, Kautsky, and other idealists and eclectics.

Essence. (*See* Reality and Appearance.)

Esthetics (Gr., *aesthetikos*—perceptive), that part of the philosophy of art which is, above all, concerned with the problems of beauty. Considering the beautiful as a fundamental form of being, ancient esthetics could not explain why different people had different ideas

of the beautiful—ideas which were influenced by the conditions of the time, differences among social classes, and cultural levels. In modern times several philosophers (Kant and others) have taught that the beautiful exists only as a subjective judgment of the individual, in terms of his esthetic faculties. Moreover, although Kant's theory claims universal significance for esthetic judgment, the universality still remains within the bounds of subjectivity, and the beautiful is defined as that which is pleasing in terms of form alone, without relationship to practical interests.

In distinction from Kant, Hegel tried to unite the point of view of ancient esthetics with an *historical* explanation which would show in what way the beautiful manifests itself in the historically interacting forms of "symbolical," "classical," and "romantic" art, representing the three possible ways in which idea can be related to form and material. This problem could not be solved by Hegel not only because he interpreted the beautiful in an idealistic sense, purely as an art-manifested idea, but also because Hegel reduced the very course of social evolution to the dialectical development of consciousness or mind alone.

Marxist esthetics, restoring the conception of the objective existence of the beautiful, that is, of the existence of the basis of our esthetic evaluations in the object itself and not only in our own selves, declares that it is only by scientifically sound principles that we can explain the historical course of the development of art, changing conceptions of beauty and the nature of beauty itself.

Ethics, the theory of the right way of life, and the basis of judgments concerning right and wrong, good and bad, better and worse in human conduct and social institutions. Ethics is also used to denote the system of norms and rules for the behavior of people in their relationships with one another and with society at large.

All ethical theories rest on one or another philosophy or world view. Spiritualism, for example, derives ethical values and standards from the commandments of a god or of a transcendental moral law. Mechanical materialism derives them from some theory of the human being considered atomistically and divorced from all social-historical conditions. Dialectical materialism bases ethics upon the actual material conditions of life, upon men living in society and entering into definite relations with one another and with nature, in accordance with changing social historical conditions.

Marxism believes that ethics is a human creation, a reflection in consciousness of the needs and desires, hopes and aspirations of actual men. It views this reflection as arising always out of the concrete material conditions of life, the actual processes and relations whereby men produce the necessities for their life. It holds that men's moral conceptions change as the material conditions of life, the forces of production and the production relations change, and that they are limited at any given time by the economic structure of society.

Marxism believes that such concepts as good, right, justice, and the like derive their meaning from the actual conditions of men in society and must refer to these conditions or propose changes in them in accordance with the needs and interests of the various strata of society.

It follows that for dialectical materialism, as opposed to other philosophies, ethical considerations cannot be used to

explain historical evolution but rather are the products of social development upon which, like all other ideologies, they react and exert an influence. It follows that since all historical society has been class society, all ethical theories reflect the needs and interests, hopes and aspirations of one or another social class.

Marxism believes that the actual situation of the working class in the modern world impels it to struggle for the abolition of classes and hence possesses higher ethical values than other classes which are not so impelled to eliminate the exploitation of man by man. The victory of the proletarian revolution in the U.S.S.R. brought with it the victory of a new ethics or morality—that of communist society. Communist morality takes the position that only that which contributes to the abolition of human exploitation, poverty, and degradation, and to the building and strengthening of a system of social life from which such inhuman phenomena will be absent is moral and ethical.

Evolution and Revolution. The classic metaphysical conception of evolution leads to the recognition of only quantitative changes, the slow and gradual growth of what is qualitatively given in the beginning. Such a conception denies "leaps" (*see*), revolutionary transformations, and is unable to explain the rise of new qualities, the emergence of a state or condition which is qualitatively new. Dialectical materialism stands for a rejection of this view and teaches that motion has a dual aspect: evolutionary and revolutionary. The gradual and imperceptible evolutionary changes, quantitative in character (representing increases or decreases in respect to the original qualities present), prepare the way for radical, qualitative changes. These changes take place precipitately, by means of a "leap," in what may be called a revolutionary fashion. Thus evolution involves "breaks in continuity"; "the transformation of quantity into quality." (*See* Transition from Quantity to Quality.) It is impossible to separate revolution and evolution; they are organically connected.

Fatalism, the doctrine according to which all things are predetermined by a mysterious force of fate or destiny, generally referred to God. Fatalism denies the positive or creative role of the human individual, or of parties and classes in history, holding that any intervention of man in the development of society is useless, that man is but a blind plaything in the hands of mysterious and implacable laws. (*See* Individual in History.) Fatalism is a reactionary doctrine, since it tends to induce moods of passivity and individual isolation and rejects the idea of struggle for the improvement of society. The Marxist theory of the laws of social evolution is opposed alike to fatalism and to the subjectivism which attributes the entire course of social evolution to "heroes," great personalities. (*See* Determinism and Indeterminism; Freedom and Necessity.) Marxism holds the view that people make their own history but that their historical activity is conditioned by the needs and demands raised by the evolution of the material life of society. (*See* Materialism, Historical.)

Fetishism (Lat., *facticius*—artificial), the deification of various things or objects (fetishes); the attributing to them of mysterious supernatural forces, incomprehensible to human reason. At the first and lowest level of religious evolution, the fetish is an object of worship. But as Marx showed, fetishism occurs not only in the sphere of religion but

in other spheres as well, whenever properties derived from social relations are regarded as mysteriously inherent in things. Under capitalism, for example, all production relations between persons appear as relations of things. And Marx said: "In order, therefore, to find an analogy, we must have recourse to the mist-enveloped regions of the religious world. In that world the productions of the human brain appear as independent beings endowed with life, and entering into relation both with one another and the human race. So it is in the world of commodities with the products of men's hands. This I call the Fetishism which attaches itself to the products of labour, so soon as they are produced as commodities. . . ." (*Capital*, Vol I, p. 83.)

Feuerbach, Ludwig (1804-1872), an outstanding thinker who gave expression to and defended materialism in Germany; an ideologist of the revolutionary-democratic bourgeoisie. His course of development was from Hegelianism, although not strictly orthodox, to materialism. In his work, *Critique of the Hegelian Philosophy* (1839), Feuerbach attacked Hegel's idealism. He showed that idealism in general, and the Hegelian system in particular, was a theoretical foundation for religion, that Hegel's doctrine that Idea is primary and prior, and that it manifests itself only secondarily as nature, is nothing more than an expression, in technical philosophic form, of the Christian dogma concerning the creation of the world by God.

In 1841 Feuerbach published his *Essence of Christianity*, a work of great historical significance, which analyzed the roots of religion, particularly of Christianity. God, Feuerbach held, represents the essence of man projected outside of himself and transformed into an Absolute; all the properties attributed to God are properties of man himself. The historical significance of Feuerbach lay in his decisive break with Hegel's idealism and his assertion of materialism. However, Feuerbach's critique of Hegel lacked discrimination. Rejecting Hegelian idealism, Feuerbach also threw overboard his dialectics, being unable to extract from it its "rational kernel." He subjected Kantian agnosticism (*see*) to severe criticism and developed a materialistic epistemology in which knowledge is viewed as a reflection of objective reality. (*See* Reflection, Theory of.) Sensation, according to Feuerbach, does not remove us from the objective world but connects us with it, gives us an image of it. However, his theory of reflection, like his materialism in general, is of a metaphysical character; he did not understand the role of abstraction (*see*) in knowledge.

In the realm of social phenomena, Feuerbach was an idealist. Not understanding the material basis of society, he distinguished the epochs in the evolution of humanity only according to the changes of religions. Having posed the problem of creating a new society, freed from the religion of Christianity, Feuerbach advanced the idea of a religion of love among people, holding that it constituted the basis of society. Feuerbach did not understand the significance of practice, of that truly revolutionary activity of man in the course of which he changes both nature and himself. The shortcomings of Feuerbach's materialism, however, do not detract from his historical significance. Marx and Engels were greatly influenced by Feuerbach's materialism during their formative period.

Feuerbach's chief works are *Towards a Critique of Hegelian Philosophy*, 1839; *The Essence of Christianity*,

1841; *Preliminary Theses for the Reform of Philosophy*, 1842; *Principles of the Philosophy of the Future*, 1843.

Fichte, Johann Gottlieb (1762-1814). A subjective idealist and representative of classic German idealism, Fichte tried to overcome the dualism of Kant (*see*), rejecting the "thing-in-itself" and criticizing Kant from the position of pure subjective idealism. Fichte took as the starting point of his philosophy the "absolute I, or self," as an active agent. The source of the activity and development of this "absolute I" is internal contradictions. Besides the "absolute I" there exists a finite, empirically limited "I." Fichte regarded nature, the "not-I," as a product of the activity of the "absolute I." But the empirical "I" and the empirical "not-I" (non-self) or nature, as well as individual consciousness, according to Fichte, merge in absolute consciousness.

Fichte, whom Lenin described as a "classical representative of subjective idealism," (*Selected Works*, Vol. XI, p. 135), maintained the thesis of the identity of the subject and object (*see* Subject and Object). Fichte followed Berkeley's reasoning: Experience is reducible to mental impressions; hence, I have no right to assume that there is any objective material existence outside of mind. However, Fichte's subjective idealism contains a positive element which is not found in Berkeley (*see*) or Avenarius (*see*).

In opposition to the old pre-Marxian mechanistic materialism, Fichte emphasized and developed the active, moving dialectical aspect of thought. The bourgeois French revolution of 1789, which reflected the interests of the radical bourgeoisie, exercised great influence on his thought. Fichte engaged in an active struggle against the feudal backwardness of Germany, for democratic freedoms, the unification of Germany, and a republican form of government. For his radical political views, he was deprived of the right to teach in the University of Jena.

Fideism (Lat.—faith), a belief in faith as prior and superior to reason. Used especially in the last fifty years to denote various kinds of philosophic teachings, such as neo-Kantianism and Machism, which in one way or another left a door open for belief in religion and the supernatural.

Finite. (*See* Infinite and Finite.)

Formal Logic, the study of the formal aspects of human thinking, limited traditionally to those involved in deduction (*see* Induction and Deduction). Analyzing and classifying the different forms of judgment, concept, and inference, formal logic, first developed in the work of Aristotle, has played a very important role in the evolution of thought. During the Middle Ages, in Scholasticism (*see*) it suffered endless stultification. Francis Bacon violently attacked it early in the modern era on the grounds that it helped rather to perpetuate error than to discover new truths. Nevertheless it underwent considerable expansion in the seventeenth and eighteenth centuries, when sciences in the modern sense were being created, and when mathematics, mechanics, astronomy, zoology, and botany were among the more highly developed fields. These sciences investigated the aspects and phenomena of nature in terms of their separateness from and independence of one another, not in terms of their interrelations, movement, or development. This metaphysical approach was in keeping with the limitations of formal logic. Viewing phenomena and

events as isolated from one another, as given once and for all, formal logic could not cope with the interconnections and interdependence of things and thus come to grips with the internal contradictions found in all phenomena.

The three basic principles of formal logic, traditionally designated "laws of thought," are as follows: (1) A is A (identity): each thing is identical with itself (*see* Identity); (2) A is not non-A (contradiction): nothing can be both itself and different from itself at the same time. (3) Each thing is either A or non-A (excluded middle): any third alternative or middle ground being excluded. Within such a framework, formal logic is unable to develop the flexible and dynamic system of concepts required to do justice to the essential interconnectedness and evolution of phenomena, the internal struggle of their contradictory components, and the consequent transformation of one thing into another. They are an oversimplification of the nature of existence, expressing only one aspect of it, namely, the stability and separateness of things. The methods and findings of contemporary science cannot be expressed in terms of formal logic, with its "this is this" and "that is that" and "never the twain shall meet," and so on. Dialectical logic requires that we go farther in order to understand a given subject matter, that we seek out and study all its different phases and aspects, in terms of their dynamic connections and interrelations. Dialectical logic necessitates taking the subject at hand in terms of its evolution, its self-movement (as Hegel was wont to put it), its changes. Further, all human practice connected with the subject matter must enter into the full definition of it; practice, and not mere formal validity, must serve as a criterion of truth.

While including in itself all that is valuable in the old formal logic, materialist dialectics (*see* Method, Marxist Dialectical) represents a higher level in the development of scientific methodology. Bourgeois theoreticians are in general devoted followers of formal logic.

Fourier, Charles (1772-1837), French utopian-socialist, whose work, *Théorie des quatre mouvements*, was a brilliant critique of bourgeois society. Fourier revealed the contradictions between the glowing promises of the ideologists of the French Revolution concerning liberty, equality, fraternity, and the increasing material and moral poverty of bourgeois society. Fourier wrote that in bourgeois society poverty grows out of plenty. Such a system cripples the individual, warps his feelings, desires, thoughts. The happiness of one is attained at the expense of another.

In his historical outlook, Fourier raised himself to a higher level than the French reformers who thought in terms of a rigid boundary line between the rational future and the irrational present and past. The history of human society, to Fourier, is a history of progressive evolution. Fourier remained within the circle of metaphysical ideas of the French materialists (*see* Materialism, Mechanistic) concerning human nature. He based the inevitability of his future society on his doctrine of human passions or faculties and their functioning. Moralists up to now had written of the depravity of human nature and called for a suppression of the human passions. Fourier holds that depravity stems from a certain form of society. All the elements of the human character are good. The real problem consists in the creation of a society which will

facilitate the satisfaction, growth, and development of the human faculties.

Proceeding on the basis of these theoretical presuppositions, Fourier sketches a picture of the future social system. The nucleus of the system is the "phalanx," consisting of various sets of economic enterprises. Each member of a phalanx possesses the right to work. Voluntarily, and led by the operation of his natural tendencies, each member of the phalanx enters into one of the economic groups. Labor in the phalanx is regarded as a need of human development, and as a source of enjoyment will correspond with the interests of the collective. As a result of the creative character and high productivity of labor, there will be an abundance of material goods.

Fourier gave expression, in embryonic form, to the idea of the eradication of the antagonism between mental and physical labor and between town and country. Fourier's socialism was utopian, and he was opposed to any violent revolution. Disillusioned with the French Revolution, he thought to organize the future socialist society by means of peaceful propaganda. For many years he applied to wealthy people, delineating for them the features and possibilities of the future society and asking them for capital with which to organize it. With the aim of influencing capitalists, Fourier arranged for the possibility of an unearned income for them in the future system, promising to allocate 4/12 of the income of the phalanx to external capital.

Fourier exercised great influence on the development of socialist ideas. Marx and Engels called him one of the "patriarchs of socialism." His socialism, together with that of St. Simon (*see*) and Robert Owen is one of the theoretical sources of scientific communism.

Freedom and Necessity. Metaphysicians usually place freedom and necessity in opposition, and regard them as mutually exclusive. Some metaphysicians deny any sort of human freedom, and in the last analysis are led to fatalism (*see*). Such a position is in obvious contradiction with actuality, which shows people constantly changing their world. Others maintain that the will is completely free and independent of the laws of nature. This conception of man's "will" as undetermined and unconditioned by his environment and education represents a denial of scientifically verified principles and leads to the wholly unwarranted conclusion that the course of history is determined by "personalities," "heroes." (*See* Individual in History, The Role of the.)

From the point of view of Marxist philosophical materialism, freedom consists not in any imaginary state of independence in respect to the laws of nature (*see* Determinism and Indeterminism), but in a knowledge of these laws, in the possibility of utilizing them in our practical activity. "For until we know a law of nature, it, existing and acting independently and outside of our mind, makes us slaves of 'blind necessity.' But once we come to know this law, which acts (as Marx pointed out so many times) ***independently*** of our will and our mind, we become the lords of nature." (Lenin, *Selected Works*, Vol. XI, p. 250.) Human freedom is nothing but the ability to carry out a decision in the light of knowledge.

This freedom is a product of the historical evolution of society, in the beginning of which man was a slave of nature. With the development of private property in the means of production and the rise of class society, people became slaves by virtue of their social relations. In capitalist society, although

there are great advances in man's mastery of nature, social relations are not subject to man's control and hence are not free. Under socialism social relations cease to master people, cease to constitute a force hostile to them. "The conditions of existence forming man's environment, which up to now have dominated man, at this point pass under the dominion and control of man, who now for the first time becomes the real conscious master of nature, because and in so far as he has become master of his own social organization. . . . It is humanity's leap from the realm of necessity into the realm of freedom." (Engels, *Anti-Dühring*, p. 318.)

Freedom of Will. (*See* Determinism and Indeterminism, Freedom and Necessity.)

Freudianism, a term signifying the psychological and psychiatric theories of the Austrian neurologist Sigmund Freud (1856-1939) and his followers. These theories, known as psychoanalysis, comprise an extensive body of observations and theoretical formulations concerning both normal and abnormal personality, together with special techniques for treatment of neurotic illness. The basic tenet of psychoanalysis is that psychological processes are natural phenomena and therefore occur according to definite and discoverable laws. Freud also established the close relationships existing between normal and abnormal mental processes, established the fact of unconscious mental activity and called attention to the important role of conflict in certain mental illnesses.

Historically, these theories brought a dynamic approach to psychiatry and helped overcome the hypocritical Victorian sex morality. By emphasizing the clash of the individual with social restrictions, Freud called attention in an inverted manner to the decisive influences of social structure on personality. Psychoanalytic theory has accordingly been derived from, and extended into, anthropology, sociology, esthetics, religion, literature, and related fields.

Although Freud sought to apply materialist principles to the structure of personality, his underlying philosophy contained errors typical of late nineteenth-century bourgeois science. His materialism was mechanical and was combined with large elements of subjective idealism. Paradoxically, although he saw the dynamic forces and the changes in personality, his deeper outlook was essentially static, as expressed in the theories that individual personality and even society itself are the result of dark, unchangeable, biological forces, such as the life and death instincts. Individual personality is regarded as determined by the degree of development of these inherited instincts, and the organization of society corresponds to the fulfillment of unconscious, inner instinctual needs rather than to external, objective necessity.

This biological approach thus leads to the purest subjective idealism in every set of problems to which it is applied. These instinct formulations give concrete expression to Freud's reactionary bourgeois class position. In psychoanalytic theory wars are due to instinctual drives and are therefore inevitable; capitalist society is regarded as the natural and final expression of man's aggressive and selfish intincts, and women are regarded as biologically and psychologically inferior to men.

Galileo (Galilei, Galileo) (1564-1642). Italian physicist and astronomer, energetic contributor to the modern scientific conception of the universe,

Galileo lent powerful support to the Copernican system of astronomy and fought against clerical obscurantism. To Galileo belongs credit for the discovery —with telescopes he himself made—of the mountains and valleys of the moon, a finding which decisively invalidated the view that there was an essential difference between the "heavenly" and the "earthly." Galileo discovered the four satellites of Jupiter, demonstrated the motion of Venus around the sun, established (through the shifting of sun spots) the rotation of the sun on its axis, and discovered that the "Milky Way" is a collection of multitudinous stars. He also established the possibility of determining longitude by reference to the satellites of Jupiter, a discovery which possessed direct practical significance for navigation.

Galileo is one of the founders of classical mechanics; he formulated the law of inertia and the law of the composition of forces, with the help of which he solved a whole series of problems. He is likewise one of the founders of dynamics, the discoverer of the law of falling bodies, and the law of the oscillation of the pendulum. In his search for the laws of nature, Galileo followed the method of observation and experiment which he considered the only valid source of our knowledge of the world. For his opposition to scholastic Aristotelianism and to the restrictions laid down by the church, Galileo, in spite of his advanced age, was subjected to the persecution of the Inquisition.

Among the chief works of Galileo are: *Dialogue on the Ebb and Flow of Tides*, 1630; *Dialogue of the Two Principal Systems of the World, the Ptolemaic and the Copernican*, 1632; and *Discourses on Two New Sciences*, 1638.

Hegel, Georg Wilhelm Friedrich (1770-1831), German philosopher, idealist and dialectician. According to Hegel's system of objective (or absolute) idealism, the world depends for its being on some sort of "absolute idea" which existed before the advent of nature and man. The dialectical nature of the idea manifests itself in its impulse toward actualization and self-knowledge. The "absolute idea" contains contradictions within itself: it moves and changes, alienates itself and passes over into its opposite. In the process of its dialectical self-movement, by means of transformation into its opposite (negation) and further negation (negation of the negation) the "absolute idea" passes through three fundamental stages.

In the first stage the idea is found in its pure form in the realm of pure thought, then it transforms itself into its opposite (negates itself), manifesting itself in the realm of natural phenomena; finally, it once more negates itself, and, on a higher level of development, returns to the realm of thought, but this time to human thought. In this stage individual consciousness occupies a certain level while social consciousness, wherein the idea in the form of religion, art, and philosophy carries self-knowledge to its consummation, occupies a higher level. Hegel pronounced philosophy to be "absolute knowledge" and considered his own philosophy the final stage in the self-development of the idea.

The valuable and progressive element in the Hegelian dialectical philosophy is its penetrating dialectical method—the conception that evolution proceeds on the basis of dialectical contradictions, that in evolution there takes place a transformation of quantitative into qualitative changes, that truth is concrete, that the process of evolution of human society is one wholly governed by scien-

tifically ascertainable laws and not by the arbitrary force of personalities.

However, Hegel's dialectics is not separated from the idealistic system, but is on the contrary an integral part of it. Hence, there arose in the Hegelian philosophy a deep and decisive contradiction between method and system. The dialectical method asserts that the development of knowledge is an endless process, but the idealistic system led Hegel to consider his philosophy as the culmination of all intellectual evolution, the final and complete truth. The dialectical method asserts that everything evolves dialectically, but the idealistic system depicts nature as the negation of dialectics.

Hegel was an ideological representative of the German bourgeoisie of the early nineteenth century, a bourgeoisie progressive in relation to the problems which it posed for itself but at the same time inconsistent, half-hearted and cowardly, seeking compromises with feudalism. In spite of his dialectics, Hegel pronounced the Prussian landed bourgeois monarchy the last and highest stage in the evolution of human society. Likewise he regarded the "national soul" of the Prussian monarchical state as the embodiment of absolute spirit. Contemporary reactionaries utilize this part of Hegel's philosophy in order to argue the finality and unchangeability of reactionary bourgeois states in the contemporary world (*see* neo-Hegelianism).

Marx and Engels, in constructing their philosophy—dialectical materialism (*see*)—could not accept dialectics in the form worked out by Hegel, but reconstructed it, placing it upon a firm foundation—as Marx once said, standing it on its feet instead of allowing it to remain on its head. (*See* Method, Marxist Dialectical.)

"When describing their dialectical method, Marx and Engels usually refer to Hegel as the philosopher who formulated the main features of dialectics. This, however, does not mean that the dialectics of Marx and Engels is identical with the dialectics of Hegel. As a matter of fact Marx and Engels took from the Hegelian dialectics only its 'rational kernel,' casting aside its idealistic shell, and developed it further so as to lend it a modern scientific form." (Stalin, *Dialectical and Historical Materialism*, p. 5.)

"My dialectical method," said Marx, "is not only different from the Hegelian, but is its direct opposite. To Hegel, the life-process of the human brain, *i.e.*, the process of thinking, which, under the name of 'the Idea,' he even transforms into an independent subject, is the demiurgos of the real world, and the real world is only the external, phenomenal form of 'the Idea.' With me, on the contrary, the ideal is nothing else than the material world reflected by the human mind, and translated into forms of thought." (*Capital*, Vol. I, Preface, p. xxx.)

The chief works of Hegel are *Phenomenology of Mind*, 1807; *Science of Logic*, 1812-16; *Encyclopedia of the Philosophical Sciences* (*Short Logic*, *Philosophy of Nature*, *Philosophy of Mind*), 1817; *Philosophy of Right*, 1821. Posthumously published works include *Lectures on the History of Philosophy*, 1833-36; *Philosophy of History*, 1837; *Philosophy of Art*, 1836-38.

Helvetius, Claude Adrien (1715-1771), leading French materialist philosopher of the eighteenth century. Helvetius took his point of departure from the teaching of the English philosopher Locke (*see*) who held that sense experience is the source of all human ideas. Helvetius asserted that man is a product of his environment and that the character of a person is not innate at

birth but is formed by experience, environment. This thesis supplied the starting point for Helvetius' views on society. However, as he developed his doctrine, he took the position that social institutions are produced by the prevailing system of law. The set of ideas articulated in the legal system became for him the determining factor in society and its history. Thus in this aspect of his thought Helvetius was an idealist. But his doctrine concerning the decisive significance of social environment and political institutions in the formation of the character of the individual possessed great revolutionary significance. "If human character is formed by surrounding conditions, then the surrounding conditions must be humanized." (Marx.)

Hence followed the demand for the elimination of feudal institutions. As Marx pointed out, the work of Helvetius exercised great influence on the growth of utopian socialism at the beginning of the nineteenth century. The chief works of Helvetius are *On the Mind*, 1758; *On Man*, 1772.

Heraclitus of Ephesus. An ancient Greek philosopher, Heraclitus lived about 544-484 B.C. He taught that the world "no one of gods or men has made; but it was ever, is now, and ever shall be an everliving Fire, fixed measures of it kindling and fixed measures going out." (*See* Burnet, *Early Greek Philosophy*, p. 135.) Fire, according to Heraclitus, is the primary element. It can transform itself into water or earth, or anything else. All things can become fire. The "dying down" of fire into earth and water Heraclitus calls the "downward path"; its "rising up" he calls the "upward path." But the "upward and downward are one and the same"—parts of one connected process. As goods are turned into gold and gold into goods, so the universal fire changes into all things and all things into fire. In respect to the problem of the relation of life and matter, Heraclitus takes the view known as hylozoism (*see*).

The universe, in Heraclitus' conception, is an eternal process of growing up and dying away: "Everything flows, everything changes." "One cannot step twice into the same river." The world is made up of opposites, among which a struggle is constantly taking place. "Strife is father and king of all." Opposites pass over into one another: "Cold becomes warm, hot becomes cold, the moist becomes dry, the dry becomes moist." Heraclitus affirms the unity of opposites: day and night, winter and summer, war and peace, satiation and hunger, good and evil, and so on. All changes take place in accordance with strict and definite laws: "Everything proceeds according to necessity." As is the case with all the Greek philosophers except Plato and Aristotle, no works of Heraclitus have come down to us. But the fragments we have give us, as Lenin said, "a very good statement of some of the essential principles of dialectical materialism." (*Philosophical Notebooks*, p. 318, Russian ed.)

Historical Materialism. (*See* Materialism, Historical.)

Hobbes, Thomas (1588-1679), outstanding English materialist philosopher. Influenced by Bacon (*see*) Hobbes militantly opposed medieval ideas in the field of philosophy and socio-political problems. He denied the existence of any non-material substance, claiming that all "souls" or "immaterial existences" are the product of the human imagination. Hobbes considered extension (occupying space—"spatiality") to be the essence of material bodies. According to him, only extension and mass are con-

stant, inseparable properties of bodies. All the remaining properties are variable. One of the shortcomings of Hobbes' materialism is that he did not conceive time and space as general forms of the existence of matter. Hobbes defines space as the imaginary form of bodies existing outside of us, and holds that time does not exist in things themselves outside of us, but only in our thought. Hence, space and time, according to Hobbes, are notions formed as a result of the action of objectively existing bodies on us. Neither is motion a form of existence of matter; it is only an accident, an inessential property of matter in the same sense that rest is. Hobbes reduces all the manifold forms of the motion of matter to mechanical motion, a position which leads him to deny the objectivity of qualitative differences, of sounds, smells, tastes, colors, and the like. In a word, Hobbes's materialism is mechanistic.

In his political views, which exercised considerable influence on the social thought of the seventeenth and eighteenth centuries, Hobbes postulated as the "state of nature" of mankind a general war of each against all (*bellum omnium contra omnes*). This universal warfare, implying a natural right and desire of all to do violence to one another, led of necessity to a kind of "social contract" and the institution of the state. Hobbes's political theories, although not without their shortcomings, dealt a heavy blow to the scholastic dogmas concerning the divine origin of the state, predestination, etc. His critique of religion played a significant role in the history of the atheistic movements of the eighteenth and nineteenth centuries. Among the basic works of Hobbes are *Leviathan*, 1651; *Philosophic Foundations of the Doctrine of Citizenship*, 1647; *De Corpore*, 1650.

Holbach (d'Holbach) Paul-Henri (1723-1789), outstanding French philosophical materialist and atheist; one of the leading representatives of the Enlightenment and a philosophical forerunner of the Revolution in eighteenth-century France. Holbach gave, in his *System of Nature*, a systematic summary of French materialist thought of his time. He held that matter is eternal, indestructible, uncreatable, and exists independently of human consciousness. Matter is characterized by internal motion, arising by virtue of mechanical collisions of its constituent particles. Holbach recognized only mechanical motion, denying self-movement. He considered mind a highly organized form of matter. Holbach regarded religion as the result of primitive ignorance in man. In the field of general social problems, he developed the idea that the individual is ruled by interest; his interest is determined by the existing social system; the system is determined by law, and, finally, law is determined by opinion. Thus Holbach, in this phase of his thought, came to the idealistic conclusion that "opinion rules the world." Recognizing the necessity of overthrowing the feudal system, Holbach advanced the idea of a return to the "natural order" by which he meant the capitalist order. The chief works of Holbach are *The Unmasking of Christianity*, 1761; *The System of Nature*, 1770; *The Social System*, 1773; *Natural Politics*, 1773.

Humanism (Lat., *humanus*—pertaining to man), a general cultural movement arising in the fourteenth century in Italy and spreading to Germany, Holland, France, and England. As a social movement humanism exerted an influence toward the freeing of mankind from the fetters of the medieval ecclesiastical world view in the name of

the rights and values of human personality. Humanism was an ideology of a comparatively narrow circle of educated people and took form as a cultural movement on the basis of the growing study, in the fourteenth and fifteenth centuries, of the literary, philosophical and historical heritage of ancient Greece and Rome. In Italy the leading humanists of the fourteenth century were great poets and scholars like Petrarch and Boccaccio, and, in the fifteenth century, figures like Pico della Mirandola. Italian humanism in its mature phase aspired to free morality from the ascetic standards of the existing conception of Christianity, fought for the right of the healthy exercise of the physical senses and emotions, and unmasked the hypocrisy of monasticism.

Humanism was not a consistent or well defined tendency either in a socio-political sense or in the fields of philosophy and science. Some of the humanists, like Erasmus of Rotterdam (sixteenth century) limited themselves to ridiculing obscurantism, parasitism, and ignorance, attacking monks and priests. Others, such as the English humanist Thomas More, author of *Utopia,* put forward projects for the reconstruction of society based on the principle of equality of labor. Still others, like the German humanist of the beginning of the sixteenth century, Ulrich von Hutten, presented a program of imperial reform in the name of the knighthood and even took up arms against the feudal princes. The majority of humanists did not identify themselves with the Reformation.

Humanism played a significant part in the restoration of the literary heritage of antiquity, which had been buried during the Middle Ages, by investigating, commenting upon, and publishing classical manuscripts, and by working out methods of philological criticism. However, having played a progressive role from the fourteenth to the sixteenth centuries, but not having developed a broad democratic basis, humanism arrived at a stage where it was confined to a narrow circle of Latin scholars who were disdainful of the people and of their language and art. Later Italian humanists censured Dante for having written in Italian and for having popularized cosmological doctrines, as they valued only the Latin works of writers like Petrarch and Boccaccio. Accordingly, the new sciences of the later Renaissance, created by people of practice—artists, technicians, and engineers—opposed not only scholasticism but also the humanism which had substituted a comparison of the opinions of ancient writers for observation and experiment.

Bourgeois humanism reached its prime in the eighteenth century, in the epoch of the Enlightenment, among such men as Denis Diderot, Thomas Paine, and Thomas Jefferson. Since that time it has become thinner and poorer until all that is left, on the philosophical side, is either a cloak for spiritualist ideas as in the "ethical culture" movement in America, or a "shame-faced materialism" among certain philosophers who fear identifying themselves as materialists. On the social side humanism tends towards the teaching that if all men of good-will would only co-operate, all the world's economic and political problems could readily be solved.

Hume, David (1711-1776), Scottish philosopher, historian and economist, prominent in the tradition of British empiricism (*see*). Hume was a philosophic agnostic. He considered insoluble the question as to whether or not there was an objective reality, holding that we can have no basis for assuming an external cause of our perceptions. This po-

sition distinguished the more consistent agnosticism of Hume from that of Kant (*see*) who asserted the existence of "things-in-themselves" which however were unknowable by human reason. Causal connection did not signify to Hume the necessary operation of a law of nature, but was merely a statement of the way phenomena usually seem to behave. Denying causal necessity and the material basis of things, Hume came to the conclusion that human consciousness or mind is nothing but a stream of sensations and that science is nothing but description of this stream, impotent to attain to any genuine laws. The agnosticism and subjectivism of Hume are refuted by the social practice of mankind. By acting upon and modifying nature, man demonstrates the objectivity and knowability of the world. Hume's philosophy, which exercised great influence on Kant and the Machians, is also a basic feature of contemporary positivism (*see*) and pragmatism (*see*). It was brilliantly criticized by Lenin in his *Materialism and Empirio-Criticism.* Among the chief philosophic works of Hume are *A Treatise of Human Nature,* 1739-40, and *Enquiry Concerning the Human Understanding,* 1748.

Hylozoism (Gr., *hyle*—matter; *zoe*—life), the doctrine that life and consequently sensibility are inherent in all existing things. Representatives of this trend of thought are found among the first Greek materialists, and also among certain French materialists, such as Robinet and others.

Ideal, a higher aim or ethical goal toward the realization of which separate individuals, political parties, groups, social classes direct their activity. Every ideal is historically conditioned, that is, conditioned by the character of the surrounding social system. For the philosophical school known as idealism (*see*) an ideal is something unconnected with actual existence, without roots in time or space. This school, further, together with most religionists, seeks to make it appear that ideals, in the sense of aims or aspirations towards a better world, are the special property of religious or idealistic thought and cannot be found in a materialist philosophy. "Idealism," as the name for a type of philosophy, is derived from the word "idea" (not "ideal") and should really be called "idea-ism." Materialist philosophy does not deny ideals but seeks to derive them from existing conditions at any given time and tries to work out practical plans for their realization.

Idealism, one of the two fundamental philosophical tendencies which—in regard to the problem of the relation of mind to being—takes mind, consciousness, spirit, as primary, denying the materialist view that mind and thought are products, functions of matter.

Philosophical idealism may be divided into two fundamental types: subjective and objective. Subjective idealism bases itself upon the sensations, the ideas, the consciousness of the individual mind or self. This type of idealism logically leads to solipsism (*see*), that is, to the assertion that nothing exists save the perceiving subject.

Objective idealism bases itself, not on personal mind or subjective thought, but on some sort of superhuman mind, universal will or the like, existing, according to this doctrine, independently of human beings.

The needs and demands of practice afford the clearest demonstration of the inadequacy of idealistic doctrines in philosophy. At every step, men find it imperative to distinguish between illusion

and reality, for example, between a "combination of sensations" which is produced in a dream and that "combination of sensations" produced by objectively existing things acting on our sense organs. Idealism is closely conected with religion and is usually derived from the idea of God in one form or another. Socially, idealism may be traced to class divisions in society and especially to the division of manual and intellectual labor, while its psychological roots may be found in certain aspects of the process of knowing. Observing that idealism is "a form of religious thinking," Lenin at the same time emphasizes that "philosophical idealism . . . is a *road* to clericalism *through one of the shades* of the infinitely complex *knowledge* (dialectical) of man." (Lenin, *Selected Works*, Vol. XI, p. 84.)

In knowledge itself, as Lenin points out, in the process of expressing and generalizing phenomena, the possibility presents itself of divorcing the idea from the thing, of transforming (perhaps quite unconsciously) ideas into absolute existences, which are then regarded as devoid of any relationship to matter. Thus abstract ideas are transformed by objective idealism into the basis of all existence; the actual world surrounding us, from this point of view, represents an imperfect copy or shadow of the idea. The idealistic explanation of the phenomena of nature is invoked, as a rule, by apologists for reactionary classes or for those groups which stand for a compromise with reactionary classes. The outstanding representative of ancient Greek idealism was Plato (*see*). Plato held that the real world was the world of pure ideas, which he regarded as beyond sense perception, while the world of perceivable things, he held, was a world of shadows, of meager and imperfect reflections of the ideas.

In feudal society the predominant trend of thought was an idealistic scholasticism which transformed philosophy into a handmaiden of theology. In the period of the decay of feudalism and the growth of capitalist society, the revolutionary bourgeoisie of the leading countries, such as England, produced a whole group of thinkers with marked materialistic tendencies, like Francis Bacon (*see*) and Thomas Hobbes (*see*). The idealism of Berkeley (*see*) and the agnostic and solipsistic doctrines of Hume (*see*) represented a reaction against these naturalistic and materialistic tendencies. The German bourgeoisie of the seventeenth century and early eighteenth century, tied up with the development of capitalism but at the same time closely connected with feudalism, found a kind of compromise in the idealism of a philosopher like Leibniz (*see*). The eighteenth century and the first half of the nineteenth century in Germany witnessed the development of classic idealist philosophy (Kant, Fichte, Schelling, Hegel). This philosophy reflects the tendency to compromise as exhibited by the German bourgeoisie: on the one hand, its revolutionary aspirations, on the other, its inability to carry out the bourgeois revolution because of the general backwardness of economic relations together with the political disunification of Germany. The culminating point of German idealism was the philosophy of Hegel. Hegel was the last great representative of idealistic philosophy and his thought possessed some valuable and progressive aspects. After Marx and Engels had worked out dialectical materialism —the philosophical world view and method of the revolutionary proletariat —bourgeois philosophy declined, borrowing from the idealistic systems of the past some of their most anti-scientific and mystical ideas.

Idealism, "Physiological" and "Physical," terms referring to the attempts to arrive at idealist conclusions from evidences in the fields of physiology and physics. Such attempts always involve self-contradiction in as much as they seek to employ supposedly objective data concerning the nature of things to deny any objective reality. Physiological idealism became widespread after the middle of the nineteenth century and was exposed by Ludwig Feuerbach in 1866. It consisted in the denial that our sensations are images of objective reality on the basis of the detailed examination of the physiology of our sense organs and the brain, thus inconsistently assuming materialism up to a certain point in order then to deny it. Physical idealism, as Lenin showed, arose especially in connection with new discoveries concerning the nature of the atom that began with the closing years of the last century. Great leaps forward in our knowledge of the structure of matter were used by many professors to advance the argument that "matter has disappeared." But as Lenin showed, not matter but a naive and mechanical conception of matter had disappeared. " 'Physical' idealism, *i.e.*, the idealism of a certain school of physicists at the end of the nineteenth century and the beginning of the twentieth century, no more 'refutes' materialism, no more establishes the connection between idealism (or empirio-criticism) and natural science, than did the similar efforts of F. A. Lange and the 'physiological' idealists. The deviation towards reactionary philosophy manifested in both cases by one school of scientists in one branch of science is a temporary deflection, a transitory period of sickness in the history of science, an ailment of growth, mainly brought on by the *abrupt breakdown* of old established concepts." (Lenin, "Materialism and Empirio-Criticism," *Selected Works*, Vol. XI, p. 358.) In our century Bertrand Russell, in practically every one of his philosophical works, has exploited both the physiological and physical arguments for idealism.

Idealistic Interpretation of History. In opposition to the materialistic understanding of history (*see* Materialism, Historical), the idealistic conception finds the basic force of social evolution in ideas and theories, in people's thoughts and opinions. Before Marx the idealistic interpretations of history were predominant, and even thinkers who were materialists in their general philosophy took an idealistic position in attempting to explain social phenomena. The idealistic interpretation of history is of two fundamental kinds. In one of these, the idealist explains social evolution on the basis of the "absolute idea," "world reason," the "oversoul" and the like. Hegel, for example, belongs to this group. His great contribution consists in the fact that he sought to understand the history of society as a process governed by law. But Hegel sought the moving forces of this process outside of history, in the unfolding of the "absolute idea." The "absolute idea," according to Hegel, governs the life of peoples and moves society forward. Other representatives of the idealistic interpretation of history explain social evolution on the basis of individual personality, attributing to it a uniquely creative role in history. This trend was exemplified in the nineteenth century by the Left Hegelians in Germany (the Bauer brothers and others), by Thomas Carlyle in England, and the populists (*Narodniks*) in Russia. The Russian Populists considered that history was made by a kind of "hero," a "critically thinking individual," whom they placed in opposition to the people, scornfully referring to the

latter as a "mob." (*See* Individual in History, the Role of the.)

Marxism teaches "that it is not heroes that make history but history that makes heroes, and that, consequently, it is not heroes who create a people, but the people who create heroes and move history onward. Heroes, outstanding individuals, may play an important part in the life of society only in so far as they are capable of understanding the necessary conditions of social development and improvement. Heroes, outstanding individuals, may become ridiculous and useless failures if they do not correctly understand the conditions of development of society and go counter to the historical needs of society in the conceited belief that they are makers of history." (*History of the Communist Party of the Soviet Union*, p. 14.)

In contemporary bourgeois sociology various voluntarist and irrationalist theories are current. These reactionary theories maintain that in the evolution of social life the basic factor is not the productive forces, but "unity of soul," "unity of will," and the like, and the determining force is not a struggle of classes, not the activity of the masses of people, but "the strong personalities," the "leaders." This is clearly another way of saying that ideas make history rather than that historical development brings about the rise of new ideas.

Ideas, Innate. Various idealistic theories postulate the existence of certain ideas that are "innate," that is, somehow already implanted in the human mind prior to experience. In the history of modern philosophy the concept of innate ideas received its fullest formulation in the work of Descartes. Our ideas of God, of eternal and unchanging essences, as well as all the basic concepts of geometry, distinguished for clearness and distinctness, may be put into the class of innate ideas, according to Descartes. The German philosopher Leibniz also considered that general ideas are not the product of experience, but are found in the soul of the individual, not, however, in the form of ready-made concepts, as Descartes held, but as innate principles, faculties. Representatives of materialist tendencies in philosophy have sharply criticized the theory of innate ideas.

Arguing against Descartes and Leibniz, the English philosopher Locke showed that all man's ideas arise out of sense experience. The mind of man, said Locke, is like a *tabula rasa*, a blank tablet, on which the external, tangible, and material world inscribes its content, acting through the sense organs of the individual. On the other hand, Kant's theory of the a priori (*see*) forms of knowledge (time, space, causality, and the like) is closely connected with the doctrine of innate ideas. Dialectical materialism affirms that all human ideas and conceptions, without exception, are the result of experience, practice, and the protracted historical evolution of knowledge.

Ideas, Role of in History. Ideas, which are a reflection of reality in the human consciousness, a link by which people are related to their surrounding world, are influenced in their formation by the character of the social structure, the prevailing conditions of life. In class society, ideas having a social bearing always possess a class character, a positive or negative relationship to the interests of different classes. The characteristic idealistic assumption of an eternal existence of ideas, immune to change and independent of concrete reality, lends support to the attempt of exploiting classes to justify the conception of a

changeless order of society—an "order" permeated by class privileges and oppression.

Marxism teaches that ideas possess an immense significance in human history. When ideas defend a decaying society or classes which have outlived their social usefulness, when they no longer respond to the demands of social evolution, they become reactionary, an obstacle to progress. And, on the contrary, when ideas are directed against outmoded social systems, when they respond to the new needs and demands of evolving society, their role is progressive, revolutionary.

"New social ideas and theories arise only after the development of the material life of society has set new tasks before society. But once they have arisen they become a most potent force which facilitates the carrying out of the new tasks by the development of the material life of society, a force which facilitates the progress of society. It is precisely here that the tremendous organizing, mobilizing, and transforming value of new ideas, new theories, new political views and new political institutions manifests itself. New social ideas and theories arise precisely because they are necessary to society, because it is *impossible* to carry out the urgent tasks of development of the material life of society without their organizing, mobilizing and transforming action. . . ." (Stalin, *Dialectical and Historical Materialism*, pp. 22-23.)

Identity, a logical category expressing the equality or identity of objects and phenomena with themselves. Formal logic (*see*) understands identity *abstractly*, in terms of such a formula as "A is A, and is not non-A." But no such lifeless, static identity exists in nature.

"The plant, the animal, every cell is at every moment of its life identical with itself and yet becoming distinct from itself, by absorption and excretion of substances, by respiration, by cell formation and death of cells, by the process of circulation taking place." (Engels, *Dialectics of Nature*, p. 162.)

Dialectical materialism (*see*) asserts *concrete* identity, that is, the kind of self-identity which does not exclude change, difference, the continuous internal conflict of opposing constituent elements which results in ceaseless changes of the given thing. Each thing, moreover, stands in different and often contradictory relationships to other things and can never be a static identity, merely equal to itself, but is always in the position of being both what it is and what it is becoming. However, in spite of the stream of imperceptible changes which are always taking place in each thing, the given thing remains that identifiable thing for a definite period during which it has not yet suffered radical change or been converted into a complex of new qualities. For example, a cliff remains a cliff for a given period in spite of the action of the elements and the process of erosion by which it is constantly modified. Thus the objectively existing capacity of things to be identical with and at the same time different from themselves, to contain within themselves internal contradictions, is revealed in the process of continuous change and evolution, and is expressed in the category of concrete, dialectical identity. Every self-identity is temporary, relative, transitional; only motion and change are absolute and continuous. (*See* Unity and Conflict of Opposites; Transition from Quantity to Quality; Negation of the Negation.)

Ideology, a term used during the past century to denote the whole complex of views, ideas, concepts, notions, function-

ing on a social level—a form of social consciousness. Political views, sciences, philosophies, ethical systems, arts and religions are forms of ideology, in this sense of the word, regardless as to whether they are true or false, progressive or reactionary. All ideologies are outgrowths or reflections of the existing social reality. In class society, the prevailing ideologies may be called class ideologies in the sense that they reflect, defend, or otherwise react to and act upon the interests of the various struggling classes. For example, the bourgeoisie in its struggle with feudalism worked out its ideology, just as the working class with the help of the socialist intelligentsia, develops its revolutionary ideology. In general, ideology plays a very significant role in social life, in the history of society. Arising as a reflection of the conditions of the material life of society and the interests of the different classes, ideology comes to exercise, on its own part, an active influence on the evolution of society.

Individual in History, the Role of the. Bourgeois theories denying definite laws in the movement of history, frequently either attribute it to the conscious activity of great personalities—rulers, generals and the like—or reduce the significance of the activity of individual people to zero, viewing the individual as the tool of blind inevitability, divine will, or inscrutable fate. From neither of these points of view does the prediction of events, and, hence, scientific politics, become a possibility. Marxism teaches that people themselves create their own history, but always under historically determined material conditions. (*See* Materialism, historical.) The influence of the outstanding individual on the course of events is the greater the better he understands the objective system of laws and the direction of social evolution. ". . . The idea of historical necessity in no way undermines the role of the individual in history." (Lenin *Selected Works*, Vol. XI, p. 439.)

The course of history is determined by the material conditions of social life. But an individual, understanding the demands of the economic development of society and those of the progressive classes, can stand at the head of events, and, uniting people around himself, can, with their help, expedite the forward movement of these events (or, in the contrary case, delay it). Herein is the basis of the significance of individuality, its sphere of action, its role in social life. Marxism solves the problem of the role of individuality in history in terms of the closest connection with the problem of the role of the masses. While recognizing the importance of the role of the individual in history, Marxism points out that only those individuals can play a truly great part in history whose action is in accordance with the interests of the people.

Induction and Deduction. Induction —a method of reasoning from the particular to the general, from facts to generalizations; deduction—a method of reasoning from the general to the particular, from general propositions to particular conclusions. Materialistic dialectics considers induction and deduction as basic types of thought, but not as independent or divorced from one another, as certain metaphysicians consider them. One is impossible without the other. All deduction claiming truth presupposes that the general laws and principles on which it is based are the result of induction, and each scientific induction requires reference to general, already known propositions, which process involves deduction. (*See* Method, Marxist Dialectical.)

Infinite and Finite. The metaphysical tendency is to divorce infinite and finite as categories standing in mutually exclusive opposition to each other. In reality, the infinite and the finite are found in dialectical interconnection. The material world is limitless in space and time, while it also has the character of a complex of developing things, phenomena, processes. The concepts of infinite and finite, properly taken, reflect this connection which exists in the real world of moving matter. The concept of the finite reflects the limitedness of particular things, phenomena, and processes in space and time. All individual things are transient, bounded. Only matter as a whole, the material universe, is unbounded.

The concept of the infinite reflects the endless continuity and unlimited qualitative richness of processes and things. Infinity, like all reality, is dialectical, which means it is made up of opposing or contradictory elements; it includes all the many aspects of the finite, but is not the simple sum of finite things, because infinity signifies eternal motion, change, a ceaseless destruction of the old and creation of the new. Engels, following Hegel, distinguishes the concept of the genuine from the false infinity. (*Dialectics of Nature*, p. 164.) The false infinity postulates a simple unbroken passage beyond the bounds of the finite, as for example in the case of the simple sum: 1 plus 1 plus 1 plus 1 plus 1 plus 1 . . ., where infinity signifies the sum of the infinite series of units and this sum can never be attained; infinity here is conceived as something alien to the finite. Genuine infinity signifies the actually existing and eternally developing world in all the inexhaustible richness of its phenomena. The concepts of the infinitely large and the infinitely small in mathematics likewise reflect the relationships of the real world. It is because of this actual relation to the conditions of the real world that the mathematical concepts possess such great value in science.

Intuition. By intuition idealists often understand a peculiar subjective capacity, by which a person is able to know truth without the need of any rational or logical activity. Interpreted in this way, intuition takes on the character of a mystical faculty (Schelling, Hartmann, Bergson). In the materialistically oriented system of Spinoza (*see*), intellectual intuition possesses a rational character and signifies a higher mental rather than a dubious emotional conception of nature. The concept of intuition is often made mystical on the ground that it involves an instantaneous, unexpected flash of knowledge which anticipates the solution of some problem. In reality, this intuition represents the result of imperceptibly and gradually accumulated facts and experiences which, having reached a certain point, permit an immediate grasp of some solution or principle. (*See* Intuitionism.)

Intuitionism, a reactionary, subjective-idealistic tendency in philosophy which, rejecting knowledge of the world based upon sensation, reason, and practice, proclaims intuition (*see*), taken in an idealistic and mystical sense, as the only source of knowledge, the criterion of the validity of which is alleged "self-evidence." Among outstanding representatives of intuitionism in contemporary bourgeois philosophy are Bergson and Sorel. Intuitionism is utilized in the "foundations" of fascist ideology.

Irrational, not amenable to reason, not reflected in logical concepts. The term "irrational" is often employed to characterize the type of philosophical ten-

dency which denies that rational thought and science can grasp reality, and preaches the priority of will, instinct, and blind, unconscious forces and impulses. In varying degrees, irrationalist tendencies of this sort have been espoused by different thinkers from Schopenhauer and Nietzsche to Bergson and James. Advocates of this tendency, remarkably widespread in contemporary bourgeois philosophy and extending even into sciences like biology, psychology, and sociology, attack not only Marxism and materialism but also those forms of idealism which, in greater or lesser measure, are connected with a belief in the power and possibilities of rational knowledge.

Judgment, a form of thought which aims at reflecting the objectively existing aspects, properties, and relations of things. Judgments are expressed in the form of propositions, *e.g.*, the rose is red. The evolution of knowledge proceeds from simple judgments established by isolated facts to more complex and general conclusions. For example, from such judgments as "this object becomes warm in the process of friction, friction produces heat," we proceed to such judgments as "all mechanical motion can be converted into heat, all energy can be converted into some other form of energy." The types of judgment cannot be adequately explained and understood as "pure" forms, apart from the actual content of the knowledge and the history of the specific sciences concerned. Formal logic (*see*) looks upon judgment as a sheer form of thinking and consequently cannot attain to an adequate understanding of the problems involved. Formal logic defines judgment as the assertion of a relation between terms or concepts. The fundamental criterion of the truth of judgments, in its view, is the principle of the incompatibility of contradictory propositions.

For example, in respect to the two propositions, "Socrates is good," and "Socrates is not good," the truth of the first is taken to imply the necessary falsity of the second, and the falsity of the first, the necessary truth of the second. In spite of the apparent soundness of this principle, it cannot be regarded as an adequate criterion of truth in respect to judgments. Dialectical materialism teaches that a strict distinction must be made between true and false judgments, but that the basis advanced by formal logic for this distinction is unsatisfactory, since it is not concerned with the content of the judgment. For instance, the judgment "matter is continuous and discontinuous" must be asserted by formal logic to be false, but, as a matter of fact, this proposition, as contemporary science shows, is a profoundly correct statement about the actual nature of matter. The only adequate criterion of the truth of judgments is their conformity to objective reality, their verifiability in practice. (*See* Materialism, Dialectical; Unity and Conflict of Opposites.)

Kant, Immanuel (1724-1804), founder of classical German idealism. The principle feature of Kant's philosophy is the attempted reconciliation of materialism and idealism, of science and religion. On the one hand, Kant asserts the existence of a reality outside of our consciousness which he calls the "thing-in-itself." But, on the other hand, the "thing-in-itself" according to Kant is inherently unknowable, beyond our cognition ("transcendental"). "When Kant holds that something exists outside us, some sort of thing-in-itself which has a functional relationship to our impres-

sions, he is a materialist. When he declares this thing-in-itself to be unknowable . . . he is an idealist." (Lenin, *Selected Works*, Vol. XI, pp. 257-58.) Under the influence of an impulse communicated by the "thing-in-itself" the sensory faculties of the individual, according to Kant, give rise to a chaos of impressions which are organized by means of subjective forms of apperception, such as space and time. Thus the phenomenon or object of sensation is received by the human knower. Thereafter, mind, with the help of its subjective logical categories, transforms the sensory percept, the phenomenon, into a concept. Presiding over the higher sphere of human knowledge is reason, leading once again to subjective entities: soul as a substance, the world as a completed whole, God. Thus Kant considered that space, time, causality, laws are not properties of nature itself, but of the human cognitive faculty. Kant considered them to be "a priori" (*see*), preconditions of experience, "transcendental" (hence the name which Kant gave to his philosophy—"transcendental idealism"). Kant held that reason creates the laws of nature, that nature as we know it is a subjective construction of mind. The unity of nature is simply the unity of the knowing subject, the "I."

All the attempts of reason to go beyond the bounds of experience, according to Kant, inevitably lead to insoluble contradictions. While Kant correctly observed that reason inevitably falls into contradictions, he considered contradiction itself simply as fallacy or illusion and not as a reflection of something inherent in reality. (*See* Antinomies.) The aim of his theory was to restrict the domain of knowledge so that God would have a place above and beyond it. In his ethical teachings Kant held that the necessary foundation of morals was an acknowledgement of the existence of God and the immortality of the soul. (*See* Categorical Imperative.) In his hypothesis concerning the origin of the solar system, Kant was the first thinker of the eighteenth century to try to approach nature from the point of view of its evolution. Engels attributes great significance to this Kantian hypothesis, remarking that Kant was the first to force a breach in the metaphysical, non-evolutionary world view.

The philosophy of Kant was the ideology of the young German bourgeoisie which was in need of a critique of the philosophic and legal concepts of the feudal epoch, but which at the same time was so weak as to seek compromises with absolutism, and to be unable to develop more than a timid liberalism. In this connection, Hegel (*see*), at the beginning of the nineteenth century, supplanted Kant. But at the end of the nineteenth century, the great majority of professors in Germany proclaimed the slogan, "Back to Kant," and gave rise to the popular philosophical tendency of "neo-Kantianism" (*see*). The slogan, "Back to Kant," served to support the efforts of the ideologists of the bourgeoisie and the reformists in the labor movement to effect, by means of Kant's philosophy, a reconciliation (rather than the abolition) of classes and a restriction of science in order to strengthen the position of religious faith. Among the chief works of Kant are *Universal Natural History and Theory of the Heavens*, 1755; *Critique of Pure Reason*, 1781; *Prolegomena*, 1783; *Critique of Practical Reason*, 1788; *Critique of Judgment*, 1790.

Knowledge, Theory of. (*See* Reflection, Theory of.)

Labor. "Labor is, in the first place, a process in which both man and nature

participate, and in which man of his own accord starts, regulates, and controls the material reactions between himself and nature." (Marx, *Capital*, Vol. I, p. 156.) Acting on nature, man changes both it and himself. The process of labor must contain three elements: (1) purposeful activity of the human being; (2) an object on which to act; (3) a tool which can be used to act on the object. Labor is the first and fundamental condition of human existence. It not only obtains the necessary means of existence for the human being; it creates this being himself. Developing from other higher animals, man distinguished himself, in relation to the rest of the animal world, through labor. "In short, the animal merely *uses* external nature, and brings about changes in it simply by his presence; man by his changes makes it serve his ends, *masters* it. This is the final, essential distinction between man and other animals, and once again it is labor that brings about this distinction." (Engels, "The Part Played by Labor in the Transition from Ape to Man." *Dialectics of Nature*, p. 291.)

Lafargue, Paul (1842-1911), French sociologist, pupil of Marx and Engels, son-in-law of Marx, one "of the best-equipped and most talented disseminators of the ideas of Marxism." (Lenin.) In his works Lafargue supported and defended the basic teachings of materialistic philosophy and severely criticized the attempts of the revisionists to replace materialism with idealism. When at the close of the nineteenth century the German and French revisionists attempted, as Lafargue wrote, "to abandon the materialism of Marx and Engels in favor of the philosophy of Kant," he came forward with a scathing attack on this attempt to alter the basis of Marxism. Lafargue dealt particularly with problems of historical materialism. Applying the method of Marx to the analysis of "superstructural," ideological relationships, Lafargue contributed a series of interesting researches on such problems as the origin of religion and morality and the theory of history and language. In his researches on language Lafargue criticized idealistic, bourgeois theories and demonstrated the interdependence between the evolution of language and the basic social relations.

The chief works of Lafargue are *The Evolution of Property*; *The Economic Determinism of Karl Marx*; *The Materialism of Marx and the Idealism of Kant*; *Language and Revolution*. The volume in English, titled *Social and Philosophical Studies*, contains "Causes of Belief in God," and "Origins of Abstract Ideas."

Lamarckism, the theory of the French biologist Lamarck (1744-1829), together with the modifications of his followers, concerning the evolution of organic nature. Lamarckism, which must be considered as a forerunner of Darwinism, was a very important step in the development of biology. The central thesis of Lamarckism, the modifiability of species and the origin of higher forms, in particular, man, by further development of lower forms, is in general agreement with Darwinism, from which it differs in its evaluation of the factors on which the evolution of the organism depends. In distinction from Darwinism, which attributed primary significance to such factors as natural selection and the struggle for existence, Lamarckism assigns primary influence to the external environment. According to Lamarckism the environment of the organism can promote the development of its organs, and can facilitate modification of them in terms of expedient adapta-

tions which contribute to its self-preservation. Notwithstanding its shortcomings and one-sidedness, Lamarckism played a very important role in the progress of biology by offering solutions to a series of problems connected with the influence of external factors on the evolution of organisms.

Law, Scientific. Dialectical materialism asserts that nature and human society do not represent an accidental or arbitrary conglomeration of things and processes but that objective causality and a system of laws, intelligible to the human mind, pervade nature and society. Advocates of subjectivism and agnosticism in philosophy, such as Hume, Kant, and Mach, deny the objectivity of the laws of nature. They contend that it is man who postulates a system of laws in nature, that it is the human mind which introduces this concept into what is, in itself, a chaotic, unpredictable, unknowable world. Dialectical materialism also opposes objective idealism which, although it recognizes objective law, considers its source to be not matter, but mind, absolute idea, or the like. A law is the expression of the more general and basic aspects and relationships of material reality; hence scientific laws express the nature of the objective world in a deeper and fuller sense than direct sense perception. "A law is a reflection of what is essential in the movement of the universe." (Lenin, *Philosophical Notebooks*, p. 148, Russian ed.)

Leaps, a sudden transition in the evolutionary process, from one qualitative condition to another, a result of the gradual accumulation of slight and imperceptible quantitative changes. "The transition from one form of motion to another always remains a leap, a decisive change." (Engels, *Anti-Dühring* p. 75.) The view that evolution is always slow and gradual, without sudden transitions from quantitative to qualitative changes, without leaps, is a mark of the metaphysical outlook, the falsity of which nature and society have demonstrated. The history of the earth reveals a series of periods of slow and gradual changes, each of which leads up to and prepares for a period of precipitate, qualitative change. Gradual quantitative changes, taking place in the womb of capitalism, prepare for radical qualitative changes in the social structure, the precipitate transition from one qualitative condition of society to another, *i.e.*, through revolution.

Leaps in nature, however, are to be distinguished from those in society. In nature leaps are spontaneous, while in society, they are prepared for by various kinds of conscious activity on the part of people. Leaps may be in the nature of a momentary act, or one of comparatively long duration. All manner of reactionaries, opportunists and reformists, attempting to divert the attention of the masses of exploited toilers from any consideration of a revolutionary alternative, combat the idea that leaps are an integral part of evolution. The dialectical theory of leaps thus has great significance in respect to the practical revolutionary struggle.

"If the passing of slow quantitative changes into rapid and abrupt qualitative changes is a law of development, then it is clear that revolutions made by oppressed classes are a quite natural and inevitable phenomenon." (Stalin, *Dialectical and Historical Materialism*, p. 14.)

Left-Hegelians, the name given to the radical or "left" wing of the Hegelian school. The most prominent of the Left-Hegelians were Arnold Ruge, Bruno

Bauer, Ludwig Feuerbach (before the development of his materialist tendencies), David Strauss, and F. Richter. Under the conditions of the political backwardness of Germany in the 1830's-1840's, the disputes between the Left-Hegelians and the "right" wing of the school over such questions as God, immortality, the nature of Christ and the origin of the Gospels were conducted in a mystical form. Problems touching the historical development of Germany, the role of the individual and his relation to the people were also cast in this form. The Left-Hegelians tried to show the dynamic character of historical phenomena and applied Hegelian dialectics in criticizing the Prussian political system. However, their criticism did not go beyond "liberal" illusions based on the expectation of constitutional reforms and the uniting of dismembered Germany under Friedrich Wilhelm IV. These illusions are reflected in perhaps their clearest form in the work of Bruno Bauer.

For Marx and Engels, at the beginning of their philosophical development, the Left-Hegelian doctrine of self-knowledge was the starting point of emancipation from the obscurities of theology. However, in such early works as *The Holy Family* and *The German Ideology*, they subjected the idealism as well as the liberal illusions of the Left-Hegelians to relentless criticism. Marx and Engels showed that the Left-Hegelians, "in spite of their allegedly 'world shattering' statements, are the staunchest conservatives . . . that they are only fighting against phrases . . . [and that] the only results which this philosophic criticism could achieve were a few . . . elucidations of Christianity from the point of view of religious history." (Marx and Engels, *The German Ideology*, p. 6.)

Leibniz, Gottfried Wilhelm (1646-1716), outstanding German philosopher and mathematician, a forerunner of classic German idealism. The philosophy of Leibniz arose and developed under conditions of the feudal dismemberment of Germany. The weakness of the immature German bourgeoisie, which led to the conciliatory character of its ideology, is clearly manifested in the philosophy of Leibniz. This thinker tried to reconcile religion and science. According to Leibniz, at the basis of nature lie independent spiritual (ideal) entities—monads (*see*). These monads are moving and active, forming the basis of all things and all life. Monads represent active force, but matter is only an outer manifestation of such force, an alienation of the spiritual essence of the monads, which are created by the supreme, universal monad—God. The interconnections of monads among themselves is in the nature of a higher, predetermined harmony. Leibniz held, accordingly, that all is for the best in this best of all possible worlds.

The doctrine of monads combines idealistic metaphysics (the supernatural origin of monads) with certain dialectical ideas concerning the internal movement of matter and the interconnection of all forms of life (through monads). However, at the same time Leibniz developed a mechanistic conception of continuity in evolution, denied "leaps," and subordinated the laws of physical motion to teleology. In the field of mathematics, Leibniz made many contributions. Independently of Newton he discovered the differential and integral calculus (analysis of the infinitely small) which represents a powerful instrument in gaining knowledge of the world, since, as Engels observed, it permits the representation not only of the states but also of the processes of nature. Among

the chief works of Leibniz are *Systeme nouveau de la nature*, 1695; *Théodicée*, 1710; *Nouveaux essais sur l'entendement humain*, *Monadologie*, 1714.

Lenin, Vladimir Ilyich. Lenin was born April 22 (10 Old Style), 1870, in Simbirsk (now Ulyanovsk), Russia. His father, Ilya Nikolayevich Ulyanov, was an inspector of the public schools of Simbirsk Province. In his student years Lenin came into conflict with the authorities for his activities in Marxist circles.

In 1895 Lenin united the Marxist workers' study circles of St. Petersburg into the "League of Struggle for the Emancipation of the Working Class" which represented the embryo of the revolutionary proletarian party in Russia. At the Second Congress of the Russian Social-Democratic Labor Party which took place in July, 1903, Lenin, having exposed and isolated the opportunist trend of economism, made possible the victory of revolutionary Marxism and united around himself the group known as the "Bolsheviks" (from *bolshinstvo*—majority). In the struggle with the Mensheviks (from *menshinstvo*—minority) at and after the Congress he worked out the organizational foundations of the Bolshevik Party, a party of a new type.

Lenin's book, *Materialism and Empirio-Criticism*, which appeared in 1909, made an immense contribution to the task of forming a party of social revolution conceived along new lines. In this book Lenin defended the theoretical foundations of the Marxist party—dialectical and historical materialism—in the struggle against revisionists, defeatists, and falsifiers, and developed further the philosophy of Marxism, incorporating the results of developments in science since the days of Engels. During World War I, in addition to his other activities, Lenin worked strenuously to develop further the philosophical foundations of Marxism. His philosophical notes, abstracts, and fragments of this period represent an important source of material for Marxist philosophy. These appear in his *Philosophical Notebooks*.

In April, 1917, Lenin returned to Russia from exile and immediately began preparing the Bolshevik Party for the proletarian revolution which came in November. During the summer he completed his celebrated work, *State and Revolution*, in which he developed further the teachings of Marx and Engels on the dictatorship of the proletariat. With the establishment of the Soviet Republic, Lenin threw his full energies into organizing the new socialist state, winning the support of the peasantry for the new order, and conducting a successful struggle against the forces of counter-revolution and foreign intervention. In 1919, as a result of many years of work, the Third Communist International was established, reviving the best traditions of the revolutionary struggles of the working class. At the conclusion of the Civil War, Lenin organized and directed the work of reconstructing the Soviet national economy, effected the transition from war communism to the "New Economic Policy" (N.E.P.) and carried on a struggle against the Trotskyites, Bukharinites, and other enemies of Bolshevism who were undermining the unity and sapping the fighting strength of the party. The difficult conditions of Lenin's life in the days of tsarism, his inhumanly strenuous practical and theoretical work, together with the serious wound he received from a would-be assassin in 1918, overtaxed the strength of the great leader and shortened his life. He died on January 21, 1924.

Lenin's role in the development of

Marxism was so great that ever since his time scientific socialism is referred to as Marxism-Leninism (*see*).

Lessing, Gotthold Ephraim (1729-1781), one of the leading representatives of the German and European Enlightenment; art critic, publicist, and dramatist. An uncompromising democrat and a warrior against medievalism and its ideology, Lessing's esthetics and philosophy were representative of the revolutionary bourgeois realism of the eighteenth century and of materialist tendencies, although not in a systematic sense. In a series of brilliant conjectures, Lessing anticipated the theory of the historical development of ideologies, in particular, of religions (*Thoughts on the Education of the Human Race*). However, Lessing's best-known work is the field of literature. Among his chief productions are *Laokoon*, 1766; *The Hamburg Dramaturgy*, 1767-1768; and the play, *Nathan the Wise*, a plea for religious tolerance. In these writings, Lessing worked out the most consistent and penetrating criticism of the aristocratic classicism of the seventeenth century. He showed how thoroughly this art was divorced from the life of the people and was one of the first in Germany to call attention to the exemplary realism of Shakespeare and to the way in which his art was rooted in the life of the people. Lessing's ideal was a people's art, heroic in spirit, after the manner of the ancient Greeks and Romans, something which was later to inspire the statesmen and artists of the bourgeois revolution in France. In this spirit Lessing tried to revolutionize the German theater and literature in general. The plays of Lessing, because of their freshness of style, their social significance, and courageous realism, directed against the absolutist regime of Germany, mark an epoch in German literature of the eighteenth century. The historical role of Lessing as a theoretician, as the most radical and courageous representative of the Enlightenment in Germany, has had a lasting influence on all the better minds of the German people and has called forth a response from the revolutionary proletariat and workers everywhere.

Life, the activities of organisms composed of a complex physico-chemical system called protoplasm. Protoplasm occurs generally in units called cells. In multicellular organisms, both plant and animal, the activity of the organism is dependent upon the functions of the cells, but the cells cannot be considered *independent* units. Through hormones, nerve impulses, etc., the functioning of the cells is *integrated* into the organism. The properties of the organism as a whole result from the interaction of all its cells, so that these properties cannot be fully described in terms of the individual cells.

This relation of units and whole in the living organism is not recognized by mechanical materialism. It *reduces* the properties of the organism to the activities of the cells, as if these existed in isolation. Similarly it *reduces* the properties of the cell or protoplasm to its physico-chemical components in isolation. On the other hand, "vitalists," pointing to this error of the mechanical materialists, assert that the *new* properties of the cell (not in any of its isolated component parts) or of the organism (not in any of its isolated cells) are incapable of analysis and description because they result from a transcendental life force, "entelechy," or "soul."

Dialectical materialism, distinct from both mechanical materialism and vital-

ism, regards life as the motion of matter on a higher level than that of the individual chemical constituents of protoplasm. It recognizes the qualitative uniqueness of this higher level which emerged from the combination of these components in the distant past of the earth's history.

Life has not existed eternally. Its origin from non-living matter was one of the steps in the long historical development or evolution of the earth. This carries no implication that life can today arise spontaneously. For, as Frederick Engels put it in *Dialectics of Nature*: "It would be foolish to try and force nature to accomplish in twenty-four hours, with the aid of a bit of stinking water, that which it took her many thousands of years to do."

The most unique characteristic of living matter is its uninterrupted, simultaneous, and intereffective creation and destruction (metabolism). Engels brilliantly described the dependence of the continued existence of organisms on these ceaseless physico-chemical changes in the protoplasm:

"But what are these universal phenomena of life which are equally present among all living organisms? They consist above all in that a protinaceous body absorbs other appropriate substances from its environment and assimilates them, while other, older parts of the body are consumed and excreted. Other, non-living bodies also change and are consumed or enter into combinations in the course of natural processes; but in doing this they cease to be what they were. A rock worn away by atmospheric action is no longer a rock; metal which oxidizes turns into rust. But what with non-living bodies is the cause of destruction, with proteins is the *fundamental condition of existence*. From the moment when this uninterrupted metamorphosis of its constituents, this constant alternation of nutrition and excretion, no longer takes place in a proteinaceous body, from that moment the proteinaceous body itself comes to an end and decomposes, that is, dies. Life, the mode of existence of protein substances, therefore consists primarily in the fact that at each moment it is itself and at the same time something else; and this does not take place as the result of a process to which it is subjected from without, as is the way in which this can occur in the case of inanimate bodies. On the contrary, life, the exchange of matter which takes place through nutrition and excretion, is a self-completing process which is inherent in and native to its medium, protein, without which it cannot exist." (*Anti-Dühring*, p. 92.)

This quotation indicates that as early as 1878 Engels grasped the decisive significance for life of the most complex of non-living chemical entities, the proteins. Recent research has established their fundamental importance for the basic architecture of the cell and, as enzymes, for the unique features of cellular chemistry.

Because dialectical materialism recognizes that there are no rigid boundaries in nature, that matter can exist in a form both living and non-living, Engels could write: "Everywhere where we find life we find it associated with a proteinaceous body, and everywhere we find a proteinaceous body not in process of dissolution, there also without exception we find the phenomena of life. . . . And hence it follows that if chemistry ever succeeds in producing proteins artificially, these proteins must show the phenomena of life, however weak these may be." (*Ibid.*)

In 1935, Dr. W. M. Stanley crystallized the first filterable virus. Since then

other viruses have been similarly isolated, and all are composed of giant protein molecules. These chemical molecules show some of the attributes of life (reproduction and mutation), when inside the cells of a host. Compare with Engels' statements above, this statement by Dr. Stanley: "If we are ever able to synthesize virus proteins in the absence of living cells, then we shall have gone a long way toward the synthesis of protoplasm." "Virus Hunters" in *American Naturalist*, Vol. 72, 1938.)

Locke, John (1632-1704), English physician, political thinker, and philosopher who carried on the general line of thought developed by Bacon (*see*) and Hobbes (*see*). As Marx wrote, "Hobbes has systematized Bacon, without however furnishing a *proof* for Bacon's fundamental principle, the origin of all human knowledge from the world of sensation. It was Locke who, in his *Essay on the Human Understanding*, supplied this proof." ("Karl Marx on the History of French Materialism," in Engels, *Feuerbach*, Appendix C.) Following the whole line of materialism from the ancients to his immediate predecessors, Locke attacked all notions of ideas being in some way present in the mind at birth (Plato, Descartes) and worked out, in extraordinary detail, the doctrine that ideas arise in the mind (in the first instance) from sensations caused by the action of external objects on our sense organs. Nevertheless, he was unable to work out a consistent materialist theory of knowledge both because of his mechanistic materialism, inherited from Hobbes, and his characteristic bourgeois unwillingness to give up the ideas of God and the immortality of the soul. These limitations in his approach led him to consider sensation as a purely passive reception by the mind of impressions from objects outside, to distinguish it from reflection as something the mind does of itself with the data received from outside, and to regard knowledge as "conversant" only with our ideas and not with the objects outside. Underneath all of this lay a narrow "practicalist" attitude which distinguished between what we *really* know about the world (which he held to be very little, indeed), and what we need for our practical purposes (which he regarded as quite adequate).

These limitations of Locke led him to make certain errors that were readily seized upon by Berkeley (*see*) for his attack on materialism and the new natural science. One was the distinction between primary and secondary qualities. Among the first were the qualities of extension, shape, solidity, and motion, regarded by him as reflections in the mind of qualities actually existing in things. Among the second were color, taste, smell, and sound, conceived as existing only "in us" and not in the things outside. (*See* Primary and Secondary Qualities.) Another error, inherent in his conceiving sensations as so many separate atomistic entities, such as redness, taste, etc., say of an apple, led to his inability to explain how the "mind" got them together again as they existed together in the apple. But most important of all was his defining knowledge as consisting only in our ideas, while yet he recognized that, as regards nature, something else was "intended," namely, the knowledge of the actual nature of things. This led him to a doctrine that suggests Kant's "thing-in-itself." (*See* Kant; Thing-in-itself and Thing-for-us.) Because of these inconsistencies, two contradictory tendencies in modern philosophy stem from Locke. The French materialists of the eighteenth century, such as Helvetius (*see*)

and Diderot (*see*), utilized and developed Locke's analysis of knowledge as derived from sensations. On the other hand, Berkeley founded modern subjective idealism on Locke's distinction between primary and secondary qualities and his admission that we can never really know objective things but only our own ideas.

The contradictory currents in Locke's work arise from the nature of the basic social conflicts of his time. As Engels observed, Locke was "the child of the class compromise of 1688" (Marx and Engels, *Selected Correspondence*, p. 483), the British bourgeoisie and the nobility, in the epoch of the so-called "glorious revolution." In his political works Locke came forward with a defense of the constitutional monarchy set up by the revolution. In his religious views Locke was a Deist. (*See* Deism.) His chief works are *Essay on the Human Understanding*; *Two Treatises of Civil Government*.

Logic. (*See* Formal Logic; Dialectics; Method, Marxist Dialectical.)

Logos (Gr., thought, word, reason), a philosophical term first met with in Heraclitus (*see*) who called the universal system of natural laws *Logos*. Among the Stoics, *Logos* became the universal mind, or fate, while among the neo-Platonists and in Christian theology of the Middle Ages, it is a creator, a mystical spiritual entity—God. Hegel used the word to denote reason, Absolute Spirit.

Lucretius, Carus (99-55 B.C.), Roman poet and materialist philosopher. In his work, *On The Nature of Things*, Lucretius expounded in poetical form the philosophy of atomistic materialism. In full agreement with the Greek philosophers, Democritus and Epicurus, he asserted the fundamental thesis of their materialism: the basis of all reality is eternally existing matter moving in space and made up of tiny indivisible particles —atoms. All the various things in the world, according to Lucretius, are different combinations of atoms. The destruction of anything is, in reality, only the dispersal of its constituent atoms. Not a single atom can ever be destroyed. According to Lucretius, the world is knowable and the source of knowledge is sense impressions. Lucretius devoted much attention to such natural phenomena as thunder, lightning, and rain. His philosophy exercised great influence on the whole subsequent evolution of materialism.

Machism, or Empirio-Criticism, a subjective-idealist philosophical tendency, denying the existence of objective reality and maintaining that the world must be viewed as a complex of sensations. The founders of Machism are the German philosopher Avenarius (*see*) and the Austrian physicist Mach. Both criticized materialism, proceeding on the basis of "pure experience," the data of consciousness allegedly purged of any sort of non-empirical admixture. Machism tried to represent itself as a "neutral" position between idealism and materialism.

The contemporary philosophical movement called "logical empiricism" or "logical positivism" is in large part derived from Machism. The philosophy of Bertrand Russell likewise was considerably influenced by Mach and his movement. Among Mach's chief works are *Analysis of the Sensations*, and the *Science of Mechanics*. Lenin's *Materialism and Empirio-Criticism* presents a thorough analysis and penetrating critique of the Machian philosophy.

Marx, Karl. Marx was born May 5, 1818, in Trier, Germany, the son of a lawyer. On completing his preparatory studies in Trier, he entered Bonn and then Berlin University. In Berlin Marx joined the group of revolutionary-minded students of the Hegelian philosophy (*see* Hegel) who were known as "Left-Hegelians" (*see*). On completing his university studies Marx wrote his doctoral dissertation on "The Difference Between the Natural Philosophy of Democritus and Epicurus," in which work he still held an idealist viewpoint. During the next few years, he passed through Feuerbachian (*see* Feuerbach) humanism to dialectical materialism.

Political reaction in Germany in 1841 having made a university position impossible, Marx became editor of a radical bourgeois newspaper at Cologne. Soon he resigned his editorship under pressure from the censors and the paper's owners. He emigrated to Paris and became involved in communist activities there, both theoretical and practical. In 1845 he was expelled from France and went to Brussels, where he lived until 1848. Banished from Belgium after the February Revolution of 1848, Marx finally went to London, where he lived to the end of his days.

During 1845-49, with the help of Engels (*see*), Marx developed the basic features of what is known as Marxism. *The Holy Family* and *The German Ideology* (both written with Engels), his *Poverty of Philosophy* in criticism of Proudhon, all point towards the basic document of scientific socialism, *The Communist Manifesto*, written with Engels and published in February, 1848, as the program of the Communist League, the first international organization of Communists. It appeared just before the outbreak of the French and German revolutions of 1848, in connection with which Marx also played an important practical organizing role.

After the political upheavals in France in 1851 Marx published *The Eighteenth Brumaire of Louis Bonaparte* in which he summed up the results of the revolution of 1848-1851. The years after the revolution were for Marx years of the most intense labor on his chief scientific work, *Capital*, the first volume of which appeared in 1867. The later years of Marx's work on *Capital* were also years of extensive political and organizational activity.

With the strengthening of the labor movement at the beginning of the 'sixties, Marx undertook the realization of his ideas concerning an association of workers of the leading European countries. In London in 1864 the International Workingmen's Assosication—the First International—was founded, of which Marx was the moving spirit and intellectual leader. In 1871 Marx wrote his brilliant brochure, *The Civil War in France*, a profound analysis of the Paris Commune. As a result of the growth of political reaction after the fall of the Commune, the General Council of the First International was removed to America, where, in 1876, it declared the dissolution of the organization. From that time on Marx devoted himself to the completion of *Capital*. The exile to which he had periodically been subjected by reactionary governments, the severe needs from which he did not escape throughout his life and which were only partly mitigated by the material aid of Engels, the vigorous struggles which Marx carried on against the many non-proletarian and anti-proletarian tendencies—all undermined his strength, and he died on March 14, 1883.

Together with Engels, Marx had worked out the revolutionary world view

of the proletariat—dialectical materialism (*see*). Extending and applying this world view to the field of social history, Marx created historical materialism (*see*), the science of the laws of social evolution and of the class struggle. On the basis afforded by his philosophy of dialectical and historical materialism, his profound study of world history and of the economic and political life of bourgeois society, Marx was able, with the insight of genius, to discover the nature of the origin of capitalism, the laws and direction of its evolution and the conditions determining its decline and death. Marx demonstrated the historically transient character of the capitalist order, and the inevitability of the victory of the coming communist system. Proceeding from the evident irreconcilability of the class interests of the proletariat and the bourgeoisie, and from an analysis of the historical mission of the proletariat as the gravedigger of capitalism and the creator of the new communist society, Marx put forward the basic idea of the dictatorship of the proletariat as an instrument in effecting the revolutionary transformation of capitalism into socialism. Marx set up the theory of scientific communism as against the variety of previously existing theories of utopian socialism (*see*). It is important to note the philosophic significance of the fact that Marx's theories in the several fields to which he applied himself are not independent of one another but are organically connected.

Marxism-Leninism, a term used to signalize the fact that Lenin enriched, and developed, for the era of imperialism and socialist revolution, the teachings of Marx and Engels in such a way as to create something new, which is yet inseparable from the old. Thus it can be described as the theory of the proletarian movement for the emancipation of society from capitalist oppression, embodying the strategy and tactics of the proletarian socialist revolution, of the dictatorship of the proletariat, the theory and practice of building socialism, and of the transition to communism.

Marxism is a creative science. (*See* Marxism, Theoretical Sources of.) Its founders always looked upon their revolutionary theory as a guide to action. After the death of Marx and Engels, first Lenin and later Stalin not only exposed opportunists of every stripe and defended Marxism from various perversions, but also carried forward this science, enriching it, under new conditions of the class struggle, with new evidence and experience. They demonstrated in practice the creative strength of Marxism. Marx and Engels lived in the period of industrial capitalism, capitalism which was still expanding and growing stronger, in the period when the proletariat was beginning to prepare for revolution. Lenin and Stalin, on the other hand, belong to the period of imperialism, of declining capitalism, and the period wherein the proletarian revolution has already been victorious in one country, thus opening the Soviet era of proletarian democracy and the construction of socialism. "That is why," as Stalin points out, "Leninism is the further development of Marxism. Leninism is Marxism in the epoch of imperialism and proletarian revolution." (Stalin, *Leninism*, Vol. I, pp. 8, 9, 1933 ed.)

Stalin in his conversation with the first American labor delegation in 1927 pointed out the nature of Lenin's contribution to the structure of Marxism. "I think that Lenin 'added' no new 'principles' to Marxism, nor did Lenin abolish any of the 'old' principles of

Marxism." (*Ibid.*, p. 359.) Basing himself exclusively on Marxist principles, Lenin developed Marxism in its application to new conditions, to the new imperialist phase of capitalism. In the first place, he explained imperialism as a new phase of capitalism. "The service Lenin rendered, and, consequently, his new contribution, was that on the basis of the main postulates enunciated in *Capital*, he made a fundamental Marxian analysis of imperialism as the final phase of capitalism, he exposed its ulcers and the conditions of its inevitable doom. On the basis of this analysis arose Lenin's well-known postulate that the conditions of imperialism made possible the victory of socialism in separate capitalist countries." (*Ibid.*, p. 360.)

Further, Lenin developed the Marxist concept of the dictatorship of the proletariat, having discovered the significance of Soviets as the state form of this dictatorship. Lenin defined the dictatorship of the proletariat as a special form of class union of the proletariat with the exploited non-proletarian classes (peasants and others); he showed that this dictatorship is a higher type of democracy than that which exists in class society. Lenin established the possibility of the construction of socialist society in a country of proletarian dictatorship, even though encircled by capitalism, on condition that such a country not be strangled by armed intervention. Lenin devoted particular attention to the concrete ways and means of socialist construction, demonstrating that the Soviet Union possessed all that was necessary to this end. He further developed the Marxist idea of the hegemony of the proletariat. He organized these ideas into a "system of proletarian leadership of the masses of the toilers in town and country not only in the fight for the overthrow of tsarism and capitalism, but also in the work of building up socialism under the dictatorship of the proletariat." (*Ibid.*, pp. 361-62.)

Proceeding on the basis of Marx's conception of the national-colonial question, Lenin worked out its application to the conditions of the new epoch of imperialism and colonial revolution. He demonstrated that the solution of the national-colonial problem is inseparately connected with the overthrow of imperialism and "he declared the national and colonial question to be a component part of the general question of international proletarian revolution." (*Ibid.*, p. 363.)

Lenin gave to the Russian and to the whole international working class a systematic grasp of the political, tactical, organizational, and theoretical foundations of the party—a party of a new type, radically different from the party of the Second International, which was fatally weakened by opportunism.

The theory of Marx, Engels, and Lenin received further development in the works of Stalin, who relentlessly exposed the enemies of Leninism and defended the unity, strength, and integrity of the party. Stalin carried further Lenin's teachings concerning the possibility of the initial victory of socialism in but a few countries, or even one, and the impossibility, under imperialist conditions, of a simultaneous victory of socialism in all countries. He also developed further the pivotal ideas of Lenin in regard to the industrialization of the country and the collectivization of agriculture, worked out the methods of socialist reconstruction in the countryside and of the liquidation of the kulaks as a class through general collectivization. The problem of the state under socialism is another of the basic questions dealt with by Marx,

Engels, and Lenin which received further treatment in the work of Stalin, especially in relation to the conditions of capitalist encirclement. He armed the party and the Soviet people with a knowledge of the laws of class struggle under new conditions and pointed out the role of the proletarian state in the defense of emerging communism. In particular the writings of Stalin on the national-colonial question have contributed some of the best pages in all the literature of Marxism in this field.

Working on the problem of the relation of the epoch of socialism to that of communism, Stalin has shown the conditions necessary for the transition from socialism to communism. Under the leadership of Stalin the basic conditions of scientific communism have already been established in practice and have received explicit formulation in the present constitution of the U.S.S.R. This Stalinist constitution sums up the momentous experience of socialist construction in the U.S.S.R., where the basic aspects of such difficult problems involved in the transition from socialism to communism as the liquidation of the antagonisms between town and country and between physical and mental labor have been practically solved.

To master Marxism-Leninism means, among other things, to learn to distinguish its spirit from its letter, to assimilate this spirit and to learn to apply it under various conditions of class struggle, to learn to enrich, develop, and carry it forward in relation to new historical situations and new problems.

Marxism, Theoretical Sources of. The sources of Marxism are German classical philosophy (Hegel and Feuerbach); English political economy (Smith, Ricardo); and utopian socialism (St. Simon, Fourier, Owen). The greatest product of classical German philosophy was Hegelian dialectics. But the dialectics of Hegel was idealistic, and in order to transform it into a genuinely scientific method it was necessary to reconstruct it on a materialist basis.

"My dialectic method," says Marx, "is fundamentally not only different from the Hegelian, but is its direct opposite. To Hegel, the process of thinking, which, under the name of 'the Idea,' he even transforms into an independent subject, is the demiurge (creator) of the real world, and the real world is only the external, phenomenal form of 'the Idea.' With me, on the contrary, the ideal is nothing else than the material world reflected by the human mind, and translated into forms of thought." (*Capital*, Vol. I, p. xxx.)

The important contribution of Feuerbach was his materialist critique of Hegel's idealism. But Feuerbach, while a materialist in his approach to natural phenomena, remained an idealist in his conception of society. Marx and Engels consistently applied materialism in the realm of social phenomena. ". . . Idealism was driven from its last refuge, the philosophy of history; now a materialist conception of history was propounded." (Engels, *Anti-Dühring*, p. 32.)

English political economy supplied the basis of the labor theory of value, but Smith and Ricardo showed that they were unable to comprehend the historical, transitory character of capitalist production. They looked upon the capitalist system as the natural and eternal social order. The laws of evolution of capitalism as an historically conditioned social-economic order were discovered by Marx. He showed the the foundation of capitalist exploitation is surplus value, which is, as Lenin pointed out, the cornerstone of Marx's economic theory.

In *Capital* Marx demonstrated the inevitability of the decline and death of capitalism.

The third source of Marxism is utopian socialism. This type of thought, keenly and courageously criticizing the contradictions of capitalism, put forward the idea of socialism as a more perfect social order. But the utopians, by virtue of their historical limitations, were unable to understand the laws of evolution of capitalism, the essential nature of the wage slavery involved in it and the significance of the proletariat as the creator of socialism. Marx and Engels transformed the dream of socialism into a science, demonstrating that the moving force of history is the class struggle. Marx teaches that the only road to socialism lies through the revolutionary movement of the proletariat.

Materialism, one of the two chief tendencies in philosophy, that on which science is based and which is able to give the only scientifically adequate answers to the fundamental problems of the nature of the world and man. Materialism, in contradistinction to idealism, recognizes matter as primary and thought or consciousness as secondary. Its most fully developed form is *Marxist philosophical materialism*, known as dialectical materialism (*see*) which recognizes and overcomes the inadequacies of preceding materialist doctrines. The history of philosophy shows that, as a rule, materialism is the world view of the more progressive social classes, of groups interested in the development of science.

Materialism grew up in the Ionian colonies of ancient Greece at the close of the seventh and the beginning of the sixth century B.C., in the epoch of the establishment of the ancient Greek city-states, and greatly contributed to the development of industry and trading. Engels, characterizing the philosophy of the Ionians, wrote: "Here . . . is the whole original natural materialism which at its beginning . . . regards the unity of . . . natural phenomena as a matter of course, and seeks it in some definite corporeal principle, a special thing, as Thales does in water." (*Dialectics of Nature*, p. 244.) Asserting various material elements to be the basis of all things, the Ionians looked upon the universe as an interconnected infinite process of change and transformation of these primary elements. They were all, in Engels' expression, "natural born dialecticians." This naive but essentially correct view of the world was most clearly reflected in Heraclitus (about 544-484 B.C.). The further development of ancient materialism is connected chiefly with the names of Anaxagoras (about 500-428 B.C.), Empedocles (about 485-425 B.C.), and especially Democritus (460-370 B.C.), Epicurus (342-270 B.C.) and Lucretius (99-55 B.C.). Democritus, Epicurus, and Lucretius were representatives of atomistic materialism. They held that the basis of all things was atoms, tiny, indivisible, impenetrable material particles which moved in infinite space. This atomistic materialism was directed against the idea of the interference of gods in the affairs of this world, and in general against religious superstition. They held that the soul was material, made up of lighter atoms, and rejected the belief in its immortality.

During the middle ages, philosophy became transformed into a handmaiden of theology, and the dominant trend of thought was derived from Platonic and Aristotelian idealism. Certain materialistic tendencies in scholasticism appeared among the nominalists (Duns Scotus, William of Occam) who held

that universal or general ideas do not exist over and above the individual concrete things, as the so-called "realists" of that time maintained. The development of science and the revival of materialism are connected with the breakup of feudal society and the formation of the new capitalist system of production. The great geographical achievements of the end of the fifteenth and beginning of the sixteenth century (the discovery of America, the sea route to India, the circumnavigation of the globe) proved the sphericity of the earth. Copernicus (1473-1543) dealt a mortal blow to the theological world view of the Middle Ages in his doctrine that the earth revolves around the sun. The Copernican theory was further developed by Kepler (1571-1630) and Galileo (1564-1642).

Materialist philosophy, at the beginning of the modern period, building on the foundation of the victories won by science, carries on a struggle against scholasticism and clerical authoritarianism, turning to experience as to a true teacher and approaching nature as the proper object of philosophy. The father of modern materialism was the English philosopher, Francis Bacon (1561-1626). Bacon attacked scholasticism and defended scientific knowledge; he considered sensation and experience the only valid sources of knowledge. Although his materialism included mechanistic tendencies, it did not take on the one-sidedness characteristic of fully developed mechanism. In Hobbes (1588-1679) materialism assumed a clearly mechanistic character. "Knowledge based upon the senses loses its poetic blossom; it passes into the abstract experience of the mathematician: geometry is proclaimed as the queen of sciences." (Marx, "On the History of French Materialism," in Engels, *Ludwig Feuerbach*, p. 85.) The French philosopher Descartes (1596-1650) developed mechanistic materialism in his physics, remaining a dualist in his metaphysics. Gassendi (1592-1655) revived the atomistic materialism of Epicurus and combated the idealistic metaphysics of Descartes. The great Dutch philosopher Spinoza (1632-1677) overcame the dualism of Descartes. Spinoza took as basic a single substance—nature—and considered thought and extension as attributes of this substance which was eternal and infinite. In spite of a variety of inadequacies, the philosophy of Spinoza represents a great synthesis of the knowledge of his time. The work of Locke (1632-1704), although not free from concessions to idealism and agnosticism, developed the essentially materialist thesis that impressions received through the sense organs from the outside world are the source of knowledge.

This thought influenced the theory of knowledge of the French materialists of the eighteenth century. French materialism (La Mettrie, 1709-51; Diderot, 1713-84; Helvetius, 1715-71; Holbach, 1723-89; and others) built upon the successes of the natural science of the seventeenth and eighteenth centuries. Because of its militant and progressive character, this materialism became the theoretical weapon of the revolutionary bourgeoisie in the struggle against feudalism, a struggle which culminated in the French Revolution of 1789. The French materialists became warriors in the cause of scientific progress, against religious obscurantism and seventeenth-century idealistic metaphysics. Their philosophy, however, could not transcend the limitations of metaphysical materialism and the mechanistic conception of motion, while their approach to the field of social phenomena was idealistic. The last great figure of pre-Marxian materialism was the Ger-

man philosopher Ludwig Feuerbach (1804-72). Combating the idealism of Hegel, Feuerbach held that nature exists independently of consciousness and that man was a product of nature. But Feuerbach was a metaphysical materialist, since, in rejecting Hegel's idealism, he also rejected his dialectics. He considered man only abstractly, as man in general, not concretely, in terms of an evolving social and historical environment. Not understanding the significance of social practice, he remained an idealist in the field of social phenomena, and, in spite of his sharp criticism of religion, himself set up a new religion, "religion of the heart," of love.

Marx and Engels, the ideologists of the proletariat, having assimilated the positive and valuable elements of preceding scientific and philosophic thought, were able to work out a higher form of materialism — dialectical materialism (*see*). They were the first to extend materialism into the field of social phenomena, in their development of historical materialism (*see*). After Marx and Engels, bourgeois philosophers and scientists made several attempts to resurrect the earlier forms of materialism, lending them an oversimplified and vulgar character (Büchner, Moleschott, active in Germany in the fifties and sixties of the nineteenth century). Marx and Engels combated this sort of materialism. After the death of Marx and Engels, Lenin and Stalin developed further some of the basic concepts of dialectical materialism.

Materialism, Dialectical, the scientific philosophy, concerned basically with the general laws of development (evolution) of nature, society, and thought; the world view of international Marxism, created by Marx and Engels and developed further by Lenin and Stalin. This world view "is called dialectical materialism because its approach to the phenomena of nature, its method of studying and apprehending them is *dialectical*, while its interpretation of the phenomena of nature, its conception of these phenomena, its theory is *materialistic*." (Stalin, *Dialectical and Historical Materialism*, p. 5.) The historical materialism (*see*) of Marx and Engels is an application of dialectical materialism to the field of social phenomena, the evolution of human society, and represents an outstanding achievement of scientific thought. Dialectical and historical materialism constitute the theoretical foundation of communism. Marxism is "a complete world outlook, a system of philosophy from which the proletarian socialism of Marx logically ensues." (Quoted by L. Beria, *Stalin's Early Writings and Activities*, p. 99.)

Dialectical materialism as a philosophy of the proletariat arose in the middle of the last century and developed in organic connection with the practice of the revolutionary labor movement. Working out this progressive philosophical world view, Marx and Engels based themselves on all that was of value in the preceding development of human thought. In particular, the work of Hegel and Feuerbach, critically approached, proved an abundant source of material. Marx and Engels extracted the "rational kernel" from Hegel's dialectics, and, casting aside its idealistic shell, developed it in a scientific direction. Likewise, from Feuerbach's materialism, which was metaphysical and inconsistent, Marx and Engels took the nucleus while rejecting the idealistic and religious wrappings and worked it into their scientifically oriented theory of materialism.

Marx and Engels, and later Lenin and Stalin, applied the teachings of

dialectical materialism to the political and tactical problems of the working class, to the practical activity of its party. "Just as philosophy finds in the proletariat its *material* weapon, so the proletariat finds in philosophy its *spiritual* weapon." (Marx-Engels, *Gesamtausgabe*, Part I, Vol. I, Book I, p. 620.) Only the dialectical materialism of Marx, as Lenin emphasized, can show the proletariat the way out of the spiritual slavery by which all the exploited classes are blighted. Dialectical materialism is a living theory, constantly developing and growing richer by assimilating new discoveries of science and new experience in the class struggle. In such profoundly significant works as Lenin's *Materialism and Empirio-Criticism* and Stalin's *Foundations of Leninism* and *Dialectical and Historical Materialism*, Marx's philosophy is concretely elaborated in terms of new problems and thereby enriched. (For further details on the content of this philosophy consult also Matter; Method, Marxist Dialectical; Reflection, Theory of; Materialism, Historical; Esthetics; Ethics.)

Materialism, Historical (Materialist conception of history), Marxist teachings concerning the laws of development of human society; the application of the basic principles of dialectical materialism to the field of social phenomena. Before Marx's epoch-making researches, the idealistic conception of history was practically unchallenged.

"Just as Darwin discovered the law of evolution in organic nature, so Marx discovered the law of evolution in human history; he discovered the simple fact, hitherto concealed by an overgrowth of ideology, that mankind must first of all eat and drink, have shelter and clothing, before it can pursue politics, science, religion, art, etc.; and that therefore the production of the immediate material means of subsistence, and consequently the degree of economic development attained by a given people or during a given epoch, form the foundations upon which the state institutions, the legal conceptions, the art and even the religious ideas of the people concerned have been evolved, and in the light of which these things must therefore be explained, instead of *vice versa*, as had hitherto been the case." (Engels, "Speech at the Graveside of Karl Marx," See Marx, *Selected Works*, Vol. I, p. 16.)

In the basic changes which take place in the methods of producing the material goods necessary for the existence of man, historical materialism sees the main determinant of the path of social life and of the transition from one social system to another. No society can exist without engaging in material production. With the help of tools, technique, man in the process of production acts on nature and obtains the necessities of life. The progress of society depends on the evolution of the means of material production. The history of human society begins from the time that man mastered the use of tools and himself became "a living, active tool." The evolution of productive forces is clearly marked by the growth of man's control over nature. This evolution is also accompanied by changes in the relations among people in respect to productive forces, that is, by changes in the prevailing socio-economic system.

Fundamental changes in the social-economic structure—from the primitive communal to the slave system, from the slave to the feudal, the feudal to the bourgeois-capitalist, the capitalist to the socialist, are first of all changes from a certain set of production relations to another and more progressive set. Such a

change is always a necessary consequence of the operation of definite laws of the evolution of the productive forces. A great service of the theory of historical materialism, accordingly, consists in the fact that it was the first to call attention to the significance of the objective conditions of material production, to the economic laws of society which underlie human action on an historical scale. Thanks to the theory of Marx "The chaos and arbitrariness that had previously reigned in the views on history and politics gave way to a strikingly integral and harmonious scientific theory, which shows how, in consequence of the growth of productive forces, out of one system of social life another and higher system develops—how capitalism, for instance, grows out of feudalism." (Lenin, *Selected Works*, Vol XI, p. 5.)

The discovery of the development of material production as the underlying dynamic of social evolution permitted for the first time the formation of an adequate conception of the great, creative role of the people, the toiling masses, in the unfolding story of mankind. The history of society was for the first time understood as "the history of the producers of material values themselves, the history of the laboring masses who are the chief force in the process of production and who carry on the production of material values necessary for the existence of society.

"Hence if historical science is to be a real science, it can no longer reduce the history of social development to the actions of kings and generals, to the action of 'conquerors' and 'subjugators' of states, but must above all devote itself to the history of the producers of material values, the history of the laboring masses, the history of the peoples." (Stalin, *Dialectical and Historical Materialism*, p. 30.)

Conditioned by the existing system of production, by the material life of society, the whole social structure of political institutions, forms of thought, ideas, theories, takes on a definite historical character. *Social existence determines social consciousness.* It is impossible to understand adequately the nature of political institutions, of ideas and theories, if we forget the material precondition of their origin—the underlying economic movements which affect them and by which they are also affected. It is impossible to understand why in one epoch certain institutions and ideas arise, while others arise in a different epoch, unless we relate them to the actual way of life in question, in which the system of material production is of basic significance.

For example, the different forms of the state in a society characterized by exploitation have always depended on the division of society into classes: slave owners and slaves, land owners and serfs, bourgeoisie and proletariat. The forms of social consciousness (political views, philosophies, sciences, religions, and the like) also depend in the last analysis on the prevailing production relations among people, and suffer radical change in accordance with fundamental changes in the system of production, in the economic order. Approaching political ideas, theories and institutions in terms of their dependence on the system of production, historical materialism by no means denies their significant influence on the life of society. They may hold back the movement of social evolution, by serving backward groups or classes; or, on the other hand, they may help to carry forward this movement by serving progressive, revolutionary classes. The discovery of the theory of historical materialism enabled the study of society for the first time to become a genuine

science of the laws of development of human society. This theory is by no means to be identified with, and takes particular pains to differentiate itself from, the vulgarized "economic determinism" which holds that economics is the only factor which influences the course of social evolution. Economic determinism denies the active role of politics and political institutions as well as of ideas and theories in the determination of the course of the historical process.

Materialism, Mechanistic, the dominant form of materialism prior to Marx and Engels. Mechanistic materialism is characterized by the attempt to explain all phenomena by means of mechanical laws of motion, to reduce all the qualitatively diversified processes and phenomena of nature (chemical, biological, psychological, etc.), to mechanics. It denies the self movement of things and also the factor of discontinuity or "leap" (*see*) in their evolution; in fact, it really denies any genuine evolution in the sense of the emergence of new forms and new qualities of *new things.* Roots of the mechanistic viewpoint may be found in the materialism of Democritus. The real growth of mechanistic materialism, however, took place in the seventeenth and eighteenth centuries (Hobbes, Descartes in physics, Spinoza, the French materialists of the Enlightenment). Feuerbach (*see*) also belongs to the school of mechanistic materialism.

In the centuries mentioned, mechanistic materialism represented a necessary and progressive stage in the evolution of materialist philosophy, and possessed a content which was conditioned by the fact that at that time, of all the sciences, only mechanics and mathematics had attained a high level of development. After Marx and Engels had created dialectical materialism, the earlier trend no longer constituted a progressive outlook.

Materialism, Spontaneous, an unconsciously materialistic conception of nature, a conception unaware of its systematic and far-reaching implications. The thought of the ancient Greek nature philosophers (*see* Ancient Philosophy) belongs in this category as does that of virtually all people in the modern world in so far as practical activity is concerned. The majority of natural scientists, even when they reject materialism in their conscious philosophy, spontaneously adopt a materialist orientation in their actual researches, however inconsistent and reluctant it may be. This is true even of those scientists who publicly embrace contemporary positivism (*see*) or *pragmatism* (*see*) with their denial of causality and objective reality. "The conviction of the 'naive realists' (in other words, of all humanity) that our sensations are images of an objectively real external world is the conviction of the mass of scientists, one that is steadily growing and gaining in strength." (Lenin, "Materialism and Empirio-Criticism," *Selected Works,* Vol. XI, p. 400.)

Materialism, Vulgar, a philosophical tendency which arose in Germany in the fifties and sixties of the nineteenth century, particularly among natural scientists and physicians. The founders of this tendency—Büchner, Vogt, and Moleschott—were characterized by Engels as pedlars of "cheap materialism" and "circuit preachers" of vulgarized thought. Recognizing that matter is the basis of all reality, and defending atheism, these materialists at the same time held the view that the brain secretes thought just as the liver secretes bile,

a clear example of the vulgarization of materialist thought. Such a viewpoint represented a step backward not only in comparison to dialectical materialism but in relation to the French materialism of the eighteenth century. Vulgar materialism is usually characterized by such traits as a total ignorance of dialectics, a defense of outmoded mechanistic concepts of motion, and an idealistic approach to society. Behaviorism in psychology offers a striking example of vulgar materialism.

Matter, objective reality existing outside of us, independent of and reflected by our consciousness. Dialectical materialism, in accord with the data of science, teaches that matter always exists in motion. There is no matter without motion and no motion without matter. Space and time are objectively real forms of the existence of matter, which is uncreatable and indestructible. "Nothing is eternal but eternally changing, eternally moving matter and the laws according to which it moves and changes." (Engels, *Dialectics of Nature,* p. 24.) Generalizations concerning the unity of the material world were arrived at, as Engels observed, only after a long and slow evolution of philosophy and science. While the first ancient Greek philosophers recognized matter as the basis of all things, they identified it with one or another of its special forms. Thales considered it to be essentially water, Anaximenes—air, and Heraclitus—fire. The first universal concept of matter was worked out by the ancient atomists (Leucippus, Democritus, Epicurus).

In seventeenth century France the atomistic theory of the structure of matter was carried on by Gassendi. He held that atoms are possessed of absolute properties such as solidity and impenetrability. Descartes developed a different view of matter. He attacked the atomistic theory and defended the idea of the continuity of matter. Descartes denied the indivisibility of atoms and held that matter is infinitely divisible. The French materialists of the eighteenth century carried the understanding of matter a step further. On the one hand, they attacked Descartes, who identified matter with extension (space), and, on the other hand, attacked Newton, who conceived of matter as something passive and inert. The French materialists looked upon matter in terms of its unity with motion. But their views could not overcome the limitations of the metaphysical outlook, according to which matter consists of identical and unchanging particles. "The recognition of immutable elements, of 'the immutable substance of things,' and so forth, is not genuine materialism, but *metaphysical, i.e.,* anti-dialectical materialism." (Lenin, *Selected Works,* Vol. XI, p. 317.) (*See* Materialism, Mechanistic.) Only materialism that is dialectical can develop the concept that matter is not a complex of dead, frozen, and motionless elements, but, like the objective world of which it is the substance, is something that exists in a rich variety of forms and manifestations. Dialectical materialism does not identify the general concept of matter with any selected concrete manifestation, but clearly distinguishes between the philosophical and the physical concepts of matter.

"Matter is a philosophical category designating 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." (*Ibid,* p. 192.) The physical concept of matter is determined by our scientific knowledge of its structure and properties and cannot help but change with the development

of science. Thus with the new successes of science at the end of the nineteenth and beginning of the twentieth century, our knowledge of the structure of matter underwent considerable change as a result of a series of discoveries (radioactivity, theory of electrons). Contemporary physics has discovered that the nucleus of the atom as well as the atom possesses a complex structure, which is composed of two types of particles—protons and neutrons. The natural sciences cannot give a complete and exhaustive definition of physical matter, because matter itself is inexhaustible. While the philosophical definition of matter is closely connected with the physical, there are important distinctions between them. To confuse the philosophical concept of matter, *i.e.*, the objective reality given to the senses and reflected by consciousness, with the physical theory of the structure of matter, which can never be more than an expression of the level of knowledge attained at a given time is a procedure that can lead to a denial of the objective existence of matter, to idealism (*see*).

A case in point arose out of the great discoveries of physics at the beginning of the twentieth century, when bourgeois natural scientists drew idealistic conclusions from the confusion of philosophical with physical concepts. They interpreted the breakdown of previous notions of matter as the disappearance of matter itself. However, as Lenin observed, it is not matter that disappears, but only those limits within which we had conceived of it; our knowledge becomes deeper and reveals new properties of matter. The teachings of science on the structure of matter, on the chemical composition of food, on the atom and electron, may and do become obsolete, (*Ibid.*, p. 245), but the philosophical concept of matter can hardly become obsolete. Thus the recognition of matter as objective reality which existed before man and which is outside and independent of human consciousness is the fundamental presupposition of all scientific knowledge.

Mental and Manual Labor, Antagonism or Opposition Between. This antagonism or opposition arises with the appearance of private property in the means of production, with the development of the division of labor, and the splitting up of society into classes. Under conditions of class oppression, slaves, serfs, peasants, and industrial workers are forced to undertake severe physical labors while a career of mental labor and preoccupation with the achievements of science and culture are in the nature of privileges enjoyed for the most part only by the ruling classes. Historically speaking, there was a time when the division of labor in terms of mental and physical was a progressive step. For example, ancient Greek thinkers made valuable contributions to science which played an important role in subsequent developments in many fields. But under capitalist conditions, wherein the contradictions between mental and physical labor became particularly sharp, the separation and opposition of the two become both stultifying to the individual and a hindrance to scientific and social progress.

Marx, Engels, Lenin, and Stalin have shown that the distinction between mental and physical labor will disappear only under communism. The roots of the social and political conditions necessary for the abolition of this differentiation took firm hold with the victory of the proletarian revolution. The building of socialism in the U.S.S.R., the growth of improved technique, factories, and plants; the introduction of machines

into agricultural work; the increasing prosperity of the workers, together with the steady rise of their cultural level—all these factors served as the basis for the development of the Stakhanov movement which shows the way "by which alone can be achieved those high indices of productivity of labor which are essential for the transition from socialism to communism and for the elimination of the distinction between mental and manual labor." (Stalin, *Selected Writings*, p. 369.)

Metaphysics. In the history of philosophy the term metaphysics has had a number of different meanings, so much so that no one can tell what a particular bourgeois philosopher means by it except through studying his writings. Three principal meanings, however, can be distinguished:

(1) The study and investigation of the most widespread or pervasive characteristics of things and processes, as contrasted with the particular sciences which study limited aspects of the world. In this sense metaphysics is almost identical with philosophy, especially ontology (*see*), and any generalizations from many sciences concerning the world and its processes could be included under it. It is mainly in this sense that one of Aristotle's works is named *Metaphysics*.

(2) Speculation and doctrines concerned with matters beyond possible human experience, God, the absolute, "things-in-themselves," the soul, etc. In ages dominated by religion any philosophical pursuit described under the first definition would inevitably lead to metaphysics in this sense. Such "metaphysics" is mystical and reactionary and seeks to deny, belittle, and prevent scientific knowledge of the world and man.

(3) A method of approach to the phenomena of nature which is directly opposed to dialectics. This is the sense in which Marxists use the term. In this sense "metaphysical" includes "mechanical," and describes all non-dialectical philosophies which see in nature an arbitrary collection of objects and events, independent of and isolated from one another, without universal and basic relationships. Marx and Engels recognized that this metaphysical method was historically conditioned by the level of knowledge of its day. The analytic breakdown of nature into its several parts, the distribution of the variegated natural phenomena into definite categories, were a fundamental precondition of the great successes of natural science in the period from the sixteenth to the eighteenth century. But this method of study grew into the fixed tendency to consider phenomena separate from their connections, evolution, and changes.

"To the metaphysician, things and their mental images, ideas, are isolated, to be considered one after the other apart from each other, rigid, fixed objects of investigation given once for all." (Engels, *Anti-Dühring*, pp. 27-28.)

In this Marxist sense, both materialists and idealists of the early modern period were metaphysical. Even Hegel, who was the first to use "metaphysics" in this sense, could not cease being a metaphysician. Since the creation of the dialectical materialism of Marx and Engels, metaphysical materialism is no longer a forward but rather a backward tendency, and inevitably compromises with idealism. John B. Watson's *Behaviorism* was an example of such metaphysical materialism.

Bourgeois theoreticians who try to "prove" the eternity of capitalism, who see it as the absolutely final form of social production, who deny the existence of class contradictions, are metaphysicians. In the same category are the op-

portunists and revisionists who hold for the "peaceful growth of capitalism into socialism," and that the transition must take place without "leaps," without the proletarian revolution.

Method, Marxist Dialectical. This method is characterized by the following features: (1) It looks upon nature as an *interconnected*, united whole, in which things and events depend upon and condition one another. (2) It looks upon nature as undergoing unceasing change and renovation, wherein everything grows, evolves and then dies: *everything is in process of movement and change.* (3) It looks upon evolution as a process in which, on the basis of the accumulation of gradual and imperceptible quantitative changes, a precipitate transition to fundamental qualitative changes takes place; *transition from quantity to quality* is one of the main principles of dialectics. According to dialectics, evolution is not simply a quantitative elaboration of existing forms which produces nothing new but a progressive movement from lower to higher levels. (4) It takes its point of departure from the fact that the phenomena of nature are characterized by internal contradictions, that everything possesses its positive and negative aspects, those of growth and development as well as decay and disintegration, and that the struggle between what is growing and what is dying makes up the internal content of the process of evolution, the process of transformation from quantity to quality. *Contradiction* (opposition), *leaps forward*, is a principle basic to dialectics.

These principles of the dialectical method are developed in relation both to evolution in nature and to the evolution of society, for the history of nature and society alike bears witness to the fact that everything moves dialectically. Lenin and Stalin have characterized dialectics as the heart of Marxism. Their theoretical work represents a further development and application of the dialectical method of Marx and Engels.

Methodology (1) Theory of method, of procedures in intellectual investigation; (2) The set of methods applied in any given science.

Mind. (*See* Brain, Thought.)

Mode of Production, the general method of obtaining the means of life (food, clothing, shelter, tools of production, and the like) necessary for people, and for the existence and development of society. One side of the mode of production consists of the productive forces (*see*), in which are reflected the relationship of man to those objects and forces of nature which he must utilize to create the material necessities of life. The other side is the production relations (*see*), that is, the relations between people in the process of material production, relations in terms of which we may answer the question: Who possesses the means of production and under what conditions. Each historically determined mode of production (primitive-communal, slave-holding, feudal, etc.) is an interdependent combination of productive forces and corresponding production relations. The productive system lies at the basis and determines the character of the social order. (*See* Base and Superstructure.) Each new productive system marks a higher stage in the history of man. "This means that the history of development of society is above all the history of the development of production, the history of the modes of production which succeed each other in the course of centuries, the history of the development of productive forces and people's

relations of production." (Stalin, *Dialectical and Historical Materialism*, p. 30.)

Monad, a philosophical term which has been used to designate that unit of existence considered to be simplest and indivisible. In Greek philosophy the term "monad" is used to refer to any individual or unit of being; in modern philosophy, this term was used by Bruno and played a significant role in the system of Leibniz (*see*), in which monads are taken as the foundation of all existence, as independent spiritual essences possessed of self-movement. Both Bruno and Leibniz used the term "monad" in opposition to "atom" which had a purely materialist meaning, inasmuch as they conceived these units of the world as essentially spiritual in nature. In Leibniz's view, the interrelations of monads represent a preordained divine harmony. In its attempt to establish connections among all the phenomena of nature and in its theory of their eternal self-movement, this conception of Leibniz possessed something of value.

Monism, term applied to those philosophies which see the world as the manifestation of one stuff or substance. Thus materialism (*see*) which holds this substance to be matter, and pure idealism (*see*) which regards it as mind or spirit, are both monistic philosophies. The most common religious or spiritualist view is dualistic, holding as it does that there are two substances, God or spiritual substance and the world of nature or material substance, while of course it always regards the first as the cause of the second and as having a superior reality. It was partially the inherent weakness of this dualist position that led Berkeley (*see*) to deny material reality altogether. In the past half-century or so it has been popular to oppose monism, whether materialist or idealist, with pluralism (*see*) which holds that there are an unlimited number of substances or kinds of being. This position was popularized in America by William James. Analysis reveals its essentially idealist nature in that it denies the material basis of all things, upholds religion and free will, and pictures the universe as a very loose kind of thing in which "anything can happen."

Monotheism, a higher stage in the evolution of religion in which the belief in many gods (polytheism) gives way to belief in a single god. Monotheism makes its appearance together with the rise of a state governed by a single monarch. However, the monotheism of certain contemporary religions is extremely relative in character. The belief in God the Father, God the Son, the Holy Ghost, the Mother of God, angels, saints, and the like, is in essence a kind of polytheism.

Morality, Morals. (*See* Ethics.)

More, Thomas (1478-1535), founder of utopian socialism and outstanding scholar-humanist. More is the author of the famous work, pulbished in 1516, *A Fruteful and Pleasant Worke of the best state of a Publyque Weale and of the Newe Yle called Utopia.* In this book More criticized bourgeois society, then in its infancy. He pictured the suffering of the people caused by the "primitive accumulation" (Marx) of capital. More saw the root of all poverty in private property. To the system founded on private property, he opposed the ideal system of Utopia, at the basis of which lies socialized property and socialized production. More's description of the island of Utopia (meaning, literally, land of nowhere) is the first attempt in history to delineate the features of a socialist society.

The term which More coined gave rise to the custom of referring to fanciful or prescientific systems of socialism as "utopian socialism." (*See* Socialism, Utopian.)

Motion, form of existence of matter, its essential and inalienable property. Motion, like matter, is eternal; it can neither be created nor destroyed. The world is moving matter. "Matter without motion is just as unthinkable as motion without matter." (Engels, *Anti-Dühring*, p. 68.) The source of motion is found in matter itself, and motion therefore in the last analysis is self-motion having no need of a "first impulse" or a "prime mover" in the form of a creator, God, or any sort of supernatural force. The conflict of opposites, contradiction, constitutes the internal impulse in respect to all types of motion.

Dialectical materialism includes under motion not only change of position in space but all change whatsoever in nature and society. The fundamental forms of motion are mechanical motion (change of place of a body in space); physical (heat, light, electricity, and the like); chemical (combination and dispersal of atoms); intra-atomic motion (quantum mechanics, nuclear physics); organic motion or life (cell, organism); social life, consciousness. Each of these forms of motion possesses its own peculiar properties, and consequently it is impossible to reduce the higher forms of motion to the lower: the laws of thought cannot be reduced to biology, to a study of the laws of organic life, while the function of the organism in turn cannot be adequately explained either by physical or mechanical laws of heat, gravity, or the like.

In connection with the attempt to reduce higher forms of motion to lower, it is usually pointed out that the higher forms of motion take place as further developments of chemical, physical, or mechanical motion. But mechanistic materialists do not understand that the lower forms of motion, while indispensable as a foundation, cannot exhaust the significance of the higher forms. As Engels remarks: "One day we shall certainly 'reduce' thought experimentally to molecular and chemical motion in the brain; but does that exhaust the essence of thought?" (*Dialectics of Nature*, p. 175.)

Motion possesses an absolute and universal character; nowhere and never do we find perfect equilibrium or absolute rest. All rest is relative. For instance, a stone, a house, and a table are at rest only in relation to the earth, but move together with the earth as it moves on its axis, and around the sun, and also along the path of motion pursued by the whole solar system. At the same time, within the stone, house, and table, molecular and atomic motion are taking place. It is evident, therefore, that rest or equilibrium is only a phase of motion, that only motion is continuous and absolute whereas rest is temporary and relative. Said Engels: "The individual motion strives toward equilibrium, the motion as a whole once more destroys the individual equilibrium." (*Ibid.*, p. 170.)

Motion, Source of. One of the time-honored arguments in the anti-scientific arsenal of the idealists is that motion cannot be accounted for naturally. Consequently, they maintain that it can only be accounted for by reference to something outside nature in space and time, in a God or *unmoved-mover* as Aristotle (*see*) defined him. According to this view, which was also shared by mechanistic materialism (*see* Materialism, Mechanistic), matter is completely static, inert stuff, incapable of moving

on its own account. But since it is in motion, they maintain that something immaterial must have given the original impetus or must be constantly acting upon it. Among the pre-Marxian materialists none understood so well as Diderot (*see*) the absurdity of this doctrine. He wrote: "*A body*, according to some philosophers, *is, in itself, without action and without force.* This is a terrible error, contrary to all sound physics and to all sound chemistry: a body in itself, by the nature of its essential qualities is full of action and of energy. . . . The molecule endowed with a quality proper to its own nature is in itself an active force. It exercises its force upon another molecule, which in turn exercises its force upon the first one." (*Diderot, Interpreter of Nature*, J. Kemp, ed., p. 128.) Dialectical materialism develops this view further, holding that in nature and in society, in all the phenomena of the universe, movement, change, evolution, take place on the basis of internal contradictions inherent in the phenomena. Consequently, it is self-movement and any outside source of movement is therefore completely superfluous.

Mysticism, a type of religious-idealistic world view. In its strict classic sense mysticism is the belief that man can attain, through a so-called "mystic experience," complete unity or identity with God. This unity, although admittedly of momentary duration, is conceived as a vision which gives one the highest wisdom, revealing in a flash the essense of the divine, and hence, in the mystic tradition, a vision of all things conceived as a totality. Since, however, this vision involves the supposed identity of the subject, man, with the Godhead, it is an undifferentiated experience about which nothing can be said. Thus the mystic's vision must remain inexpressible. In this sense mysticism is the belief in some supra-sensual and supra-rational intuition by which the "secrets" of existence can be discovered. But the term mysticism is also used in a more general way to describe any and all kinds of spiritualist or religious beliefs and attitudes.

Throughout history philosophic mysticism, like religion in general, has been a weapon used in the struggle against science and progress. A number of bourgeois philosophers have developed into open apologists for mysticism (William James in America, Henri Bergson in France). Elements of mysticism have even penetrated into contemporary bourgeois science. For example, a number of physicists have perverted Einstein's relativity theory in such a way as to arrive at the existence of a realm of purely spiritual entities behind the observable world.

Mythology. In their attempts to explain the phenomena of nature and society, the people of early times, not possessed of scientific knowledge, fell back on inventions and fantasies. Thus there grew up a store of myths about gods and superhuman heroes, their lives and exploits. Since mythology supplied in imagination that mastery and domination over the forces of nature which were lacking in practice, it could no longer command the same kind of belief after man had progressed scientifically and technologically. In other words, the myth was an attempt on the part of ancient people to answer the question: how and why does this or that phenomenon of nature or social life take place. Thus, for example, the ancient Hebrews answered the question of the origin of the earth and of mankind with the myth of the creation of the world in six days. The construction of myths was especially

highly developed among the ancient Greeks and Romans, many of whose myths, as, for example, those of Prometheus, Antaeus, and others, have passed into world literature.

Naturalism, a term implying a philosophical approach to the world which takes nature as the whole of reality. In this sense it is opposed to super-naturalism and any other doctrine which holds for the existence of some spiritual reality over and above nature. In the sixteenth and seventeenth centuries naturalism was a progressive philosophical position, even though it often interpreted nature pantheistically by ascribing to nature itself a spiritual or divine character. By the eighteenth century naturalism was virtually synonymous with materialism as can be seen in d'Holbach's compendium of French mechanical materialism, the *System of Nature*. Since that time, however, the term has had less precise meaning and has often been used to describe the tendency to explain the evolution of society by means of the laws of nature (climatic conditions, geographical surroundings, biological characteristics, and the like).

It was in this sense that Lenin called naturalism only an inexact, weak version of materialism. (*Philosophical Notebooks*, p. 73, Russian ed.) Malthus, Spencer, and the "social Darwinists" are examples of this trend. In the present century the term naturalism has been used by philosophers who couldn't accept an outright idealism but who also wanted to avoid materialism. Engels' description of agnostics as "shame-faced materialists" often applies equally well to the self-styled naturalists. Thus it is a loose term, of such a nature that while all materialists are naturalists not all naturalists are materialists.

Nature. Dialectical materialism (*see*) conceives of nature as matter in all the multiplicity of its manifestations and forms of movement. The unity of nature consists in its materiality. The scientific explanation of the phenomena of nature has no need of any sort of transcendental, spiritual, divine or similar causes. "The materialistic outlook on nature means no more than simply conceiving nature just as it exists without any foreign admixture." (Engels, *Ludwig Feuerbach*, p. 79.)

Idealists, in their subjectivist tendencies, consider nature a phenomenon of consciousness. Kant, for example, considered that the human mind alone introduced order and law into the chaos of phenomena surrounding us, transforming this chaos into the system of nature. Hegel considered nature the alienation of the spirit, while Mach considered it a complex of sensations in the knower. Stalin, in expressing the materialist point of view, says: "Matter, nature, being, is an objective reality, existing outside and independent of our minds." (*Dialectical and Historical Materialism*, p. 16.) Nature is in process of eternal change and movement, and its present condition is the result of a protracted historical evolution. Organic life, the capacity for sensation, arose out of inorganic matter. Man, a part of nature and its highest product, changes and controls nature by means of tools and thereby compels the forces of nature to serve his ends. From the sixteenth to the eighteenth century the conception of the absolute unchangeableness of nature was dominant. Dialectical materialism, on the other hand, views nature historically, in terms of its movement and evolution.

Necessity and Chance. By necessity, dialectical materialism understands the operation of the objective system of na-

tural laws, that is, the inevitable development of certain phenomena out of preceding phenomena, out of the whole previous course of events. Idealistic philosophy either completely denies necessity in nature or conceives it as a product of non-material entities or divine decree. Dialectical materialism maintains the objective existence of necessity as a function of universal law, but at the same time does not deny accident or chance. Accident is that which, in respect to the phenomena under consideration, can either be or not be. It exists objectively and possesses its own cause but it does not follow from the laws controlling the phenomena being dealt with. For example, hail is a phenomenon determined by a number of causes, but in relation to the growth of plants, which it can seriously damage, it is an accident.

Mechanical thinking looks upon chance and necessity as mutually exclusive concepts: phenomena are either accidental or necessary. Followers of Hume (*see*) (Machians, Pragmatists, Positivists) deny any necessity in nature, while mechanical materialists deny accident or chance. Dialectical materialism maintains that necessity and chance are mutually connected, that chance is a form of manifestation of necessity. The progress of science often shows that what was thought to be mere "chance" is really the product of causal necessity. Said Engels: "But where on the surface accident holds sway, there actually it is always governed by inner, hidden laws and it is only a matter of discovering these laws." (*Ludwig Feuerbach*, p. 58.) Social phenomena afford abundant illustrations of this. (*See* Freedom and Necessity.)

Negation of the Negation, one of the basic laws or principles of dialectics (*see*). Every object or condition, being made up of internal contradictions, contains within itself its own negation. There is a struggle within it between that which is growing and that which is dying—between the old and the new. The negation of the old does not signify, however, a useless, empty negation, a simple casting aside of all that is old, as metaphysical thinking tends to conceive it. "Negation in dialectics does not mean simply saying 'no,' or declaring that something does not exist, or destroying it in any way one likes." (Engels, *Anti-Dühring*, p. 155.) Dialectics "demands a recognition of the *unity*, that is, the connection of negative with positive, the finding of the positive in the negative." (Lenin, *Philosophical Notebooks*, p. 217, Russian ed.) It is this that is meant when people speak of turning a defeat into a victory, or again, the destruction of fascism which is a return to the conditions that preceded fascism, is not a dialectical destruction, for fascism will then arise again. Fascism is only *destroyed* when the negation is negated, when new conditions are created that make the return of fascism impossible.

Marx wrote in a famous passage: "The capitalist mode of appropriation, the result of the capitalist mode of production, produces capitalist private property. This is the first negation of individual private property, as founded on the labor of the proprietor. But capitalist production begets, with the inexorability of a law of nature, its own negation. It is the negation of negation. This does not re-establish private property for the producer, but gives him individual property based on the acquisitions of the capitalist era, *i.e.*, on co-operation and the possession in common of the land and of the means of production." (*Capital*, I, p. 837.)

Many of the basic ideas of Marxism represent the employment of this dialectical law. One simple example is found in the concept of the proletariat. While the proletariat is produced by capitalism for the purpose of exploitation, it becomes the grave-digger of capitalism. And what Marx is pointing to in the above passage is that elements of socialism are already contained within the framework of capitalist society, but they are the negation of this structure or order of society. When they are freed from these bonds, and the expropriators are expropriated, there is a negation of the former negation, which, far from being a mere nothing, is a higher form of society—socialism. Not to see this resolution of the contradictions in terms of the negation of the negation, with its genuinely positive aspects, may mean to think of resolving the contradictions by going backwards to an earlier form of society before these contradictions arose. The negation of negation points always towards the resolution of any and every contradiction in nature and society through a forward movement which brings into being new forces and conditions. Thus it is that Engels calls it "an extremely general—and for this reason extremely comprehensive and important—law of development of Nature, history and thought; a law which holds good in the animal and plant kingdom, in geology, in mathematics, in history, and in philosophy." (*Anti-Dühring*, p. 154.)

Neo-Hegelianism. A contemporary bourgeois philosophical tendency, neo-Hegelianism utilizes the conservative side of Hegel's philosophy, and at the same time criticizes his objective idealism from a subjectivistic viewpoint and transforms his dialectics into something mystical, rejecting its living revolutionary content. The neo-Hegelians are opponents of dialectical materialism, and, directly or indirectly, support political reaction. Neo-Hegelianism grew up at the same time as imperialism. At the end of the last century, a number of English philosophers, such as, for example, the Scottish metaphysician, Edward Caird, put forward a system of thought which represented a combination of Hegelian idealism and neo-Kantianism (*see*). In Germany in 1910 a number of neo-Kantians began a movement away from Kant to neo-Hegelianism. Neo-Hegelianism reached its zenith in the years following World War I, when it overshadowed for a while such bourgeois tendencies as Machism and neo-Kantianism. It considered as the most important of Hegel's works the *Philosophy of History* and the *Philosophy of Right*, in which the conservative side of Hegel's thought receives fullest development.

Neo-Hegelianism devotes particular attention to theories which maintain, for example, that the more the individual knows God, the freer he is; that a nation or state is an eternal entity, and that the individual as a part of it is completely subordinate to it and must wholly give himself up to it; that the basic content of the history of humanity is a struggle of nations, not classes, an unfolding of absolute spirit, inherent in the soul of this or that people. Neo-Hegelians criticize Hegel on the ground that he introduces too much "content"; according to some of them dialectics has to do only with spirit, thought. Such "dialectics" leads to irrationalism.

The Italian neo-Hegelian, Giovanni Gentile, developed a subjective-idealist theory: the only existence is in the pure act of thinking, spirit. Nature is only past thought, pure passivity; history is a product of free creative soul; there are no objectively existing laws in the world;

the only laws are products of the acting subject. The philosophy of Gentile—"actualism"—represents an ideology of reaction, of imperialism, actively opposed to the progressive movement of historical necessity. Gentile himself was a member of the Italian fascist party, and its most prominent philosopher. Neo-Hegelianism in general is a philosophy of disintegrating capitalism.

Neo-Kantianism, bourgeois philosophical tendency of the second half of the nineteenth century which fashioned into a system all that was subjective-idealist, narrow, reactionary, and dead in the philosophy of Kant. Neo-Kantianism arose as a reaction against the materialist elements in the views of Büchner, Moleschott, and others, which had gained currency after the German Revolution of 1848; later, neo-Kantianism devoted itself to sharp criticism of Marxism. Flourishing in the 'eighties and 'nineties, neo-Kantianism was widespread in Germany, Italy, and Russia. After the imperialist World War of 1914-18, it yielded first place to a still more reactionary tendency—neo-Hegelianism (*see*).

The pioneers of neo-Kantianism in the 'fifties and 'sixties were the physicist Helmholtz and the philosophers Liebmann, Lange, and Zeller. They tried to adjust modern science to the idealistic aspects of Kant's doctrines. Thus Helmholtz emphasized the unknowability of Kant's "thing-in-itself"; Lange argued that materialism, as a principle and a world view, is fruitless and only useful as a method of investigation. Liebmann saw in the "thing-in-itself" a vestige of metaphysics. The neo-Kantians did not simply announce the slogan, "Back to Kant," but also criticized Kant for his "concessions" to materialism. The idealistic extension and revision of Kant's philosophy was most elaborately carried out by the Marburg School of South-Western Germany (Cohen, Natorp, Cassirer); and the Freiberg School (Windelband, Rickert). Neo-Kantianism became a sort of official philosophy of the Second International. Bernstein, Max Adler, and later Kautsky and others sought to substitute neo-Kantianism for dialectical materialism.

Newton, Isaac (1642-1727), great English physicist, astronomer, and mathematician, the formulator, following Galileo, of classical mechanics. Newton discovered the law of universal gravitation and worked out the theory of the movement of heavenly bodies. He believed that God had given the initial impulse for the movement of the heavenly bodies. This and other idealistic weaknesses in Newton's thought, and the generally metaphysical character (*see* Metaphysics) of his world view were subjected to a severe criticism by Frederick Engels in *Dialectics of Nature*. Newton, as Engels observed, brought to its highest development the mechanistic and metaphysical trend in natural science. His chief work is *Principia Mathematica*, 1686.

Nominalism, a tendency in medieval philosophy which maintained that the only real existences are the separate concrete things with their unique individual properties, that general concepts do not exist independently and are only names, words, or abstractions of human reason. The positive side of nominalism consists in the fact that it recognized the primacy of the object and the secondary character of the concept. This type of thought clearly moved in a materialist direction. Thus Marx and Engels considered nominalism "the first expression of materialism" in the Middle

Ages. However, nominalism did not understand the objective significance of concepts and their dialectical connections with the system of things. Outstanding nominalists were Duns Scotus (1266?-1308) and William of Occam (1280-1349).

Noumenon and Phenomenon, concepts which play an important role in the philosophy of Immanuel Kant. Noumenon signifies the "thing-in-itself," the reality; phenomenon signifies its appearance, the way it appears to us. It is considered to be something different in principle from the noumenon. Experience, according to Kant, is only of phenomena, which arise out of the action of the unknowable "things-in-themselves" on the human being. Noumena thus represent a transcendental reality, beyond phenomena and any knowledge possible to us. Dialectical materialism denies the existence of any essential barrier between phenomena and "things-in-themselves."

Ontology (Gr., *on*—being; *logos*—logic), a term developed in modern philosophy, signifying a theory of existence or reality, in distinction from gnosiology (epistemology), the theory of knowledge. Such a distinction between thought and existence is characteristic of bourgeois philosophy and formal logic. For example, in the work of Christian Wolff (1679-1754), the author of the term "ontology," the theory of existence is already separated from the theory of knowledge. The subject matter of ontology, according to Hegel, is abstract, general philosophical categories: being, substance, cause, action, phenomenon, and the like. In the further development of bourgeois philosophy this distinction between ontology and epistemology was converted into an opposition and fostered by various skeptical and agnostic tendencies. It laid the basis for the tradition, in formal logic, of looking upon the categories and forms of thought in separation from existence. Marxism unconditionally rejects the separation of the theory of knowledge and theory of reality. The Marxian theory of knowledge, of logic, in the words of Lenin, "is a theory, not of the external forms of thought, but of the laws of evolution of all material and mental [ideal] phenomena, *i.e.*, of the evolution of all the concrete content of the world and the knowledge of it—the sum total of the *history* of knowledge." (*Philosophical Notebooks*, p. 94, Russian ed.)

Pantheism (Gr., *Pan*—all; *Theos*—God), the philosophical doctrine according to which the deity, conceived of impersonally as a spiritual principle, is to be found not outside the limits of the observable world but pervasively within it. Nature and God are held to be identical. Among the representatives of pantheistic tendencies in the history of thought are Johannes Scotus Erigena (ninth century) and Nicholas of Cusa (fifteenth century). Elements of pantheism occur also in the philosophy of Giordano Bruno (*see*). Beginning with the sixteenth century pantheism played a positive role as a forerunner of materialism. Under the influence of a rapid evolution of natural science and industry, systems that were originally idealistic took on more and more materialist content and endeavored to reconcile matter and spirit by means of pantheism.

Partisanship of Philosophy. Dialectical materialism teaches that philosophy, like science and art, has vital relationships to class and party phenomena. "Recent philosophy is as partisan as it was two thousand years ago." (Lenin, *Collected Works*, Vol. XIII, p. 311.)

Behind the struggle of opinions in philosophy there is always the struggle of classes and parties in society. Lenin observed that behind the verbal operations of the idealistic Machists "it is impossible not to discern clearly the partisan struggle in philosophy, a struggle which ultimately expresses the tendencies and ideology of classes hostile to one another in modern society." (*Ibid.*)

In class society, philosophy outside of and above class and party does not exist. Philosophy and science are always utilized by this or that group as a spiritual weapon in the class struggle. Leading Marxist thinkers always have emphasized the partisan character of dialectical materialism and the equally partisan or class character of its opponents.

Pavlov, Ivan Petrovich (1849-1936). A natural scientist, materialist-physiologist, Pavlov, through his researches on problems of digestion and of higher nervous activity, created an epoch in the development of physiological science. All contemporary theoretical physiology is, to a considerable extent, under the influence of Pavlov's ideas. His work on the higher nervous activity of animals has proved especially fruitful. By means of innumerable researches Pavlov discovered that besides the so-called unconditioned reflexes (often called instincts), which always operate directly without any preliminary activity or preparation of the organism (in relation to nutrition and preservation), there exist also *conditioned* reflexes, formed during the life process of the individual living thing. For example, Pavlov established the fact that the salivary process of animals which, it was previously thought, was connected only with the act of taking food, could be induced also by sounds which constantly accompany feeding; by the sight of the feeding utensils; or even upon signaling regulated in connection with the process of feeding, and in like ways. Reflexes are conditioned by the activity of the central nervous system. However, their physiological mechanism is varied, as is their qualitative content. The theory of conditioned reflexes was grounded on the objective study of the psychic life of animals as well as men. In the later years of his life Pavlov devoted himself to the study of the physiology of the individual. The scientific discoveries of Pavlov played an important role in the struggle against the negative influence of idealism in the understanding of psychic phenomena. He was a materialist in his world view. The chief works of Pavlov in English are *Lectures on Conditioned Reflexes* and *Conditioned Reflexes and Psychiatry.*

Perception, the direct reflection of reality through the physical senses. The term perception has often been used as synonymous with sensation (*see*), but it is well to distinguish them as different levels in our acquiring knowledge of the material world. We have sensations of hot and cold, of colors, of hardness and softness, etc., but through experiencing these sensations we *perceive* objects and relationships. In other words, sensation provides us with the raw materials of knowledge but these are worked up as a result of experience (based on the brain and central nervous system) into a perceived world. Perception presupposes the existence outside the perceiver of a surrounding world of material subject-matter acting on his sense organs. Perception, however, is but the first step in the reflection of reality in human consciousness. Scientific knowledge, proceeding by means of the evidence of the senses and with the help of abstractions, attains to general conceptions reflecting

the laws of nature and nature's development. In respect to the age-old controversy between materialism and idealism, the question is whether perception is the reflection in consciousness of objective reality or is the creation of consciousness itself and thus reflects nothing objective. Materialism has held the former view, subjective idealism the latter.

Phenomenalism, a philosophical doctrine which maintains that human knowledge can grasp only the appearance (phenomenon); the reality of anything, its essence, from this point of view, is unknowable. Phenomenalism takes the same position as agnosticism (*see*). The German philosopher Kant (*see*) held that the world was made up of phenomena, behind which stand the "things-in-themselves," to a knowledge of which human reason cannot penetrate. Phenomenalism, divorcing objective experience from reality, leads to subjective idealism. Dialectical materialism wholly rejects the phenomenalistic conception of the world. There is no impassable gulf between appearance and reality. Appearance is the appearance of reality. (*See* Reality and Appearance; Noumenon and Phenomenon.)

Phenomenon (appearance). (*See* Reality and Appearance; Noumenon and Phenomenon; Phenomenalism.

Philosophy (Gr., *Philosophia*—the love of wisdom), the name for the whole body of thought, in its historical development, concerning the kind of world we live in, the kind of beings we are, and our relation to the world. In this sense everyone has a philosophy but as a logically thought-out and organized conception of nature and man, most such "philosophy" remains eclectic (*see* Eclecticism) and loose. Philosophy is traditionally expressed in terms of fundamental attitudes towards such basic questions as the general nature of existence or being (ontology); of the nature, limits, and extent of knowledge (epistemology, logic); the problems of human values or the good life (ethics); of social organization (political or social philosophy); and of art and beauty (esthetics). One of the most fundamental problems of philosophy concerns the relation of thinking to being, or in technical terms, of epistemology to ontology. In accordance with the way in which this problem is handled, philosophical tendencies divide themselves into two chief camps—materialism (*see*) and idealism (*see*). The history of philosophy, in fact, has consisted primarily of the struggle of mankind towards a materialist or scientific world view against all forms of idealism (*see*), mysticism (*see*), and obscurantism — in short, against religious attitudes in all their forms.

Philosophy arose in China and India with the beginnings of civilization. It began in Europe in the sixth century B.C. in ancient Greece, where it attained a brilliant development and succeeded in outlining the main types of world view, such as those of materialism and idealism, and in defining the major problems that have concerned philosophy ever since. In the Middle Ages, philosophy scarcely existed as an independent discipline, but was generally regarded as the "handmaiden of theology." Together with the development of modern science by the bourgeoisie in the seventeenth and eighteenth centuries, classic bourgeois or modern philosophy grew up. This philosophy achieved its highest development in the materialism of the eighteenth-century French philosophers of the Enlightenment and in the development of dialectics by Hegel

in Germany in the first decades of the nineteenth century. After this, bourgeois philosophy began to degenerate and to assume the form of reactionary idealistic or completely agnostic (*see* Agnosticism) systems devoid of any scientific significance. Marx and Engels developed in dialectical materialism the only philosophy that could be called genuinely scientific and progressive in relation to the basic problems of the modern period.

For a long time, as a consequence of the relative backwardness of the special sciences, philosophy was regarded as a kind of "science of sciences," including within itself all branches of human knowledge and giving guidance to them all in virtue of its possession of a monopoly on "first principles." But by the middle of the nineteenth century, the natural and social sciences achieved a development that put an end to this situation, insamuch as they no longer required a philosophy standing over and above them. The Marxist dialectical method (*see*), itself generalized from all human experience and especially the sciences, provides the means for the study of nature and society in a scientific way. Marxist philosophical materialism, also derived from the whole of human experience and especially from that involved in the labor necessary to maintain our life, combats all tendencies towards idealism and teaches that what science learns in every field is the laws of motion of matter in one or another form. Dialectical materialism, in short, is derived from the knowledge acquired by all experience and science and in turn helps to direct behavior and the sciences in a progressive direction. Historical materialism (*see*) represents an application of the basic principles of dialectical materialism to the study of human society. These theoretical principles constitute the foundations of scientific communism.

Philosophy, Ancient. (*See* Ancient Philosophy.)

Philosophy of Race and Blood, the term applied by ideologists of German national-socialism, such as Alfred Rosenberg, to their philosophical "theories."

In the epoch of imperialism all the contradictions of capitalism grow particularly acute. With the aim of eliminating class conflicts which threaten their rule, the reactionary bourgeoisie tries to create "theories" which would not only hide the true character of class contradictions but would justify the existing system in the eyes of the workers. The "philosophy of race and blood," with its "racial community" and "community of blood," represents such a theory. Basically, it asserts that classes and class contradictions do not exist, that they are the inventions of Marxists, that the whole nation is an inseparable whole, tied together by blood, soul, and the like. In the opinion of national-socialist theoreticians, "race" and "blood" determine the achievements in politics, science, art, religion, etc., of this or that nation. Moreover, these factors determine the whole course of history. The "philosophy of race and blood" preaches the reactionary theory of the rule of a "superior race" over "inferior" races, sedulously cultivating the most savage anti-Semitism and chauvinism. It is at the same time mystical in character. For example, Rosenberg proclaimed that the influence of race and blood "cannot be explained by reasonings or the investigation of causes and effects." The ideologists of German national-socialism expressed the view that representatives of the "Nordic race" in ancient times, having become conquerors in different parts of the world, gave rise to the ruling class of such countries as Iran, India, ancient

Rome, Greece, France, and Germany.

Philosophy, Speculative, a philosophy which approaches the investigation of reality from the point of view of *a priori* (*see*) principles. Speculative philosophy "imagines that [one] can produce out of [one's] head, in the first place, the basic forms of being, the simple elements of all knowledge, the axioms of philosophy; then that [one] can deduce from these the whole of philosophy or world schematism, and then, by sovereign decree, impose this conception . . . on nature and humanity." (Engels, *Anti-Dühring*, p. 46.)

The chief source of knowledge, according to speculative philosophy, is "pure" reason, the pure and direct "force of the mind," without the help of the senses. In modern times, representatives of speculative philosophy include such thinkers as Descartes, Malebranch and Leibniz as well as exponents of classic German idealism. Subjecting it to severe criticism, Engels pointed out that speculative philosophy, in choosing to begin from "*a priori* principles," has a diametrically opposite starting point from that of dialectical materialism.

"The principles [of dialectical materialism] are not the starting point of the investigation, but its final result; they are not applied to nature and human history, but abstracted from them; it is not nature and the realm of humanity which conform to these principles, but the principles are only valid in so far as they are in conformity with nature and history." (*Ibid*, p. 42.)

Plato (427-347 B.C.), ancient Greek idealist philosopher, ideologist of the slave-holding aristocracy. Plato was the creator of the philosophical system of objective idealism, which holds that, beside the world of perceived things (the unreal world) there exists a basic (true) world of ideas, grasped by reason; for example, besides actual horses, there exists, according to Plato, "horseness"; besides tables, "tableness," and so on. Things, according to him, are only shadows of ideas. Ideas are eternal, things are transitory. Whereas things are perceived in terms of individualized impressions, ideas have a generalized character. Thus the true knowledge of the essences of things is given not by sensations, but only by reason, through concepts. The idealistic philosophy of Plato played an important role in the development of the Christian doctrines concerning the immortality of the soul and the sinfulness of the flesh, *i.e.*, of matter. Plato's philosophical principles were all set forth in dialogue form. Among the most important of his dialogues are *Republic*; *Phaedo*; *Phaedrus*; *Symposium*; *Meno*; *Sophist*; *The Laws*.

Plekhanov, George V. (1856-1918), a leading Russian Marxist. At first Plekhanov was a Narodnik (Populist) but while in emigration he broke with the populist movement and in 1883 organized abroad the first Russian Marxist group called the "Emancipation of Labor group." Plekhanov's theoretical works during this early period possess great value in terms of their contribution to Marxism. "Such works of his as *Socialism and the Political Struggle*; *Our Differences*; and *On the Development of the Monistic View of History* cleared the way for the victory of Marxism in Russia." (*History of the Communist Party of the Soviet Union*, p. 12.)

A particularly noteworthy contribution of Plekhanov was his struggle against idealism, against the numerous attempts to unite Marxism with Kantianism. Certain problems involved in the materialist conception of history, as, for example, the question of the role

of the individual in history (*see* Individual in History, the Role of the), were treated by him with great success. As Lenin pointed out, Plekhanov dealt a decisive blow to the Narodnik movement, and also sharply criticized the revisionism of Eduard Bernstein. However, Plekhanov underestimated the revolutionary role of the peasantry and, on the other hand, believed that the liberal bourgeoisie could render decisive support to the revolution. After the second congress of the Russian Social-Democratic Labor Party (1903), these mistakes led Plekhanov to go over to the Mensheviks. The political evolution of Plekhanov is reflected in his theoretical works. The philosophical works, written from 1883 to 1903, Lenin characterized at that time as "the best in all the international literature of Marxism." (Lenin, *Collected Works*, Vol. XXIV, p. 135, Russian ed.) He criticized, however, serious weaknesses in the philosophical writings of Plekhanov. For example, Plekhanov fell into errors in dealing with the theory of knowledge, separating it from dialectics (not understanding that dialectics contains a theory of knowledge); could not make a clear distinction between the materialistic and idealistic concepts of experience (thereby providing a loophole for idealism); overestimated the role of geographic environment in the social-economic process and made several other serious philosophical mistakes. Among the important works of Plekhanov are *Socialism and the Political Struggle*, 1883; *Our Differences*, 1885; *On the Development of the Monistic View of History*, 1895 (in English under the title, *In Defense of Materialism*); *Essays on the History of Materialism*, 1896; *The Materialist Conception of History*, 1897; *The Role of the Individual in History*, 1898.

Pluralism, the name for any of a number of philosophical viewpoints which hold that reality consists of a multiplicity of independent parts or substances. Thus it is opposed to monism (*see*) whether it is materialist or idealist, and to dualism (*see*), or the theory that there are two basic substances. Leibniz (*see*), for example, taught that the world consists of an infinite number of self-contained and completely independent monads (*see*). In recent bourgeois philosophy the outstanding representative of pragmatism (*see*), William James, looked upon the world as not one organic whole but as a multiplicity of independent parts connected only loosely, if at all, with one another. Such a philosophy opposes materialism in its two most fundamental aspects: (1) that matter is the substance of the world, and (2) that the world is one interconnected whole of causal relations. Pluralism's "loose" universe is a way of denying any universality to science and of allowing room for "free-will," "pure" chance, immortality, spiritual forces. As with James, so with John Dewey, it is a world in which, literally, "anything can happen."

Positivism, one of the most widespread of the anti-materialist currents in contemporary bourgeois philosophy. Claiming to stand above materialism and idealism, positivism holds that it bases itself only on "experience" and that, consequently, it must reject the attempt to discover the essential nature of things. In this regard, it takes the position of philosophical agnosticism (*see*). However, limiting its concept of experience exclusively to subjective sensations, it falls into the position of idealism. When it deals with social phenomena, it tends to explain the evolution of society by

the levels reached in the intellectual development of man, of which the three principal stages are: the theological, the metaphysical, and the positive, as asserted in the work of Comte (*see*), nineteenth-century progenitor of positivism. Positivism supports the existing order, admits only slow evolutionary processes, and opposes revolution. At the close of the nineteenth and beginning of the twentieth century all philosophers who tried to find a place somewhere between materialism and idealism, and to "transcend" the opposition between these two basic schools of thought, tended to gravitate to the positivists.

Lenin in his *Materialism and Empirio-Criticism* presents a thoroughgoing critique of positivism. After the First World War positivism was revived in Europe, especially in Austria, and spread to England and America under the name of *logical positivism* or *logical empiricism.*

Possibility and Actuality. Possibility arises out of the objective content of existence. Possibility is not yet actuality, but can become so under definite conditions. Actuality is the realization in existence of possibility. On this basis we must distinguish formal, empty, from real possibility. From the point of view of the formalistic analysis of possibility, "anything is possible": it is possible that the moon is now crashing to earth, and the like. Formal or abstract possibility, unlike genuine possibility, is not grounded on objective conditions and cannot become actuality. Among the conditions necessary for the transformation of possibility into actuality, deliberate and purposeful activity plays a decisive role. For example, the building of socialism in one country which is surrounded by capitalism was possible, but was made actual only through the fact that the Bolshevik Party deliberately pursued a certain policy, a policy capable of accomplishing the task in question under the prevailing objective conditions.

Practice. (*See* Theory and Practice.)

Pragmatism (Gr.,—action, practice), an idealistically inclined and reactionary tendency in contemporary bourgeois philosophy, akin to positivism (*see*), denying the objectivity of truth and maintaining that the value of scientific theories is to be found, not in the fact that they actually reflect reality, but exclusively in the utility which they yield in this or that particular case. Though paralleled by similar tendencies on the continent of Europe, pragmatism is thought of primarily as an American philosophical movement associated with the names of C. S. Peirce, William James, and John Dewey. It is often thought of, indeed, as the distinctive philosophy of the United States and regarded by its bourgeois critics as the introduction of opportunism into philosophy. For William James pragmatism was especially a way of justifying religious beliefs, which he recognized could not be justified on rational grounds, through their supposed "workability" or usefulness to us in practice. In endeavoring to achieve this, James was led to deny that truth was the reflection in our minds of objective reality, holding instead that it was only the quality some ideas possessed of helping us to achieve our ends. John Dewey sought to avoid the obvious crudity of James's position but nevertheless followed his general line. For Dewey any proposition of science, such as "Water is H_2O" is not a statement concerning the nature of water as it exists independent of our experience, but only a sort of recipe which tells us that if we perform such

and such operations, we will experience such and such results. This method enables him to deny that we have knowledge through our propositions and scientific formulæ of any objective reality, holding instead that they give us only anticipations of future experience. This same method is used by the pragmatists to deny the possibility of any social science and hence the validity of long-range planning. In addition to denying objective truth, Dewey and the pragmatists generally deny causality and any necessity in nature. Pragmatism is the sworn enemy of materialism, and especially of Marxism.

Prediction, Scientific, the capacity to foretell, on the basis of scientific knowledge of the laws of nature and society, particular phenomena, events, processes which can or must arise in the future. Natural and social science offer numerous examples of prediction. Science is not only able to predict the exact time, place, and circumstances of the recurrence of such events as eclipses of the sun and moon, etc., but is able also to predict new events, things, or processes which have never occurred or been observed before. Thus, for example, the famous Russian chemist Mendeleyev, analyzing the table of chemical elements, arrived at a hypothesis concerning the existence of three further elements, giving their atomic weights and defining their properties, which prediction was fully substantiated by the discovery of the elements of germanium, gallium, and scandium.

On a basis of knowledge of the laws of evolution of organisms, predictions have been made concerning the possibility of creating new forms of plant and animal life by hybridization, artificial selection, and the control of environmental conditions. In the field of social phenomena scientific predictions of the course of history became increasingly possible after Marx and Engels had discovered the laws of social evolution. "Marx treats the question of communism the same way as a naturalist would treat the question of the development of, say, a new biological species, if he knew that such and such was its origin, and such and such the direction in which it was changing." (Lenin, *Selected Works*, Vol. VII, p. 77.)

A knowledge of the laws of social evolution affords the possibility of predicting not only the general direction and result of the historical movement, but also provides the possibility of determining more or less exactly the actual time of occurrence of events, such as the periodic crises of capitalism, although in the field of social phenomena, this type of prediction is incomparably more complex than in natural science. A knowledge of the laws of dialectics, of social evolution, of revolution and political struggle permits the party of the proletariat to determine the moment of historical action without falling into serious error.

Primary and Secondary Qualities. The metaphysical thinkers of the seventeenth and eighteenth centuries regarded properties such as extension, motion, shape, and mass as primary qualities of bodies while color, smell, taste, sound, etc., were termed secondary qualities. They believed the primary qualities of things were objective, that is, belonged to the objects themselves, inasmuch as they were preserved throughout the various changes of bodies. But they regarded the secondary qualities as subjective, that is, as existing only in the perceiving individual and not belonging to things themselves. This division naturally arose

from the abstract metaphysical approach of these philosophers and from their initial separation of mind and matter, subject and object, as two distinct and independent entities. This division afforded the idealist Berkeley (*see*) the opportunity to regard as subjective not only secondary qualities but also primary ones, and thus to deny altogether the objective existence of material things.

Marxist materialism, approaching this question dialectically, regards this metaphysical distinction as inadequate, considering secondary qualities as well as primary ones to be valid reflections in the mind of the things themselves. Thus it regards the colors of bodies, to take one example, as functional products of their surfaces, of ordinary light, and of our visual organs and brains. Color, therefore, is neither merely subjective nor objective, but is a real reflection in our minds of the nature of things. The social and historical practice of mankind adequately proves the objective character of our judgments of color, taste, smell, sound, etc.

Production Relations, relations established among people in the process of production of material goods. Such production can never be accomplished by people singly; it is always social in nature. There are various types of production relations. Fundamental among these relations is that of people to the means of production, that is, the question of power and control in respect to such means. The production relations determine the system of social life. Because of the ineradicable economic antagonisms of class society, production relations between classes are relations of subjection and mastery, while in socialist society the production relations among people are those of co-operation and mutual aid. However, the production relations are not in the nature of passive consequences of the evolution of productive forces. While dependent, in their own evolution, upon these forces, they act in turn on the productive forces, hastening or delaying the evolution of the latter. In capitalist society, the private ownership of the productive forces is in profound contradiction to the social character of the productive system, frustrate the possibilities of development of this system and periodically lead to the most serious crises. (*See* Materialism, historical.) In socialist society the production relations and forces are in harmonious correspondence, promoting further growth and development.

Productive Forces, tools (instruments, machines, utensils, and the like) by means of which material goods are produced, and people, who set in motion these tools of production aided by the accumulation of experience and knowledge. The productivity of human labor is dependent upon the historical level of development of the productive forces, which marks the degree of mastery of man over nature. Herein lies the significance of the productive forces and their growth for the life of society. The existence of the savage is unthinkable without his bow and arrow, his stone hatchet and other primitive implements, just as the existence of contemporary capitalism is unthinkable without machines and workers to operate them. The evolution of productive forces, which is first of all an evolution of the tools of production, lies at the basis of the evolution of the mode of production (*see*), that is, the productive system generally, including the production relations. This evolution, in its turn, leads to changes in the whole social superstructure. (*See* Base and Superstructure.) Under capitalism the evolution of the

productive forces proceeds on the basis of profound contradictions which follow from the antagonism between the social character of production and the private, capitalist character of the appropriation of its products. In a socialist society, the productive forces possess unbounded possibilities of integrated growth and development which are directed towards raising the material and cultural level of the people.

Progress, the evolution of society from the lower to the higher, the transition to a higher level of development of productive forces and human culture. The idea of social progress arose in the seventeenth and eighteenth centuries in connection with the evolution and expansion of the industrial bourgeoisie which was moving against the forces of feudal society ("the theory of progress": Condorcet in France, Herder and Kant in Germany). In the ideology of the post-World War I bourgeoisie, the problem of progress tended to be approached pessimistically, in terms of a denial of the capacity of mankind for progress to a higher phase of social life (Spengler). In idealistic philosophy progress is explained as an intervention of divine will or as a result of the action of some sort of reason or mind which controls the world, in terms of which "the universal historical process" (Hegel) fulfills itself.

For historical materialism the objective criterion of social progress is the evolution of the *productive forces* (*see*) and, together with this evolution, the revolutionary reconstruction of society necessitated by the contradictions between the evolution of the forces of production and the relations of production (*see*). As there are no limits to the evolution of production, so there are no boundaries to the possibilities of social progress. This is not because progress itself consists in a greater complexity of technique, but because the increased efficacy of the productive system makes it possible to release all the manifold capacities of the human personality and to set up the necessary conditions for their actual development in the widest sense on the part of the whole people. It is for this reason that genuine progress grows less and less compatible with present-day capitalism, while under socialism and communism there is unlimited scope for the unhampered humanistic development of art, science, and culture generally.

Quality. Quality is that definiteness of a given thing which is inseparably connected with its existence. Every thing or process in nature and society possesses given characteristics through which its quality is defined: The quality is that which distinguishes this or that kind of thing or process from all others. On this basis we differentiate socialistic and capitalistic social relations, water and hydrogen peroxide (H_2O and H_2O_2), water and steam, animals and plants, and so on. Scientific knowledge must in the first place establish the qualities of the phenomenon being studied, that is, define the specific properties which differentiate it from other things. "Anything which exists," wrote Lenin, "is definite, determinate." (Lenin, *Philosophical Notebooks*, p. 107, Russian ed.)

If the qualities of the object are not determined, it is impossible to clarify the laws of its evolution. In any concrete existence, the quality which differentiates it from other things is in process of change, contrary to the metaphysical conception of evolution as a movement fulfilling itself within the limits of a certain fixed set of qualities. Having conceived of quality and quantity as

independent of each other, metaphysicians excluded the possibility of the emergence of new qualities and the destruction of the old through quantitative changes. Dialectics, on the contrary, recognizing the interdependence of quality on quantity, seeks to discover in the case of every given quality the quantitative limits within which alone it exists and beyond which it is transformed into a new quality. (*See* Transition from Quantity to Quality.) Marxist materialism manifests itself, with regard to quality, in the doctrine that all qualities rest on quantities. Engels wrote: "All qualitative differences in nature rest on differences of chemical composition or on different quantities or forms of motion (energy) or, as is almost always the case, on both. Hence it is impossible to alter the quality of a body without addition or subtraction of matter or motion, *i.e.*, without quantitative alteration of the body concerned." (*Dialectics of Nature*, p. 27.)

Quantity. (*See* Transition from Quantity to Quality.)

Rationalism. In regard to basic questions in the theory of knowledge, rationalism represents a reliance upon "reason" as the source of genuine knowledge. It usually conceives of reason as something opposed to sense experience, and, contrary to empiricism (*see*), regards it as the ultimate source of all knowledge. Rationalism has also been opposed to mystical and obscurantist tendencies, and its outstanding representatives are Descartes, Spinoza, and Liebniz, all of whom conducted a struggle against various aspects of the dogmatic theological world view characteristic of feudalism. The progenitor of the rationalism of modern times, Descartes, held that just as the mathematician solves mathematical problems through abstract reasoning, the philosopher too can reach truth by the means of "pure" reason. Sense data, according to Descartes, are a source of possible deception; reason alone allows us to comprehend the nature of existence. Spinoza, in somewhat similar fashion, held that knowldege based on experience is untrustworthy and accidental, while reason yields true knowledge characterized by logical necessity. This position is symptomatic of the fact that Spinoza did not carry the materialist elements of his philosophy far enough or work them out consistently.

If, as it is held, empiricism converts experience into an absolute, and underestimates the role of reason in knowledge, it is equally true that rationalism divorces reason from experience and conceives thought to be absolute. The separation of the logical from the sensory inevitably leads to idealism. Dialectical materialism overcomes the onesidedness of both rationalism and empiricism by a scientific treatment of sensory and logical elements in knowledge, in which they are considered as connected in an organic unity. The starting point of genuine knowledge is human sensation, what the sense organs can furnish. But direct sense impressions do not of themselves yield knowledge in the proper sense of that word. Knowledge of universal connections and relations is possible only by the help of reason, of systematic theory. Logical concepts (the rational element in knowledge) are constructed on the basis of sensory data. Thus the sensory and the logical are interconnected.

Realism, a general term signifying, in modern philosophy, belief in the objective reality of the surrounding world. The only consistently worked out realism is dialectical materialism. In bourgeois philosophy the term realism, like

that of naturalism, is often used to avoid the more scientifically exact term, materialism, or in order to veil certain idealistic views. This was especially exemplified in the German philosopher Wundt, who called himself a critical realist. A philosophical tendency which arose in America and England after the First World War (1914-18) was also called critical realism. Flirting with materialism, and supposedly struggling against idealism, critical realism has constantly vacillated through its inability to break away from religion. (*See* Realism, medieval.)

Realism, Medieval, an idealistic tendency in medieval philosophy, derived from Platonism (*see* Plato), which holds that general concepts ("universals") possess a real and objective existence prior and superior to the existence of material things. Medieval realism was the philosophic basis of Catholicism. Among the leading representatives of realism were Anselm of Canterbury (1033-1109) and William of Champeaux (1070-1121). Representatives of the nominalist tendency in scholasticism (*see* Nominalism) carried on a struggle against realism.

Reality and Appearance. Reality signifies the inner and fundamental content and relationships in nature, the basis of the countless and diversified phenomena (appearances). Thus the phenomenon or appearance is a manifestation of the inner reality; the two are interconnected and represent a unity. "Reality manifests itself. The manifestation is real." (Lenin, *Philosophical Notebooks*, p. 263, Russian ed.) But reality and phenomenon do not directly coincide. Thus, for example, the profit realized from commercial capital appears to be a simple addition to the price of goods. But in reality the source of profit is the exploitation of workers who create surplus value. Thus the reality does not present itself directly in the phenomenon; it is necessary to seek it out, to discover it. "All science would be superfluous if the appearance, the form, and the nature of things were wholly identical." (Marx, *Capital*, Vol. III, p. 951.)

The task of science is to resolve the contradictions between the reality and appearance of things, to discover the basic content of the reality beneath and within the phenomena. "Human thought reaches progressively deeper, proceeding from phenomenon to reality, from reality of the first order, so to say, to reality of the second order and so on *without end.*" (Lenin, *Philosophical Notebooks*, p. 263.) In regard to the question of reality and appearance, dialectical materialism is to be distinguished alike from agnosticism which, divorcing reality and appearance, holds that it is impossible to assert that reality is knowable; and from vulgar empiricism, which identifies them and limits itself only to the superficial aspects of things.

Reflection, Theory of. "At the roots of the theory of knowledge of dialectical materialism lies the recognition of the objective world and its reflection by the human mind." (Lenin.) Sense data and concepts (*see*) represent a kind of reflection or copy of the things and processes of the objective world. Sensation, the starting point of our knowledge of things, "is a direct connection of the mind with the external world; it is the transformation of energy of external excitation into a mental state." (Lenin.) The second stage of knowledge is the interrelation and generalization of the separate phenomena, the construction of concepts and categories, the discovery of laws reflecting the existing content of the objective world.

In distinction from the metaphysical conception, which understands "reflection" as a static, passive contemplation or mirroring of the objects of the external world by the human consciousness, the Marxist-Leninist theory of reflection understands the process of knowledge as an active one, characterized by the resolution of internal contradictions. "It is necessary to understand the reflection of nature in the mind of man not as lifeless or abstract, not as motionless, but as an active process of constant movement, of the rise of contradictions and their resolution." (Lenin, *Philosophical Notebooks*, p. 188, Russian ed.) The reflection of reality in people's consciousness in class society is affected by the nature of the society. For the ultimate origin of social ideas, theories, and views, it is necessary to investigate the conditions of the material life of society, social practice in its broadest sense, which these ideas and theories, in various ways, reflect.

Relativism, the philosophical doctrine which asserts the conditional, subjective character of human knowledge and which denies absolute or objective truth. Maintaining a kind of absolute relativity in knowledge, this position naturally tends towards subjective idealism (*see*). Dialectical materialism sees both a relative and an absolute element in all knowledge. Its relativity consists in the fact that knowledge at any one level of historical development is not and cannot be complete, but at the same time this knowledge must be regarded as one of the elements or constituents of absolute or objective truth.

"The materialist dialectics of Marx and Engels certainly does contain relativism, but is not reducible to relativism, that is, it recognizes the relativity of all our knowledge, not in the sense of the denial of objective truth, but in the sense of the historically conditional nature of the limits of the approximation of our knowledge of this truth. (Lenin, *Selected Works*, Vol. XI, p. 199.) (*See* Truth; Absolute Truth.)

Relativity, Theory of. Theory in contemporary physics, a basic aspect of which represents a new view of space and time. The theory of relativity, fertile in new and progressive ideas, arose at the beginning of the twentieth century, in a period characterized by the breakdown of the old concepts of classical mechanics which stemmed from Newton (*see*). Towards the end of the nineteenth century, classical physics was confronted by a series of natural phenomena which it was unable to explain. Prominently involved in these phenomena were problems associated with the electro-dynamics of moving bodies. Classical physics could not do without the notion of a special material medium, the ether, in relation to which the motion of a body was considered to take place. But experiments arranged with the object of determining the movement of the earth in relation to such an ether led to naught: no ether could be found. There followed (1905) the creation of the theory of relativity by Einstein.

In order to overcome the difficulties connected with the rejection of the ether, the theory of relativity made radical changes in the classical conceptions of space and time. In the work of Newton, the father of classical mechanics, space and time are represented as self-sufficient realities, separated from matter and from each other. The theory of relativity, on the other hand, postulates the closest connection of space and time with each other and with the movement of matter; motion reveals the relative character of space and time.

This relativity is a result of the fact that spatial intervals or distances appear different from the point of view of differently moving bodies.

The relativity of space and time, however, does not in any way negate their objectivity and absoluteness in the philosophic sense, their objective status as forms of the existence of matter, not dependent on any particular kind of determination (as Einstein himself points out) of what takes place in nature. This position was already taken in the so-called special theory of relativity which concerns uniform and rectilinear motion of bodies.

The general theory of relativity, advanced also by Einstein about 1916, covers any kind of motion of material bodies, thus widening the scope of the thesis. The general theory of relativity also presents a new concept of gravitation, differing from Newton's. This concept rejects the notion of action at a distance through "empty" space, and on the contrary postulates a universal space filled with a material gravitational field. On the basis of the new theory of gravitation it became possible to explain a number of phenomena which were a source of perplexity to classical physics. Various observations, made on the basis of the general theory of relativity, although they have not always been as exact as could be desired, have on the whole borne out the correctness of the calculations in regard to the displacement of the orbits of planets (for example, of the planet Mercury), the deflection of light rays in the gravitational field (the Einsteinian "effect") and in other matters.

The theory of relativity includes a new law of the conservation and transformation of energy, in accordance with which the mass of a body and its energy are equivalent, so that this law is looked upon in the theory of relativity as the law of the transformation of energy into mass and vice versa. In this form it has received complete confirmation, and has not only led to the explanation of a whole series of phenomena, for example, the deviation of the atomic weight for chemical elements from whole numbers, but it provided the theoretical foundation for the release of "atomic energy" through nuclear fission. In general, the theory of relativity represents a great stride forward in the evolution of human knowledge. However, like every theory, it cannot be regarded as absolute or complete; there are still many phenomena which it cannot explain. While the essential scientific content of this theory represents a profound contribution, bourgeois philosophers and scholars, such as A. S. Eddington, have drawn various unjustified and unscientific idealistic conclusions from it.

As early as 1922 Lenin observed that "a whole horde of representatives of the bourgeois intelligentsia have already seized upon Einstein's theory." (*Collected Works*, Vol. XXVII, p. 187, Russian ed.) These representatives were able to misconstrue, to a considerable extent, the significance of the theory of relativity, in the field of cosmological problems in particular. Unproved and reactionary conclusions concerning the finitude of the universe in time and space were asserted, which lead to "other world" hypotheses and the notion of a creator of the universe. Bourgeois philosophy has also perverted the significance of the theory of relativity by substituting for the relativity of phenomena, in the physical sense of the word, relativity in the philosophical sense, using the theory as a basis for preaching philosophical relativism (*see*), which denies the objective character of motion, space, and time, the objective signifi-

cance of our knowledge. Einstein himself has opposed such idealistic perversions of his theories, although his own philosophical views are far from being consistent: certain naive materialist elements in his world view are eclectically combined with a series of Machian (*see* Machism) theses and doctrines.

Religion, a general name for all those forms of belief and modes of practice based on the idea of spiritual force or forces that control the world. In most cases this idea is accompanied by the belief that by prayers, incantations, sacrifices, or other appropriate ceremonies or rituals, we can influence these forces in our interests. The historical origin of religion, as many investigators have testified, lay in the helplessness of primitive man before the menacing phenomena of nature, the content of which he did not understand. This helplessness gave rise in the mind of the savage to all sorts of beliefs concerning the existence, in the surrounding natural objects and events, of spirits capable either of showering him with benefits or visiting him with manifold evils (*see* Animism). Thus attributing spiritual powers to natural things, the savage began to try to influence them through various kinds of magic. Such elements of magic form component parts of all the major religions down to the present day. In prayers, incantations, sacrifices, ikons, rituals, talismans and the like, religious believers vainly try to find a means to prevent sickness, fire, famine, storms, plagues, wars, and other such catastrophes. Or else they proclaim that these are good things which have been ordered by God, or the gods, for their own purposes which we cannot possibly understand. Often, indeed, they say it is wicked for us to try to understand the inscrutable will of God and the working out of his divine plan. A central feature of almost all religions since the rise of ancient civilization is the teaching that this world is not our real home, that this life is only a preparation for our true life which lies in a world beyond, after death and resurrection, when we either are rewarded with blessedness for our virtue and suffering here, or suffer eternal damnation for our wickedness.

When Marx wrote that "Religion is the opium of the people," he was saying on behalf of the exploited masses what many men said through the ages in the interests of the exploiting classes. Plato and Aristotle, Plutarch and Polybius in the ancient world understood that religion was a potent factor in the struggle to keep the people "in their place" by drugging them with fears and hopes of the unknown. Marxists see that religious illusions operate in holding people back from actively struggling for better conditions here and now and that organized religious bodies such as the Catholic Church become political institutions in defense of the interests of the ruling class.

"The roots of modern religion are deeply embedded in the social oppression of the working masses, and in their apparently complete helplessness before the blind forces of capitalism, which every day and every hour cause a thousand times more horrible suffering and torture for ordinary working folk than are caused by exceptional events such as war, earthquakes, etc." (Lenin, *Religion*, pp. 14–15.)

While condemning religion as an untenable position that runs counter to science and is its direct opposite, and condemning it as performing a socially reactionary role by keeping from the masses the real knowledge of their conditions and of the laws of social devel-

opment, Marxism never denies that religious individuals and even religious leaders may not join in progressive struggles. This can be seen especially in national liberation movements and struggles of colonial peoples as well as activities in behalf of improvement of economic conditions of workers in industries and on the land. But it is not religion but scientific materialism that constitutes the necessary theoretical basis for the struggle towards socialism.

The writings of Lenin on religion are especially significant for the contemporary world. With utmost clarity and the greatest dialectical skill he exposed the dangers of all forms of "fideism" (*see*), of "God-seeking," of making a "religion" of socialism and the socialist movement. At the same time he bitingly castigated that sectarianism and leftism which failed to subordinate the struggle against religion to the struggle and progress of the working class movement. Socialism alone will destroy the material roots of human oppression and suffering upon which religion feeds. Marxism teaches, therefore, that the struggle against religion is basically the struggle for the kind of world in which men through their own collective efforts will achieve their goals and thus have no need for the illusions of religion.

Revisionism, Philosophical, a tendency inimical to Marxism, initiated at the end of the 'nineties by the German Socialist Eduard Bernstein. Directed against dialectical materialism, it advanced the slogans of "reconsideration" and "revision" of the philosophical foundations of Marxism. It based itself fundamentally on the philosophy of Kant, with an admixture of mechanical materialism. The revisionists attempted to replace dialectics with a vulgar evolutionism which could see only a simple process of slow and gradual development. Proceeding on this basis they rejected the dictatorship of the proletariat, opposing to it the "peaceful growth of capitalism into socialism," propagandized for collaboration with the bourgeoisie, and put forward the doctrine of the harmony of class interests.

Following the Kantian revisionism of Bernstein and his group, there appeared the revisionism of the Machist school (*see* Machism): Fritz Adler in Austria; Bogdanov, Lunacharsky, Yushkevich, and others in Russia, who attempted to substitute the reactionary philosophy of Mach for dialectical and historical materialism. Kautsky and his fellow theorists of the Second International ended up by becoming typical revisionists in the field of philosophy. Their revisionism was in essence an expression of their political opportunism and their betrayal of the cause of the proletarian revolution. Only the party of the Bolsheviks, led by Lenin and Stalin, systematically combated these attempts to revise the philosophical and scientific foundations of Marxism.

Revolution, Social, a decisively important step in social evolution, signifying a radical change in the life of society and the character of the state, wherein an outmoded social form is discarded and a new and progressive form is established.

As distinguished from the theories of the liberal bourgeoisie and those of opportunism in general, which look upon revolution as a chance occurrence, or else as a departure from what is "natural" to society, Marxism teaches that revolution is a necessary result of the operation of the laws of evolution of class society. Revolutions represent the culmination of the process of social evolution, the process of the gradual devel-

opment and maturing, within the womb of the old social system, of the elements of the new system, the gradual accumulation of contradictions between old and new.

"At a certain stage of their development, the material forces of production in society come in conflict with the existing relations of production, or—what is but a legal expression for the same thing—with the property relations within which they had been at work before. From forms of development of the forces of production these relations turn into their fetters. Then begins an epoch of social revolution." (Marx, *Selected Works*, Vol. I, p. 356.)

Revolutions resolve the contradictions between the material forces of production and the production relations, opening new perspectives for the further development of the productive forces through the establishment of new relations.

The basic question of all revolutions is the question of state power. The shifting of power from a reactionary ruling class, which stands in the way of the evolution of society, to a revolutionary class, usually takes place through a sharpened class struggle which more and more moves the great masses of people into open and decisive struggle against the existing order. In revolutionary epochs, the spontaneous, unorganized process of social evolution gives way to the consciously directed activity of people. "Out of the conflict between the new productive forces and the old relations of production, out of the new economic demands of society there arise new social ideas; the new ideas organize and mobilize the masses; the masses become welded into a new political army, create a new revolutionary power, and make use of it to abolish by force the old system of relations of production, and firmly to establish the new system." (Stalin, *Dialectical and Historical Materialism*, pp. 43-44.)

In revolution, the great masses of people who previously did not participate in political life are raised to the level of conscious political struggle. Precisely because of these factors, revolutionary epochs always signify an immense acceleration of the rate of social evolution. As Marx put it, revolutions are the locomotives of history. It is important, of course, not to confuse social revolutions with "palace" coups, "putsches," and the like. These signify only a change of government personnel brought about by violence, the transfer of power from one to another group of persons within the same social class. The basic criterion of the genuine social revolution is the radical reconstruction of the whole state apparatus, and the shifting of power from the hands of one class to another class (*see* Class). However, not every violent overthrow of one class by another can be called a revolution. If a reactionary class raises a revolt against a progressive class, if power is seized by a class which had previously governed, and had become outmoded, it is not revolution but counter-revolution. Revolution means the coming to power of a *leading, progressive* class, one which opens the door to the further evolution of society, by releasing its productive possibilities, adjusting its economic relations to this, and permitting the development of the whole structure.

We may distinguish various types of social revolution, depending upon the type of social system: slave revolts, serf revolts, bourgeois revolutions, and proletarian revolutions. The character or type of revolution is determined by what social aims it realizes, what contradictions it resolves. The moving

forces of revolutions are the classes which bring them about and carry them on; which overcome the opposition of the outmoded classes. Proletarian, socialist revolution is basically different from all earlier types of revolution; it alone is historically capable of abolishing the exploitation of man by man. *A genuine social revolution cannot be carried out at any moment, simply as an act of will on the part of this or that group of revolutionists.* Revolution is necessary and desirable only under certain definite and objective conditions, the combination of which Lenin called the revolutionary situation. "The fundamental law of revolution, confirmed by all revolutions and particularly by all three Russian revolutions in the twentieth century, is as follows: It is not sufficient for revolution that the exploited and oppressed masses understand the impossibility of living in the old way and demand changes; for the revolution it is necessary that the exploiters should not be able to live and rule in the old way. Only when the 'lower classes' *do not want* the old and when the 'upper classes' cannot *continue in the old way* then only can the revolution be victorious. In other words: revolution is impossible without a national crisis affecting both the exploited and the exploiters." (*Left Wing Communism: an Infantile Disorder*, p. 65.)

But in order for the revolution to emerge and remain victorious, the external revolutionary situation alone is not sufficient. It is necessary to combine certain personal or subjective factors with the objective conditions: the capacity of the revolutionary class for courageous, self-denying action, for example, and the existence of a party tempered in struggle and possessed of a leadership with a high development of strategic and tactical abilities.

Rousseau, Jean Jacques (1712-78), a leading writer and political thinker of the eighteenth century, who played an important role in the ideological preparation for the bourgeois revolution in France in 1789. Expressing the ideology of the petty bourgeoisie who were being proletarianized, Rousseau not only attacked the feudal order of pre-revolutionary France but also the oppressions of the growing plutocracy. Rousseau held that the development of the productive forces under this system inevitably made for regression in morals and a deterioration of the material and social condition of the masses. Rousseau connected the rise and growth of inequality, which he considered the basic cause for all social ills, with the rise and growth of private property. However, he did not consider the abolition of private property either possible or expedient, since he saw in it a certain guarantee of individual freedom. Rousseau advocated legal regulation of personal wealth in the light of the common good, and the passage of a series of measures to slow down the economic progress of society. Considering that man is by nature good and that the fundamental cause of human ills lies in the social system, Rousseau in his well-known work, *The Social Contract*, laid down the principles of a new social-economic system guaranteeing the freedom and equality of all citizens.

In his book, *Emile*, Rousseau developed his philosophical and pedagogical views most elaborately. At the basis of education, according to this theory, lies the principle of following the directives of nature: (1) Each age level has its special forms of education and training; (2) Education must have a bearing on work and facilitate the maximum development of the self reliance and initiative of the pupil; (3) The exercise of

the physical and emotional faculties must precede and accompany intellectual training; (4) Physical punishment of the pupil is pedagogically harmful. All these ideas of Rousseau, new for the eighteenth century, became the legacy of progressive pedagogy. Engels regarded the *Discourse on Inequality* as a remarkable example of dialectical thinking, and noted the great theoretical and practical significance of Rousseau's views on this subject, which, in his words, "even today still play an important agitational role in the socialist movement of almost every country." (Engels, *Anti-Dühring*, p. 113.) Rousseau did not consider himself a materialist, but took the position of deism (*see*); nevertheless, in his treatment of a whole series of problems, he came very close to a materialist understanding of history. For example, he recognized the connection of the intellectual progress of society with the growth of its material necessities and he understood that the legal and political institutions of capitalism serve the interests of the wealthy. Rousseau also exercised considerable influence on many outstanding writers in the field of literature, as, for example, Schiller, Goethe, Byron and Tolstoy.

St. Simon, Claude Henri (1760-1825). One of the leading utopian socialists (*see* Socialism, Utopian), St. Simon was born into a famous family of the nobility. He participated as a volunteer in the American Revolution. At the end of the eighteenth century, he renounced his title. St. Simon sympathized with the French Revolution during its first period, but after the Reign of Terror, he turned against it.

Coupling him with Hegel, Engels declared that St. Simon "was the most encyclopedic mind of his age." (*Socialism, Utopian and Scientific*, p. 49.)

Tending in philosophy toward the French materialism of his day (*see* Materialism, Mechanistic), St. Simon, however, advanced beyond that school by recognizing the evolution of society. At the time when the French materialists were looking upon history as a mere collection of accidental factors, St. Simon tried to establish, on the basis of scientific law, a new theory of the movement and development of society. According to him, each social system, as for example, the slave-holding and the feudal, represented a step forward in the development of the historical process, making possible the further evolution of science, art, and the system of production. The Golden Age, observed St. Simon, in opposition to Rousseau and other thinkers, was not in the past but lies ahead of us.

However, in his conception of the moving forces of history, St. Simon took an idealistic position. The progress of science, morality, and religion was itself the ultimate cause, in his opinion, of the forward movement of society.

In spite of his generally idealistic conception of social evolution, St. Simon made a number of brilliant contributions, which at times closely approximated an adequate, materialistic understanding of phenomena, and which played an important role in the evolution of historical science. Chief among these is his approach to the understanding of the role of property and classes in the evolution of society. He interpreted the whole history of France from the fifteenth century to the French revolution from the point of view of the shift of property from the clergy and nobility to the industrialists, and from the consequent class struggles among these groups, and explained the Reign of Terror as a function of the power of the dispossessed classes. "To conceive the

French Revolution as a class war [and not only between the nobility and the bourgeoisie but also] between nobility, bourgeoisie and the propertyless masses was, indeed, in the year 1802, a discovery of genius." (Engels, *Anti-Dühring*, 1939 ed., p. 283.)

The basis of the future society, according to St. Simon, would be a scientifically organized and planned system of industry. Like Fourier (*see*), St. Simon would preserve a kind of private property and classes in his projected society. In his future system, the leading role would belong to science and industry, to scientists and industrialists, the latter term covering workmen as well as employers, merchants and bankers. But he was interested first and foremost in the fate of the "poorest and most numerous class."

In his last work, *The New Christianity*, St. Simon wrote that the final goal of all his efforts was the emancipation of the working class, the elimination of poverty and the raising of the material and cultural level of the "lower class." In such aspirations he saw the possibility of a new and genuine Christianity: the planned industrial system to be established in the interests of the vast majority, particularly of the poorer groups, and the right to work to be guaranteed to all, with each working according to his capacities. St. Simon's ideas concerning the planned, socially organized character of production as the basis of the future social system constituted an historic contribution to socialist theory. He expressed in embryonic form the profound thought that in the future industrial system there must take place "the transformation of political government over men into the administration of things and the direction of production processes." (*Ibid.*, p. 283.) Marx called St. Simon, together with Fourier and Owen, patriarchs of socialism. The socialist teachings of St. Simon, like those of Fourier, are utopian (*see* Utopia) in character. St. Simon expected the future industrial system to come about as a result of spreading his own "positive" philosophy.

St. Simon died in poverty in 1825. After his death his pupils (Bazard, Enfantin, Comte) continued to propagate his ideas. However, the school of St. Simon disintegrated and became transformed into a narrow, semi-religious sect.

Scepticism, a philosophical tendency which denies the very possibility of man's attaining true knowledge or reaching any objective truth. Scepticism originated in ancient Greece; Pyrrho (third century, B.C.) is considered to be its founder. According to the opinions of the sceptics, the maintaining of the impossibility of knowledge must lead in theory to "abstinence from judgment," and in practice to an indifferent, imperturbable attitude toward things. In the epoch of the Renaissance, scepticism played a significant part in the struggle against medieval ideology, in the undermining of the authoritarianism of the church. Following Montaigne (1533-1592), Pierre Bayle (1647-1706), as Marx pointed out, "routed metaphysics with the aid of scepticism, clearing the way for materialism and a progressive philosophical outlook." (Marx and Engels, *Collected Works*, Vol. III, p. 156, Russian ed.) However, on the other hand, the French philosopher and mathematician Pascal (1623-1662) had already drawn conclusions from scepticism in support of mysticism, placing religious feeling on a level higher than reason.

In the eighteenth century Hume (*see*), a representative of scepticism, denied the objective significance of the most basic philosophical categories: sub-

stance and causality. Kant's (*see*) doctrine of the unknowability of the "thing-in-itself" must also be regarded as derived from scepticism. Hegel, while he recognized the services of scepticism in the struggle against metaphysics and dogmatism, considered it a "paralysis of thought."

Scepticism, in so far as it represents a denial of the possibility of knowing objective truth in any way, is refuted by experience and practice. Dialectical materialism bases itself on the principle that "there are no things in the world which are unknowable, but only things which are still not known, but which will be disclosed and made known by the efforts of science and practice." (Stalin, *Dialectical and Historical Materialism*, p. 17.)

Schelling, Friedrich Wilhelm (1775-1854), a representative of German classic idealism. Leaning originally towards the philosophy of Fichte (*see*), Schelling later created his own philosophical system of objective idealism. According to Schelling, there lay at the basis of the development of both mind and nature a single spiritual force—the Absolute. Nature or matter was a product of this active spiritual force and prepared the way for mind (soul). Mind was in the process of dialectical evolution, and mind and nature, subject and object, merged in the Absolute. Hence Schelling characterized his system as the "philosophy of identity." His approach to the Absolute relied only on "reason." In the first period of his philosophical activity, Schelling played a leading role in the development of German philosophy. Hegel was at one time strongly influenced by him. Although in his youth Schelling had been inspired by the French Revolution, and, as a student, had even received a severe reprimand for translating the *Marseillaise*, he later turned to reactionary feudal-religious ideology. In 1841 he was invited by the Prussian monarch Friedrich Wilhelm to occupy the post of Professor at Berlin University in order to carry on a struggle against the Left-Hegelians (*see*), then the ideologists of the radical German bourgeoisie. In this latter period of his life Schelling created his reactionary "philosophy of revelation." Engels subjected this philosophy to a devastating critique in his brochure *Schelling and Revelation*.

Scholasticism. This term is taken to signify medieval philosophy generally (the representatives of which were usually teachers in ecclesiastical schools), a trend of thought so much in the service of clerical dogmatism that it regarded itself as the "handmaiden of theology." This philosophy ignored the scientific investigation of surrounding reality but rather endeavored to deduce principles of the universe and rules for the conduct of man from the general dogmas of the church. Hence, the word "scholastic" is frequently applied to any sort of divorcement from life, fruitless philosophizing, pedantry, and the manipulation of concepts and logical processes without relation to facts and practice. The chief tendencies in scholasticism were Platonism (Anselm of Canterbury, Bonaventura), Aristotelianism (Thomas Aquinas), and nominalism (Duns Scotus, William of Occam). Early bourgeois philosophy grew up on the basis of its struggle against scholasticism. (*See* Realism, Medieval; Nominalism.)

Science, the organized body of knowledge concerning nature and society acquired in the historical evolution of social life. In a broad sense science is the name for both the accumulated knowl-

edge we have, at any time, of any and all aspects of phenomena, and for the processes through which such knowledge is acquired, verified, and enlarged. Science endeavors to find the basic laws underlying the apparent accidents of phenomena in all fields. As Marx remarked, "All science would be superfluous if the appearance, the form, and the nature of things were wholly identical." (*Capital*, Vol. III, p. 951.) In short, the real nature of things is not immediately apparent, as can be seen from our knowledge of the motion of the earth around the sun or from the law of surplus value as the essence of capitalist economy. The progress of science consists in its ability to get behind the appearances to the underlying laws of motion of phenomena, and thus to reflect reality more and more accurately and profoundly. (*See* Reality and Appearance.)

Scientific knowledge is more than having opinions about things, even though these opinions may be true. We may know, for example, that quinine cures malaria or that workers are exploited, but we do not have science in respect to these facts until we know the "how" and the "why"; until we know the causes and laws of motion of the respective subject-matters. The ancient Greek philosophers recognized that science was more than knowing individual facts, but they tended to the conclusion that we had science if these facts were organized in accordance with "logical" principles. The great pioneers of modern science rejected this notion, knowing that they must find in nature, and not in their minds, the connections of things and their inner laws of motion. With this came also the recognition that the test of the truth of our scientific theories is to be found in experience, in our ability to predict and control the phenomena in question. (*See* Phenomenon.)

Another false idea about science that came down to us from the ancient world was that science is a result of pure disinterested curiosity on the part of certain individuals and thus bore no relation to actual conditions or the practical needs of society. We know today that science arises on the basis of the productive and practical activity of people and is directed towards changing and controlling the surrounding world, that is, towards the mastery and utilization of the forces of nature and the alteration of social relations. Marx and Engels showed that in the evolution of science the decisive factor was not any independent curiosity or purely logical development of problems and concepts but rather the economic and political interests and technical necessities of society at a given stage of development. For Marxism, the key to the history of science, in terms both of the basic problems brought forward and the way these problems are approached, is to be found in the mode of production and especially in the problems of technology. For example, "Almost all the great mathematicians after the middle of the seventeenth century, so far as they occupied themselves with practical mechanics and its theoretical side, started from the simple corn-grinding water-mill." (*Selected Correspondence of Marx and Engels*, p. 143.)

The dependence of science on the evolution of the productive system always manifests itself, in class society, in the form of dependence upon the economic and political interests of the ruling classes. Under capitalist conditions science is amenable to control by capital and must often place itself in opposition to the working class; for example, scientific discoveries, instead of lightening the burden of the workers generally,

lead to an increase in unemployment ("technological unemployment"), while intensifying the exploitation of the employed workers. Also important is the fact that under capitalism scientific discoveries are often held back because under monopoly conditions they might open up new avenues for competitors, produce a more durable product (thus reducing sales) and so on. The application of atomic power for industrial purposes, for example, may be held back for decades in capitalist countries because of the struggle of the biggest monopolies to get exclusive control of it, because existing monopolies in the field of power production fear competition from it, and because the state and its military arm wish to keep it a secret for purposes of war. Under socialism such a development would be sought in the shortest possible time to increase the productivity and lighten the burden of all toilers.

Science today is a vast social enterprise, not the work of so many isolated "gifted" individuals. Modern scientific research requires vast and complicated apparatus and the co-operative efforts of hosts of investigators. Necessarily, therefore, the direction and the tempo of its development are determined by the needs and interests of the dominant class in society which alone has the wealth to establish laboratories and employ large numbers of scientists. Under capitalism all large-scale and important scientific research is carried on in the laboratories of the great corporations or in university laboratories and institutes endowed by business and therefore more or less controlled by the interests of capital. Under socialism alone can scientific research be supported by the whole of society for the sole purpose of advancing man's knowledge of the world and through that knowledge improving the conditions of human life. Only under socialism, too, can that unity of theory and practice, that unity of the knowledge and researches of the scientists and the problems and needs of industry, agriculture, health, and the people generally, be achieved. And the history of science has shown that the greater this unity of theory and practice the more rapidly does science advance.

Sensation, the direct result of the action of the external world on our sense organs. Sensation is the first and indispensable source of our knowledge of surrounding existence, of the material world; thanks to it we establish connection with the outside world and are able to find our way about in it for the pursuit of our objectives. But sensation, as the apprehension of so many sense qualities, represents only the first step in the process of knowledge. Perception (*see*), or the actual identification of objects in the world, involving as it does comparing, contrasting, etc., involves memory, imagination, and a certain amount of reasoning through the development of concepts from the given sensations. As against mechanical materialism, which tended to conceive sensation as a passive reflection in the mind of things outside, Marxism insists on sensation as an active process arising through the efforts of the organism to satisfy its needs. As against all forms of subjective idealism, which either claim that the source of sensations is unknown and unknowable or that they come from the mind itself, Marxism insists that they are caused by the action on us of material things and reflect real qualities of these things.

Sensationalism (in Epistemology), the philosophical theory which maintains that sensation is the sole source of knowledge. If sensation is looked upon

as a reflection of objective reality (which in fact it is), then the consistent development of sensationalism leads to materialism (Locke, Holbach, Helvetius, Feuerbach). But if sensations are seen as merely subjective experiences, beyond which nothing or only some sort of unknowable "thing-in-itself" exists, then sensationalism will lead to subjective idealism (Berkeley, Hume, Kant, Mach, Avenarius, Bogdanov). (*See* Reflection, Theory of.)

Social-Darwinism, the unwarranted carrying over of the Darwinian law of the struggle for existence among plants and animals into the field of human social relations and the class struggle. The Social-Darwinists, led principally by Herbert Spencer (*see*), hold that ruling and exploiting classes must be made up of people who are in some way possessed of superior talents, who are "victors" in the struggle for existence. Bourgeois writers use such a "theory" to try to justify predatory imperialist wars, the exploitation of colonial peoples, the inflaming of racial hatreds, and the social inequalities of capitalist society. Social-Darwinism possesses nothing in common with science. Marxism considers "the mechanical transference of the laws of animal societies to human society as incorrect." (Engels.) At the basis of the evolution of human society, lie laws peculiar to it, laws of development of material production, which are qualitatively different from the biological laws of evolution characteristic of the organic world as such.

Socialism, Utopian. This theory of socialism arose at a time when the class struggle of the proletariat was little developed. "All the utopian socialist sects belonged to a period when the working class was not yet sufficiently united and schooled by the impact of capitalist development to fulfill its historic role in the arena of world movements, when the material conditions of its emancipation had not yet sufficiently matured within the womb of the old order. The poverty and misery of the working class existed, but the conditions for the solution of its problems did not yet exist." (*Marx-Engels Archives*, Vol. III, p. 349, Russian ed.) Accordingly, this type of socialist doctrine inevitably took on a utopian, that is, dreamlike and unreal character. (*See* Utopia, Utopianism; More, Thomas.) The utopian socialists could advance their programs only on an idealistic basis, since they did not understand the primary role of the material conditions of the life of society in influencing the direction of social evolution.

Utopian socialism clearly and profoundly criticized the contradictions of capitalism, argued that it would inevitably be replaced by socialism, predicted the elimination of the antagonisms between city and country, the abolition of private property, and the like. However, "it could not explain the essence of wage slavery under capitalism, nor discover the laws of its development, nor point to the *social force* which is capable of becoming the creator of a new society." (Lenin, *Selected Works*, Vol. XI, p. 7.) In the working class, utopian socialists saw only an exploited mass of people, who had to be helped, but they did not see a great historical force which alone was capable, through its own strength and struggle, of bringing the socialist idea to life. The great utopian socialists of the beginning of the nineteenth century were St. Simon (*see*), Fourier (*see*) and Owen. Marx and Engels transformed socialism from a dream into a science. They taught that socialism was not a figment of the imagi-

nation, but the inevitable result of the development of capitalist society and the class struggle of the proletariat. (*See* Materialism, Historical.)

Solipsism (Lat., *solus*—alone; *ipse*—self), the philosophical point of view that I, or my momentary sensations, alone exist, and that the rest of the world, including other people, have no objective existence but are creations of my consciousness. It is doubtful if any sane thinker ever actually held or expounded such a view, but from the time of Berkeley its theoretical possibility has been recognized. While most idealists have struggled to escape from it, there are some, such as Bertrand Russell, who regard it as the only consistent and completely logical standpoint, but one which, however unfortunately, they are unable to achieve. The sterility of solipsism, and its complete incompatibility with science and experience, are evident. Yet subjective idealist philosophies, such as those of Berkeley (*see*), Machism (*see*), and pragmatism (*see*), are logically unable to escape the solipsist implications inherent in their approach.

Sophists. A philosophical school in ancient Greece (5th century B.C.), the leading representatives of which were Protagoras, Gorgias, Prodicus, and others. Unlike their philosophical predecessors, the Sophists seem to have emphasized the human, subjective, side of our knowledge, and although they oscillated between idealism and materialism, their tendency was towards subjective idealism and the denial of objective truth. Unfortunately, our knowledge of them comes almost entirely from Plato and Aristotle, who were their sworn enemies. As popular teachers of rhetoric and popularizers of existing knowledge they won the hatred of the aristocratic Plato, who represented them as teaching the art of gaining victory over an opponent in debate, of overcoming his arguments, irrespective of where the truth lay. Hence, the received sense of the word sophistry—a false play on words, an argument of merely rhetorical effectiveness, seemingly correct, but actually false. The famous statement of Protagoras that "man is the measure of all things" may not have implied a subjective idealist approach to the world so much as a protest against metaphysical, legal, and ethical absolutism.

Spencer, Herbert (1820-1903), English bourgeois philosopher and sociologist, positivist, and apologist for capitalism. In his work called *First Principles* he developed a vulgarized version of mechanism in his approach to nature, founding the "theory of equilibrium." In his *Foundations of Biology* he perverted the Darwinian theory, interpreting it in the sense of a purely gradualistic evolution which excluded all leaps (*see*). Posing such questions as "what is society," "what is progress," "what is evolution," he answered them with empty and general formulae by means of which the capitalist system was placed in the light of the most nearly perfect order. Developing the so-called organic theory of society, which likened it to an animal organism, he argued that the government was the head while the workers were the hands which must obey the head, on which basis he rejected the idea of revolution. He extended Darwin's theory of the struggle for existence to people in society, attempting to show the inevitability of such a struggle and the impossibility of socialism. (*See* Social-Darwinism.)

Spinoza, Baruch (Benedict) (1632-1677), great Dutch philosopher of atheistic and materialistic tendencies. Spinoza rejected the idea of God as the

creator of the universe, holding that nature was itself God. He maintained that the infinite and eternal universe or system of nature was self-existent and that, since by definition it includes everything, there could not exist any cause outside of it. Subjecting the dualism of Descartes (*see*) to severe criticism, Spinoza created a great monistic system, in which thought and extension were considered as attributes (essential properties) of the single substance—nature. Spinoza understood motion as mechanical change of position in space, attributing it only to individual things; in other words, his view was that separate things suffer change, but that nature as a whole was changeless, static. In his theory of knowledge, Spinoza carried on Descartes' rationalistic viewpoint, and believed that true knowledge was attained by reason, without the help of the senses.

The vast majority of bourgeois historians of philosophy incorrectly consider Spinoza a pantheist. (*See* Pantheism.) In actuality he was much nearer materialism and atheism as witnessed by the attacks upon him, from the time of his excommunication from the Hebrew community as a young man to his untimely death from tuberculosis. In his political views Spinoza was an advocate of the democratic tendencies of the time. The materialistic elements in Spinoza's thought exercised considerable influence on French materialism (*see* Materialism, Mechanistic), and the German Enlightenment of the eighteenth century. His basic works are *On the Improvement of the Understanding*, written about 1662; *Theological-Political Treatise*, 1666-70; *Ethics*, 1662-75. His *Correspondence*, 1661-76, is also of great importance. Of his major works, only the *Theological-Political Treatise* was published during his lifetime, and that appeared without the name of the author.

Spiritualism, the view of the world diametrically opposed to materialism. Spiritualism is a broad term that includes both the standpoints of traditional religion and of philosophic idealism. In its vulgar form it is a belief in table-raising, mental telepathy, and communication with the souls of the dead. The essence of spiritualism is the belief that spirit, or mind, is the highest reality and that matter is either non-existent or is completely subordinate to spirit.

Spiritualism necessarily runs counter to a scientific view of the world, even though it may accept science in limited spheres. This is easily seen in the field of biology where contemporary spiritualists can accept actual scientific findings but still assert that life is not ultimately derived from matter, that there is more in it than science can ever explain. While in its popular usage spiritualism is identified with religion, in philosophy it tends to be synonymous with idealism (*see*).

Stalin, Joseph Vissarionovich. Stalin was born December 21, 1879, in the town of Gori, in the province of Tiflis. His father, of peasant stock and a shoemaker by profession, later became a factory worker. Stalin began his education at the Gori parochial school and upon concluding his studies there (in 1894) entered the theological seminary in Tiflis. Stalin began his revolutionary activities at the age of fifteen, joining a group of underground Russian Marxists living in the Transcaucasus, and in 1896 became a member of the Tiflis organization of the Russian Social-Democratic Labor Party. In the "Messameh-Dassy" group—the first Social-Democratic organization in Georgia—Stalin, together with Ketskhoveli and Tsulukidze, represented a movement in the direction of revolutionary Marxism,

opposing the opportunistic majority of "Messameh-Dassy." In December, 1905, the Transcaucasian Bolsheviks elected Stalin a delegate to the conference of the Russian Social-Democratic Party, held in Tammerfors, Finland. Here he met Lenin for the first time.

In a series of articles in 1905, particularly "Armed Insurrection and Our Tactics," "Reaction Is Growing" and "Notes of a Delegate," writen on his return from the Fifth (London) Congress, he gave a masterly defense of the tactical position of Bolshevism. In 1906-07, the series of articles called "Anarchism or Socialism" was published, devoted to the support and further development of the philosophical foundations of the Marxist party—dialectical and historical materialism. In 1912-13 Stalin wrote *Marxism and the National Question*, which drew from Lenin the observation that among Marxist works devoted to the national question "Stalin's article stands at the head." (*Collected Works*, Vol. XVII, p. 116, Russian ed.) Upon Lenin's arrival in Petrograd from abroad in 1917, Stalin joined him in leading the struggle of the Bolsheviks in the development of the Russian Revolution. Stalin's book, *The Foundations of Leninism*, issued in 1924, was a highly important and a masterly presentation of, and a significant theoretical contribution to, the principles of Leninism.

Another work of Stalin, also published in 1924, *The October Revolution and the Tactics of the Russian Communists*, was of great influence in the struggle against Trotskyism. In this work, which sums up the experience of the October revolution, Stalin developed further the Leninist theory of the possibility of socialism in the Soviet Union, examining the two basic aspects of this problem—the internal conditions and the external conditions on which the final victory of socialism in the U.S.S.R. depends. But Stalin not only presented a substantial theoretical basis for the possibility of the victory of socialism in the U.S.S.R.; he indicated the ways and means to attain this end. He developed the Leninist idea of socialist industrialization of the country and collectivization of agriculture, and worked out a concrete plan for the realization of these objectives.

Stalin is the author of the 1936 Constitution of the U.S.S.R., the significance of which is depicted in his report at the Extraordinary Eighth Congress of Soviets. This constitution was an expression of the fact that the country had entered upon a new phase of its development—the phase of the completion of the construction of classless socialist society and the gradual transition to communism. The essay, *Dialectical and Historical Materialism*, written by Stalin as part of the *History of the Communist Party of the Soviet Union*, raises to a new level the development of the subject.

In accordance with the new stage reached in the evolution of the U.S.S.R., Stalin put forward, in his report to the Eighteenth Congress of the Bolshevik Party, a comprehensive program for effecting the gradual transition to the higher phase of communism, setting the problem of overtaking and outstripping, in the next ten or fifteen years, the most highly developed capitalist countries. He also pointed out the possibility of the construction of communism in the U.S.S.R. under the conditions of capitalist encirclement and developed further the teachings of Marx, Engels, and Lenin on the state. In his theoretical works Stalin has enriched the component parts of Marxism-Leninism: philosophy, political economy, scientific communism. He has contributed to dialectical and historical materialism a profound analysis

and interpretation of the momentous historical developments at the end of the nineteenth and the first decades of the twentieth centuries, and of the struggles of the Bolshevik party in relation to them. His theoretical contribution to the Leninist thesis concerning imperialism and the possibility of the victory of socialism in one country and the impossibility of its simultaneous victory in all countries is exceptionally significant. In the great patriotic war against Nazi Germany and world fascism, Stalin's outstanding political and military leadership not only inspired and guided the peoples of the Soviet Union to complete triumph on the field of battle, but also made a great historical contribution to the salvation of the independence and progress of the peoples of the world.

Stoicism, a philosophical school which arose in ancient Greece at the end of the fourth century B.C. The name of the school was derived from the Greek word *stoa* (porch, portico), a place where the founder of this philosophy, Zeno of Citium (about 336-264 B.C.), taught. The Stoics expounded views in the field of logic, physics, and ethics. In their teachings on logic they worked out a sensationalistic (*see* Sensationalism) theory of knowledge: all knowledge is the result of sense impressions. Sense data are worked over by the mind, which thus forms general concepts and judgments. The soul is the seat of all the processes of consciousness. In the field of physics the Stoics took a materialistic position, developing the doctrine asserted by Heraclitus (*see*), that fire is the primal element. They looked upon nature as a material, living unity, all parts of which are in motion.

Everything in nature is subject to strict causal necessity. From their natural philosophy, the Stoics drew the conclusion that the fundamental principle of ethics is living according to the inner law of reason (a reflection of cosmic law), whereby the individual is freed from the fears and pressures of external things. The free man is happy and subject only to his own will; his happiness does not depend on sense pleasures but on the consciousness of virtue. Man is a citizen of the universe: slave and master, the lowly and the high-born are equal in principle. This kind of assertion of an abstract equality and the tendency to evaluate political institutions in terms of cosmic analogies was representative of the decline of slave-holding society.

Subject and Object. In philosophy, especially in epistemology or theory of knowledge, the "subject" means a being endowed with consciousness and will, acting and acquiring knowledge in accordance with his own aims. To the subject is opposed the "object," an external thing, towards which the consciousness and activity of the subject may be directed. Idealistic philosophy says, "There is no object without a subject," that is, the external world has no existence outside and independent of consciousness. Dialectical materialism, on the contrary, holds that the object exists independently of the subject, that without material existence there is not and cannot be any consciousness. At the same time dialectical materialism points out that the subject, the human individual, does not simply mirror passively the objective world, but acts on it and changes it, while also changing himself. (*See* Reflection, Theory of.)

Substance, in pre-Marxian philosophy, the *unchanging* foundation of all existence; in opposition to the changing properties of individual things, the unchanging source or basis of these proper-

ties. Materialists of the seventeenth century considered that matter was such a substance and had no need for any sort of supernatural cause. Thus Spinoza (*see*) taught that eternal and infinite substance (nature, the universe) is self-caused or self-existent. To idealists, substance is soul, god, idea. Dualists assert two substances: spiritual and material. Dialectical materialism rejects the idea of an "unchanging" substance of things; in its view, the concept of substance coincides with that of moving and eternally evolving matter.

Syllogism (Gr., *syllogismos*—a reckoning all together), a basic type of deduction in formal logic. The concept of the syllogism was introduced by Aristotle. According to him, a syllogism is an example of deduction in which, from two propositions, called premises, a third proposition, or conclusion, is drawn by means of the concept (middle term) which is common to both premises. The best known form of the syllogism is of the type: "All men are mortal. Socrates is a man. Therefore Socrates is mortal." In this syllogism, "man" is the middle term, the concept common to both premises, which offers the possibility, by comparing it to the remaining term in each premise, of coming to a logical conclusion. In Aristotle's thought, the syllogism possessed a real, objective content and genuine significance. Scholasticism and formal logic have transformed the syllogism into something dead, concentrating attention on different forms of syllogism (figures and moods), on its merely formal aspects. Lenin in his *Philosophical Notebooks*, in a note to a quotation from Hegel, says: "The most common logical 'figures' are simply the scholastically thinned out and devitalized reflections (*sit venia verbo*) of the most common relations of things" (p. 172, Russian ed.). Thus the syllogism, if we set aside the formalistic tradition with which it has become involved, possesses rational content—a reflection of certain aspects of the connections and relations of things.

Synthesis. (*See* Thesis, Antithesis, Synthesis.)

Technics, Tools of Production, one of the most important elements of the forces of production—the instruments, machines, agricultural implements, and the like, with the aid of which man acts upon nature in order to produce material goods. The creation and employment of tools in labor was the decisive factor in the emergence of man out of the state of a lower animal. The change and evolution of tools of production and of productive forces in general leads to changes in the social system of production and thus in the whole social order. (See Materialism, Historical.) Marx characterized the significance of the tools of production for the life of society as follows: "It is not the articles made, but how they are made, and by what instruments, that enables us to distinguish different economical epochs. Instruments of labor not only supply a standard of the degree of development to which human labor has attained, but they are also indicators of the social conditions under which that labor is carried on." (*Capital*, Vol. I, p. 159.)

Teleology, an idealistic doctrine according to which everything in the world is a product of design, and, as a rule, is explained as the action of a god. Engels ridiculed the view of certain teleologists, according to whom "cats were created in order to devour mice, mice in order to be devoured by cats, and all of nature in order to prove the

wisdom of the creator." The doctrine is expressed in the popular phrase, "everything has a purpose." Defenders of teleology, among whom were Aristotle and Hegel, held that in the basic structure of organisms lies an inherent aim or goal predetermining the direction of the evolution of plants and animals, and that this goal is given by God, a mystical "Nature," or somehow implanted in an ideal essence, or the like. Dialectical materialism teaches that planned or purposive activity is a characteristic only of human beings. The evident efficacy possessed by the structure of animal organisms is the result of natural selection (*see* Darwinism).

Theism, the belief in the existence of God. Although theism takes many forms in different ages and in different societies, it has as its least common denominator the doctrine that a God, or gods, rules the world and directs it towards a preconceived end. As distinct from animism (*see*) theism rises only at the dawn of civilization. It then takes such forms as polytheism, monotheism (*see*), pantheism (*see*), and deism (*see*). Theism, in short, may conceive God as one or as many, as outside of and above the world, or as part and parcel of it, as ruling through laws or as interfering with the world by means of miracles, as an abstract principle or as an actual glorified person. All these have this much in common—that a spirit conceived as analogous to a human being (*see* Anthropomorphism) guides and directs the world for a purpose, or, in other words, that spirit or mind is primary, that is, is prior and superior to matter.

Theory and Practice. Marxist philosophical materialism considers social practice, and especially that part of it which represents the materially productive practice of people, the basic source of theory. "The standpoint of life, of practice, should be first and fundamental in the theory of knowledge." (Lenin, *Selected Works,* Vol. XI, p. 205.) A science always relies for its source of verification upon practice, experience, which thus becomes the most profound and decisive criterion of truth. Theory, which is a generalization of experience, or, in other words, of practice, gives people a perspective for their further practical activity. For instance, Marxist-Leninist theory is a generalization of the experience of the working-class movement of all countries and is, at the same time, a guide to the understanding of present and future developments and hence to present and future practice.

Theory becomes sterile unless it is connected with revolutionary practice, and practice stumbles in darkness unless it lights its way with revolutionary theory. ". . . Theory can become the greatest force in the labor movement if it is built up in indissoluble connection with revolutionary practice." (Stalin, *Leninism,* Vol. I, p. 27.)

Thesis, Antithesis, Synthesis. According to Hegel, every process of development passes through three stages. The first, called the thesis, is "negated" by the second stage, called the antithesis, which in turn is negated by the third stage, called the synthesis. This third stage not only "negates" the previous stages but unites them both in itself as a new form. In Hegel, this triad is a logical schema into which nature is artificially forced. "According to Hegel the evolution of the idea in accordance with the triadic law determines the evolution of nature." (Lenin, *Collected Works,* Vol. I, p. 84, Russian ed.) A favorite argument against Marxism is the assertion that Marx's theory of the inevitability of socialism was arrived at

not by factual investigation of the laws of social evolution but by a preconceived notion derived from the dialectical triad, namely, that since socialized property is the antithesis of private property, it is inevitable that the former will replace the latter. The fact is that Marx grounded his conclusion as to the inevitability of socialism on an objective study of the predominant economic contradictions of capitalism.

The extensive materials and carefully documented analyses of Marx's studies are to be found in such works as *Capital* (three volumes) and *Contribution to the Critique of Political Economy*. Marxist dialectics always demands a study of life in all its concrete fullness, in terms of its actual contradictions and transformations, without artificially pressing it into conformity with some abstract schema. In the Hegelian triad, there is a "rational kernel" which is salvaged by the materialist dialectical law of "negation of the negation" (*see*). This "rational kernel" consists in the fact that the Hegelian triad reflects the nature of evolution, the transition from the lower to the higher in the course of which the higher stage retains and develops the positive features of the lower. The "triadicity" itself is not an essential aspect of dialectics but only the form of its manifestation.

Thing-in-Itself and Thing-for-Us. The "thing-in-itself" in the philosophy of Kant (*see*) is what things *really* are as opposed to things as we know them. Our knowledge of things is inevitably determined by the forms of our own understanding, and hence we know things only in accordance with the categories of our minds and not as they are "in-themselves." This "thing-in-itself" therefore exists not only beyond the bounds of our present knowledge but forever beyond the possibility of knowledge. It is for him, therefore, something intrinsically unknowable by definition. Dialectical materialism holds, on the contrary, that such "things-in-themselves" are pure myths, created by the mind of Kant or of other idealists. The only distinction that is warranted in the history of human knowledge is that between what is already known and what is not yet known.

The process of knowledge was conceived by Engels as a process by which "things-in-themselves" become transformed into "things-for-us." As Lenin expressed it, "In practice each one of us has observed time without number the simple and palpable transformation of the 'thing-in-itself' into the 'thing-for-us.' It is precisely this transformation that is cognition." (*Selected Works*, Vol. XI, p. 182.) For example, natural rubber—the sap of a plant—was a veritable thing in itself until science discovered its molecular structure and was able to produce the same thing synthetically, thereby transforming rubber into a "thing-for-us." In short, when we know enough about a thing to be able to make it and use it for our own purposes it is no longer a "thing-in-itself" beyond the possibility of knowledge but a thing known and mastered, a "thing-for-us."

Thought, the name given to the conscious processes, carried on in the brain of man, that have as their aim the solving of problems, the understanding of the past and present, and planning of the future, through the reflection of objective reality in impressions, concepts, judgments, and the like. Thought, a function of an especially complex form of matter, takes place only in connection with a definite kind of organic activity, the activity of the brain and central nervous system. Idealism regards

thought as the product of some nonmaterial substance and thus as having no connection with or dependence on matter. Contemporary science offers more and more detailed proof of the fact that thought is a function of a specific kind of material organ. In this regard the work of the Russian scientist, Ivan Pavlov (*see*) and his school on the higher nervous activity of animals has produced a fund of evidence, as has work in brain surgery, and more recent work whereby the thinking brain is shown to exhibit patterns of electrical activity differing from those of a brain not so engaged.

Emphasizing the well-defined similarity between the mental activity of animals and humans, dialectical materialism also points out the essential difference between the thinking of man and the animals. This difference between the thinking of man and of animals is explained not only by the more developed biological organization of the human being but also by the material and social conditions of his life.

In his work, *The Role of Labor in the Transition from Ape to Man*, Engels showed that the fundamental precondition for the evolution of human thought and speech is labor. In other words, in a very basic sense, labor has created man himself, his specifically human consciousness and psychological activity. The evolution of theoretical, systematic thought, of science, is connected with the material conditions of the life of society, with social practice. Recognizing the sense in which thinking is conditioned by the material basis of social life, dialectical materialism also recognizes that thinking, consciousness, possesses its own sphere of action with a certain relative independence. While material conditions are the most powerful agency in determining the evolution of thought, other factors, such as the political system, and the level of knowledge already reached, also influence this evolution.

Dialectical materialism combats vulgarized notions that thought can be reduced to purely physiological processes. Human thought is essentially a social phenomenon, and cannot be understood except in connection with the history of society. Dialectical materialism alone does justice to the significance of the role of thought, of theoretical systems in the movement of social history. (*See* Joseph Stalin's brief work, *Dialectical and Historical Materialism.*)

Time and Space. All the reality around us has its source in moving matter, and matter cannot move otherwise than in time and space. Subjective idealism looks upon time and space as belonging only to our minds, as subjective forms of thought. In opposition to idealism, dialectical materialism asserts that time and space are objective forms of the existence of moving matter, that time and space without matter would be empty concepts devoid of any sort of content. Physical science (especially contemporary physics) clearly shares the view of dialectical materialism. There was a time when physics, following the lead of Newton, conceived of space and time as divorced both from each other and from matter. Newton held that time was absolute, that it flowed always in the same way, without relationship to anything outside of itself, that is, independently of matter; in the same way, he conceived of space as absolute, as everywhere the same. The inadequacy of this conception was revealed by Einstein in the theory of relativity (*see*).

Einstein showed, for example, that an observer on one of two bodies (or systems of bodies) moving relative to each

other would find that his measurements of space and time differed from those of an observer on the other body. Likewise, the two observers would not necessarily agree on the simultaneity of two or more events taking place outside of their systems. According to Einstein, it is demonstrable that time also depends on the activity of the gravitational field; closer to the mass of material bodies, time moves more slowly than further away. There are essential questions involved in the theory of relativity which are still being debated. What is of great importance, however, is the fact that contemporary physics has abandoned the metaphysical methodology (*see* Metaphysics) involved in Newton's approach and has connected time and space with matter in motion. A comparison of the Newtonian and Einsteinian concepts of space and time shows us clearly how scientific doctrines change and evolve.

Transcendent, Transcendental, terms traditionally used to refer to anything lying beyond the possibility of knowledge or experience, or to something such as a God outside and beyond the world of nature. The ordinary conception of God, for example, is of a transcendent being apart from and above the observable material world. Pantheism (*see*) denies such a conception of God, holding instead that he is within the world of nature, or *immanent*. Kant (*see*) gave these words a new meaning when he applied them to his philosophy, in which the transcendental refers to the allegedly *a priori* (prior to experience) forms of knowledge—forms as distinguished from the "matter" or sensual materials of knowledge. In America, transcendentalism refers especially to a philosophy associated primarily with the name of Emerson. This use of the term adds further to the confusion created by Kant's usage, inasmuch as Emerson's philosophy was a peculiar early nineteenth-century admixture of Kantianism, subjective idealism, and pantheism.

Transition from Quantity to Quality. Marxist dialectics (*see* Method, Marxist Dialectical) looks upon evolution, which takes place in every type of subject matter, as a transition from slight and imperceptible quantitative changes to radical and open qualitative changes. These latter changes take place suddenly, precipitately. Every revolutionary transformation in society gives a clear example of a leap from one qualitative condition to another.

Metaphysical thinking looks upon evolution as a simple process of quantitative development, which does not lead to genuinely new qualities, and wherein the old never gives way to anything really new. Dialectics on the other hand does not conceive of evolution as simply quantitative, as a simple repetition of what has already gone before, or as the mere "unfolding" of what was already present, but as movement along an ascending line in which new qualities emerge. From the dialectical law of the transition from quantity to quality important conclusions in regard to the practical political and economic activity of the working class follow. If evolution includes radical and precipitate changes of phenomena as well as slight and gradual ones, then qualitatively new situations arise which require new forms of action, new modes of struggle. This dialectical conception of evolution implies further that in the course of capitalist development stages arise which require, for further economic progress, drastic and revolutionary reconstruction of all political and economic relationships. "In order not to err in policy, one must be a revolutionary, not a reformist." (Stalin, *Dialec-*

tical and Historical Materialism, p. 14.)

The new quality in its turn involves new quantitative ratios or changes. Not only do quantitative changes bring about qualitative changes, but the rise of new qualities changes previous quantitative relationships and the rates of quantitative development. This principle, therefore, is often called that of the transition of quantity to quality and *vice versa*. Thus, for example, when man appeared on the earth as a result of long and imperceptible quantitative changes in the development of his body and brain, there began a most marked change in the quantitative relationships among the earth's mammals. Again, when collective farms were established in the Soviet Union, representing a new quality in comparison with the old individual farms, there appeared the most radical change in the rate of labor productivity and in the proportion of agricultural to industrial labor. Bourgeois statisticians often bog down because they fail to take into account this principle, namely that rates of quantitative change themselves undergo marked transformation at key points because of new qualities that have emerged.

Triad. (*See* Thesis, Antithesis, Synthesis.)

Truth, the correspondence of human knowledge with its object. Dialectical materialism conceives of truth as the developing reflection, in the human consciousness, of eternally evolving reality. Materialism and idealism differ not only in respect to the question of whether mind or nature is primary but also in respect to the question whether our perceptions and conceptions can be taken as a true reflection of reality. Dialectical materialism considers knowledge as a historically developing process of ever deeper and fuller comprehension of the laws of evolution of nature and society, a process which attains to a more and more nearly complete and accurate reflection of reality. Philosophical agnosticism (*see*) denies the possibility of genuine knowledge of the objective world. Agnosticism holds that nothing is given to us except subjective sensations, and that consequently it is impossible to determine whether an external world exists or not. Proceeding from a recognition of objective reality outside of us, and its reflection in our consciousness, dialectical materialism recognizes objective truth. That is, it believes in the presence in human sense impressions and concepts of a kind of content "that does not depend either on a human being or on humanity." (Lenin, *Selected Works*, Vol. XI, p. 185.) Lenin sharply attacks the reactionary, anti-scientific character of all theories which deny objective truth. Dialectical materialism asserts that the reflection of the material world in our consciousness bears a relative, conditional, historically limited character, but at the same time it does not regard such a character as a justification of subjectivism or "relativism" as that term is usually employed. Dialectical materialism recognizes the relativity of our knowledge, not in the sense of a denial of objective truth, but in the sense of the historical limitations of the approximation of our knowledge to this truth. In this way, the absoluteness of objective truth does not signify that this truth is ever expressible as a finite sum of knowledge, as a completed whole beyond which nothing remains. Truth is absolute precisely because it possesses no final limits, is continuously evolving, and proceeding to ever higher and newer levels of development. These levels in the development of absolute truth in themselves represent relative truths. However, each relative truth reflects,

although but partially, the objectively existing reality. And in that sense each relative truth includes within itself a portion of absolute truth.

Thus the solution of the problem of truth in dialectical materialism is not to be identified with that of relativism. The latter interprets the relativity of truth subjectively in the spirit of agnosticism, which denies in principle the possibility of a knowledge of objective truth, and sets up boundaries to human knowledge, limiting it to the study of the sphere of sensations. (*See* Machism.) Dialectical materialism, although it asserts the relative character of each separate concrete truth and denies the possibility of attaining the complete truth about matter at any one (historically limited) moment, sets up no boundaries to human knowledge, but, on the contrary, proves its unlimited possibilities. Truth is always *concrete*, inasmuch as time, place, and circumstance are germane to everything. Marxism denies the existence of abstract truth in the sense of something finished for all time and demands a concrete historical approach to the explanation of phenomena.

Philosophical thought before the time of Marx vainly disputed over the solution of the problem of truth, as it considered knowledge outside of practice, outside the activity of historically conditioned individuals who are always dealing with their surrounding conditions and endeavoring to control and change them in the pursuit of their interests. Practice represents the source of knowledge and the criterion of its validity. (*See* Theory and Practice.) Dialectical materialism thus emphasizes the significance of practice in the process of knowledge, as the link between the subjective idea and the objective truth, which it conceives in terms of the evolution of nature and society.

Unity and Conflict of Opposites, the core of materialist dialectics. In opposition to metaphysics, dialectics bases itself on the fact that the objects and phenomena of nature are characterized by internal contradictions which are the source of change and development. When we examine things at rest, each in isolation, in their relatively static aspect, our attention is not directed to their internal contradictions. It is only when we begin to investigate things in terms of their interconnections, movements, changes, and evolution that we are led to take adequate account of contradictions. Everything that exists comes into being, evolves, and finally dies away. The struggle between the old and the new, between that which is dying and that which is being born, between that which has lived out its time and that which has developmental perspectives before it, is what supplies the dynamics of the evolutionary process.

Lenin called the principle of unity and conflict of opposites the essence of dialectics (*see*) inasmuch as it reveals the source of the self motion and evolution of matter. By studying the contradictory elements within things and the pattern of development manifested by these contradictory elements, we are enabled to understand phenomena dialectically, that is, in terms of their growing and dying. Lenin pointed out that the unity of opposites is conditional, temporary, and relative, whereas the conflict of opposites, like motion and evolution, is absolute, continuous. Opposites at one and the same time mutually exclude and mutually penetrate one another. As Engels puts it, ". . . Two poles of an antithesis, like positive and negative, are just as inseparable from each other as they are opposed, and . . . despite all their opposition they mutually

penetrate each other." (*Anti-Dühring*, pp. 28-29.)

The proletariat and bourgeoisie were both generated by the capitalist mode of production. Within the framework of this system of production they are connected with each other in such a way that without either one of these classes the capitalist mode of production would be impossible; but at the same time they exclude each other and are engaged in an irreconcilable conflict. The atom, as it is shown by modern physics, is a unity of particles of positive and negative electricity. It is by means of their interpenetration that the physical and chemical properties of the atom are defined. Life is likewise a contradictory process, characterized by the constant dying out and renewal of cells, by the incessant emerging and resolving of contradictions.

In the study of social phenomena, the law of the unity and conflict of opposites possesses great scientific significance. It was Marxism which first showed scientifically that the source of the struggles and antagonistic tendencies in class society is the differences of classes in relation to the conditions of life. It showed that the class struggle is the moving force of history in all class societies. Marxism-Leninism teaches that "it is possible to overcome contradictions only through a struggle for one or another set of principles" (Stalin, *On the Opposition*, p. 439, Russian ed.) and not by an attempt to reconcile the irreconcilable. From the law of the unity and conflict of opposites flow very important implications for the policies and tactics of the proletarian party.

If the struggle of opposites is decisive in the resolving of contradictions, it follows also that subjective factors such as consciousness, will, and discipline also possess great significance. Contradictions are to be overcome, not feared. If evolution works itself out in terms of the struggle of opposites and the resolution of this struggle, then "we must not cover up the contradictions of the capitalist system, but disclose and unravel them; we must not try to check the class struggle but carry it to its conclusion. Hence, in order not to err in policy, one must pursue an uncompromising proletarian class policy. . . ." (Stalin, *Dialectical and Historical Materialism*, p. 14.)

Unity and Diversity in the Universe. "There is nothing in the world but matter in motion." (Lenin, *Selected Works*, Vol. XI, p. 236.) There cannot be two infinities, hence there can be no universe in addition to the infinite universe of nature moving in time and space. The diversity of the world is rooted in the qualitative differences of things and processes and the various forms of the movement of matter. "The real unity of the world consists in its materiality." (Engels, *Anti-Dühring*, p. 51.) The unity and diversity of the world exist in dialectical inter-relationship; matter always exists in qualitatively diversified forms, while all this diversity is connected by and rooted in matter.

Utopia, Utopianism (Gr., *ou*—not; *topos*—a place). The word utopia came into use following the appearance of the well-known work of Sir Thomas More (*see*) called Utopia, wherein an ideal state and a rational organization of social life are pictured on the imaginary island of Utopia. Thenceforward the word signified doctrines concerning an ideal state without a realistic basis. (*See* Socialism, Utopian.)

Utopian Socialism. (*See* Socialism, Utopian.)

Vitalism, a trend of thought in respect to biology connected with idealistic tendencies in philosophy. (*See* Idealism.) It holds that there is present in every living organism a special "vital force" (*vis vitalis*). Vitalists assert that organic or living phenomena are divided from inorganic phenomena by an absolute gulf, and that all physico-chemical processes in living organisms are subordinate to forces purposefully directed from some supermaterial or supernatural source. The thesis of the vitalists concerning the intrinsic qualitative difference between the organic and the inorganic was dealt a decisive blow by the German chemist Friedrich Wöhler who, in 1828, obtained the first laboratory synthesis of an organic substance of animal origin (urea). Since that time organic chemistry has synthesized more than one hundred thousand organic substances including fats, carbohydrates, a series of hormones and vitamins, certain blood pigments, and the simple forms of protein. The successes of chemistry in the middle of the nineteenth century, and the evolution of biology as a whole, overthrew all the "arguments" of vitalism.

However, at the time of the rise and growth of imperialism at the close of the nineteenth century, there appeared a new attempt to revive idealism in biology under the title of "neo-vitalism," a tendency which was represented by such men as Hans Driesch. A critique of vitalism from the point of view of dialectical materialism has been given by Engels and Lenin. Scientists like Ernst Haeckel and K. A. Timiriazev, as well as many other leading thinkers, taking the position that science should be defended against idealistic importations, have sharply criticized neo-vitalism. During the last ten or twenty years, vitalistic tendencies under newly coined terms (holism, etc.) have appeared, the advocates of which attempt to take a stand "above" both materialism and idealism.

Voltaire, Francois Marie (Arouet) 1694-1788, outstanding French reformer and enlightener of the eighteenth century, a noted publicist and philosopher. Voltaire belonged to that group of writers who, through their brilliant critique of clericalism and absolutism, prepared men's minds for the French revolution at the close of the eighteenth century. In philosophy Voltaire was a follower of Locke (*see*).

Voltaire's philosophic writings contain many contradictory aspects; side by side with criticism of absolutism we find an advocacy of "enlightened absolutism," and, together with a sharp criticism of clericalism and Catholicism, an assertion of the necessity of religion and belief in God. Marx writes that Voltaire "in the text preaches disbelief, and in the footnotes defends religion. . . ." (Marx-Engels, *Gesamtausgabe*, Part I, Vol. I, first half, p. 347, German ed.)

Voltaire, as critic of the existing ecclesiastical and political systems, and the feudal order in France, exercised an enormous influence on his contemporaries. Among his philosophic works are *Philosophical Letters*, 1729; *Foundations of the Philosophy of Newton*, 1738; *Philosophical Dictionary*; *The Maid of Orleans*, 1739; *Candide*, 1759.

Voluntarism (Lat., *voluntas*—will), a trend of thought in philosophy which is connected with subjective idealism, attributing primary significance to the will. Representatives of voluntarism are such writers as Schopenhauer, Nietzsche, and William James.

In modern philosophy, as Lenin showed in *Materialism and Empirio-*

Criticism, voluntarism is connected with certain views of Kant and Hume, the denial of objective necessity in nature, and the position that the human mind prescribes the laws of nature. A clear example, in Lenin's opinion, of such "voluntaristic idealism" is Machism, with its denial of objective laws in nature and society, and its assertion of a world of individual wills.

Among neo-Kantians (the school of Windelband and Rickert) voluntarism serves to cast doubt on the theory of the inevitable passing away of the capitalist system, and to support the theory of the possibility of indefinitely prolonging the existence of such a system. In Nietzsche's thought voluntarism stands for a justification of the coercion exercised by the governing class and the enslavement of the oppressed masses.

In William James's essay, "The Will to Believe," the primacy of the will and the subordination of reason and science are stressed, while "faith" is given a primary role in social activity.

In contemporary bourgeois philosophy, voluntaristic tendencies are widespread. A fear of proletarian movements and social revolution and of the inevitability of the collapse of the capitalist system impels the bourgeoisie to seek escape from inexorable laws of social evolution in various theories of free will, the independence of the human psyche, and the like. The ideology of fascism, both in Italy and Germany, contained marked voluntarist elements.

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