A SHORT SURVEY OF THE HISTORY OF MODERN PHILOSOPHY

HARALD HØFFDING

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THE HISTORY OF MODERN PHILOSOPHY

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PREFACE TO THE FOURTH EDITION

In this new edition I have entirely reworked the little book in the light of the experience I have gained by using it for a number of years in the propaedeutic course. I have left out much that was seldom needed in that course, but have in return included biographical information, and I have also tried to make the presentation more rounded and intelligible. This applies not least to the last section, which was to give an idea of the present work of philosophy. — I offer my best thanks to Dr. Anton Thomsen for a number of valuable remarks, which have benefited this new edition.

The 28th of March, 1910.

Harald Høffding.

[1]

INTRODUCTION.

Philosophical Problems.

The history of philosophy presents the attempts that thinkers have made to discuss the ultimate problems of knowledge and of existence. In modern philosophy, i.e. the philosophy of the last three and a half centuries, four main problems in particular have been treated, as the following account will show.

1. *The psychological problem* arises with the question of the main characteristics of mental life. Is the soul a peculiar substance, or does its essence consist in a distinctive activity? Is it composed of many independent elements, or does it have the character of unity and wholeness? Which of the various sides or properties of mental life is the fundamental one? What laws connect the various mental elements with one another?

Whereas psychological consideration has the factually given mental life for its object, there are two problems that are conditioned by the opposition between the factual and the valid or valuable mental life, — between the actual constitution of mental life and the ideal demands that can be made of it: the problem of knowledge and the problem of valuation. In these two problems the point is to show and to apply definite standards of validity or value.

2. *The problem of knowledge* (the logical problem) arises when the conditions and limits of the validity of our knowledge are asked about. Knowledge is a human mental activity, a work we undertake with our mental powers and according to the laws of the working of these powers; to what extent are we then entitled to ascribe validity to its results beyond our own mind? In what does the truth of knowledge consist? — *Formal logic* shows how we must think in order to be in agreement with ourselves, to be consistent. But the actual problem of knowledge arises only when we ask what significance the order and coherence that we establish among our thoughts have for the subjects that we do not ourselves produce, — — for existence, which is more comprehensive than our thinking. *Epistemology* (logic in the wider sense) therefore does not stop at formal consistency or systematics, but raises the question of the real significance of this consistency itself.

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3. An analogous question is raised by *the problem of valuation* (the ethical-religious problem) with regard to our expressions of feeling and will. We judge or evaluate human

actions (our own and those of others) and human social conditions and call them perfect or imperfect, good or evil, noble or base. What standard do we have for such valuation? Is it possible to ground a firm and universally valid standard and to carry it through with consistency? It is the task of *ethics* to discuss these questions. But we also evaluate existence as a whole according to the relation in which it shows itself to stand to our ethical standard, to our ideals, our highest values. Does the course of things in nature and in history show itself favorable or unfavorable, promoting or hindering our ethical ideals? On the answering of this question the religious conception (in the widest sense of the word) depends. It is the task of the *philosophy of religion* to discuss the relation of the ethical ideals to experience, just as it is the task of epistemology to investigate the relation of our logical ideals to experience.

4. Finally it can be asked about the nature of the existence of which the thinking, feeling and willing being is only a single link. Thereby *the problem of existence* (the
[3] cosmological or metaphysical problem) is posed. What is at issue here is the possibility of a scientific world-view. Are we able to comprehend all experiences into a whole, and what validity can an attempt in this direction have? Every such attempt will get its distinctive stamp from the domain of experience or the side of experience that it emphasizes in particular, and in whose light it sees the other domains or sides. One can thus regard the mental as the essential, as the primal phenomenon, and arrive then at an idealist world-view, or make what is movable in space the primal phenomenon, and arrive then at a materialist world-view. One can emphasize the unity and the coherence in the world, and arrive then at a monistic world-view, or the multiplicity and diversity, and arrive then at a pluralistic world-view. Within each of these views the question can again be asked whether existence is in development, or whether in its innermost ground it is unchangeable, and whether values are realized in existence, or whether its essence is exhausted in a system of causes and effects. This last question leads to a connection of the problem of existence and the problem of valuation.

Whereas history shows that there has been a tendency, by reason of a sanguine confidence in the power of thought, to go immediately to the problem of existence, there appears later a decided endeavor to treat psychology, epistemology and ethics independently of "metaphysics" or the systematic treatment of the problem of existence. But the interest in philosophy can spring from four different motives, corresponding to the four main problems, and the one problem leads naturally over to the other, in so far as there is an analogy between them. One and the same fundamental problem runs through all of them: the relation between unity and multiplicity, continuity and

discontinuity comes forward under different forms, whether we investigate personality, science, the conduct of life or the world-view. The spiritual struggles in these different domains present analogous features: what is at issue is the possibility of comprehending into a unity what provisionally appears as a multiplicity, which offers greater or lesser resistance to giving up its sporadic character. All the main problems consist in tasks for *[4]* psychical energy. If a conclusive solution of them is unattainable, this means only that however far we may get in our inquiry, new horizons constantly form for us, with new goals and new tasks[*)].

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I.
THE ORIGIN OF MODERN PHILOSOPHY.

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1. The Discovery of Natural Man.

a. Burckardt in his work *Die Kultur der Renaissance in Italien* has characterized the Italian Renaissance as a discovery of man. The historical conditions led to a liberation of individuals. Man was no longer judged merely by his relation to the Church or to his estate (corporation), but became an independent object of interest and investigation. The discovery of ancient art and literature contributed to this. Men learned that outside the Church too there was to be found a distinctive human life with laws and purposes of its own. The horizon was widened, and a comparative consideration became possible.

In Italy itself Niccolo da Machiavelli (1469—1527) can be regarded as a characteristic representative of these endeavors. He belonged to an old Florentine family and entered the service of his native city as a diplomat, whereby he had good opportunity to observe men and events. After the fall of the Republic (1512) he entered into relations with the Medici, but thereby aroused the ill will of his fellow citizens, and when the republican constitution was introduced again, his services were not accepted. He died in dejection in 1527. — It was political interest that made him a thinker. The unhappy conditions of Italy awakened in him the wish to see the strength and way of thinking

[*)] Cf. the essay *Filosofien og Livet* in my "Mindre Arbejder". Second Series.

of antiquity awakened again. Why should one only imitate the art of antiquity and not
[6] its deeds? But great deeds are possible only when one ruthlessly seeks to reach the goal one has set oneself! — — It may sometimes seem in Machiavelli as if it were a matter of indifference what goal one sets oneself, if only one pursues it with ruthless energy. But there was one goal that always stood in the background of his thinking: the unity and greatness of Italy. In the service of this goal all means were sacred to him. In his famous book Il *Principe* (1513) he has expressed himself in this direction. When he found no sense for the great and no true energy in the Italians of his time, he derived it from the fact that the Church and Christianity had weakened the passions. In his *Discorsi* (Treatises on the First Ten Books of Livy) he compares the way of thinking of antiquity and of modern times, and the comparison does not turn out to the advantage of the latter. Honor, strength of mind and bodily strength are not sufficiently valued. In his admiration for these qualities Machiavelli is a true son of the Renaissance.

In France the spirit of the Renaissance appears in Michel de Montaigne (1533—1592), a nobleman who lived a rich literary life at his castle near Bordeaux, far from the political and religious struggles of the time. His interest was the study of human life, as he knew it from travel, books and self-observation. His *Essais* (1580—1588) begin with the statement: Je suis moy mesme le sujet de mon livre. Our great mother Nature reveals herself in each individual in a distinctive way. The more we investigate, the more differences we discover, without being able to bring them under general laws. Therefore Montaigne speaks against all superstitious faith in reason (rationalism) as well as against belief in dogma. We know things only as our senses show them to us, and in all notions of God we clothe him with human attributes, just as animals, if they could think, would picture their gods in the shape of animals.

In purely theoretical form the interest in the human appears in the learned Spaniard Luis Vives (b. in Valencia 1492, d. in Bruges 1540), who by his book *De anima et vita*
[7] (1538) is a forerunner of modern empirical psychology. He demands that experience shall be the foundation of all knowledge, and by virtue of this principle he declares that our main interest is not to know what the soul is, but *how* it works. His method is descriptive, not analytic and explanatory; but his description of the individual mental phenomena, especially of the emotions, is still of interest. For him the soul and the vital force are One, and he seeks everywhere to connect physiology and psychology.

b. Within Protestantism Melanchton (1495 — 1560) worked for philosophy through a series of textbooks. But the greatest significance was attained by Calvinism, within which the struggle for religious freedom brought about endeavors toward a liberal doc-

trine of law and of the state. Thus the burgomaster of Emden JOHANNES ALTHAUS (Althusius) (1557—1638) developed the idea of the sovereignty of the people in his book *Politica methodice digesta* (1603). But most famous in this domain is the Dutchman HUGO DE GROOT (Grotius) (1583—1645). Early he attracted attention by his juridical and theological learning. As a politician he belonged to Oldenbarnewelt's aristocratic and liberal-theological party. After Oldenbarnewelt's death he was imprisoned, but escaped by the ruse of his wife and afterwards lived in Paris, finally as Swedish ambassador. In his work *De jure belli et pacis* (1625) he proceeds from the fact that there is war in the world — 1) between states, 2) between an individual and the state, 3) between individuals among themselves, and 4) between the state and an individual. 1) The rights of man and the duties of humanity are not abolished in war, which is to be waged in a human manner and for the sake of peace. By this principle Grotius has become the founder of modern international law. 2) The individual's struggle against the state is rebellion, which Grotius rejects (whereas Althaus maintained that it could be justified). 3) War between individuals ought to be limited to self-defense. 4) The state's war against the individual appears as punishment. This is justified only when the suffering that is inflicted on the lawbreaker is outweighed by a greater good for himself and for society. — In all these relations right holds independently of theological grounds, springs from principles that lie in the nature of man (ex principiis homini internis), namely as the *[8]* condition of the social life for which man has an involuntary need. The most important condition here is that every promise be kept; to this men have bound themselves by an express or tacit contract, as soon as they agree to live in a society.

At about the same time that Grotius gave natural law and international law a purely human foundation, the English diplomat HERBERT OF CHERBURY (1582—1648) maintained a natural religion springing from the nature of man himself *(De veritate* 1624). He opposes both those who place an ecclesiastical faith above knowledge of reason, and those who trust only the investigating reason, and those who would derive everything from the senses. There is, he maintains, an immediate, instinctive sense which leads men to the recognition of certain truths (notitiæ communes), a sense that is an effect of the instinct of self-preservation implanted by God. Such truths are e.g. that two propositions which conflict with each other cannot both be true, — that there is a first cause of everything, — that we should do to others what one wishes that they should do to us. Natural religion also rests on an instinctive foundation, an inner revelation in every human soul. A testimony of this he finds in the fact that we have faculties and feel a need that cannot be satisfied by any finite object. The content of natural religion is

the belief in a supreme being, who is to be worshipped by virtue and pious disposition, and in reward and punishment after death. Questions that go beyond this need not be answered.

In the domain of the theory of knowledge another English nobleman sought at the same time to lay a new foundation. Francis Bacon of Verulam (1561—1626) expected a mighty rise in culture when men, by the aid of natural science, which antiquity and the Middle Ages had neglected, made themselves masters of the forces of nature. The purpose of science is the enrichment of human life by new inventions. Yet Bacon also emphasizes the joy itself in the contemplation of nature (contemplatio rerum): the sight of light is more glorious than the manifold utility of light! — In order to carry out his
[9] great scientific plans he considered himself entitled to use all means. What mattered was power and wealth for the costly investigations. Therefore he plunged into political life and reached — by compliance with the despotic whims of Elizabeth and James the First — the highest positions. As Lord Chancellor he was accused by Parliament of bribery and other illegality and removed from office. He spent his last years in quiet with his works.

Bacon calls himself a herald who proclaims a new era but does not himself fight along. He demands that one should give up fruitless speculations and apply the method of experience (induction) in all domains, the mental as well as the material. Against the induction that had earlier been applied Bacon objects that one has kept only to the positive cases, and he demands that one should also investigate the cases in which a phenomenon does not occur. Further he demands an investigation of the manner in which a phenomenon varies under different conditions, and he lays stress on the point that one should — in order not to be overwhelmed by one's material — try to set up hypotheses and see whether they are confirmed by new experiences. Yet he does not — because he underrates the quantitative method — arrive at the true method of the new natural science, which we shall find in his contemporaries Kepler and Galilei. — It is in his work *Novum Organum* (1620) that he describes the inductive method, after first having investigated the grounds of the imperfection of the sciences.

In order rightly to grasp nature man must make himself a blank slate; only as a child can one enter into the kingdom of nature. But there are natural and acquired illusions (idola mentis) which hinder us in this. They can be traced to four kinds. The first kind is common to the whole species, because it lies in human nature (idola tribus). We are inclined to grasp things in likeness to ourselves (ex analogia hominis) instead of according to their place in the connection of the world (ex analogia universi), and

we are inclined to find order, simplicity and regularity in nature. The second kind of illusions rests on the individuality of the individual (idola specus: Everyone looks out *[10]* on nature from his own cave). Some emphasize most the similarities, others most the differences; some emphasize the wholes, others the elements of which they consist. The third kind is due to the influence of language on thinking (idola fori). Words are formed according to the needs of practical life and often indicate differences or combinations that science cannot approve. The fourth kind (idola theatri) is due to the influence of traditional theories. — Bacon does not investigate how it is possible to cast off these illusions. In particular there lies in idola tribus a great problem, which in a later time was brought forward: we must always regard existence from a human point of view (ex analogia hominis), but how can our knowledge then have absolute validity?

2. The New Picture of the World.

In its view of nature, as in its conception of man, the Middle Ages, in so far as it did not take its ideas from the Bible and the Christian tradition, had built on Greek antiquity. Its medicine it learned from Galen, its astronomy from Ptolemy, its philosophy from Aristotle. Its world-picture was due to the combination of the Ptolemaic and Aristotelian doctrine with the biblical conception. The earth stood fixed in the center of the world. Around it revolve, fastened on solid but transparent spherical surfaces (spheres), the moon, the sun, the planets and the fixed stars (these last all on one and the same sphere). The earth and the space from the earth to the moon, the sublunary world, is the home of changeability and perishability; here the four elements (earth, water, air and fire) are in constant motion, as they seek their "natural places," the heavy "downward," the light "upward." Above the sphere of the moon is found the ether (the fifth element), a matter that has no "natural place" and therefore continues its motion eternally and with absolute regularity. By this unchangeability the motions of the heavenly bodies are an image of the essence of the Deity. They move in circles; the circle is the most perfect figure, because it always returns into itself. The world is bounded by the sphere of the *[11]* fixed stars, which is moved immediately by the Deity, whereas the lower spheres are moved by subordinate star-spirits. — This picture of the world agreed not only with what the authorities of the time, the Bible and Aristotle, taught, but also with what the senses immediately seemed to teach. It cost therefore a hard struggle to displace it. And this struggle brought with it a remodeling of the whole world-view.

The founder of the new world-picture, Nicolaus Copernicus (Coppernick), was born in Thorn (1473), studied in Cracow and at various Italian universities and lived as a

canon in Frauenburg, occupied partly with studies, partly with administration. In the great struggle of the age he took no part, although he seems to have had a certain sympathy with the religious movement as well as with humanism. As early as 1506 he began the elaboration of his new astronomical theory, but hesitated long to publish his work *(De revolutionibus orbium coelestium),* and only on his deathbed (1543) did he get a printed copy into his hands. — Here we are interested especially in the epistemological presuppositions on which his work rests.

Nature always works in the simplest way. Against this it would conflict if the whole world moved around so small a body as the earth. And in addition, in order to explain that the planets did not, like the fixed stars, always move in the same direction, but apparently back and forth, one had been obliged to assume that they did not move in simple circles, but in small circles which (as epicycles) moved on the larger circles. A far simpler picture of the world is obtained when the sun is thought of as the center of the world, and the earth and the planets move around it.

Besides the principle of simplicity, the thought of the relativity of motion plays an essential role in Copernicus. An observed motion can be explained not only by the observed object's moving, but also by the observing subject's itself moving. If it is now assumed that the earth, from which the motions of the heavenly bodies are observed, is
[12] itself in motion (about its axis and around the sun), the observations could be explained just as well, but far more simply, than according to the old system.

Copernicus still assumed the world to be bounded by the sphere of the fixed stars, which he thought was the immovable boundary of the world, and he believed in solid spheres in which the stars were set. But he had nevertheless made a decisive change and had stressed that we cannot infer with certainty from our conception of existence to the nature of existence itself.

For long Copernicus' doctrine was regarded as an idle thought experiment, and almost half a century passed before it won adherence among independent investigators.

Giordano Bruno stands here as the one who not only drew further-reaching consequences of the new doctrine, but laid it as the foundation of a whole world-view, in its main features the distinctive fundamental conception of modern times and its first attempt at an independent philosophy. Bruno was born in Nola in southern Italy (1548) and entered the Dominican order while quite young. When he made himself guilty of heresies, and when his need to move freely made the constraint of the cloister unendurable, he fled, cast off the monk's habit and began a restless life of study and wandering, which led him to Switzerland, France, England and Germany. He appeared as

a teacher in Toulouse, Paris, Oxford and Wittenberg, but found no lasting place, partly because of the resistance of the old schools, partly because of his own restless and passionate spirit. Yet he found time to compose his ingenious works, of which especially the Italian dialogues published in London in 1584 (which are now available in German translations) are to be singled out. When he considered a reconciliation with the Catholic Church possible, and when he had greater ill will toward the Protestant Church than toward the Catholic, he returned to Italy, where he wished to live in peace for his studies. But he was imprisoned by the Inquisition and after a long captivity burned in Rome in the year 1600.

Bruno praises Copernicus for the lofty and free spirit that had raised him above the testimony of the senses, by which the great multitude remains held. But he disputes that the world can end with the sphere of the fixed stars, and supports himself herein *[13]* partly on epistemological, partly on grounds of the philosophy of religion.

Only apparently do the senses bear witness to an absolute center of the world and an absolute whole of the world. Every time we change standpoint, we get a new center of the world and a new boundary of the world, so that each place in the world can be regarded now as center, now as boundary point. And it goes with thinking as with sense perception: number can be added to number and thought to thought without limit. Every place is determined by its relation to other places, as every number by its relation to other numbers and every thought by its relation to other thoughts. Every motion looks different according to the standpoint in relation to which it is conceived. Since time is measured by motion, the determination of time too becomes always relative. Neither are heaviness and lightness now absolute properties, but hold in relation to the larger bodies to which the elements belong. The old opposition between heaven and earth must also fall away. We have no right to assume that the fixed stars are each by itself unmoved and all at the same distance from us; it might well go with us here as when distant ships seem to us to be immovable and all equally far away. It is in any case something that must be investigated more closely. And the fixed spheres must be rejected, because Tycho Brahe has shown that the comets are not (as was formerly believed) meteors in the earth's atmosphere, but pass straight through the heavenly space and thus long ago would have had to break the spheres. The stars must then also, just as well as the earth, be able to move without support.

From the standpoint of the philosophy of religion Bruno proceeds from the infinity of the Deity. The effect must be infinite if the cause is. The divine fullness could not come to unfolding in a bounded world.

As it goes with the opposition between heaven and earth, so, according to Bruno, it goes with all oppositions with which we work, because we can think only by setting the one over against the other. Neither the opposition between matter and form, nor that between possibility and actuality, nor that between matter and mind may we ascribe
[14] absolute validity. In the essence that lies at the ground of everything, but for which no positive determination of thought can be found, all these oppositions must fall away. The Deity cannot have its seat in "heaven," since the opposition between heaven and earth does not hold, but every point can be seen both as center and as boundary point. It works in our innermost being, in our striving for self-assertion; it is the soul in our soul, as it is the soul in all of nature, and through space it brings everything existing into interaction. But it is honored better by silence than by speech.

Bruno's ethics stands in close connection with his world-view. Among the virtues he puts love of truth and zeal for work in the first rank. No goal can be the last, but every goal begets new striving. Where a heroic enthusiasm (furore eroico) has been aroused, man does not let himself be deterred from striving after a high goal because pain and danger are bound up with it; they are evils only for the sensuous consideration. The higher the goal, the greater the pain that is possible. But the heroic man rejoices when the noble fire is kindled in him, even if the goal should not be reached.

3. The New Science.

The struggle over the validity of the new picture of the world could be brought to an end only when it could be demonstrated as a necessary consequence of physical laws of nature. This happened through Isaac Newton's demonstration of gravity as a universal law (1687). But the presupposition for this was in turn a new scientific method; it is to such a method that modern natural science owes its origin. Instead of speculation and construction on the one hand and mere gathering of observations on the other, there now came exact measurement, quantitative determination of the phenomena, and, on the basis of it, strict calculation and inference, whose results could in turn be confirmed by new measurable phenomena. Modern natural science came into being through such an interaction between induction and deduction, observation
[15] and mathematical calculation. It is Kepler and Galilei to whom the introduction of this method is due, after the famous artist Leonardo da Vinci (1452—1519), the most many-sided genius of the Renaissance, had already expressed thoughts in the same direction, which however became known only much later.

In Johannes Kepler (1571—1630), the famous astronomer, there took place an interesting development from a theological-poetic world-view to an exact natural-scientific

conception. He first proceeded from the view that the universe, as a revelation of the Deity, must be ordered according to simple geometrical relations, which he even thought he could construct in advance. Later he held fast only to the general conviction that certain mathematical laws must hold for the motions of the planets, and on the basis of Tycho Brahe's observations he found these laws (having shown, among others, that the orbit of Mars was an ellipse). And whereas earlier he had explained the motion of the planets by the assumption of peculiar planetary souls, he later (in his writing on the orbit of Mars) set up the principle that the causes one assumed should themselves be capable of being shown in experience; such a cause he called *vera causa.* The planetary souls were not veræ causæ. — Besides the theological grounding of the quantitative method he has also a psychological grounding: mathematical knowledge is the clearest and surest that we possess, and ought therefore to be applied as far as possible. In qualitative respect the phenomena may present themselves differently to different individuals; but with quantitative determination the disagreement ceases. — Finally experience shows that all material phenomena have quantitative, especially geometrical properties: ubi materia, ibi geometria.

The real founder of modern natural science is, however, Galileo Galilei (1564—1642), through his clear consciousness of the interaction between induction and deduction, observation and calculation. Observation cannot embrace all possible cases; we must therefore keep to certain selected phenomena, describe and measure them as exactly as possible, on the basis of this set up by inference and calculation a hypothesis, and investigate whether the consequences that can be derived from it agree with what *[16]* observation shows. Both in the setting up and in the testing of the hypothesis quantitative determinations are necessary, and Galilei therefore set up the principle: measure everything that is measurable, and make measurable what is not yet so!

Kepler had already taught that a body cannot of itself pass over from rest to motion. Galilei goes a step further. It seemed to him the simplest (and like Copernicus, Bruno and Kepler he regarded the law of simplicity as a universal law) that a thing remains in the state in which it is, when no external causes intervene. A body can therefore not of itself change its motion. If all external influences could be kept away, the motion would continue constantly with the same velocity. By experiments Galilei demonstrated thereupon that balls rolled along parchment channels continued their course the longer, the smoother the channels were, and the smoother and more regular they themselves were. Circular motion too, which he regarded as simple, would in his opinion continue constantly in the absence of external hindrances, — not merely rectilinear motion.

These physical theories Galilei developed in *Discorsi delle nuove scienze* (1638). Some years earlier he had in his *Dialogo sopra i due massimi sistemi del mondo* (1632) compared the Ptolemaic and the Copernican system of the world with one another. He thought he had weighed the possibilities for and against without pronouncing decisively; but his own view was clear, not least from the irony with which the representative of the old view was treated. This brought about the catastrophe of his life. Already earlier (after the discovery of the moons of Jupiter and of the sunspots) he had publicly declared himself in favor of the Copernican system. And when in the year 1616 the Inquisition put Copernicus' book on the list of forbidden books, Galilei is said to have promised not to hold or to spread the new doctrine. The Inquisition saw in his Dialogue a breach of this promise, and the seventy-year-old man had to, under threat of the rack, abjure the
[17] impious doctrine that the earth moved and was not the center of the world. Until his death he stood under the surveillance of the Inquisition, and his later works had to be printed secretly abroad.

Galilei stresses strongly that Copernicanism enjoins that we must not confuse our conception with existence itself: "Think the earth away, and the sun does not rise and does not go down, and there is neither horizon nor meridian, neither day nor night!" This thought he extends to the whole sensuous view of nature under the influence of the conviction that we obtain true knowledge only by keeping to the quantitative properties of things. Only size, figure and motion or rest can we ascribe to things themselves; they are the first and real properties. On the other hand it is a sensuous prejudice to regard taste, smell, color, heat etc. as absolute properties of things. They are names that we give to things when they call forth certain sensations in us; they have their seat in our sensuous body and fall away when this falls away. This doctrine, in which the principle of mechanical natural science is expressed, became of great importance for the epistemological investigations of the following age.

II.
THE FORMATION OF SYSTEMS.

The new interests, points of view, and discoveries that the age of the Renaissance had brought were bound to call forth an effort to develop, on the foundation thus given,

a new world-view coherent in itself. There was bound to stir a need to draw the ultimate consequences of the new views. At all times there stirs, more or less distinctly, a need in the human mind to bring together its knowledge in a view of the whole. The task now presented itself in particular of uniting the new world-picture and the new science *[18]* with the remaining content of the life of the spirit. Bruno had already worked in this direction; but the new mechanical view of nature, through which many problems took on a different shape from before, could not influence his way of posing problems.

a. Réné Descartes (1596—1650) may be called the true founder of modern philosophy, because he is the first to seek out methodically the presuppositions of knowledge, and because he was the first in whom the mechanical explanation of nature acquired a decisive influence on the way problems were posed. He was the son of a French nobleman, and his economic independence made it possible for him to devote his life to thinking and inquiry. In his *Discours de la méthode* (1637) he has given an interesting philosophical autobiography. He received his first instruction at a Jesuit college. Although he had the best teachers of the age, he was nevertheless not satisfied with the result of his schooling. He knew a great deal, but coherence and clear grounding were lacking. He then threw himself into the life of the world and resolved later to get to know real life through military service and travel. Yet he was again and again drawn back to philosophy. When in the year 1619 he lay in winter quarters in Bavaria, he had a kind of scientific awakening. The path he was to take as an investigator stood suddenly before him: The bewildering multiplicity of our representations will vanish when we begin with the simplest and clearest thoughts and then proceed step by step to the composite questions, constantly ordering our thoughts in such a way that the later can be derived from the earlier. This idea guided him both in his mathematical works (the founding of analytic geometry) and in the working out of his philosophical system. After some years of study in Paris he went to Holland in order to live in greater peace, and because in France strict prohibitions were issued against departure from the medieval philosophy. But as the Dutch theologians no less than the Catholic ones regarded his philosophy as dangerous, he accepted an invitation from Queen Christina and spent his *[19]* last years in Stockholm.

In order to find the first principles of knowledge, Descartes (most fully in the *Meditationes* 1641) examines whether there is anything that cannot be called in doubt. Of every object, every content of our thoughts we can doubt. Every observation and every assumption can be illusion. But even the most radical doubt is a thinking, an act of consciousness; if all thinking falls away, then all doubt falls away too. If I doubt, then I still

know that I doubt. Thought itself I can therefore not doubt, even though I doubt all its results. The word thinking Descartes takes in a broad sense, of every kind of consciousness, feeling and willing. That I think shows that I am (as thinking): je pense, donc je suis (cogito, ergo sum)! This is, however, no inference, but an immediate consciousness (of being conscious). — The clearness and distinctness with which I know that I think is now for Descartes a standard: all propositions that are as evident as this one must be valid. And there are two important propositions that satisfy this demand: the proposition that everything has a cause, and the one that there cannot be more contained in the effect than in the cause. From these propositions Descartes derives a proof of God's existence: whereas all representations of finite things and beings can find their explanation in us or outside us, this is not possible for the representation of an infinite being; it can be due only to an infinite cause. Moreover it would be a self-contradiction if God's existence were rejected: for the concept of God is the concept of a perfect being, and to perfection existence also belongs. It follows, then, from the concept of God that he must exist.

Only now, when Descartes (admittedly with the help of the causal principle) believes he has proved the existence of God, is the truth of our knowledge secured for him; for a perfect being cannot deceive. Like Kepler, then, he gives his doctrine a theological foundation. Yet the concept of God with which he operates here is not a purely religious
[20] concept. It expresses the principle of the lawful connection in nature. Everything that is to be recognized as true must find its place in this connection, which makes it possible for us to distinguish between dream and reality.

By means of the concept of God Descartes then grounds the first principles of natural science. *(Principia* Philosophiæ. 1644). Only three properties have we a right to ascribe to material things: extension, divisibility, and mobility. And we obtain the clearest knowledge of everything that takes place in the material world when we confine ourselves to these three properties; the sense qualities, on the other hand, must be charged to the account of the perceiving subject. Herein Descartes pronounces the fundamental thought of mechanical natural science, which he seems to have arrived at independently of Galileo, but probably under the influence of Kepler. — From God's immutability (which is a part of his perfection) it follows now that a body remains in its state when an external cause does not act upon it. And not only the principle of inertia is thus grounded theologically. From the divine immutability there follows further the principle of the conservation of motion (an imperfect precursor of the principle of the conservation of energy): the sum of motion placed in matter at creation can be dis-

tributed differently at different times, but no motion is lost, and no wholly new motion arises.

Proceeding from these presuppositions Descartes demands that everything in nature be explained in a mechanical way. He himself has satisfied this demand only through hypotheses that have not always stood the test. — — Like the world as a whole, so too the organism is a machine. A confirmation of this view Descartes found in Harvey's discovery of the circulation of the blood, which showed that the motion of the blood was due to mechanical causes. He himself applied a mechanical explanation to the nervous system, in that he describes the involuntary movement now called reflex movement, in which an impression, without any consciousness needing to be present, immediately releases muscular activity. Consciousness he assumed only in man, whereas he regarded animals as mere machines.

[21] The soul of man stands in reciprocal action with the brain, in particular with a definite part of it (the pineal gland, glandula pinealis), which in his opinion lay centrally in the brain and which was not, like the other parts of the brain, double. Upon this gland the "animal spirits" (the fine air that, according to the physiology of the age, derived from antiquity, flowed through the nerves) impinge, and the impact is then propagated to the soul, whereby sense-sensations arise. When the soul in its turn impinges on the "gland," a change is produced in the direction of the "animal spirits," which in turn causes a muscular movement, that is, the execution of an act of will. By this clear and consistent carrying through of the popular notion of a reciprocal action between soul and body Descartes comes into conflict with his own doctrine of the conservation of motion: motion disappears when the pineal gland impinges on the soul, and motion arises when the soul impinges on the pineal gland. Even though the soul only changes the direction of motion, this conflicts with the principle of inertia.

Soul and body are for Descartes two different beings (substances), because they present different properties, thinking (consciousness) and extension, which cannot be derived from one another. How two such different beings could act upon one another became accordingly a difficulty for Descartes and his followers. —

Cartesianism was the first form in which the thought of the new age became accessible to wider circles. By its strict demand for a mechanical explanation of nature it marked, despite its often unfortunate hypotheses, a great advance, and it aroused a lively movement in the domain of natural science. By its spiritualism (the assumption of the soul as a being different from the body) and by its attempt to combine theology and science it could — despite violent opposition — find entrance into religious circles.

By its great clarity his doctrine could easily be presented in a popular way, and it won wide support in France, Holland, and Germany.

b. Thomas Hobbes (1588—1679) made the first independent attempt to regard the
[22] mechanical natural philosophy as the only science, — its points of view as the only ones from which existence can and should be conceived. This man, energetic as a thinker and polemicist, but mild and timid in his life, was, like Descartes, dissatisfied with the medieval school he had passed through. For a time he occupied himself mostly with literary studies. The unrest in England awakened his interest in political and ethical questions, and when he had come to know the new scientific points of view (especially after he had become, on a journey in Italy, a personal friend of Galileo) he was led over to general philosophical studies. He lived as a private man with the noble family Cavendish, first as a tutor, afterwards as a friend of the house.

When the Revolution broke out, Hobbes went to France, where he was for a time later the tutor of the exiled Charles II. When Cromwell had brought peace to the country and granted freedom of expression, he returned. —

Hobbes seems to have arrived by his own path at the conviction that all change is motion. Being present at a discussion about what sensation is, he hit upon the thought that if everything in nature were immovable or in uniform motion, no sensation would arise. A difference of motion (diversitas motuum) is therefore a condition of sensation. To sense one and the same thing constantly and not to sense at all come to the same thing. On this proposition Hobbes grounded his psychology. When he then also thought about what change was, he found that it consisted only in motion, and from this it followed in turn that the sense qualities (color, sound, etc.) have a purely subjective validity. He also appeals here to experience, e.g. to the fact that a blow on the eye produces light, although there is in fact no external light.

The proposition mentioned, that all change consists in motion, is for Hobbes the main principle of science. As such it cannot be proved, but it will be acknowledged when one merely lays aside all prejudices. In a similar way he sets up a series of other
[23] fundamental propositions: the causal principle, the principle of inertia, the proposition that motion can arise only from motion and produce nothing but motion. When now these fundamental propositions are to explain everything, then everything must consist in motion. In his systematic exposition Hobbes begins with the doctrine of body *(corpus)* in general, an exposition of the geometrical, mechanical, and physical laws of motion, passes then to the doctrine of man *(homo),* i.e. of the motions that take place in man, the physiological and psychological motions, and ends with the doctrine of the citizen

(civis), i.e. of the motions in men that condition their mutual relations and their social life. — The freshest presentation of his psychological and social theories he has given in a work written about 1640, *Elements of Law* (new edition by Tønnies 1888). Later he published partly the political-philosophical works *De cive* and *Leviathan,* partly a systematic exposition of the first two parts of the system (De corpore and De homine) under the name of *Elementa Philosophiæ* (1655).

The first fundamental propositions must, according to Hobbes, be set up as arbitrary definitions. But he is clear that science cannot content itself with deductions from such definitions. When we pass from geometry to mechanics, from there to physics and from there in turn to psychology and the theory of society, we take up constantly new presuppositions and set up hypotheses that make possible the application of the general fundamental propositions to the special domains. But he does not doubt that the fundamental propositions can be applied throughout. When everything is motion, everything must be corporeal. An incorporeal thing is a non-thing. Science can investigate only finite things, since only such can be in motion from one place to another. Of the world as a completed whole we can have no knowledge. All questions concerning the world as a whole lead over to the inconceivable and can be decided only by faith, not by knowledge. Neither about the origin, limit, nor end of the world can science teach anything. The highest science, the first fruits of wisdom (primitiæ sapientiæ), is reserved to the theologians, just as in Israel the first fruits of the harvest were reserved to the priests. —

When everything is motion, sensation, and consciousness in general, must also be *[24]* motion: "Sensation is *nothing else than* a motion in the minute parts of the sensing body"; "Consciousness (mens) is *nothing else than* a motion in some parts of an organic body." Motion is the real; consciousness is only the appearance (apparition) of motion to us. Thus the feeling of pleasure is in reality (really) only a motion in the heart, thinking only a motion in the head. Psychology is therefore a part of the general doctrine of motion. Yet Hobbes distinguishes expressly motion itself from its appearance or apparition to us. He even declares that of all phenomena the most remarkable is this, that anything at all can become a phenomenon, that is, appear to a subject. There must therefore after all be something other than motion in the world.

In his special psychology Hobbes emphasizes the great importance that comparison has, already as regards sense perception itself, and he shows how representations arise and are connected according to laws of association. He has laid the foundation of the English psychological school. — Of particular interest is his doctrine of feelings and

passions. Pleasure or pain arise when a change furthers or hinders our striving for self-preservation. An absolute goal that could be attained once and for all is unthinkable; all striving and feeling would then fall away. The highest good must consist in unhindered progress toward ever higher purposes. For life is motion! — The special forms of striving and feeling develop from the feeling of power and of powerlessness. The notion of the future plays, namely, a great role: if I believe I have means for future satisfaction and for overcoming obstacles, the feeling of power arises, in the opposite case the feeling of powerlessness. Among the means on which I reckon may also be help from friends or from God. Since my striving for self-preservation is easily crossed by the striving of others, comparison with them plays a great role. Life is a race. We exult when we get ahead of others, feel humiliation when we fall behind, — — hope when we are in good spirits, despair when we are tired, anger when we meet a sudden obstacle, pride when
[25] obstacles are overcome; — we laugh when we see others fall, weep when we ourselves fall; — we feel pity when we see one whom we wish well fall behind, love when we help others. Only with death does the race end.

In this great race it is learned that the efforts at self-preservation of different men are not in mutual harmony. Strife arises, and encroachment may constantly be feared. The state of nature, i.e. the condition of human life as it would be without a political order, is a war of all against all (bellum omnium contra omnes). Here only the need and power of individuals count, as far as they can extend themselves. Fear, hatred, and restless lust for power rule. But in calm moments (sedato animo) men will realize that they can gain greater advantages by union and community than by strife. Thereby they discover the fundamental moral law: Peace is to be upheld, and if it cannot be attained, war is to be waged in common! From this fundamental proposition the particular virtues and duties can be derived, for faithfulness to one's word, gratitude, helpfulness, forbearance, fairness, and self-control are necessary qualities if peace is to rule and society to subsist. Likewise there follows from that fundamental proposition the rule that one must not do to others what one does not wish that they should do to us.

But for the practical carrying out and upholding of these laws and rules a strong power of the state is necessary; the freedom of the state of nature must be given up. This takes place by an express or tacit contract, by which all individuals at one stroke renounce their freedom and bind themselves to unconditional obedience to an authority (a prince or an assembly). Only by such an absolute submission can peace be secured. From now on the will of the government becomes one with the will of the people. Hobbes is the naturalistic theorist of absolute sovereignty. Every limitation (by estates

or Church) and every division (between prince and parliament) would contain the seed of war and could lead back to the state of nature. In the moral and religious domain too the will of the sovereign is to be decisive. Above all the sovereign is to decide how God is to be worshipped; otherwise what is worship for one would be blasphemy for *[26]* another, and there would be a constant source of strife and dissolution. For the same reason the first definitions of good and evil must be fixed by the sovereign. Hobbes here constantly presupposes that the sovereign expresses the will of the people to hold the state of nature down and uphold peace. He is a precursor of the enlightened despotism of the eighteenth century. What he fought was first and foremost class rule and the domination of the Church, and in that he hopes for the progressive enlightenment of the people (paulatim eruditur vulgus), he expects also that an enlightened sovereign will some day uphold the will of an enlightened people.

c. Baruch Spinoza (1632—1677) has in his *Ethica more geometrico demonstrata* (1677) made the most profound attempt to work the fundamental thoughts of the new view of nature into a general world-view. This work, despite its abstract form, does not have an impersonal and purely theoretical character. In Spinoza life and thinking go together. Clear thinking was for him the way to spiritual freedom, to the highest form of personal life. It was his endeavor to see all sides and forms of existence in inner connection. The great thing in his thinking is the full carrying through of different lines of thought, each by itself, without interruption and without compromising, and then the demonstration that each of the trains of thought closed in themselves signifies only one side of or one fundamental form of infinite existence. Thus he attempts to show that unity and multiplicity, mind and matter, eternity and time, value and reality each in its own way express the whole of existence, so that there is an inner identity between them.

Spinoza, who was born in Amsterdam of a Jewish merchant family that had fled from Spain, began as a Jewish theologian, in whom his co-religionists placed great hopes. But he took an increasingly critical stance toward the religious notions of his fathers and was at last solemnly expelled from the synagogue. He lived for a time in the country, afterwards in the neighborhood of Leiden and finally in The Hague, occupied with studies *[27]* and with the working out of his writings. His frugal livelihood he provided by grinding optical glasses. A circle of young friends stood in lively exchange of thought with him and studied his "Ethics" in manuscript. His life is an exalted example of cheerful resignation and inward devotion to intellectual work.

The deductive ("geometrical") method that Spinoza employs in his chief work is not

the one by whose help he came to his doctrine. From an unfinished treatise "On the Improvement of the Intellect," as well as from hints in the chief work, one sees how he conceived the development of knowledge. This begins with scattered and fortuitous experience (experientia vaga), in which the various phenomena are put together according to rules that present themselves involuntarily and rest merely on the fact that no exceptions have been found. Science (ratio), on the other hand, makes a careful comparison of the given phenomena. It proceeds from experience, but seeks something that expresses itself both in nature as a whole and in its individual parts: general laws, valid everywhere. As examples Spinoza names the laws of motion in the material domain and the laws of the association of representations in the mental domain. Only in such laws can one find a conclusion for one's thoughts, whereas the series of individual phenomena can constantly be continued, since what in one respect is cause, in another respect is effect, and conversely. An Absolute in which thought can rest is to be found only in the law of the causal series, not in its supposed beginning or end. Such an Absolute Spinoza calls substance: that which subsists in itself and is understood through itself, in that its concept does not presuppose any other concept. Spinoza's substance, the conclusion of his thinking, is thus the principle of the lawfulness of existence. The highest kind of knowledge is not knowledge of the laws of nature itself. Above experientia vaga, which gives only individual cases, and ratio, which gives general laws, there stands for Spinoza intuitive knowledge (scientia intuitiva), by which the individual phenomenon is immediately presented as a peculiar member of the great connection of nature, — the
[28] individual being as part of the substance that reveals itself in this connection of nature. This higher intuition can be attained only when one has gone through the school of experience and of science. It seems rather to be an artistic beholding than a purely scientific conception. It gives a picture of the individual seen in the light of the whole. Both in the second mode of knowledge (ratio) and in the third (scientia intuitiva) we regard things from the standpoint of eternity (sub specie æterni), i.e. not in their isolation and contingency, but as members of a comprehensive order.

Like Descartes and Hobbes, Spinoza builds his whole philosophy on the causal principle, whose validity is for him, as for them, self-evident. He lays quite special weight on the point that cause and effect cannot be different things: "When two things have nothing in common with one another, the one cannot be the cause of the other; for there would then not be anything in the effect that was also in the cause, and everything in the effect would then have arisen from nothing." That two things stand related as effect and cause means, according to Spinoza, that the concept of the one can be derived from

that of the other. He does not distinguish between ground and cause. The relation between cause and effect is for him the same as that between premises and conclusion in an inference. That the cause precedes the effect *in time,* not merely in thought, he lays no weight on.

"From the standpoint of eternity" time vanishes.

The cause of a thing can lie either in itself or in something else. What has its cause in itself is substance (fundamental being). It subsists in itself and can be understood through itself. We have already seen that the fundamental being reveals itself for Spinoza in the inner lawfulness of nature. It lies at the basis of the subsistence and activity of all things. There can be only one substance; for if there were several, they would have to limit one another, and none of them could then be said to subsist in itself and to be understood through itself. This concept, which for Spinoza forms the conclusion of his thinking, is for him identical with the concept of God as well as with the concept of nature. But these concepts must then be understood in a way other than the usual one. Nature signifies an inner power that stirs in everything, not the mere sum *[29]* of all that exists. And God cannot be conceived as a personal being, since psychological properties such as intellect and will cannot be applied to an absolute and infinite being. Intellect presupposes an object different from it, and will an end toward which one strives; but such differences cannot hold for the absolute being. — Things that do not have their cause in themselves Spinoza calls *modi* (individual beings, phenomena). Modes have their cause in the substance, whose forms of manifestation they are. They stand in external causal relations to one another, but this whole series of causes and effects given in experience has its cause in the substance, which is the inner bond, the power that holds together the series of phenomena.

Everything that exists, modes as well as substance, appears in our experience with two *attributes* (fundamental properties or fundamental forms): mind and matter (or, as Spinoza expresses it, thinking and extension). Since substance is an infinite and perfect being, it must have infinitely many attributes; but we know only two of these, since experience shows us no more. By attribute Spinoza understands "that which the intellect perceives of substance as constituting its essence." Every attribute must therefore be understood through itself, just like the substance whose essence it is to express. One cannot therefore explain one attribute by another, mind by matter or matter by mind. If one has begun to regard existence under the attribute of matter, one must continue with it and not leap over to another attribute. The essence of existence (substance and modes) displays itself in the form of matter as well as in the form of mind, and the one form

cannot be derived from the other. That follows already from the way in which Spinoza conceives the causal principle: cause and effect must be of the same kind, and so belong under the same attribute. To derive a material change from the action of the soul is therefore, according to Spinoza, in truth to admit that one does not understand it. — By this conception Spinoza founded a new hypothesis, which leads beyond the opposition
[30] between spiritualism and materialism, the identity hypothesis. Against Descartes he objects that because two properties cannot be derived the one from the other, it is not justified to refer them to two different beings (substances); they may be irreducible properties of the same being. From Hobbes he is distinguished by the clear insight that the mental cannot be derived from the material, and that the scientific conception of existence therefore cannot be exhaustive. — In Descartes, Hobbes, and Spinoza we have the principal representatives of the three principal hypotheses concerning the relation between mind and matter. —

Of Spinoza's special psychology his account of feelings and drives is of lasting importance. Like Hobbes, and under his influence, he starts from the impulse of self-preservation, which in his system shows itself in connection with the whole world-view, in that it is the infinite substance that acts in the individual mode, whose striving for self-preservation is thus a part of the divine activity. When this striving is satisfied, pleasure arises; when it is hindered, pain arises. Yet this happens only in the transition to satisfaction or hindrance; a stable and unchanged state would not be bound up with pleasure or pain. The special kinds of feeling develop under the influence of the association of representations, whereby a feeling toward an object can gradually become attached to quite other objects. Compassion can e.g. arise when we represent to ourselves a being who resembles us as feeling pleasure or pain.

On the impulse of self-preservation Spinoza, like Hobbes, builds his ethics. It is the opposition between activity and passivity, between being cause and being effect, that here becomes decisive. We are active when the cause of our state and actions lies in ourselves, passive when it lies outside us. As an individual being (mode) man is from the outset predominantly determined by external conditions, by the relation to other modes; his feelings and drives are called forth from without and make him dependent. But by virtue of the impulse of self-preservation a striving can be awakened to have,
[31] as far as possible, the cause of his feelings and drives in himself. There then forms an ideal of human life (idea hominis, tanqvam naturæ humanæ exemplar), as it would be if it unfolded in full freedom and independence. This goal furnishes a standard for what is called good and evil. What leads us nearer to the ideal is good; what removes us from

it, evil. These predicates can be applied only to finite beings who stand in the midst of the struggle with external conditions. — Since a drive can be overcome only by another drive, the ideal itself must awaken a drive that grows strong, so that it can come to rule. Through life in society this drive is strengthened. When men unite their powers, they can more easily overcome external obstacles and provide for their physical self-preservation, so that the mental goods, above all true knowledge, can come to occupy the mind. The mental goods themselves can be an object of common striving; they do not awaken the strife that material goods do, which can each only fall to the share of individuals; on the contrary, in the mental domain the one can help the other without himself losing anything. When full power and freedom are attained, the strong self-assertion (fortitudo) in which virtue consists, then the individual will not only with courage (animositas) assert his own personality, but will also have power enough to give others, with magnanimity (generositas), mental and material help. The highest degree of freedom and self-assertion is, however, attained only through the full understanding of ourselves in our unity with the substance of existence, which stirs in us as well as in external nature. We then obtain a scientia intuitiva of ourselves, see ourselves sub specie æterni, and we are filled with a joy of knowledge that engenders love of the Deity (amor intellectualis dei).

In his political theory Spinoza, like Hobbes, maintains a sharp opposition between the state of nature and political life. But on account of the significance that social life has, according to him, for the development of the individual, it is so far from the case that the individual, as in Hobbes, gives up his freedom by entering into the state, that full freedom, especially in so far as it is conditioned by mental development, first becomes possible in the state. The state is not to make men into animals or machines, but to *[32]* provide conditions for the development of the mental and bodily self-activity of men. It would then act against its own end if it did not uphold freedom of thought, speech, and religion. — It is in his *Tractatus theologico-politicus* (1670) that Spinoza speaks for freedom of religion. In this work he maintains at the same time the justification and significance of a purely historical method in the study of the biblical writings

d. Gottfried Wilhelm Leibniz (1646—1716) is, like his three predecessors, Descartes, Hobbes, and Spinoza, permeated by the significance of the mechanical view of nature. As a boy he had studied medieval works in the library of his father, a Leipzig professor, and it was only after a struggle that he joined the new natural science and philosophy. He felt himself then "transported into another world." He saw that the new thoughts could not be rejected; but he could nevertheless not give up the conviction that nature

was in the end guided by a Providence, and that the mechanical lawfulness was in the end theologically grounded, i.e. had its ultimate ground in a divine purpose. During a stay in Paris the physicist Huyghens had great influence on his mathematical and physical conception, and later he made personal acquaintance with Spinoza. From 1676 on he lived in Hanover as electoral court councillor and librarian, restlessly occupied with philosophical, mathematical, historical, and juridical works. His universal genius made it possible for him to intervene creatively and ordering in very different domains. Everywhere he was guided by one fundamental thought, continuity, the unbroken connection through a multiplicity of transitions — in the world of thought, of number, of nature, and of purposes.

When Descartes and Spinoza taught that the sum of motion in the world is always the same, Leibniz found in this the difficulty that it was inexplicable how motion and rest could succeed one another in the individual places in the world: they stand, after all, as opposed states! Continuity can be maintained only through the concept of force,
[33] i.e. that in a state which contains the ground of a following state. It is force, not motion, that is conserved. When motion ceases at a place in the world, it is not succeeded by absolute rest, but by a state of equilibrium, in which opposed forces hold one another in equilibrium. The transition to motion then takes place by the equilibrium being removed. Leibniz here laid the foundation of the modern distinction between potential and actual energy, led by his great interest in continuity, which in turn is connected with the presupposition that everything has its sufficient reason. If one were to ask again why force is conserved, Leibniz answers that the opposite, a vanishing of force, would be an imperfection and a decline, which conflicts with Providence. He demands that mechanical explanation of nature be carried through in the particular; but this last presupposition, the conservation of force, is teleologically grounded.

On another point too Leibniz departs from his predecessors. Descartes and Spinoza started from extension as an absolute property (created by God or a divine attribute). But the extended is always composite, and the truly real must be the elements of which it is composed, and which therefore (since they are to lie at the basis of extension) cannot themselves be extended, but must be unities (monads). If one wishes to form a representation of these monads, no other way stands open than analogy with our own souls. Every monad is a little world, within which the following states have their ground in the preceding ones, just as in the human soul mental states develop out of one another through striving for clarity. Leibniz takes the same stand toward the opposition between unconsciousness and consciousness as toward the opposition between rest and

motion. He maintains continuity in existence, seen from its mental side as well as from its material side. Nothing in the world begins with absolute suddenness, by a leap, consciousness no more than motion. Unconsciousness is only a lower degree of mental life.

In his conception of the relation between the mental and the material Leibniz stands on Spinoza's standpoint, in so far as he embraces the identity hypothesis. But whereas *[34]* for Spinoza mind and matter stood as coordinate attributes, it is according to Leibniz the mental side that is the fundamental one; it expresses the innermost essence of existence, whereas matter is its outer, sensible form. Material objects we must interpret as sensible appearances of something that forms an analogy to our own mental life. — It is a significant discovery that Leibniz has made, that all metaphysics, i.e. all conclusive world-view, rests on analogy. All mythologies, religions, and metaphysical systems had gone this way, but Leibniz is the first to have become conscious of it. His own system is the first original attempt at metaphysical idealism (i.e. the conception that the mental constitutes the innermost kernel of existence) since Plato, and it stands as a model for all later attempts in a similar direction. When he himself has so great a confidence in analogy, it is because it points out the only way to a conclusive understanding of the world, and he proceeds, by virtue of the principle of sufficient reason, from the assumption that the world must be intelligible. (*Système nouveau* 1695. *Monadologie* 1714).

The law of continuity leads Leibniz to lay weight everywhere in nature and in mental life on the small transitions, the vanishing differences, in opposition to the leaps that experience seems to show. The same thought guided him as a mathematician and led him here to the invention of the differential calculus. His "differentials" are vanishing small magnitudes or changes of magnitude, which nevertheless by summation (integration) give a finite magnitude. The differentials express continuous variations. — In many different domains Leibniz's thinking has worked; but its type is everywhere the same.

Among the infinitely many monads too there is continuity with one another. They are all individually different. There are found, Leibniz maintains, no two things in the world that are absolutely alike. There would then (he adds teleologically) be no reason why they should exist. In existence the greatest possible multiplicity is realized together with the greatest possible continuity. And the ultimate ground of this great harmony *[35]* Leibniz finds (in passing over from philosophy to theology) in this, that all monads are emanations ("fulgurations") of a divine primal monad, which among all possibilities of worlds has chosen the one that would exhibit the greatest possible harmony. He even

undertakes to prove (in his *Théodicée* 1710) that this world is the best of all possible worlds. Every finite world must present imperfections, partly limitations (metaphysical evils), partly sufferings (physical evils), partly sins (moral evils). By God's choice these imperfections are restricted to the least possible. But beyond the domain of the possibilities even the divine will cannot go. And when we find so much evil in our experience, we must not forget that the part of the world that we know, and that is perhaps the worst part, may be vanishing in relation to infinity, — and moreover, that evil does not abolish the harmony of the world, but precisely serves to bring it out, just as a dark shadow enhances the effect of the bright colors in a painting, or as a sound that alone would sound ill may fit excellently into a whole piece of music! —

Besides the works of Leibniz cited (only a few of the great mass of notes that he has left behind) must be noted *Nouveaux Essais,* which appeared only long after his death, and in which he countered John Locke's theory of knowledge.

III.
THE PHILOSOPHY OF EXPERIENCE.

The formation of systems in the seventeenth century had as its foundation concepts and presuppositions that were not examined more closely. This holds quite particularly
[36] of the causal principle and of some propositions of natural science that, like it, came to be regarded as self-evident. It is the merit of English philosophy to have examined the psychological origin and the epistemological validity of such concepts and presuppositions. This inquiry acquired significance beyond the purely philosophical domain, in that men now also put to the test the principles that held in the state, in religion and in education. Authorities that had hitherto won involuntary assent were now to render an account of their origin and their justification. Together with psychology and epistemology, ethics now came to the fore.

a. John Locke (1632—1704) is said to have got the idea for his epoch-making work *Essay on human understanding* (1690) from a discussion of religious and moral subjects; since it proved difficult to reach agreement, Locke saw that one must first examine our faculty of knowledge, in order to see what it is capable of and what it is not capable

of. He sets up the principle that all our ideas are due to experience, to observation either of external things or of our own inner states and activities. This as regards origin; as regards validity, he finds it self-evident that what we get from observation, i.e. predominantly passively, must be valid, whereas a difficulty arises with concepts and propositions that are due to our own activity.

Locke was no more than Descartes and Hobbes satisfied with his medieval instruction. The writings of the two men named led him into philosophy. Since he could not subscribe to the 39 Articles, he had to give up his original plan of becoming a clergyman and afterwards studied medicine. Later he entered the service of the Earl of Shaftesbury and remained attached to his family, as tutor, secretary and friend. When the Earl was overthrown, Locke went over to Holland, and he composed here his most important writings. He returned to England with William of Orange and gained no small influence under the new government. He spent his last years in rural solitude.

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Since all ideas ultimately derive from experience, there can be no question of "innate" ideas. The assumption of such ideas is due to human laziness, which shuns the trouble that may be bound up with discovering the origin of our ideas. But from the simple ideas, which we receive predominantly (for the most part) passively, we ourselves form new ideas. We *combine* simple ideas into complex ones; thus we form ideas of things (beings, substances) by combining the various qualities that each for itself correspond to a sensation. We *compare* different ideas and thereby get new ideas, e.g. of likeness and unlikeness, of causal relations. And we *separate* (abstract) ideas from their original connection, e.g. when we form the idea of a color in general, or of space apart from any content. How, then, can such ideas produced by ourselves be valid for existence itself? They are surely not copies or impressions! Their validity can consist only in our being able to use them as patterns or exemplars, by which we measure what is observed. In this way we use in mathematics the geometrical figures and in moral philosophy the ethical ideals. But now the concept of thing (being, substance), which is expressly to concern something that exists in itself? What we perceive is surely never the things themselves, but only their qualities! It is no use saying that there must be "something" underlying the qualities; for then there must surely be "something" underlying this "something", and so on. Nevertheless Locke will not deny the existence of things or beings. — Characteristic too is his attitude toward the causal principle. He regards it as self-evident, like the system-builders: Nothing cannot produce Something! And he confidently uses it to prove the existence of God (since the world must have a cause). The idea of cause, on the other hand, corresponds, he thinks, to the observation that things

and qualities arise through the action of other things. But he has himself reckoned the idea of cause among those that we ourselves produce (by comparison)! — Locke thus left problems enough to his successors.

[38] b. George Berkeley (1685—1753) wished to remove the consequences, dangerous to religion, of the new science, and this end he thought to reach by a critique of the abstract concepts (especially the concepts of space and matter) and by going back to immediate experience and intuition. Seldom have childlike piety and sharp critical analysis been united in so close a manner as in this clear and fine mind. At the University of Dublin he had studied Locke, Newton and the chemist Boyle, and he wrote his principal works as a young man. Then he became an Anglican clergyman and polemized zealously against the freethinkers. His favorite plan was to found a college in America, partly to convert the Indians, partly to transplant art and science to a new flowering in the new world. After three years' stay there he had to give up this plan. He then served as Bishop of Cloyne in Ireland, equally zealous as a pastor of souls, as a philanthropist and as a patriot.

In his principal work *(Principles of Knowledge.* 1710) Berkeley shows that in the strict sense of the word we have no general ideas, as Locke had still assumed. We can represent to ourselves a part or a quality distinguished from other parts and qualities. But we cannot represent to ourselves anything "common" to several qualities, such as e.g. color in general. An idea of color must be either an idea of red or of yellow or of green, etc. When I want to have an idea that is to hold of several qualitatively different things, I must either regard a single one of these things as an example, or use a word that fits each of them. The idea of matter as something extended and movable is thus a mere general idea; for we cannot observe anything extended without color, hardness, etc. And space (extension) we know (as Berkeley had shown in *Theory of Vision.* 1709) from two different senses, sight and the sense of touch. Space in general (mathematical space) is supposed to be "common" to sight and touch; but nothing of the sort can be represented. Our idea of space must either concern something that can be seen, or something that can be touched.

[39] Berkeley wishes only to combat the assumption that behind the sense qualities there should lie a material substance. He does not wish to combat natural science itself, but sees its task in finding out by what rules we, when one sense quality has appeared, can expect another. To explain nature is to point out the lawlike relations between the sense qualities. — — As a theologian Berkeley declares it a detour to let God first create "matter" and then let it produce the sense-sensations in us. It is simplest to think of God

(whose action we represent to ourselves in analogy with our willing, which constitutes the innermost essence of our soul) as acting immediately in the production of our sense-sensations according to definite laws.

c. David Hume (1711—1776) brought the empirical inquiry into human knowledge to a provisional conclusion, especially by his inquiry into the concept of cause, that concept whose validity is a tacit presupposition for research in natural science, psychology and history, as well as for religious beliefs and for practical human life. Hume's problems therefore lie at the root of all human thinking. And he is a poser of problems of the first rank, besides which his psychological talent makes it possible for him to throw light on the actual development of human thoughts even where their objective validity is problematic.

Hume was the son of a landowner in the south of Scotland and showed early a desire and aptitude for thinking and learning. After vainly trying to make his way in practical life he withdrew into solitude and wrote, during a stay in France, his principal work *Treatise on Human Nature* (1739 —40). Later he turned to historical and economic studies and wrote a history of England, one of the first works in which account is taken of all sides of the development of culture. In his *Essays* (1748 ff.) there are, besides important economic treatises, two philosophical treatises (on the human understanding and on the principles of morals), in which he gives shorter presentations of the most important *[40]* problems of the principal work. In *Natural History of Religion* (1757) he treated the religious problem from a psychological and historical standpoint; in the *Dialogues on Natural Religion*, written in 1751 but published only after his death, he treated the same problem from the critical side. — After holding various public offices he spent his last years in Edinburgh in scholarly otium.

Whereas Locke had distinguished between the origin of ideas and their validity, for Hume both coincide. An idea (idea) is valid only when it derives from a sensation (impression). Whence the sensations in turn come he does not inquire, because it is epistemologically indifferent; with regard to validity it comes to the same thing whether they derive from ourselves, or from external things, or from God. Pure logic and mathematics also, which concern only relations between our ideas, not the ideas themselves, Hume excludes from his inquiry. He wishes to discuss only the validity of those ideas by whose help we think we can go beyond what is given in our sensations. An idea of this kind is (as Berkeley had already shown in regard to the material) the idea of things (beings or substances). We sense only single qualities, not that which "has" them. In ourselves we observe changing sensations, ideas and feelings, but no soul or ego, no

constant elements that could deserve the name of "ourselves". And the concept of cause fares in a corresponding way. We observe single phenomena that follow one another in time, but an inner bond, a necessary connection we do not observe. Causality cannot be observed. And all phenomena, all things appear to our observation as independent, each with its own constitution; we can very well represent them to ourselves each for itself, without being compelled to pass from one to the other. When a ball moves, we can represent to ourselves this motion without being compelled to represent to ourselves any other motion.

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But we do after all use the concepts of thing and cause! Whence can that come? — Hume answers: The concepts of thing or substance we form under the influence of the propensity that our consciousness has to continue with an activity even after the occasion has ceased. It is thereby that we form ideal ideas: through our imagination we represent as perfect what for observation is only imperfect. Thus we form, e.g., ideas of absolutely regular figures. And thus we form ideas of constant things or substances, although we know only different degrees of constancy. In the case of the concept of cause, custom also takes a hand. We are accustomed to nothing happening without something else having happened beforehand, and something third happening afterwards. Therefore, when something happens, we expect partly a "cause", partly an "effect". But there is no proof in that. It is a mere association of ideas. It goes with "necessity" as it goes with the sense qualities; like these it is subjective, not objective or real. Custom can ground a belief, an instinctive conviction, but cannot yield proof. Hume naturally does not mean that we could refrain from using the concept of cause; but for him the marvel was that the validity of the concept on which all our real science depends could not itself be grounded.

Just as Hume in his epistemology ends by finding the ultimate foundation in a need or an instinct whose justification cannot be proved, so he also grounds his ethics on feeling, not on reason. Reason can only compare and analyze; it can convince us of facts and relations, but not of value. Good and evil are qualities that our feeling drives us to attribute to things, just as our sense-sensations lead us to attribute to them the sense qualities. Since we call actions and qualities good even though they do not benefit ourselves, the feeling that underlies approval cannot be of an egoistic kind. In our approval or disapproval we take up a common, not a private standpoint. When we, e.g.,

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regard justice as a good quality, this can only spring from our embracing human life, wherever it stirs, with sympathy. Perhaps it was originally only interest in our own security that made us approve of justice; there must then have taken place a change in

our emotional life when we call it good even where our own welfare is not affected by its observance. The basic motive of ethical valuation is then sympathy or the feeling of comradeship (fellow-feeling).

As in ethics, so in the philosophy of religion Hume opposes the overvaluation of the influence of the intellectual. And as in epistemology he undertakes here too a twofold inquiry, in that he discusses partly the psychological origin of religion, partly the validity of religious ideas. The first is presented in "The Natural History of Religion", the second in "The Dialogues on Natural Religion". — Religion arises not from purely intellectual motives, but from fear and hope and from the propensity to represent all beings in the likeness of man. In the beginning man represents to himself the beings to which he takes refuge under the anguish of life, in very imperfect forms. But here too the tendency of the imagination to go beyond the limited and the finite is at work, and it dawns on man that his God must be an infinite being, and that there can be only one God. Alongside this tendency, which leads to representing the Deity as raised above everything human and removed from the finite world, there is, however, an opposite tendency, a need to represent it as near and in a graphic manner, in human form and with human qualities, and we find in religion a constant oscillation between these two tendencies. Thereby we understand the oppositions and contradictions that are found partly between the different religions, partly within the same religion. — In his "Dialogues" Hume introduces a supernaturalist (who maintains faith in a supernatural), a rationalist (who thinks that by the way of reason be able to prove the existence of God) and a naturalist (who maintains that we can come beyond experience neither in faith nor in reason). Although the naturalist in the end makes a polite retreat, it is nevertheless clear that his grounds are decisive in Hume's own eyes. He disputes the right *[43]* to infer a God from the order and purposiveness of nature. Why should what is purposive in the world not be able to arise from natural causes? Through a progressive development the ordered wholes and systems in the world might be thought to have formed themselves. And in any case the real world presents so much that is imperfect that one cannot infer a being who should be at once all-good and almighty. Finally — even if one wants to find the origin of the world in a divine thought, one must ask again whence this thought has its origin. — When the naturalist nevertheless ends by finding difficulties in all standpoints, we must presumably not see in this mere caution, but an expression of Hume's constant striving to pose the problems sharply and to keep them open.

IV.
THE PHILOSOPHY OF THE ENLIGHTENMENT.

The systems and the philosophy of experience affected only a narrow circle. But toward the middle of the eighteenth century there awoke a striving to spread the ideas of the quiet thinkers in larger circles. In England this movement, which is usually called the Enlightenment, took on forms less characteristic than in France and Germany. In France, where the old order of things in church and state stood more closed and unyielding in the face of all change than in England and Germany, the movement of the Enlightenment took on a decidedly revolutionary character. Locke's demand for a pointing out of the experiences from which the ideas derive was used to call the existing order to account, and men believed themselves to be in possession of presuppositions sufficient for the
[44] solution of the problems of thought and of life, so that whatever did not agree with them had to be overthrown. In Germany the after-effect of Leibniz's philosophy combined with Locke's influence to produce a popular philosophy, which undertook a purging of the traditional representations. But both in France and in Germany there appeared men who were satisfied neither by the new enlightenment nor by the old tradition, because their gaze was directed toward more deeply lying conditions of life. Such men were Rousseau in France and Lessing in Germany.

1. On a visit to England Voltaire (1694—1778) came to know English conditions and English thoughts. Through his *Lettres sur les Anglais* (1733, burned 1734) France came to know Locke's and Newton's thoughts, as well as English religious, literary and political conditions. Voltaire's poetic activity and his tireless work for tolerance and justice belong to the history of literature and of culture. Here only his most important philosophical works shall be mentioned: *Dictionnaire philosophique portatif* (1764, burned the next year) and *Le philosophe ignorant* (1766). Now with arguments, now with mockery and scorn, now with deep indignation he combated prejudices and spiritual and bodily oppression. His arguments he drew from Locke's doctrine of the origin of all ideas from experience and from Newton's doctrine of the lawlike order in nature, and criticized on their basis the doctrine of the church. His own religious standpoint was the so-called natural religion (cf. Herbert of Cherbury). He regarded that religion as the best which contains much morality and few dogmas. Reason can, from the purposiveness in nature, prove the existence of God, but otherwise ends in insoluble problems; we know neither what matter is nor what the soul is. God has given us reason to guide us in our action, not to penetrate into the essence of things. What lies beyond natural religion is due to

stupidity or deception; stupidity makes the beginning, and deception then takes it into its service. Educated people need no other religion than the natural; the others had best go on going to Mass. — Although the purposiveness in nature proves for Voltaire the *[45]* existence of a God, there is nevertheless — he thinks — too much evil and too much suffering in the world for this God to be almighty. In his poem on the destruction of Lisbon and in the novel "Candide" Voltaire has expressed his thoughts about the evil in the world. One may have hope of progress, but the world is far from being "the best world". Voltaire mocks Leibniz's optimism.

In decided opposition to Voltaire *Holbach* (1723—1789), a German baron living in Paris, presented materialism as the true consequence of natural science. *(Système de la nature.* 1770). Motion is an original property of matter, and material phenomena must be explained only by material causes. It is then not necessary to assume mental beings different from matter. Thinking or consciousness is only motion in the smallest parts of matter. There is only one science, physics, the doctrine of motion. The assumption of a double kind of beings, mental and material, is not merely useless, it is harmful. It favors superstition and thereby the dominion of the priests. Even the so-called natural religion is dangerous; for religion cannot subsist without cult, and with that the dominion of the priests is at once given. The representation of God is due to cunning priests (fabricateurs de la divinité), who wanted by its help to rule over men! —

Despite all opposition Voltaire and Holbach agreed that the age of the Enlightenment had come, and that the only thing now was to spread it as widely as possible. In Diderot's and d'Alembert's great Encyclopedia, in which the most outstanding men of the time were collaborators, the boldest thoughts and the sharpest criticism found admittance under disguises and paraphrases. After it the French philosophers of the Enlightenment have got the name of Encyclopedists. To their circle belonged for a time also Jean Jacques Rousseau (1712—1778), and his break with them — in which, besides the differences of principle, many personal motives also played a part — was a cultural-historical event, a sign that a new problem was about to break through. As *[46]* Hume's problem concerned the possibility of science, so Rousseau's problem concerned the value of culture.

Rousseau was born in Geneva. His restless spirit, yearning beyond the usual limits of life, cast him into a romantic life of wandering and adventure, which in the year 1741 led him to Paris, where he became a friend of Diderot and Holbach. When the great thought of the opposition between nature and culture had dawned on him, he left Paris to live in the country, and soon afterward broke with his encyclopedic friends. On

account of his writings (which were burned like Voltaire's, but were not anonymous like his) he became an exile; even in Switzerland he could find no lasting place. In his later years his suspiciousness and fear of persecution had definitely the character of insanity. He spent his last years in France in seclusion.

By nature Rousseau understands the immediate and unified force of life, the involuntary unfolding, in opposition to the divisiveness and limitation that culture causes, especially through the division of labor, which does not let the individual attain all-round development, but fosters a single faculty at the expense of the others, whereby men then become more dependent on one another. The healthy, involuntary self-assertion (amour de soi) does not stand in opposition to compassion and devotion; on the contrary, one in whom the inner life stirs vigorously needs to make no distinction between himself and the others. It is only when an unhealthy comparison and rivalry assert themselves that self-assertion becomes egoism (amour propre). To return to nature means for Rousseau to return to the unity and fullness of life and of the forces, where neither inner nor outer oppositions assert themselves. In opposition to the divisive effect of culture he exclaims: Rendez l'homme un! In free nature, which Rousseau had really learned to know in the wanderings of his youth, this feeling of unity stirred especially vividly in him. He is the first writer who has really given expression to the joy in the solitude of
[47] nature and the beauty of nature. — Since feeling — in opposition to knowledge and will, thus to comparing and preferring — has quite particularly the character of immediacy, unity and fullness, he saw man's innermost essence and worth expressed in it, and it is due especially to him that it is now regarded as an independent side of mental life.

The irreconcilable opposition between nature and culture, which Rousseau maintained in his first writings (especially *Discours sur l'origine et les fondements de l'inégalité parmi les hommes,* 1755), was, as his thoughts deepened and became clearer, replaced by a relative opposition. In his later writings *(Émile* and *Contrat social,* 1762) he distinguishes between a natural and an unnatural culture. Culture consists in the development of the forces, and a culture is natural when it corresponds to the stage of development at which man stands, so that self-activity becomes possible and the unified force of life does not come to suffer from the division of labor. What Rousseau protested against was that what the age praised as culture should signify an unconditional progress, and next that culture should without more ado be capable of being transferred from one people to another. In the pedagogical, the religious and the social domain alike he maintains the involuntary unfolding of life as the one thing needful. — All influence from without is to serve only to draw out the distinctive character of each individual; education is to

get the child to develop his faculties on his own, and has its chief significance in keeping obstacles away. Childhood is an independent period of life and must not be treated merely as a means or preparation for the adult age. — In religious respect Rousseau agrees with Voltaire, as far as the representations are concerned. He believes in a good God, who is, however, not almighty, since the evil in the world can be explained only by the resistance that matter offers to the divine action. Yet he takes a stand not only against materialism, but also against Voltaire. He felt a great antipathy to Voltaire's standpoint, which had a purely intellectual character. For him himself religion had its root in the life of feeling. The need of self-unfolding can be so great that it seeks beyond every limit and finds rest only in an infinite object. The religious feeling reaches *[48]* its culmination in an ecstasy of love, admiration and overflowing devotion. That religion springs from nature means for Rousseau that it springs from inner feeling. In a letter he says: J'ai laissé là la raison, et j'ai consulté la nature, c'est-à-dire le sentiment intérieur qui dirige ma croyance. — In his political theory he maintains the sovereignty of the people. The general will (la volonté générale, different from la volonté de tous) is to rule. It is the innermost need of the people and its dominant tendency, directed toward the common interests, the welfare of the whole and of the individuals through the changing generations. To obey it is not dependence, for each individual is membre du souverain and can find his will fulfilled in it.

2. In Germany it was especially Chr. Wolff's (1679—1754) popularization of Leibniz's philosophy that came to lie at the foundation of the Enlightenment. His broad, systematic writings displaced medieval philosophy and theology from the German universities. It was not, as with Leibniz, metaphysical idealism and the doctrine of monads that stood in the foreground, but the doctrine of the harmony in the world effected by God. His firm faith that there was a sufficient reason for everything made him a martyr, in that King Friedrich Wilhelm I of Prussia, on account of an accusation of fatalism, deposed him from his professorship at Halle and — with the threat of the gallows — ordered him to leave the country within 48 hours. Wolff then went to Marburg, whence Friedrich II called him back immediately after his accession to the throne. — Alongside Wolff's popularization of the systems of the seventeenth century Locke's influence also worked in Germany. German philosophy of the Enlightenment became then an often very external combination of Wolff and Locke. Gradually the psychological interest decidedly came into the foreground before the metaphysical, and men were thereby led to see that the opposition between the obscurity and the clarity of representations was not the only decisive one. Under the influence of English literature and Rousseau, feeling

began to be recognized as an independent side of mental life. The shadow side of this was the sentimentality that marked the age alongside rationalism.

[49] In the strife between rationalism and orthodoxy that resulted from the appearance of the philosophy of the Enlightenment in Germany, Gotthold Ephraim Lessing (1729—1781) took up a position that pointed beyond the oppositions. Although in character and gifts he is very different from Rousseau, he nevertheless occupies an analogous position in the history of the life of the spirit. He had a great and fine sense for what is original in the domain of the spirit, the religious and the poetic as well as the intellectual, and for an inner connection that lies behind the definitely marked forms of faith and thinking. Therefore he took up a critical position toward both rationalists and orthodox. As a theological critic he pointed to original Christianity, which was older than the so much disputed Bible (*Über den Beweis des Geistes und der Kraft*). And he set, as an investigator, the constant striving after truth, in which the forces come to living unfolding, above the mere possession of truth, which makes one lazy and passive. *(Duplik).* The connection in spiritual development he found not in dogmas or results, but in the inner striving to which they owe their origin. The sense for what is original and distinctive led him also as an aesthetician. He referred to Shakespeare as the great exemplar of dramatic art, in opposition to the prevailing French taste, which had ended in the artificial and empty.

Lessing's own religious standpoint is expressed in the proposition, directed against the orthodox, that from historical reports one cannot ground a knowledge of the eternal connection of existence. The various positive religions stood for him as stages in the spiritual development of man; what education is for the individual, the positive religions are for the species. The Old and the New Testament are "the elementary books of the human race". The time will come when such books will be unnecessary; then "the third kingdom", the new eternal gospel, will come. *(Erziehung des Menschengeschlechts. — Gespräche über die Freimaurer.)* — In his general philosophical ideas he stood close to Spinoza and declared that if he were to name himself after anyone, he would name himself after him.

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V.

IMMANUEL KANT AND THE CRITICAL PHILOSOPHY.

Like Lessing and Rousseau, Kant too belonged to the century of the "Enlightenment," but like them he pointed beyond it by the standpoints he adopted. Like so many great minds he received influences from many sides. Wolff, Newton, Hume and Rousseau had an especial influence on his philosophy, as he presented it, after a long period of thinking for himself, in his principal work *Kritik der reinen Vernunft* (1781). The task of this work is an examination of the powers of human thought to attain science without relying on experience; by "pure reason" is meant precisely thought, as it works without the aid of experience. That all knowledge *begins with* experience, Kant does not doubt; but it did not follow from that that it *need not be founded on* experience. The philosophers of the seventeenth century had assumed that there could be science beyond the domain of experience, but on the other hand Hume had maintained that the very principle that underlies all science of existence, the causal principle, rested only on a custom and could not be scientifically grounded. It was precisely Hume who, as Kant himself has put it, awakened him from his dogmatic slumber. For in his first period, as an adherent of Wolff's philosophy, he had trustfully relied on the fundamental propositions of science and on the justification of applying them beyond experience. The influence of Hume introduced for Kant the long labor that ended with the definitive founding of the critical philosophy, whose principal task is an investigation of the presuppositions of human science and of their validity. Kant is aware that the critical philosophy cannot be man's first philosophy. From the first, man does not doubt the validity of his knowledge and *[51]* does not assume that it has limits. The first philosophy is therefore always *dogmatic,* i.e. it makes no examination of the fundamental concepts and fundamental propositions from which it starts, but relies on them trustfully and believes that with their help it can solve all riddles. When the dogmatists come into conflict with one another, a *skeptical* period naturally follows, in which it is doubted whether valid knowledge can be had at all. But the *critical* philosophy then sets itself the task of judging between dogmatists and skeptics by a methodical examination of the conditions of science and an investigation of the domains in which these conditions are present. — It is not, as the title of Kant's principal work shows, all science that he wishes to investigate; that which rests merely on experience, e.g. descriptive natural science and psychology, he does not include.

Besides Wolff and Hume, Newton and Rousseau, as already said, exercised a profound influence on Kant's development. — Isaac Newton (1642—1727) stood for him as the model of the strict scientific conception of the world. In his *Principia philosophiæ naturalis mathematica* (1687) Newton had given the greatest example of exact science

combining induction and deduction. Starting from the experience that gravity is greater in the valleys than on mountain heights, and that bodies thrown into the air fall down, he conjectured that the planets too are heavy, and that they deviate from the direction in which they would move according to the principle of inertia only as much as the law of falling bodies established by Galileo on the surface of the Earth indicates. He then drew the mathematical consequences of this conjecture and showed finally that the results of this deduction agreed with the observations. The planets thus move according to the same law as bodies thrown into the air from the Earth. And from this assumption could then be derived the laws found by Kepler on the basis of Tycho Brahe's observations (among them the law of the elliptical form of the planetary orbits). It now became Kant's task to find what presuppositions Newton's science rested on, and to investigate
[52] whether these presuppositions could be proved. But he also tried to continue Newton's work. The latter had declared that the wonderful harmony in our solar system — in that planets and satellites move in the same direction, roughly in the same plane and in almost circular orbits — could not be explained by natural causes. Kant showed (in Allgemeine *Naturgeschichte und Theorie des Himmels* 1755) that if one imagined that all the globes of the solar system had once formed one great rotating nebular mass, one would be able to explain the order now existing according to ordinary laws of nature. During the rotation, by reason of centrifugal force, rings would separate off from the nebula's equator; these would in turn split into globes at various distances, but all rotating in the same direction and in roughly the same plane. It was the same hypothesis that (independently of Kant) was later set up by Laplace, but which is now disputed. It was a principal thought of Kant that all phenomena are subject to the law of causality, and that even the order and purposiveness found in nature must be explicable according to laws of nature. All the greater a problem arose for him when, later, through Hume's criticism, he came to doubt that the causal principle could be proved at all. — Rousseau's influence led Kant to a new valuation of man: formerly he had regarded knowledge and enlightenment as the highest and had despised the rabble, who know nothing; the study of Rousseau brought him to find an inner kernel in man's feeling and will, which can subsist with a certain independence of enlightenment and information. Rousseau also exercised an influence on the later development of Kant's ethics. —

Kant's life (1724—1804) moved, as far as externals are concerned, in a narrow circle. His father was a poor craftsman in Königsberg. At the University of Königsberg he studied Wolff's philosophy and Newton's physics. After having for some years been a private tutor in various noble families in East Prussia, he worked for a number of years

as Privatdozent at the University of Königsberg with great following; only in 1770 did he become professor. He was never outside East Prussia; his time was taken up with the preparation of his works and of his academic teaching. Yet he took part in social *[53]* life and had a reputation as a witty and elegant man of society. He belonged to the age of the Enlightenment, but by "enlightenment" understood a striving, not something that one could attain once and for all, still less had now attained. And while his critical thought led him into depths that ordinary enlightenment did not know, he had a sense of the sublime, which was the keynote of his view of life, nourished by consideration of nature and by his conviction of the unconditional validity of the ethical ideals. In his old age he came to suffer under the clerical reaction after Friedrich II's death. When in the year 1793 he had published a work on the philosophy of religion, a royal rescript was addressed to him, which censured his free conception and threatened further measures if he continued in the same direction. Kant considered it his duty to obey, but declared that he would now not write or speak about religious subjects at all. When a new, more liberal government came, he resumed his activity in the philosophy of religion and made public the scandalous episode. His last years present the picture of the dissolution of a great mind; probably he suffered from a brain disease; only occasional glimpses still recalled what he had been. —

Kant's philosophy can be presented in three sections, according to his three most important works, of which the first gives an epistemology, the second an ethics, and the third seeks to reach beyond the results of both in a conclusive conception.

1. *Epistemology.* (Kritik der reinen Vernunft).

a. Since Kant wishes to investigate how far we can get along the path of pure reason, he must first find out what pure reason is. He then analyzes our knowledge and finds that there is something that constantly asserts itself, whatever we know or experience, and which we ourselves must bring with us, namely the forms in which we combine and order our observations. Knowledge is a mental activity whose laws and forms of operation must be traceable in all experience and all knowledge. In contrast to these forms Kant calls the mere sensations and observations the material of our knowledge. That we receive passively. It is only the forms that Kant, in accordance with his task, *[54]* has to do with, and of them he finds that three kinds in fact assert themselves, which all, however, present the same fundamental character and are manifestations of one and the same fundamental form.

In every sense perception there is something that is independent of the particular sense qualities I perceive: in one and the same picture of space I can combine differently

colored things at different times, and in the same length of time I can experience highly different events. Everything I perceive, however different and changing it may be, I combine in space or in time or in both forms. Space and time are *forms of intuition,* by whose application the chaos of sensations is combined and ordered into sense images.

But we do not remain with the sense images. These are in turn combined and ordered by reflection ("the understanding") and placed in definite relations to one another. Here too certain forms assert themselves: the forms of the understanding, or *categories* (fundamental concepts). By a very artificial path, which we cannot enter into here, Kant seeks to show that there are 12 such categories; but he indicates that they can be reduced to two: the category of magnitude and the category of cause. *The concept of magnitude* we apply when we proceed from the assumption that everything we experience must have a certain extension in space and a certain degree of intensity, and that between all points in space and between all degrees on the scale of intensity a continuous transition is possible. *The concept of cause* we apply when we proceed from the assumption that the events we observe must be capable of being connected in such a way that there is not merely a temporal relation between them, but also such a relation that the one event contains for us the ground of the other, so that there is an analogy between the relation ground—consequent on the one hand and the temporal relation between the events on the other. Both categories express the demand for *continuous connection* and work together to make our experience able to constitute a unity. By virtue of the concept of magnitude we pass continuously from place to place and from degree to degree, and by virtue of the concept of cause we pass continuously from event to event. There shall be
[55] no leaps in nature, neither in extension nor in degree nor in the series of causes.

Both forms of intuition and categories are forms of our knowing activity of consciousness, which at every stage shows itself as a combining, a *synthesis.* They are different ways of combining the given material. No experience is possible except in that the sensations are connected into sense images, and the sense images are connected into continuous series in time, space, degree and causality. Such synthesis need not take place with full consciousness. It is, says Kant, the effect of a blind but indispensable mental function, without which we should have no knowledge at all, but of which we only seldom become conscious. All analysis we can undertake presupposes that something is connected in our consciousness; for we can only dissolve what is connected.

Forms of intuition and categories express connections of the given material. But the involuntary need, deeply grounded in consciousness, to connect and combine is so strong that it will embrace everything in a concluding whole. A conclusion of all exten-

sive and intensive series and of the series of causes cannot be thought within experience, which is always limited. Insofar as synthesis leads to concepts that require completion by the formation of absolute wholes, it forms *ideas,* a third group of forms. Such an idea is the concept "world," which is to embrace everything existing, although no limit can be set for space, time and the series of causes. Likewise the concept "God" in the sense of a first cause that does not in turn have any cause, and the concept "soul" in the sense of a substance that lies behind consciousness and cannot be discovered through self-observation. It is in and of itself natural that such ideas are formed; our striving to combine is one with our innermost nature.

b. The investigation by which the forms of the activity of knowing are found is descriptive. It can only show in what way our knowledge in fact works, but not the validity and justification of the way in which it works. Kant then makes the transition from psychology toepistemology ("critique of reason") by asking how a knowledge that *[56]* rests merely on the forms, not on the material, — thus a knowledge of "pure reason," can be science. The problem arises for Kant (as already for Locke) from the fact that knowledge is an activity on our part; with what right do we ascribe to the forms in which this activity appears validity for things? — Kant's answer is that if it turns out that the application of our forms of knowledge is the *condition for our being able to have real experience* (as opposed to mere representation, fantasy or dream), then propositions that are built on these forms must also hold for *all possible experience* — but not any further. He therefore investigates in this respect the various groups of forms.

All content of experience is apprehended *in space or time or both in space and time.* Since now pure mathematics properly develops only the laws of space and time, it must hold for everything that we can ever experience, for all possible observations. From this follows the validity of applied mathematics, notwithstanding that mathematics in itself is a pure science of reason. We can know in advance (a priori) that all experiences must agree with mathematical laws. But since space and time are human forms of apprehension, we dare not say that the knowledge we here reach is the only possible one. We know existence only from the standpoint of man. What Copernicus maintained, that in apprehending the motions of the heavenly bodies we must not forget that we see them from the human stage, holds for all our knowledge, all our science, because it is due to a labor that is carried out in human forms.

The case is similar with the *categories.* Since they are forms without which we do not understand things, everything that we are to experience must fall under them. Every phenomenon or event must satisfy the demands of the concept of magnitude: their

arising and development must proceed continuously, so that a higher degree of intensity is always reached by traversing all lower degrees of intensity, and a more distant point in space is always reached by traversing all points that lie between the starting point
[57] and it. If such a continuous transition cannot be shown, we cannot distinguish between experience and imagination, reality and dream. The same holds for the concept of cause. If I cannot arrange the events in series, within which each member is related to the following in an analogous way as, in our thinking, ground is related to consequent, I cannot have real experience. When I can imagine the events in any order whatever, arbitrarily make them change places, I cannot be certain whether I am confronted with something real. In my consideration, in my memory and my fantasy the representations can come in different order; but when my representations are to express a reality given in experience, they must form a series in which the members cannot be interchanged. In my consideration or my fantasy I can just as well let the house come into being for me from above downward as from below upward; but if the coming into being of the house is to be a real event, only one single order of succession is possible. (Cf. Psykologi V D, 2). Everything that we shall ever be able to experience must be subject to the causal principle. Although this proposition is a proposition of pure reason, in that it rests on one of the forms of our combining activity, it must thus be declared valid in advance (a priori) for all experiences. — — But the validity of the categories is, like that of the forms of intuition, limited to possible experience. The grounding goes no further. Experience is, says Kant, the synthesis that gives validity to every other synthesis. In the case of the ideas the grounding which in the case of forms of intuition and categories led to the goal cannot be applied. For the peculiarity of the ideas was that they demanded a concluding synthesis, an unconditioned whole, a first or last. But experience cannot present such a thing, since experience is always limited. The ideas cannot therefore be said to specify conditions for distinguishing between experience and imagination. The world, e.g., cannot appear in any experience; beyond every whole we form by synthesis, a more comprehensive whole can always be thought. On the ideas, therefore, no science
[58] can be built. There is no science of God, of the world as an absolute whole or of the soul as substance. Kant recognizes an empirical psychology; but it is no pure science of reason. — The significance of the ideas lies, on the other hand, in this, that they point beyond every single experience, prevent us from settling down content with any result whatever; they set ever new tasks. Here Kant meets Lessing in the thought of the constant striving after truth as opposed to the mere possession. —

When Kant grounds the real significance of the knowledge of reason on this, that

it expresses the conditions for having experience, he takes the concept of experience in the strict sense as a firm and necessary connection of observations. He has not seen that experience in this sense is itself an "idea" or an ideal, since observations satisfy the demands of the forms of intuition and of the categories only imperfectly and approximately. Kant has therefore furnished no conclusive proof of the validity of the causal principle and has not solved Hume's problem.

The limitation he showed for pure reason in its various forms he derived from this, that we have no right to regard these forms as the only ones in which existence could be apprehended and understood. We must distinguish between the way in which we know and the essence of things themselves. We know things only as they appear to us, according to our forms, not as they are in themselves, or as Kant expresses it, we know only phenomena (Erscheinungen) not the thing in itself (das Ding an sich). This he grounds also by this, that whereas the forms are our ways of working in our knowledge, we receive the material (the sense qualities) purely passively. Whereas the forms belong to our nature, the material cannot be derived from it. The concept "Ding an sich" then serves to mark a limit. It is a *limiting concept,* which establishes firmly, partly that our forms are *not* the only possible ones, partly that the material of our knowledge *cannot* be derived from its form. It is thus a negative concept. But involuntarily Kant comes to ascribe to it a positive significance, in that he calls "Ding an sich" the cause of phenomena (especially as regards the material, yet also as regards our forms). Hereby he comes into contradiction with his own doctrine that one has no right to apply the *[59]* concept of cause beyond experience; for "Ding an sich" cannot be experienced. And besides, the question arises whether we can be sure that "Ding an sich" will always give us material that fits our forms, and will always let the same forms subsist in us. On this point too, not merely in the concept of experience, it appears that Kant has not freed himself from all dogmatism.

2. *Ethics.* (Kritik der praktischen Vernunft. 1788).

Under strong influence from Rousseau, as well as from Hume and other English philosophers, Kant in his first utterances on ethical questions laid much weight on the feeling of "the beauty and dignity of human nature" as the foundation of the ethical principles *(Betrachtungen* über das Schöne *und Erhabene* 1764). Later he laid more weight on the will, self-activity and on the necessity that in our striving we be always in agreement with ourselves. His ethics thereby acquired a predominantly formal character. When now historical studies led him to regard the striving of individuals as members of the striving of the whole species to raise itself from the mere state of nature to true

culture, the ethical principle could not merely become the agreement of the individual with himself, but had to become one that all individuals in the same situation could consistently follow. I shall then act in such a way that the principle of my action can be set up as a rule for all. I shall, e.g., return goods entrusted to me, even if I could keep them without being discovered; for the opposite principle cannot be set up as a rule, since then no one would entrust anything to others. Every human being is to be treated as an end, never merely as a means; only in that way does a human society become possible, in which the freedom of the individual can subsist with the freedom of others. Just as we obtain valid knowledge only when all sense-sensations (all "material") are ordered according to laws that ultimately spring from the forms of our mind, so our willing and acting are valid only when they do not follow feelings and drives (whether these are
[60] sympathetic or egoistic), but submit to a law of reason that can hold for all. Such a law makes itself known as an unconditional command (a categorical imperative) in face of all other incentives, in face of all authorities, and in face of everything that experience teaches or seems to teach. Most clearly of all the ethical appears in such cases where duty and inclination stand in the greatest opposition to one another. There will always, Kant thinks, be an element of the feeling of pain in the consciousness of duty owing to the resistance which the sensuous parts of our nature offer to subordinating themselves to the form of the law.

In the capacity thus, in spite of all inner and outer resistance, to subordinate one's acting to a universally valid law Kant sees the mark of nobility of man. The law is not, after all, an alien law, but grounded in man's nature as a rational being, one with his innermost will, however exalted its authority may be. Through the ethical law man is a citizen of another world than that of experience. Inwardness (in its springing from man's innermost nature) and exaltedness (in its opposition to the human nature appearing in experience) are the two characteristic features of the ethical law according to Kant's conception. He takes this law to be purely formal and a priori, sprung from pure reason. But it clearly presupposes that a human society is to exist, and properly formulates only its most important conditions. It was also in Kant himself historical considerations that had led him to his final ethical conception. —

According to Kant there is an inner relation between religion and ethics. The transition from the ethical to the religious he finds in this, that man is to maintain the good, that which the unconditional ethical law demands, under inner and outer resistance. From this follows a sharp opposition between duty and happiness, between ideal and reality, freedom and nature. This opposition will in turn give rise to a need to believe in

another existence, in which the striving that is broken off in the world of experience can be continued in ever higher forms, and to believe in a being who is able to bring duty and happiness, ideal and reality into harmony. The belief in God and in immortality, the content of so-called natural religion, cannot, however, be scientifically grounded. It *[61]* is practical postulates that lead to it, postulates which cannot be refuted, since science itself has its limit (in "Ding an sich"). Their significance consists in their keeping us up in our striving to maintain the validity of the ethical law. But they do not extend our knowledge; that follows already from this, that the forms of our knowledge hold only within experience. All religious representations are therefore grounded only on analogy; they are symbolic and figurative. — In his work *Religion innerhalb der Grenzen der blossen Vernunft* (1793), — the work that brought Kant into conflict with the authority of the state, — he has carried through a symbolic conception of the Christian dogmas, in which he finds deep ethical truths contained.

3. *Theory of Unity on an Aesthetic and Biological Basis.* (Kritik der Urtheilskraft. 1790).

In his epistemology and in his ethics Kant had maintained a sharp opposition between the world of experience and "the things in themselves." Indeed his whole philosophy is characterized by sharp distinctions, which in his opinion were necessary if the validity of knowledge and the unconditional character of the ethical ideal were to be maintained. But precisely according to the principles of the critical philosophy, which indeed impress the illegitimacy of transferring our thoughts to existence in itself, the thought had to arise whether those very distinctions and oppositions might not have to be charged to the account of our human way of apprehending. Kant found two groups of facts that could point in the direction of a unity, the one group of an aesthetic, the other of a biological kind.

a. In the phenomena we call beautiful and sublime, existence produces in us a disinterested satisfaction. It is not our sensuousness that is gratified when we stand before something beautiful. The beautiful rests on this, that our faculty of intuition and our understanding can easily and involuntarily connect the given multiplicity into a unity, just as if the phenomenon were adapted to our faculty of apprehension. Kant here thinks especially of beauty of form, as it appears in harmony and symmetry, in the works of nature and of art. In the case of the sublime our faculty of apprehension and our self-feeling are overwhelmed, in that we stand before what is immeasurable in extension *[62]* and force; but precisely thereby is awakened the consciousness of a force dwelling in ourselves, striving beyond all limits, that which expresses itself in the ethical law. Both

in the beautiful and in the sublime it appears thus that there is something in existence that agrees with that in us which is raised above sensuousness and egoism. — In genius, in genial production, there is a feature that points in the same direction. For in genius an involuntary force of nature and natural impulse is at work, and yet works are thereby produced that stand as models. In genius nature works as if it were conscious art. Here too, then, the opposition between man and existence does not assert itself.

b. In organic life we have a fact that can be interpreted in an analogous way to the beautiful, the sublime and genius. Nature works in the organic in a way for which we properly have no expression. We see here a whole that does not arise by external joining of the parts, and in which, scientifically regarded, we also have no right to assume a preceding plan or a purpose (as in the coming into being of a human building). Nature works here too, as if it were conscious art. Neither the teleological nor the mechanical explanation of nature can interpret the organism. But the opposition between teleology and mechanics perhaps rests only on the nature of our understanding: a whole we can only understand when either the parts are joined together by external causes, or a plan precedes. In existence itself, on the other hand, the same order of nature that makes the causal connection possible could also make possible the arising of organisms, purposively constructed forms of life. In the unknown ground of nature teleology and mechanism could be one. It was a thought on which Kant had already in his youth, when he worked out his hypothesis on the development of the solar system, laid so great weight.

And in the same way it might be with the greatest opposition: between the laws of nature that science shows, and the ideals that the ethical law leads us to recognize.
[63] It would then be one and the same principle that made itself known in the laws of nature and in the ethical ideals. It would then not merely be through postulates that that opposition could be overcome.

Kant is, however, aware that such a theory of unity cannot be carried through scientifically.

VI.

THE PHILOSOPHY OF ROMANTICISM.

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a. Modern philosophy, as we have seen, received its task and its character determined partly by the new world-picture and the new science, partly by the freer conception of human relations that came with the Renaissance. Later, Kant's philosophy was determined not only by the opposition between Wolff and Hume, but also by Newton's natural science and Rousseau's problem of culture. The development of German philosophy in the period immediately after Kant was determined by the influence of the aesthetic and religious tendency that in the history of literature is called Romanticism, and which marks a strong reaction against the Enlightenment and Revolution of the eighteenth century. People were tired of criticism and analysis and felt the need to immerse themselves immediately in nature and in history, to feel one with the innermost forces of existence. The split between poetry, religion, and science, this fruit of the division of labor in the spiritual domain, was to cease; the spiritual life was to constitute a unity, and poetry, religion, and science were to be only different forms of this unity. People wanted, in general, to go beyond all oppositions, and therefore also beyond Kant's philosophy, which had emphasized the oppositions so strongly. They took their starting point from the thought that Kant had so cautiously suggested, of a unity behind the oppositions at which we stop, — a thought that for Kant meant the limit of thought. And it then became the ideal to derive everything from one principle. *[64]* In their enthusiasm for this ideal people did not examine its justification or the possibility of realizing it, and overlooked that every inference, after all, must be built on at least two premises. The methods of thinking and of science that had hitherto been valid they despised, and demanded a speculative thinking that could solve the highest problems. And they broke the connection with natural science that philosophy had had since the days of Bruno and Descartes. Starting from intimations of a unity in everything, they now wished themselves to construct the forms of nature as a series of steps up to the world of spirit. What they arrived at by this route was sometimes poetry, often fantasy, not science. And yet the philosophy of Romanticism has not only uttered profound thoughts of lasting value, but also paved the way for an understanding of the connection among the forces of nature, which could later be carried through in a more exact manner, just as it also contributed to awakening and nourishing historical sense.

The three most important representatives of the philosophy of Romanticism are Fichte, Schelling, and Hegel.

J. G. Fichte (1762—1814), a Saxon peasant's son, followed in his early youth with lively interest the appearance of Lessing and later, after heroically working his way through straitened years of study, was led to philosophy by the study of Kant's writings.

At the University of Jena he worked as a teacher with great success, not only because of his power of thought and eloquence, but through his whole energetic personality. When he was dismissed on account of his religious views, he went to Berlin, where he became one of the first teachers of the new university. He was one of the men who worked for Prussia's national regeneration after the battle of Jena, especially through his "Reden an die deutsche Nation" delivered during the French occupation.

Fichte took his starting point from Kant's opposition between thinking and "Ding an sich". Thinking is an activity, an action, and things are partly objects of this action, partly its products. But how then is it to be explained that things exist as something
[65] different from the activity of our spirit? Things as objects cannot be derived from the thinking and acting ego itself; it cannot itself call forth its limits, its resistance. The only solution is that things (objects, non-ego) exist only in order that we may have something to act upon, something that can release our forces. The free use of the forces is the highest thing; but it is possible only through there being limits, resistance to overcome. — — It is thus for Fichte an ethical consideration that gives the solution. Nature is for him material for our action in accordance with duty, our self-development to true freedom.

Fr. W. Schelling (1775—1854) is the real representative of Romanticism in philosophy. Without any critical scruple he proclaimed in his youthful writings, which are the most significant he has produced, a new science that was to solve all riddles. He too worked for a time in Jena, which was the gathering place of Romanticism, later at various Bavarian universities. In his old age he was called to Berlin by the Romantic King Friedrich Wilhelm IV to counteract the radical Hegelians; but his appearance there was a disappointment of great expectations.

Schelling made an impression on his time at the beginning of the nineteenth century through his "philosophy of nature", by which he understood a spirited beholding for which nature stands as unconscious spirit, which by various steps through the inorganic and the organic world approaches the point where consciousness awakens to progressive clarity. We can know nature only because it is spirit itself at a lower stage. Nature must be understood from within, not, as ordinary natural science attempts, through external interaction between the different matters and forces. — Yet it was no real development that Schelling assumed in nature. The different stages exist simultaneously; it is only for thought that their kinship shows itself. And it was a symbolic interpretation, not a scientific explanation, that was given; the principle vera causa was pushed aside. The enthusiasm that this "philosophy of nature" aroused became in part important for

the development of poetry (as with us through the lectures that Schelling's disciple gave *[66]*
in Copenhagen 1902); but for thinking it was a regress.

G. W. F. Hegel (1770—1831), the systematizer of Romanticism, also worked for a time in Jena. After the battle of Jena he went to Bavaria and later came to the University of Berlin, where he founded a numerous and influential philosophical school.

Neither Fichte's ethical postulate nor Schelling's beholding satisfied Hegel. He set himself the task of developing the thoughts that express the innermost nature of existence, in such a way that they form a series in which each member leads with necessity over to another. No single thought can exhaust existence; every thought shows itself, when consistently carried through, to be limited, but precisely by being driven to the extreme leads over into another thought; if these two thoughts are now combined, we get a higher unity, of which they are both members. But this new thought has itself its opposite, together with which it forms a new higher unity, and so on — a progressive process, always through triads. This is what Hegel calls the dialectical method. But it is not only in our subjective thinking that dialectic appears. There is also dialectic in existence. Development proceeds through oppositions and the overcoming of oppositions. Thus the organic germ unfolds in interaction with the environment, and in the fully developed organism we have the higher unity of what was laid down in the germ and of the opposition to the environment. The immediacy of childhood reaches, through the doubt and strife of youth, the maturity of manhood.

Hegel's system itself consists of three members. In pure logic the inner relations of thoughts are presented. In the philosophy of nature external relations in space and time take the place of the pure relations of thought. Through this externality thought develops into the philosophy of spirit, in which the opposition between the inner and the outer falls away. In art, science, and religion, the highest forms of the life of the spirit, existence reaches its consummation. And it is through all these stages and forms the absolute world-spirit that unfolds itself.

In Hegel's ethics the idea of the state is the main thought. His ethics is a social ethics. *[67]*
The good has its subsistence in society, in which forces are at work that lie beyond the consciousness of the individual. The individual reaches his highest development only by living in and for society — in the family and civil society, but especially in the state, which takes up both into itself. The state cannot be explained by an association of individuals, but is a higher order of things, in relation to which the single individual is of vanishing value. Against all individual ideals and utopias Hegel emphasizes that the ethical idea is not so impotent that it should be unable to be realized; it has found its real

form in the historically developed state. It is not the business of philosophy to construct ideals, but to demonstrate the ideality in the results of historical development. — In an analogous manner, according to Hegel, philosophy is related to religion. There is only a difference of form between philosophy and religion; the content is the same. Philosophy teaches the unity in existence through all oppositions and at all stages; religion teaches that everything has its origin in God. The former speaks the language of thought, the latter that of the image. What religion proclaims in great images and in a concrete manner, philosophy expresses in the form of thought. Especially in the doctrine of the Trinity and the doctrine of the Incarnation Hegel found the same truths expressed that he had developed dialectically in his system: the Trinity expresses that the highest cannot be an abstract unity, but a unity of oppositions; the Incarnation testifies that the Deity, precisely by passing over into its opposite, into humiliation and suffering, shows itself as the highest world-power. It was especially in theology that Hegel's philosophy was received as an ally; one saw in it a form in which the theological doctrinal content could receive a new grounding. As Hegel thought he had reconciled all oppositions, he thought also that he had reconciled faith and knowledge.

b. The Romantic tendencies of thought prevailed in Germany and the neighboring countries until toward the middle of the century, and they still continue to assert
[68] themselves in altered forms. It is the interest in asserting an idealist conception of existence that still leads many to see in them a high point in the history of philosophy. Kant's critical line of thought did not, however, disappear; in the very period of Romanticism it held its own as an undercurrent, represented by able investigators, such as Fries, Herbart, and Beneke, whose significance lies especially in the domain of psychology. Besides, there were men who, though strongly moved by the tendencies of Romanticism, nevertheless maintained an epistemology in Kant's spirit, while they sought, by different paths, a view of life that could lead beyond the limits of science. Such men were, besides the theologian Schleiermacher, Schopenhauer in Germany and Kierkegaard in Denmark. Finally, there were men who, proceeding from Hegel's school, but in sharp contrast to the Master's conservatism in the philosophy of law and the philosophy of religion, developed radical views. David Strauss maintained that on Hegel's principles one could not distinguish between theology and mythology. Karl Marx and Ferdinand Lassalle developed Hegel's political theory in a socialist direction. Feuerbach led the philosophy of religion back to pure psychology and suggested a philosophical conception that is related to the positivism that arose in France, which we shall bring forward in the next section.

Only a few of these thinkers can we dwell on here: Schopenhauer, Kierkegaard, and Feuerbach.

α. Arthur Schopenhauer (1788—1860) was the son of a rich merchant in Danzig, received a many-sided education, and learned early to know the world through travels and by moving among people. Independent as he was, he could devote himself entirely to his studies and to the development of his view of life. After an unsuccessful attempt as an academic teacher in Berlin he lived as a private man in Frankfurt am Main. Very early he had, through his own passionate nature, come to know the dark and disharmonious forces and drives of life, and what he saw around him aroused partly his indignation, partly his pity. Above these experiences, which taught him that not wonder (as Plato thought), but consternation and sorrow was the beginning of philosophy, he sought to *[69]* raise himself by intellectual work and by artistic beholding.

Schopenhauer protests against the view that Fichte, Schelling, and Hegel were Kant's rightful successors, and that the critical philosophy was a stage left behind. In the first book of his chief work *(Die Welt als Wille und Vorstellung,* first part 1819, second volume 1844) he presents an epistemology that is closely related to Kant's. He is then clear that knowledge (die Vorstellung) cannot teach us to know the innermost of existence (das Ding an sich); but he thinks he has found another way to the solution of the riddle. We ourselves belong, after all, to existence; it stirs in our own inner being. And now there stirs, far deeper down than all knowledge (Vorstellung), a yearning and craving, an impulse of self-preservation, that makes itself known in all our pleasure and pain, in hope and fear, in love and hate, — — a will that constitutes our innermost essence, the primal phenomenon in us. All representations are from the first servants of this will. What is the primal phenomenon in us must — thinks Schopenhauer — also be the primal phenomenon in existence as a whole; by the innermost in us we understand the innermost in the world. Thus he makes the transition from epistemology to metaphysics by means of an analogy, the justification of which he in his Romantic mood does not doubt. — Against the weight that Hegel laid on the life of thought, it was of great importance that the life of the will was emphasized in so energetic, and in particulars often so brilliant, a manner. A voluntarism was here set against intellectualism. Already Fichte, by whom Schopenhauer is influenced, had, by the way, given the will a predominant place in his philosophy.

If it is asked what the will is aiming at, Schopenhauer answers: at existing for the sake of existence itself; it is a will to life (Wille zum Leben). There is here no longer any Why. The principle of sufficient reason holds only for knowledge (Vorstellung),

not for the will. The manifold forms and forces of nature in their mutual clash and struggle, the ever renewed processes of motion, and the constant unrest in the world
[70] bear witness to the never-resting energy of the blind impulse of self-preservation. This dark need beguiles us with the illusion that life is good and valuable. But life appears to us as good only because the will to life rules in us at any price. In itself existence is pain, precisely because its innermost essence consists in a never-resting and never-sated need, and only as a phenomenon of contrast does pleasure or satisfaction arise, namely when the subterranean fire is for a time damped. All pleasure is illusion, is a zero point, which only because of the contrast to the constant ardor and unrest comes to stand as something positive (Cf. on this Psykologi VI E, 6). In lively descriptions of human and animal life Schopenhauer depicts the torments of existence, the mutual struggle of living beings. These torments the great mass does not notice, or easily forgets again. Those who see more deeply, especially the brilliant human beings, on the other hand, experience the disharmonies and tear asunder the veil of illusion.

The will to life can, however, be abolished by three different paths. One can place oneself in relation to life as a mere spectator, by being entirely absorbed in aesthetic or intellectual beholding. When we e.g. immerse ourselves in the contemplation of a work of art, our will is calmed, and we forget that we belong to the world. It is chiefly this path that Schopenhauer himself has taken. But also in love of humanity (which because of the torment of life must appear as pity) the will is abolished, in that I make myself entirely one with others. On this thought Schopenhauer has built his ethics. But the complete abolition of the will succeeds only for the saint, the ascetic, for whom there is no longer any motive for action. In Buddhism, in primitive Christianity, and in mysticism Schopenhauer finds the highest practical solution of the riddle of life and the torment of life, and he stands with deep admiration before the great representatives of asceticism — all the more as he was aware that he himself was no saint.

β. In Denmark Hegel's philosophy had gained no small influence, especially among aestheticians and theologians (J. L. Heiberg, and H. L. Martensen). F. C. Sibbern
[71] (1785—1872) gave an apt criticism of it and himself put forward a world-view that laid great weight on the fact that development in nature and in human life proceeds from scattered points (sporadically) and for the most part through the struggle and clash that arise when different tendencies of development meet — in the inner life of man or in nature and in society. Since every human being is himself one of the sporadic starting points, he cannot survey existence; hence the debate between different standpoints in the history of thought. In particulars Sibbern has especially occupied himself with psy-

chology, for which his power of observation and his fresh sympathy with human life made him well suited.

The religious thinker Søren Kierkegaard (1813—1855) renewed the critical philosophy and disputed Hegel's solution of the problem of knowledge. We can have system, i.e. order and coherence in our thoughts, but we cannot comprehend existence in a closed system of thought. We understand only what lies ready and completed before us; but we live in the midst of time, and our thought always comes after the experience, since new experiences always come. We live forwards, but we understand backwards. While we think, life goes on, in us and outside us. And what holds of scientific thinking holds even more of the thinking that takes part in our personal view of life. Here the point is, first and foremost, that the thoughts be our own, acquired or appropriated at first hand; only then do they correspond entirely to our personality and have personal truth. He who prays with inwardness to an idol prays nevertheless to the true God, whereas he who in indifference and out of habit prays to the true God prays to an idol. Personality (subjectivity) is the truth. Kierkegaard sympathizes with Lessing's words about the constant striving after truth. — It is in his chief philosophical work Uvidenskabelig *Efterskrift* (1846) that Kierkegaard develops his conception of knowledge and sets up the concept of personal truth. Here he also presents his comparative philosophy of life, the doctrine of the different "stages" or types of personal view of life and conduct of life. Three of these, the aesthetic, the ethical, and the religious, he has depicted in poetic form in *Stadier paa Livets Vej* (1845) (in "Enten-Eller" he depicts the first two of these *[72]* stages). The standard for the "stages" Kierkegaard takes from the degree of the oppositions that the spiritual life is able to embrace. The aesthetic man lives in the pleasures of the moment; the ethical man has an inner core that he faithfully preserves amid the changes of life, and he finds his task in society (family, state); the religious man lives in the consciousness of the cutting opposition between eternity and life in time. The transition from one of these stages to another cannot, according to Kierkegaard, take place by continuous development, but only by a leap, which cannot be psychologically motivated. (Cf. on the transition from the aesthetic to the ethical Psykologi VI E, 4). — More and more, for Kierkegaard it was not the energy of the synthesis itself, but the suffering that the strong tension between the oppositions caused, that became the real standard, and he thereby came into opposition to Romanticism's proclamation of the harmony of all oppositions, as well as to the usual conception of Christianity. Thereby was called forth the violent struggle against the established church that filled his last years, and which he finally conducted through the pamphlet *Øjeblikket* (1855).

Kierkegaard lived as a private man, absorbed in the great philosophical, aesthetic, and religious production, in which his sharp reflection and rich emotional life, his melancholy and his passionateness found an outlet. When he had said in "Øjeblikket" his last word, he succumbed to illness.

γ. Ludwig Feuerbach (1804—1872) had, under Hegel's influence, passed over from theology to philosophy. But he could not remain with Hegel's philosophy of religion, which sought to find philosophical ideas in the religious representations. He set himself instead the task of finding the psychological source of these representations, of giving a psychological explanation of the origin of dogmas. He resumes Hume's psychology of religion. His chief work is *Das Wesen des Christenthums* (1841). — Feuerbach lived, after having tried a career at the University of Erlangen, as a private man in rural solitude,
[73] occupied with studies and authorship. In his last years he had to struggle with poverty and illness.

Religions arise, according to Feuerbach, in that the inward yearning for the fulfillment of the wishes of the heart bursts the limits of reason. Thereby it is explained that religion at its height acquires an antirational character. Wish is the theogonic (god-creating) principle. The religious predicates are the content of human wishes; men's representations of the nature of heaven and of the qualities of the gods are expressions of what moves in the innermost of their hearts. That God is personal means that the personal life is of highest value (is divine); that God is love means that love is of highest value (is divine). If one wants to understand religion, one must make the religious predicates into subjects.

From the beginning man has no reason to set limits to his wishes and to the representations that the wishes call forth. And it lies in the nature of feeling to make its object infinite and yet to hold fast to its reality. Doubt arises only when man comes to know his limits, and when he begins to distinguish between his representations and reality.

Between religion and culture there exists an inverse relation. They are two different paths by which man hopes to reach his purposes, and the more confidence he has in the one, the less use he has for the other. In a similar manner it stands with religion and ethics. The more the difference between God and man is impressed, the more must qualities such as love and justice be taken in a quite different meaning when they are applied to God and when they are applied to men, and a sharp conflict can arise between God's will and what human love and justice demand.

No real values disappear with religion. The qualities that are valuable can continue

to be asserted, even if they are not ascribed to gods. Feuerbach grounds ethics on love of humanity, in which the single individual's unity with the whole species makes itself *[74]* known. He lays weight on the fact that the individual must know happiness and unhappiness from his own experience in order to be able to have compassion with others, and therefore asserts the justification of the impulse toward happiness. — In his general conception of philosophy (expressed in *Grundsätze der Philosophie der Zukunft* 1843) he finds its object in man as a being of experience and in nature as the foundation of his existence. Against materialism he emphasizes (like Schopenhauer) that matter is a concept formed by man, and that therefore the conception that regards man as a product of matter cannot be conclusive.

VII.
POSITIVISM.

The two great tendencies of thought in the nineteenth century are Romanticism and positivism. The former proceeds from the forms and ideals of thought, the latter from the factually given; "positive" means above all "real, posited, given." However different, indeed opposed, they are, they both mean, each in its own way, an opposition to the century of the Enlightenment, of criticism, and of revolution. The positivists, like the Romantics in their own way, wanted to immerse themselves in nature and in history. Both tendencies sprang up at the beginning of the century, and positivism is not to be understood as a reaction against Romanticism, although it came to the foreground only when the dominion of Romanticism was broken. — Whereas the philosophy of Romanticism had its chief seat in Germany, positivism belonged essentially in France and England.

1. Positivism has its origin in the social school founded by Saint Simon (1760—1825). His task was to prepare a social reformation, which in his view was possible only if one *[75]* founded a new world-view, which for the present could be the same as Christianity had been for the Middle Ages. Such a new world-view had to be built on the foundation of the positive sciences, just as men too could exploit nature in common labor only on this foundation, instead of, as before, having exploited one another. For this it was required

that the theological presuppositions that had formerly been laid at the foundation of science be eliminated, so that it was built on purely natural presuppositions. When this had happened, the positive philosophy could be founded.

Auguste Comte (1798—1857), the real founder of positivism, studied at the Polytechnic School in Paris; but when this was closed by the Bourbons on account of the students' revolutionary disposition, he continued his studies on his own and gave them a more encyclopedic character, to which his collaboration with Saint-Simon also contributed. This collaboration ended because Saint-Simon, in Comte's opinion, subordinated science too much to his ideas of social reformation and the religion of the future. With great capacity for work and power of concentration Comte carried through his presentation of the positive philosophy as a great encyclopedia of the positive sciences *(Cours de Philosophie positive.* 1830—1842). In his later years his thinking took on a more subjective and mystical character, in that he regarded himself as the founder of a religion of humanity and even instituted a kind of cult.

According to Comte human knowledge (as a whole and in the individual domains) passes through three stages. At the theological stage only a small circle of experiences is at one's disposal, and imagination therefore plays a great role. The bond that here unites the facts into a whole is the notion of spirits and gods. The cultural-historical significance of theology rests on the fact that at this stage of development it has served science as an intellectual bond, just as it also in the religious authorities furnished a foundation
[76] for morality. At the metaphysical stage the explanation is found no longer in personal beings, but in general forces or ideas. One speaks of force of attraction, chemical force, vital force, etc. This is a progress, since such forces or ideas are assumed to act in a regular manner. But this stage has for Comte a predominantly negative character. It is the stage of individualism and of revolution. At the positive stage imagination and speculation are subordinated to experience. Now the laws of phenomena are sought, i.e. the constant relations between them. The different laws cannot be traced back to a single one; the unity of science consists only in its being the same chief method that is applied in all domains. This unity in method makes possible a spiritual community such as had not been known since the Middle Ages.

The chief method appears, however, in somewhat different manner in the different sciences. These can be arranged in a series, so that one begins with those that concern the simplest subjects and set up the most comprehensive laws; these are also the ones that have soonest reached the positive stage, and in which deduction can be applied to a great extent. The further we advance in the series, the more complicated the subjects

become, the more special the laws become, the more must induction be applied, and the later the positive stage is reached. The order is: mathematics, astronomy, physics, chemistry, biology, and sociology (theory of society). There is no continuous transition from one science to the other. — — We miss in this classification logic, which would have its place before mathematics, and psychology, which in Comte is divided between biology and sociology.

Comte distinguishes between the positive facts and their connection. This connection takes place at the positive stage partly by ordering according to likeness (par similitude), partly by deriving the following from the preceding (par filiation), but in both cases it is a matter of a synthesizing (tout se reduit toujours à lier). (*Discours sur l'esprit positif.* 1844). Comte therefore also counted Kant among his predecessors. — In his ethics he takes up a similar standpoint to Grotius and Hume. The concept of duty springs from the individual's consciousness of being a member of a social whole, a consciousness that arises when the solidarity of all human life is experienced and recognized. Involuntarily man follows the need for intercourse, and the utility of this dawns on him only afterward. The germ of the feeling of solidarity lies already in the relation between the two sexes and in care for the offspring; in the human world there then goes on a constant education toward altruism (a word coined by Comte to denote the opposite of egoism). The single, isolated individual is only an abstraction. — *[77]*

2. In a wider sense the main tendency of nineteenth-century English philosophy too is positivistic. At the middle of the century John Stuart Mill (1806—1873) took a highly esteemed place in the scientific world through his works on logic *(System of Logic* 1843), his political economy, and his ethical and social-reformatory works. He was strongly influenced by the radical ethicist and social reformer Jeremy Bentham, but also by Comte, as well as by the Romantic tendency, which in England was represented by Coleridge and Carlyle. Mill held an office in the service of the East India Company and used his leisure for his studies. In his interesting autobiography he has given an account of his course of development, in which so many different tendencies intervened, without his quite being able to work them together.

In his logic he takes up a sharper opposition to Kant than Comte did. He tries to conceive all thinking as mere association, especially as association by contiguity. The basic form of all inference he finds in the fact that when two phenomena have frequently occurred together, we expect the second when the first has occurred. It is an inference from particular to particular. When many such experiences have been made, we formulate them into general propositions, which can form the foundation for deduction.

But all deduction presupposes an induction, ultimately a transition from particular to particular. The causal principle too is grounded on induction. — — Mill's logic is the counterpart of Hegel's. Whereas Hegel wanted to derive all thought-content from the forms of thought, Mill wanted to derive the forms of thought from the given content.
[78] Here the opposition between Romanticism and positivism appears in the sharpest way. — The significance of Mill's logic lies in his characterization of the special methods and in the honest discussion of the questions of principle.

As an ethicist Mill, following Bentham, maintained "the morality of utility" (utilitarianism), which values actions according to the degree in which they work toward the greatest possible happiness for as great a number of people as possible (a principle already set up by Bentham and earlier philosophers). The ethical feeling that drives one to act according to this principle develops under the influence of various motives, among which sympathy occupies an eminent place.

3. A great extension positivism received through the hypothesis of evolution, which appeared shortly after the middle of the century. Already before Darwin's publication of his theory Herbert Spencer had maintained that in considering the experiences to which human thoughts and feelings owe their evolution, one must not think merely of the experiences of the single individual, one must take account of the species from which it descends. But it was especially through Darwin's connection of the doctrine of evolution with the idea of the struggle for life that this point of view won more general attention.

Charles Darwin (1809—1881) receives with right a place in the history of philosophy, partly because his results (like Copernicus's, Galilei's, and Newton's) are of such great importance for the world-view, partly because his conception of science and its limits has philosophical interest. Darwin himself lived as a quiet investigator in rural solitude, after he in his youth on a three-year voyage around the world had collected a great stock of observations. — His explanation of the origin of species *(Origin of Species* 1859) is quite in the spirit of positivism. To assume that each species is created by God is for Darwin only to say that one does not know how it has come into being. Darwin rests instead on the fact that organisms vary, and that these variations can be more or less beneficial to the organism when it is to procure food, light, and warmth and to se-
[79] cure its offspring and itself against dangers and enemies, or, as Darwin with a figurative expression calls it, when it is to hold its own in the struggle for existence. The variations that were decidedly unfavorable in this struggle would gradually die out; only the more or less purposive ones could hold their own. This doctrine had for Darwin

the significance of serving as a thread of thought (the intelligible thread), by which a great multitude of facts could be connected. A limit for his hypothesis he saw in the question of the origin of the variations between which the struggle for existence (or, as Darwin also calls it, natural selection) stands. A similar riddle he finds in the origin of life in general. — Later investigators have maintained that only through considerable "leaping" variations (mutations, as their discoverer Hugo de Vries has called them) do new species come into being, in the case of which it then becomes a question whether they can hold their own in the struggle for existence; this is thus not properly the cause of the origin of new species.

From Darwin's autobiography and letters *(Life and Letters of Charles Darwin* 1887) one sees that his last standpoint with regard to the relation between teleology and mechanism was similar to Kant's. Just as little as he could believe that the world, as we know it, was the work of a conscious purpose (design), just as little could he rest content with its being due to chance or blind force (chance, brute force). He declared himself an agnostic (i.e. one who acknowledges his ignorance concerning that which lies beyond experience).

Herbert Spencer (1820—1903) passed from practical life over to philosophical inquiry. He began as an engineer, then got an interest in social questions and was thereby led to psychological and philosophical studies. His philosophy sprang from the need to find a fundamental thought that could synthesize a series of natural-scientific, psychological, and sociological studies. In his *Essays* he has given a series of in part brilliantly written treatises on individual questions. Later he published in ten volumes his "synthetic philosophy," whose first volume *(First Principles* 1861) gives the foundation for his *[80]* world-view: the concept of evolution.

In his theory of knowledge Spencer shows, under the influence of the Scottish Kantian William Hamilton, that only that which stands in relation to something else can be known. An unconditioned and all-embracing thing can therefore not be known. Every piece of knowledge gives only a section of an infinite reality, which can only be expressed by means of symbols, not in the form of the concept. Spencer is, on these grounds, an agnostic like Darwin. — But all the knowledge we can gain gathers around the concept of evolution. We have understood a phenomenon only when we have followed it through its different stages to its present shape. It turns out that here there are certain features that constantly recur, no matter which phenomena we have before us, and which together serve to define what we understand by the word evolution. There are three such main characteristics.

1) Evolution is concentration. A transition takes place from looser to firmer connection when a phenomenon comes into being. Thus when a heap of sand forms on the shore, in the coming into being of star systems and globes, in the evolution of the life of consciousness and of social life. — 2) But next, evolution is differentiation, transition from a more uniform to a more diverse condition. Whereas concentration takes place by uniform parts being acted on by the same force (the grains of sand e.g. by the wind), differentiation takes place by the uniform parts within the whole formed by concentration being acted on by different forces (as when a part lies in shade, another in sun). Within the whole there then comes to be difference between the parts. Within the solar system the individual globes take shape, and on the same globe there comes to be difference between the inner and the outer parts, and between the different parts of the surface. In the organism greater differences appear between the organs the further growth advances, and organic life on earth appears at later stages with more different species than at earlier stages. So it goes also with the life of consciousness, where the
[81] differences at later stages assert themselves most strongly, and in society the division of labor is an expression of the increasing differentiation. — 3) When concentration does not fall away through differentiation, but the firm connection is preserved despite the arising of differences, one passes over from a more indefinite to a definitely ordered condition. Here evolution appears as determination.

This third form of evolution reminds one of what Hegel called the higher unity, in which oppositions were united or merged. But whereas Hegel taught that such unities are formed with logical necessity, Spencer cannot guarantee such a progress. And no more than other concepts has the concept of evolution validity beyond experience.

In his ethics *(Data of Ethics.* 1879) Spencer builds (like Hume and Comte, by the way also Darwin) on sympathy as foundation and seeks to show how from it there can be grounded a conduct of life in which human evolution reaches its most perfect form: as concentration the ethical life shows itself in self-control, as differentiation in the rich unfolding of the faculties that compassion with others gives occasion to, and as determination in conscientiousness and justice.

VIII. RECENT TREATMENTS OF PROBLEMS.

In romantic idealism and positivist realism two tendencies of thought stand opposed to each other, which have it in common that individual problems are for the most part discussed from general points of view. In a certain contrast to both tendencies stand endeavors that dwell in detail on individual problems, perhaps on a single one, and let the general points of view recede into the background or come as a final outlook. Ar- *[82]*
ranging the exposition according to the characterization of the four principal problems given in the Introduction, we give in what follows a survey of such endeavors in the latter part of the nineteenth century and at the beginning of the twentieth.

a. The Psychological Problem.

α. Of great importance here was the founding of an experimental psychology by Gustav Theodor Fechner (1801— 1887), who passed from physics to philosophy. In his world-view he stands close to Romanticism, in that he boldly employs poetic analogies; but he unites with this idealism an exact scientific outlook. Since, in his view, the law of the conservation of energy makes it impossible to assume a causal relation between the mental and the material, he assumes that the relation is like that between the inner and the outer side of a spherical surface: the idealist sees only the former, the materialist only the latter, and yet they really see the same thing. But Fechner now sets himself the task of finding out how these two points of view are related to each other, and it is by this way that he came to experimental psychology *(Elemente der Psychophysik.* 1861). Like Kepler, with whom he is akin in spirit, he worked his way from poetic speculation to exact investigations. By psychophysics is understood the investigation of the relation between the mental and the material. By investigating the relation between the physical stimuli and the corresponding sense-sensations Fechner arrived at the result that stimulus and sensation are not directly proportional, but that the stronger a stimulus is, the more must it be increased if a certain change of sensation is to arise. The stimuli must grow in a quotient series in order that the sensations may grow in a difference series (See Psykologi V A, 3). By his own experiments and those of others he found this law confirmed. Yet it is (so far as it holds) hardly, as Fechner thought, a law for the relation between mental life and brain life. These are probably (which also agrees best with Fechner's own identity hypothesis) directly proportional, whereas Fechner's *[83]*
law expresses the relation between soul or brain on the one side, the physical stimuli on the other.

What Fechner had founded was carried further by Wilhelm Wundt (b. 1832), who passed from physiology to philosophy, and who organized the new science by his work

Physiologische Psychologie (1874). A whole series of other problems besides that treated by Fechner was now taken up, such as the speed with which psychical phenomena arise, the development of the perception of space, the laws of the association of representations, etc. — A series of investigators have continued what Fechner had founded and Wundt organized. In Denmark Alfred Lehmann has worked in this field.

In France the attempt has been made especially to illuminate psychology by the study of diseased mental life, whose conditions and manifestations often let the peculiarity of mental life appear in a particularly striking way. The famous neuropathologist Charcot and his school gained great influence in this respect; in the most recent time Pierre Janet, who has passed from philosophy to psychiatry, works in this direction.

β. Descriptive psychology found eminent practitioners in William James (b. 1842, d. 1910) *(Principles of Psychology* 1890) and Henri Bergson (b. 1859) (*Les données immédiates de la concience.* 1888), who both lay great stress on the involuntary mental life in its continuous stream, in contrast to the differences and oppositions that practical and theoretical wants induce us to set up. Already in an essay of 1884 James had pointed out the original mental stream of life (the original flux of life, the stream of thought) as the foundation from which our explicit consciousness continually draws. Bergson stresses in particular that all quantitative differences are set up only as means to a clear and distinct apprehension and understanding of what is immediately given, whose continuous course presents only qualitative differences. With great art of presentation the two psychologists attempt to open our eyes to what is originally and immediately given,
[84] which in ordinary language and later in science is parceled out in a mechanical way.

γ. With regard to the peculiar nature of the life of consciousness the conception is more and more asserted, which Leibniz and Kant had expressed, that we must seek this peculiarity in the fact that every manifestation of mental life makes itself known as a gathering together, a synthesis, of a more or less manifold content, whose elements get their character determined by this very gathering together. This hypothesis about the nature of the life of consciousness stands in contrast partly to the scholastic doctrine of a soul-substance (which was upheld by Descartes and his spiritualist successors), partly to the atomistic conception of mental life, which was upheld by the English "association psychology" (Hume, Stuart Mill). Wilhelm Wundt adheres to it; it is sought to ground it in the presentation of psychology which the author of this survey has given, just as it is also asserted by Pierre Janet on the basis of his investigations of diseased mental life. (Cf. Psykologi II, 5; V B, 5). (In his book *La synthèse mentale,* 1908, Dwelshauer has presented the concept of synthesis as it appears in the three authors named and in

Leibniz and Kant).

The concept of synthesis leads naturally to emphasizing mental life as a peculiar energy and thereby also to bringing out the life of will as the chief side of the life of consciousness. On this point Schopenhauer has exercised a thoroughgoing influence. A voluntarism is asserted in psychological theory, in contrast to intellectualism and emotionalism. In Alfred Fouillée's *Psychologie des idée-forces* (1893) this standpoint has found its most interesting expression. All mental phenomena are symptoms of a need or striving (appétition), which appears as pleasure or pain, according as it is favored or hindered. Discriminating and preferring (discernement et préférence) are originally one, and every sense perception, every act of thought denotes a more or less conscious and determinate direction of our impulse of life.

[85]

b. The Problem of Existence.

The philosophy of Romanticism had believed that it could reform natural science. And yet, precisely at the same time as the origin of this philosophy, at the end of the eighteenth century, natural science had made great progress. The old conviction of the conservation of matter was confirmed by Lavoisier by weighing, that is, by means of the quantitative method, and a series of investigators (Priestley, Saussure, and others) demonstrated the main laws of metabolism in the plant and animal world and thereby incorporated organic life into the great cycle of nature.

Natural science received a new upswing about the year 1840, notably through Robert Mayer's discovery of the conservation of energy (1842). Thoughts which Descartes, Huyghens and Leibniz had already expressed now received empirical confirmation, in that it turned out that it is not only in the purely mechanical domain that no force perishes or arises, but that this also holds in the interaction among the special forces of nature themselves, in that a definite quantitative relation (equivalence) can be established between the manifestation of force (e.g. motion) that disappears and that (e.g. heat) which arises.

To this was added (1859) Darwin's hypothesis of the origin of species. Natural science had thus demonstrated, in a magnificent manner, inner connection where one had previously seen only fragments and leaps. The question now was what influence these results would have on the general world-view. In Herbert Spencer we have already met an attempt to answer this question. Likewise in Fechner, who renewed Spinoza's identity hypothesis. In a brilliant exposition Albert Lange (1828—1875) *(Geschichte des Materialismus* 1865) sought to demonstrate the impossibility and the unjustifiability of inserting psychical links into the series of material causes, whereby the identity

hypothesis becomes the only possibility. Materialism is untenable, because the material processes from which it would derive the mental phenomena are themselves known
[86] to us only through sensations and representations, that is, through mental processes. Matter is a concept formed according to the laws that hold for our sense perception and thinking. Thus Lange combines the problem of existence and the problem of knowledge.

But besides the Spinozistic hypothesis (which is in the main upheld by Wundt and is also sought to be grounded in the presentation of psychology that the author of this survey has given) there also appear attempts in a materialist and in a spiritualist direction.

In German literature the upswing of natural science gave occasion to a series of materialist writings, which had the merit of spreading scientific knowledge and ideas in wider circles. With the opposition to dogmatics and spiritualist speculation there was joined, among the German materialists of the nineteenth century, as among the French, akin to them in spirit, in the middle of the eighteenth century, an idealist interest in humanity and progress. An idealist disposition is quite compatible with theoretical materialism: the materialist can acknowledge the high value of mental phenomena and endeavors, even though he regards them as mere atomic vibrations. — The most eminent of these authors was the physiologist Jacob Moleschott (1822 —1893). Born in Holland, he worked in his youth as Docent in Heidelberg, and when he was dismissed there on account of his views, he went to Zürich and later to Italy, where he carried on significant physiological teaching activity. In his book *Der Kreislauf des Lebens* (1852) he regards chemistry as the highest science, because it shows how matter, and with matter life, with life again thought, passes through its great cycle. In his autobiography (*An meine Freunde. Lebenserinnerungen.* 1895) he presents the history of his thoughts and declares that he has really only fought against dualism, and that his doctrine, on account of the inner connection between mind, force and matter, might just as well be called idealism as materialism. He thus really adheres to the identity hypothesis. Occasionally the
[87] physician Louis Büchner (1824—1899) also expresses himself in this direction, although he believes he upholds pure materialism. His book *Kraft und Stoff* (1855) is very unclear as regards the questions of principle, but is written in a popular language and won a very large circle of readers.

In contrast to these authors Hermann Lotze (1817—1881) set himself the task of holding fast the idealism of the Romantic period in connection with, and on the basis of, the methods and results of modern natural science. He began his scientific activity at once as natural scientist and philosopher, but later passed wholly over to philosophy,

for which he worked a long series of years at the University of Göttingen. As a natural scientist it was his endeavor to treat medicine and physiology as mechanical natural sciences without the then still frequent appeal to a special "vital force." His philosophical ideas he has developed in *Mikrokosmus* (1864—68) and in *Drei Bücher der Metaphysik* (1879).

Whereas the philosophy of Romanticism went the way of deduction and construction, Lotze is clear that the means of thought which are at our disposal in grounding our world-view are analysis and analogy. — The mechanical view of nature regards all phenomena as determined by the interaction of elements which are extended, even though their extension is extraordinarily small. But what is extended must consist of parts, cannot be absolutely simple. And extension is moreover a property that must be explained according to the same principle as all sense qualities, namely by an interaction of elements; but the elements whose interaction is to explain the quality of extension cannot themselves be extended, must therefore be simpler than the elements at which natural science stops; they can then only be points of force. And if they are to stand in interaction with one another, they cannot be absolutely independent and distinct; they must be members of a primal substance, which embraces them all and makes it possible that the state of one can determine that of another. — Further than to the indeterminate concepts of unextended elements and of a primal substance we cannot come by the way of analysis. Only by the way of analogy can we get a positive determination of these *[88]* concepts. Lotze agrees with Leibniz that all metaphysics rests on analogy. Starting from the view that existence in itself must be conceived either in analogy with the material or with the mental, he maintains that this latter analogy is the only possible one, because the mental is given to us immediately in our own nature, whereas we know only the material, including our own body and our own brain, as object. Our body is only the part of the external world that is nearest to us. The elements of existence and the primal substance that reveals itself in this interaction must then be thought of as animated in different degrees. Only in this way do we get a rational world-view.

The relation between soul and body presents for Lotze no difficulty, since, according to his metaphysical idealism, they consist of homogeneous elements. (See further on his standpoint in this respect Psykologi II 8 c).

c. The Problem of Knowledge.

Toward the end of the nineteenth century the insight gained ground that both the Romantic and the positivist reaction against Kant's critical philosophy had gone too far.

The critical tendency had not disappeared in the course of the century, but now became of greater importance, and one immersed oneself again with zeal in Kant's writings. In Germany Albert Lange in particular paved the way for the so-called neo-criticism or neo-Kantianism. In France Charles Renouvier (1815—1903) stands as the energetic renewer of the critical philosophy.

Kant's task had been to find the fundamental concepts and the presuppositions on which a scientific understanding of existence rests. In a certain sense one can say that these fundamental concepts and presuppositions are the means by whose help we can attain the goal that our intellectual interest lets us strive after. But the fundamental concepts (space, time, magnitude, causality) were for Kant at the same time expressions
[89] of the human mind's forms, of our intellectual nature, and it was for him no accident that in science we work precisely with these fundamental concepts. In this *criticism* differs from an epistemological conception that has appeared in recent years, and which grounds the fundamental concepts and presuppositions of science exclusively in the utility, the theoretical and practical significance, that they have. This conception, the so-called *pragmatism,* is maintained by William James in close connection with his psychological conception mentioned above, according to which we leave the involuntary and immediate flow in which our mental life manifests itself only when necessity requires it. The thoughts we develop and the propositions we set up are always called forth by definite interests. Were we wholly indifferent, we would not form definite concepts or draw definite conclusions. (W. James: *Pragmatism.* 1907).

A pragmatic conception was also asserted from the side of natural science. Eminent natural scientists, who reflected on the principles of their science, became aware that the determinations of concepts and the presuppositions of science must seek their justification in this, that they make possible an intellectual elaboration and presentation of the facts. Only on this rests their necessity, which is therefore not unconditional, so long as the possibility is not excluded that other concepts and presuppositions than those now employed might just as well lead to the same goal. The famous English physicist Maxwell expressed himself in this direction as early as 1855, and later Ernst Mach, on the basis of studies in the history of physics, asserted the same point of view. Both investigators lay great stress on the analogies by whose help science transfers representations from one domain of experience to another; thus the mechanical view of nature rests on a great, carried-through analogy between the motion of masses in space and the qualitative changes of things (temperature, electricity, etc.) (Ernst Mach: *Die Mechanik in ihrer* Entwickelung. 1883. — *Erkenntnis und* Irrtum. 1905). Mach uses, instead of the

word pragmatism, rather the expression economical epistemology, laying stress on the *[90]* fact that we restrict our definitions and hypotheses to what is strictly necessary.

Richard Avenarius (1843—1896) has presented the economical or pragmatic theory of knowledge from a psychological point of view, in that he has sought to give what one might call the natural history of problems. *(Philosophie als* Denken *der Welt nach dem Prinzip des kleinsten Kraftmaasses.* 1876. *Kritik der reinen* Erfahrung. 1888—1890). A problem presupposes a tension between the individual and the surrounding world. Such a tension arises when the stimuli that come from the external world demand either a greater or a smaller discharge of energy than the individual is able to supply. When, on the other hand, stimulus (P) and energy (E) correspond to each other (so that P = E), there is no problem and no unrest; the individual recognizes its external world, feels at home, and has confidence in its representations and observations.

If a greater labor is demanded than the individual can supply (that is, P > E), the individual feels a stranger in its world. Recognition is not possible, and the given stands as full of contradictions, deviations and exceptions. With every extension of experience and of the mental horizon, new problems therefore arise. Rising culture brings an increase of problems. — — If, conversely, more energy is at hand than the external world demands (so that P < E), there will arise a need that craves beyond the given, a romantic ferment or a practical idealism will appear. The unrest will persist until either the energy is exhausted or the external world is remolded according to the need of the individual.

The equalization (deproblematization) is not always a real solution. Perhaps only a provisional or purely individual point of view is reached, without the possibility of a new tension (problematization) being excluded. Definitive and universal deproblematization comes about only when a complete adaptation to the given is attained, and all provisional and individual elements in the conception are eliminated. This is attained when knowledge essentially consists in quantitative description, which constantly shows the *[91]* consequent to be the equivalent of the antecedent. Then the standpoint of pure experience is reached. —

In Danish literature K. Kroman's book *Vor Naturerkendelse* (1883) points in a pragmatic direction, in so far as it finds in the impulse of self-preservation the psychological foundation for the postulates that set up the principles of scientific knowledge (the principle of identity, the principle of causality). —

Whereas criticism teaches that we set up the fundamental concepts and presuppositions *that, according to the nature of our mind, we must set up,* pragmatism teaches that

we set up the fundamental concepts and presuppositions *that we have need of.* It is clear that the means we have at our disposal for solving our tasks must be determined by our nature and depend on it; there must be an inner connection between the means of our knowledge and the nature of our mind. Synthesis is at once the means to knowledge and the form of the involuntary working of our mind. Pragmatism adheres to the occasions that lead to the development of our conditions (our "forms"); criticism is inclined to regard the "forms" as given once for all.

Appendix. **The History of the Causal Principle in Modern Times.**

1. The principle is set up as self-evident, even in the definite form that there cannot be More in the effect than in the cause. No distinction is made between ground (ratio) and cause (causa). (Descartes and Spinoza).

2. Hume's criticism of the causal principle: this can be proved neither by inference nor by observation, but rests only on custom or acquired instinct.

3. Kant: The concept of cause is a category, one of the fundamental forms of our thinking, a special kind of synthesis. The causal principle is proved by the fact that only by means of it can we distinguish between mere representation and real experience; if there is to be experience in the strict sense (as distinct from mere representation), the concept of cause must hold. There is only analogy between ground and cause.

[92] 4. The concept of cause is a means to knowledge and orientation in the world; the causal principle is merely a working hypothesis. *(Pragmatism).*

5. *The conception presented in Psykologi V D, 3* agrees with Kant that the concept of cause is one of the forms in which synthesis, the formal unity of consciousness, displays itself, — and agrees with Hume that no conclusive proof can be given of the validity of the causal principle. Over against pragmatism it is stressed that the means and ways our knowledge employs may very well be expressions of the nature of our mind, indeed, must be so, even though the forms of our nature cannot be found and fixed once for all. In the activity of thought an essential side of our nature expresses itself, and such an expression is both end and means. The intellectual interest has its independent significance in the human life of the spirit.

d. The Problem of Valuation.

α. In the domain of ethics the conflict toward the end of the nineteenth century was between Kant's morality of reason and the morality of utility maintained by Bentham and Stuart Mill; the former held to the inner, free submission to a universally valid law, the latter to the demonstrable effects of actions. In an acute book *(Methods of Ethics*

1877) Henry Sidgwick (1838—1900) demonstrated that within the morality of utility a sharp distinction had to be made between two standpoints: the one takes account only of the individual's own utility, the other understands by utility the universal utility, the utility of the whole society. What is useful from the one standpoint is not always useful from the other standpoint, and a difficult, perhaps insoluble problem can arise here. In a masterly analysis of generally recognized practical morality (the morality of common sense) Sidgwick shows that it has a universal morality of utility as its presupposition.

In the presentation of ethics which the author of this survey published in 1887, it was shown that Kant's ethics and Bentham's and Mill's morality of utility, in spite of all opposition, rested on a common presupposition, namely that human actions are to be *[93]* valued according to a universally valid standard. This very standard (the fundamental value that determines the individual values) can of course not in turn be valued. It is the business of historical and psychological investigation to show how a standpoint that recognizes and applies such a standard comes into being; it is the business of ethics to apply the presupposed standard to the particular circumstances of life. In the very presupposition of a universally valid standard it lies that individual ethics must be a part of social ethics. The great problem is how a single individual can be led over from one fundamental value to another.

In the most recent time the social character of ethical valuation has been strongly impressed especially by French investigators. Already in Comte ethics was a part of sociology; only in his later period did he separate it off. The French sociological school with Émile Durkheim at its head lays social solidarity, grounded partly on the bond of blood, partly on community of labor, at the foundation of morality. The individual's conscience is determined, consciously and unconsciously, by the influence of society through traditions, manners, institutions and discipline. (Durkheim: *La Division du Travail Social.* 1893). — Whereas Durkheim predominantly investigates the historical and psychological development of practical morality, Léon Bourgeois and his followers proceed from the view that every individual, by virtue of the solidarity of society, stands in debt to the earlier generations, a debt he must repay by working on the tasks of his own time. From solidarity spring society's right and the individual's duty. Léon Bourgeois's book *Solidarité* has appeared in Danish translation (1910). — In Danish literature N. Bang's line of thought in *Begrebet Moral* (1897) goes in a similar direction.

β. As Avenarius demonstrated, practical problems arise when there stirs in the individual a greater fullness of energy than the surroundings can lay claim to. A similar thought stirs in various authors of the most recent time, who strongly emphasize spon-

taneity, the involuntary striving and need for expansion. In the descriptive psychology
[94] of James and Bergson this side of mental life comes strongly forward, and it has also been applied to the problem of valuation, most passionately and ruthlessly by Friedrich Nietzsche (1844— 1900), who demanded an entirely new valuation of life, with a revaluation of all values hitherto recognized. In his early work *Die Geburt der Tragœdie* (1872) he sets the tragic-poetic conception of life, represented by Dionysus and Apollo, in opposition to the intellectual optimism of Socrates. Science (Socrates) stands below art (Apollo), which in turn stands below overflowing life (Dionysus), which even takes up the struggle with suffering and death. But the vigorous unfolding of life, without which existence does not acquire positive value, he found possible only when a ruling estate represents strength and self-assertion, while a circle of workers and philistines (die Heerde) attends to the subordinate labor. Aristocracy exists for its own sake, since it expresses the highest strength of life and immediate value; in it the goal of history is attained, while "the herd" is only copy, means or hindrance *(Jenseits von Gut und* Böse. 1886. — *Die Genealogie der Moral* 1887). In the poetic work *Also sprach Zarathustra,* especially in the sketch for its conclusion, the possibility is nevertheless hinted that this social dualism might be overcome when the revaluation was completed.

Related thoughts have also been expressed from other standpoints. — Jean Marie Guyau's (1854—1888) main thought was life's need of unfolding, communication and devotion, the spontaneous working of the faculties of the soul, which ever anew leads beyond results attained and restraining barriers. In this need Guyau finds the possibility of sympathy (altruism) and magnanimity, which the English school explained by association of representations or by the struggle for life. *(Esquisse d'une Morale sans obligation ni sanction.* 1885). And out of this need there may also develop an exalted and courageous mood of life, which dares to take up the struggle with the disharmonies of existence, even though it cannot lean on supernatural guarantees. (*L'irréligion de l'avenir.* 1887). — The author of this historical survey has sought in his Religionsfilosofi
[95] (1901) to show that behind all magic and religion lies a need to maintain the constant subsistence of those goods (values) which for man at a given stage are the highest. This need does not have to fall away, even though it can no longer be given shape in myth, dogma and cult, but must seek expression in poetic symbols, and even though reflection leads to the insight to which the history of values under the development of the human species already leads, that our values cannot have lasting subsistence in the form we know. There can be a continuous development in the domain of values, as in other domains, and it is this that can be an object of our faith. — — William James shows in

his work *Varieties of religious experience* (1902), supported by a study of religious phenomena as well as by what he had demonstrated in his psychology, how small a part of our mental being can be explained clearly and definitely. Through many degrees the conscious goes back into the unconscious, or the subconscious, and our first presuppositions often stem from this "subliminal" region, from what lies beneath the threshold of consciousness. An involuntary conviction is the deepest thing in us (the deep thing in us). James is inclined to regard the influences from that dim region as the ways by which a higher order of things works in us. Every closer determination of the origin of these influences is an interpretation that will turn out differently in different individuals. Most people are too inclined to a dogmatic formulation of their involuntary need. Religion is, according to James, man's total mood toward life, a mood that contains in itself the sum of man's experiences of life. Thereby a unity and harmony is attained in the mental life, which would otherwise be lacking. And the fullness of life that can stream from the unconscious sources and continually nourishes our conscious life can be strong enough that tragedies and shipwrecks never for us denote the last word of experience.