Part 1: The Theory of Knowledge

Chapter 1: The Primary Source of Knowledge

Sharp philosophical discussions renter on human knowledge, and these discussions occupy a central position in philosophy, especially in modern philosophy. Knowledge is the starring point of philosophical advance toward establishing a solid philosophy of the universe and this world. As long as the sources of human thought, its criteria and its values, are undetermined, it will not be possible to carry on any study, regardless of its kind.

One of the above-mentioned wide discussions is that which handles the sources and primary origins of knowledge through investigations, studies and attempts to discover the primary principles of the powerful intellectual structure with which the human race is endowed. Thus, it responds to the following questions: 'How did human beings come to know? How was their intellectual life formed, including all the thoughts and notions it possesses? And what is the source that provides them with this stream of thought and knowledge?'

Every human being knows numerous things in his life, and numerous forms of thought and knowledge are expressed in his soul. There is no doubt that many kinds of human knowledge grow out of each other. Thus, in forming new knowledge, a human being is assisted by previous knowledge. The issue is to be able to put our finger on the primary threads of thought and on the common source of knowledge in general.

To begin with, we must know that in the main, perception is divided into two kinds. One of them is conception.1 This is simple knowledge.2 The ether is assent.3 (p. 58) This is knowledge involving a judgement.4 Conception is exemplified in our grasp5 of the idea of heat, light or sound. Assent, on the other hand, is exemplified in our judgement6 that heat is a power derived from the sun, that the sun is more luminous than the moon, and that the atom is susceptible to explosion.7

We begin now with a study of human conceptions, concentrating on their sources and causes. After that, we will take up assent and knowledge.

1. Conception and Its Primary Source

By the term 'primary', we mean the real source of simple conceptions or simple knowledge. The human mind contains two kinds of conceptions. One of them is simple conceptual ideas, such as the ideas of 'existence', 'unity', 'heat', 'whiteness', and similar single human conceptions.

The other is composite ideas, which are the conceptions that result from a combination of simple conceptions. Thus, you may conceive 'a mountain of soil', and then conceive 'a piece of gold'. After that, you combine these two conceptions. Thus, deriving from this combination a third conception which is (p. 59) 'a mountain of gold'. This third conception is in reality composed of the previous two conceptions; hence, all composite conceptions are reduced to simple conceptual units.

The issue under consideration is the attempt to know the real source of these units and the cause of the arising of these simple conceptions in human knowledge. This issue has an important history in the various stages of Greek, Islamic and European philosophy. Throughout the history of philosophy, it received a number of solutions. These solutions can be summarized in the following theories.

A. The Platonic Theory of Recollection

This theory states that knowledge is a function of the recollection of previous information.[8] Plato was the founder of this theory. He based it on his specific philosophy of the archetypes.[9] He believed that the soul has a prior existence. Thus, he believed that prior to the existence of the body, the human soul had existed independently of the body. Since the soul's existence was completely free from matter and its restrictions, it was possible for it to be in touch with the archetypes – that is with the realities that are free from matter.

Thus, it was also possible for is to know them. However, when it became necessary for the soul to descend from its immaterial world in order to be conjoined to the body and linked to it in the world of matter, this caused it to lose all its knowledge of the archetypes and fixed realities, and to forget them completely.

But the soul can begin to retrieve its knowledge by means of the sense perception of specific ideas and particular things. This is because all such ideas and things are shadows and reflections of those eternal archetypes and realities that are everlasting in the world in which the soul had lived. When is perceives a specific idea, it immediately moves to the ideal reality that it had known before it became attached to the body.

On this basis, our knowledge of the universal human being –that is, the universal idea of a human being – would be nothing but a recollection of an abstract reality that we had forgotten. Indeed, we remember it

only due to our sense perception of this or that specific human being (p. 60) who reflects that abstract reality in the material world. Thus, universal conceptions are prior to sense perception. And perception is not realized except through the process of retrieving and recollecting such universal conceptions. Rational knowledge is not related to particular things in the sensible realm. Rather, it is only related to those abstract universal realities.

This theory is based on two philosophical propositions. One of them is that the soul exists prior to the existence of the body in a world higher than matter. The other is that rational knowledge is nothing but knowledge of the fixed abstract realities in that higher world – the Platonic technical term for these realities being 'archetypes'.

Both propositions are false, as was pointed out by critics of Plato's philosophy. For the soul, in the rational philosophical sense, is not something that exists in an abstract form and prior to the existence of the body. Rather, it is the result of a substantial movement in matter. The soul begins with this movement as material, characterized by material qualities and subjugated to the laws of matter. By means of this movement and process of completion, it acquires an immaterial existence not characterized by material qualities and not subject to the laws of matter, even though it is subject to the general laws of existence.

This philosophical notion of the soul is the only one that can explain the [present] issue, and give a reasonable clarification of the relation between the soul and matter or the soul and the body. As for the Platonic notion, which supposes that the soul has an existence prior to that of the body, it is most incapable of explaining this relation, of justifying the link that exists between the soul and the body, and of clarifying the circumstances under which the soul falls from its own level to that of matter.

Besides, it is possible to explain rational knowledge – with the notion of the archetypes put aside in the field of discussion – (p. 61) by the explanation given in Aristotle's philosophy: namely, that the sensible ideas are the same as the universal ideas that the mind knows after is abstracts them from the proper qualities of individuals, and retains the common idea. The universal human being chat we know is not an ideal reality that we had previously seen in a higher world. Rather, he is the form of this or that human being, after it has been subjected to the process of abstraction by means of which the universal idea is extracted from it. (p. 62)

B. The Rational Theory

This theory was adopted by a number of prominent European philosophers, such as Descartes,[10] Kant[11] and others. It can be summarized in the belief that there are two sources of conceptions. One of them is sense perception. Thus, we conceive 'heat', 'light', 'taste' or 'sound' due to our sense perception of all of that. The other is the innate nature. This is to say that the human mind possesses ideas and conceptions that are not derived from the senses, but are fixed in the innermost being of the innate nature.

Thus, the soul draws [certain ideas] from itself. According to Descartes, these innate conceptions are the ideas of God, the soul, extension and movement, as well as the ideas that resemble them, and are characterized by complete clarity in the human mind. And, according to Kant, the whole field of conceptual human knowledge and science – including the two forms of time and space, as well as the twelve categories,[12] for which Kant is known – is innate.

The senses are, on the basis of this theory, the source of understanding the simple conceptions and ideas. However, they are not the only source. Rather, there is also the innate nature that produces in the mind a number of conceptions.

What obliged the rationalists to adopt this theory for explaining human conceptions was this. They did not find a reason for the arising of a number of ideas and conceptions from the senses, since they are non-sensible ideas. Thus, they must be derived essentially from the innermost being of the soul. This makes it clear that the philosophical motive for postulating the rational theory would be completely eliminated if we could explain the mental conceptions solidly, and without need of supposing innate ideas. Because of this, we can refute the rational theory in two ways.

The first is by analyzing knowledge in a way that would attribute all of it to the senses, and facilitate understanding the manner in which all conceptions are produced from the senses. Such an analysis would deny any justification to the theory of innate ideas, since it was based on the complete separation of some ideas from the sphere of the senses.

Therefore, if it were possible to extend the reach of the senses to the various areas of conception, there would be no need for innate conceptions. This way was adopted by John Locke[13] in responding to Descartes and other such rationalists. Later, it was also adopted by those who upheld the empirical principle, such as Berkeley[14] and David Hume.[15]

The second way is the philosophical method for responding to [the view of] innate conceptions. It is based on the principle that a multiplicity of effects cannot be the result of chat which is simple, by virtue of the fact of its simplicity.

The soul is simple. Therefore, it cannot be a cause in a natural manner of a number of conceptions and ideas. Rather, the existence of such a large number of pieces of knowledge in the soul must be caused by many external factors. These factors are the instrumental senses and the various sensations that occur to them.[16] (p. 68)

A complete criticism of this proof requires that we explain the principle on which it is based, and give a clarification of the reality and simplicity of the soul. But for this, there is no room here. However, we must point out the following.

First, this proof – if one can accept it – does not totally demolish the theory of innate ideas, because it only demonstrates the lack of a multiplicity of innate pieces of knowledge, but does not prove that the

soul does not naturally possess a limited [number of] conceptions[17] concordant with its unity and simplicity, and resulting in a number of other conceptions independent of the senses.

In the second place, we would like to clarify that if the rational theory means that in the human soul there are innate ideas in actuality, and then it becomes possible for the proof presented above to respond to this theory as follows. The soul is simple in essence; so, how could it produce that large number of innate ideas? Indeed, if the rationalists were truly inclined to believe that, then our human inner feeling would be sufficient for rejecting their theory.

This is because all of us know that at the moment human beings [begin] to exist on the face of the earth, they do not possess any idea, regardless of how clear and general it is in the human mind:

God brought you out of your mothers' abdomens when you did not know anything. He gave you hearing, vision and hearts, in the hope that you will be grateful. (***Al-Qur'an, 16: 78***)

Still, another interpretation of the rational theory can be recapitulated in the consideration that innate ideas exist in the soul potentially and that they acquire the quality of being actual by the development and mental integration of the soul. Thus, innate conceptions are not produced by the senses.

Rather, the soul contains them without attending to them. However, with the integration of the soul, these conceptions become knowledge, attended to and clear, as is the case of the knowledge and information that we recollect and, hence, reawaken once again after they had been latent and potential. (p. 64)

In light of this interpretation, the rational theory cannot be rejected on the basis of the philosophical demonstration or scientific evidence which has already been mentioned.

C. The Empirical Theory

This theory states that only sense perception supplies the human mind with conceptions and ideas, and that mental power is that which reflects in the mind the various sense perceptions. Thus, when we perceive a thing, we can have a conception of it – that is, we can grasp its form mentally. But the ideas that lie outside the province of the senses cannot be created by the soul, nor constructed by it essentially and independently.

According to this theory, the mind merely manages the conceptions of sensible ideas. It does this either

(1) by combination and division, so that it combines those conceptions, or divides every one of them. Thus, it conceives 'a mountain of gold', or divides 'the tree', that is had known into pieces and parts; or

(2) the mind manages the conceptions of sensible ideas by abstraction and universalization, so that it separates the qualities of the form, and abstracts the form from its particular qualities; with the result that [the mind] can form from it a universal idea.

This is exemplified in conceiving Zayd, and discounting all that which distinguishes him from 'Umar. By means of this process of subtraction, the mind retains an abstract idea that applies to both Zayd and 'Umar.

Perhaps the first one to advocate this empirical theory was John Locke, the eminent British philosopher who emerged in a philosophical period pervaded by the Cartesian notions of innate ideas. Thus, Locke began to refute these notions. For this purpose, he put forth in his book, Essay on Human Understanding, a detailed philosophy of human knowledge. In this book, he attempted to attribute all conceptions and ideas to the senses.

Later, this theory became widely spread among European philosophers, and, to some extent, it destroyed the theory of innate ideas. A number of philosophers adopted its most extreme (p. 65) forms. This led to very dangerous philosophies, such as the philosophies of Berkeley and David Hume, as we will show later, God willing.

Marxism adopted this theory in its explanation of human knowledge. This was consistent with its view of human consciousness as a reflection of objective reality. Thus, all knowledge can be attributed to a reflection of a particular reality. Such a reflection occurs by means of the senses. It is not possible for knowledge and thought to be related to anything that falls outside the limits of sensible reflections. Hence, we do not conceive anything other than our sense perceptions which indicate objective realities that exist in the external world.

Georges Politzer[18] said the following:
But what is the point of the origin of consciousness or thought? It is sense perception. Further, the source of the sense perceptions chat human beings experience is grounded in their natural needs.[19]

The Marxist view, therefore, can be interpreted to mean that there is no source for the content of our consciousness other than the objective particulars which are given to us by the external circumstances that we live. These particulars are given to us through sense perceptions. That is all there is to this matter.[20]

In an attempt to clarify the Marxist view of this matter, Mao Tse-Tungn[21] made the following statement: 'The source of all knowledge lies hidden in the perceptions by the bodily human sense organs of the objective world which surrounds us.'[22]

Thus, the first step in the process of acquiring knowledge is (p. 66) the primary contact with the external environment – this is the stage of sense perception. The second step is the accumulation, the lining up and the organizing of the information which we gather from sense perception.[23]

The empirical theory focuses on experimentation; for scientific experiments have shown chat the senses [provide] the perceptions chat produce the human conceptions. Thus, he who is deprived of any sense cannot conceive the ideas that are related to that specific sense.

Such experiments – if sound–prove scientifically only that the senses are the primary source of conception. Were it not for the senses, no conceptions would have existed in the human mind. However, such experiments do not strip the mind of the ability to produce from the sensible ideas new ideas not known by the senses.

Therefore, it is not necessary that all our simple conceptions be preceded by the sense perception of their ideas, as the empirical theory claims. In light of the above–mentioned experiments, the senses are the primary structure on the basis of which the human conception is established. But this idea does not mean that the mind is void of agency and innovation of new conceptions in light of the conceptions that are derived from the senses.

It is possible for us to show the failure of the empirical theory in its attempt to attribute all the human conceptual notions to the senses by investigating a number of the notions of the human mind, such as the following: 'cause' and 'effect', 'substance' and 'accident', 'possibility' and 'necessity', 'unity' and 'multiplicity', 'existence' and 'non–existence', as well as other similar notions and conceptions.

We all know that the senses grasp the cause and effect themselves. (p. 67) Thus, by means of our sight, we know that a pencil falls to the ground if the table on which it was placed is pulled from underneath it. Also, by means of touch, we know that water becomes hot when it is placed on fire.

Similarly, we know chat bodily particles expand in hot weather. In these examples, we perceive two successive phenomena, but we do not perceive a specific relation between the two. This relation is what we call 'causality'. By 'causality' we mean the influence of one of these phenomena on the other and the need of the other for it, in order that the other exists.

The attempts that seek to extend the province of the senses to cover causality itself and to consider it as an empirical principle are based on avoiding the depth and precision in the knowledge of the realm of the senses and the ideas and limits it includes.

Regardless of the proclamations made by the empiricists – namely, chat human experiences and the experimental sciences, which are based on the senses, are what clarify the principle of causality, and make us realize how specific material phenomena arise from other similar phenomena – I say that regardless of such proclamations, the empiricists will not be successful, as long as we know that scientific experiments cannot reveal by means of the senses anything except the succession of phenomena.

Thus, we can know that by placing water on the fire, the water gets hot. Then we multiply its temperature. At last, we perceive the boiling of the water. The empirical side of the experiment does not disclose that boiling is produced because the temperature reaches a specific degree. But if our empirical experiments fall short of disclosing the notion of causality, then how did this nation develop in the human mind, so that we began to conceive it and think about it?

David Hume, one of the advocates of the empirical principle, was more precise than others in applying the empirical theory. He knew that causality, in the real sense of the term, cannot be known by the senses.

Because of this, he rejected the principle of causality and attributed it to the habit of the association of ideas, saying that I see the billiard ball move, and then encounter another ball that, in turn, moves. But in the movement of the former ball, there is nothing that reveals to me the necessity of the movement of the latter.

The internal senses also tell me that the movement of the organs follows upon an order from the will. However, they do not give me a direct knowledge of a necessary relation between the movement and the order.[24] (p. 68)

But the rejection of the principle of causality does not at all minimize the difficulty that faces the empirical theory. The rejection of this principle as an objective reality means that we do not believe that causality is a law of objective reality, and that we are unable to know whether the phenomena are linked by necessary relations that make some of them effects of some others.

However, the principle of causality as an idea assented to is one thing, while the principle of causality as a conceptual idea is another. Suppose, for example, that we do not assent to the fact that some sensible things cause some other sensible things, and chat we do not form an assent concerning the principle of causality, would this mean that we do not have a conception of the principle of causality either? If we do not have such a conception, then what is it chat was rejected by David Hume? Can a human being reject something of which he has no conception?

The undeniable truth is that we conceive the principle of causality, whether or not we assent to it. Further, the conception of causality is not composed of the conceptions of the two successive things. When we conceive the causation of a specific degree of temperature for boiling, we do not intend by this causation an artificial composition of the idea of temperature and that of boiling.

Rather, we intend a third idea that exists between the two. From where, then, does this third idea that is not known by the senses come, if the mind does not have the ability to create non-sensible ideas? We face the same difficulty with regard to the other notions mentioned earlier;[25] since all of them are non-sensible. Thus, it is necessary to cast aside the purely empirical explanation of human conceptions and to adopt the dispossession theory (*nazariyyat al-intiza*).

D. The Dispossession Theory

This is the theory of the Islamic philosophers in general. It can be summarized in the division of the mental conceptions into the following two kind: primary conceptions and secondary conceptions. The primary conceptions are the conceptual foundation of the human mind. (p. 69) These primary conceptions are produced from the direct genre perception of their content.

Thus, we conceive heat because we had known it by means of touch. And, we conceive a color because we had known it by means of vision. Again, we conceive sweetness because we had known it by means of taste. Similarly, we conceive an odor because we had known it by means of smell.

The same is true of all the ideas that we know by means of our senses. The sense perception of every one of them is the cause of their conception and the presence of an idea about them in the human mind. These ideas form the primary foundation of conception.

On the basis of this foundation, the mind establishes the secondary conceptions. With this, the stage of innovation and construction begins – the theory under consideration gives this stage the technical name 'dispossession'. The mind produces new notions from those primary ideas. These new ideas fall outside the scope of the senses, even though they are derived and extracted from the ideas that are given to the mind and to thought by the senses.

This theory is consistent with demonstration and experiments. It is possible for it to give a solid explanation of all the conceptual units. In light of this theory, we can understand how the notions of cause and effect, substance and accident, existence and unity came about in the human mind. All of them are dispossessed notions that the mind invents in light of the sensible ideas.

Thus, we perceive the boiling of water [at sea level] when its temperature reaches one hundred degrees [centigrade]. Further, our perception of rhea two phenomena –the phenomena of boiling and that of temperature – may be repeated a thousand times, yet without our ever perceiving the causation of temperature to boiling. Rather, the mind dispossesses the notion of causality from the two phenomena that are offered by the senses to the field of conception.

Due to the limitation of space, we cannot discuss the manner, kinds and divisions of mental dispossessions. This is because in this brief investigation of ours, we are not to discuss anything other than the main points. (p. 70)

2. Assent and Its Primary Source

We move now from the investigation of simple knowledge (conception) to the investigation of knowledge as assent that involves a judgement, and by means of which human beings obtain objective knowledge.

Every one of us knows a number of propositions and assents to them. Among such propositions, there are those in which the judgement is based on particular objective realities, as in our statements: 'The weather is hot.' 'The sun is out.'

Because of this, the proposition is called 'particular'. There are also propositions in which the judgement is based on two general ideas, as in our statements: 'The whole is greater than the part.' 'One is half of two.' 'The indivisible part is impossible.' 'Heat causes boiling.' 'Coldness is a cause of solidification.' 'The circumference of the circle is greater than its diameter.' 'A mass is a relative reality.' The same is true of

[other] philosophical, physical and mathematical propositions.

These propositions are called 'universal' or 'general'. The problem that we encounter is that of knowing the origin of knowledge as assent and the principles on which the edifice of human knowledge is based. What, then, are the primary threads from which that large group of judgements and knowledge is woven? Also, what is the principle that human knowledge reaches in explanation, and is considered a general primary criterion for distinguishing truth from other things?

There are a number of philosophical doctrines concerned with this issue. Of these doctrines we will take up for study the rational doctrine and the experimental doctrine. The former is the doctrine on which Islamic philosophy, as well as the method of Islamic thinking in general, is based. The latter is the prevalent view in a number of materialistic schools, of which the Marxist school is one.

A. The Rational Doctrine

In the view of the rationalists, human knowledge is divided into two kinds. One of them is necessary knowledge, or intuitive knowledge. (p. 71) By 'necessity' here, we mean that the soul is obliged to accept a certain proposition, without having to require any evidence or a demonstration of its soundness.

Rather, it finds in its own nature the necessity for believing it, in a manner not in need of any evidence or conformation. This is exemplified in the soul's belief in, or knowledge of, the following propositions: 'Negation and affirmation are not true of the same thing [at the same time].' 'That which is originated does not exist without a cause.' 'Contrary qualities are not in harmony in the same subject.' 'The whole is greater than the part.' 'One is half of two.'

The other kind consists of theoretical knowledge and information. There are a number of propositions whose truth the soul does not believe except in light of previous knowledge and information.

Thus, the soul's making of judgements in those propositions depends on the process of thinking and derivation of the truth from prior truths that are clearer than they are, as in the following propositions: 'The earth is spherical.' 'Motion is a cause of heat.' '[The infinite] regress is impossible.' 'Bodily particles expand by heat.' 'The angles of a triangle are equal to two right angles.' 'Matter is transformable into energy.'

The same is true of similar philosophical and scientific propositions. When such propositions are presented to the soul, the soul does not reach a judgement concerning them except after reviewing other information. Because of this, the theoretical knowledge depends on the necessary primary knowledge. Therefore, if such primary knowledge is removed from the human mind, one would not be able at all to attain any theoretical knowledge, as we will show later, God willing.

Thus, the rational doctrine shows chat the cornerstone of knowledge is the primary information. On the basis of such information, the superstructures of human thought, referred to as 'secondary information',

are built.

The operation through which one derives theoretical knowledge from previous knowledge is the operation that we call 'thought' or 'thinking'. Thinking is an effort that the mind makes for the purpose of acquiring a new assent or a new knowledge from some of its previous knowledge. This means that when a human being attempts to deal with a new issue, such as the origination of matter, in order to know (p. 72) whether matter is originated or old, he has two things to consider.

One of them is a specific attribute – that is, the origination. And the other is the thing which seeks actualization by means of acquiring that attribute – this thing being 'matter'. Since this proposition is not one of the rational primary propositions, a human being, therefore, would naturally hesitate to judge and to accept the origination of matter. He then resorts to his previous knowledge to try to find in it something on which he can base his judgement and utilize as an intermediary for knowing the origination of matter.

With this, the process of thinking begins by looking over the previous information. Let us suppose, for example, that among such truths that the thinker already knows, there is the substantial movement that determines that matter is a continuous motion and a constant renewal. The mind, then, grasps this truth when this truth appears to it in the mental presentation, and makes it a link between matter and origination. For, since matter is renewable, is must be originated. This is because continuous change means continuous creation. At that point, a new knowledge is acquired by the human being, this knowledge being that matter is originated, because it is moveable and renewable, and whatever is renewable is originated.

This is how the mind is able to draw a link between origination and matter – the link being the motion of matter. It is this motion that makes us believe that matter is originated, because we know that everything moveable is originated.

Due to this, the rational doctrine asserts chat the causal relation in human knowledge is between some information and some other. For all knowledge is only produced by previous knowledge. The same is true of this previous knowledge, [and so on], until the progressive series reaches the primary rational knowledge that does not arise from previous knowledge. For this reason, this primary knowledge is considered the primary cause of knowledge.

This primary cause of knowledge is of two kinds: it is either (1) a basic condition of all human knowledge in general, or (2) a cause of a part of the information. The former is the principle of non–contradiction. This principle is necessary for all (p. 78) knowledge. Without is one cannot be sure that a certain proposition is not false, regardless of how much evidence one has for its truth and soundness.

This is because, if contradiction were possible, then it would be possible for the proposition to be false at the same time in which we prove its truth. This means that the collapse of the principle of non–contradiction strikes a blow at all philosophical and physical propositions regardless of their kind. The latter kind of primary knowledge is the rest of the necessary knowledge of which every piece is a cause

of a group of pieces of information.

On the basis of the rational doctrine, the following [truths] hold: first, the primary criterion of human thinking in general is the necessary rational knowledge. It is the fundamental pillar that is indispensable in every field. The truth or falsity of every idea must be measured in light of it. Due to this, the field of human knowledge becomes wider than the sphere of the senses and experimentation. This is because it provides human thinking with powers that extend to truths and propositions that lie beyond matter, and achieves for metaphysics and the higher philosophy the possibility of knowledge.

The experimental doctrine is the contrary of this. It distances the metaphysical issues from the field of discussion, because they are issues which are not subject to experimentation, and to which scientific understanding does not extend. Thus, it is not possible to be sure whether they are negations or affirmations, as long as experimentation is the only primary criterion, as the experimental doctrine claims.

Second, in the view of the rationalists, the progression of thought moves from general propositions to more particular propositions – that is, from universal propositions to particular propositions. Even in the experimental field, which appears at first sight to be one in which the mind moves from individual experimental subjects to general principles and laws, movement and progression occur from the general to the particular. This will be shown in our response to the experimental doctrine. (p. 74)

No doubt, you remember the example already mentioned of the knowledgeability of thought, how we moved in it from a general knowledge to a particular knowledge. We acquired the knowledge that 'matter is originated' from the knowledge that 'everything that changes is originated'. Thought began with this universal proposition, 'Everything that changes is originated', and then moved from it to a more particular proposition, 'Matter is originated'.

Finally we must warn that the rational doctrine does not neglect the powerful role of experimentation in the human sciences and knowledge, the enormous services that experimentation offers to mankind, and the secrets of the universe and the natural mysteries that it discloses.

However, according to this doctrine, experimentation alone could not have played this powerful role; because for the derivation of any such scientific truths from it, it requires the application of the necessary rational laws. This means that the derivation is achieved in light of the primary knowledge. It is not possible for experiments in themselves to be the original source and the primary criterion for knowledge. For it is analogous to the test that the doctor gives the patient. It is this test that provides the doctor with the opportunity of discovering the nature of the disease and its accompanying complications.

However, this test would not help discover that, were it not for the previous information and knowledge that the doctor has. Had he not had such information, his test would have been null and empty of any benefit. Similarly, human experiments, in general, do not pave the way for conclusions and truths except in light of previous rational information.

B. The Empirical Doctrine

This doctrine states that experience is the primary source of all human knowledge. For that, it relies on the assertion that when human beings are deprived of the various kinds of experiences, they do not know any truth, regardless of its clarity. This shows that[26] human beings are born without any innate knowledge. They begin their awareness and knowledge as soon as they begin (p. 75) their practical lives. Their knowledge widens as their experiences widen, and their knowledge becomes varied in kind as their experiences take on different forms.

The empiricists do not admit necessary rational knowledge prior to experience. Rather, they consider experience as the only basis of sound judgement and the general criterion in every field. Even those judgements that the rational doctrine alleges to be necessary knowledge must, [according to the empiricists], be subject to the empirical criterion, and must be admitted in accordance with the determination of experience.

This is because human beings do not have any judgement whose confirmation does not require experience. This results in the following:

First, the, power of human thinking is delimited by the limits of the empirical field; so that, any metaphysical investigation or study of metaphysical issues becomes useless. [In this, the empirical doctrine] is exactly the contrary of the rational doctrine.

Second, the movement of thought progresses in a way contrary to the manner asserted by the rational doctrine. Thus, whereas the rational doctrine asserts that a thought always moves from what is general to what is particular, the empiricists assert that it moves from what is particular to what is general; that is, from the narrow limits of experiments to universal laws and principles. It always progresses from the empirical particular truth to the absolute truth. The general laws and universal principles that human beings have are nothing but the result of experiences. The consequence of this is a progression of induction from[27] individual things to a discovery of general objective truths.

For this reason, the empirical doctrine relies on the inductive method in [its] search for evidence and in thinking, since this method is one that ascends from the particular to the universal. It rejects the principle of syllogistic[28] reasoning, by virtue of which thought moves from the general to the particular, as in the following syllogistic figure:[29] 'All human beings are mortal.' 'Muhammad is a human being.' 'Therefore, Muhammad is mortal.' (p. 76)

This rejection depends on the fact that this syllogistic figure does not lead to new knowledge in the conclusion, even though it is a condition of demonstration that it leads to a new conclusion not contained in the premises.[30]

Thus, the syllogism in its above-mentioned form falls into the kind of fallacy called 'begging the question' (*al-musadara 'ala al-matlub*). This is because if we accept the premise 'all human beings are mortal', we

then include in the subject, 'human being', all human individuals. After that, if we follow this premise by another: 'Muhammad is a human being,' we are then either aware that Muhammad is one of the human individuals we intended in the first premise – with this, we would also be aware that he is mortal before we state this truth in the second premise – or we are not aware of that. In this case, we would have generalized the first premise without justification, because we had not yet known that mortality is applicable to all human beings, as we claimed.

This is a brief exposition of the empirical doctrine which we find ourselves obliged to reject for the following reasons. First, is this principle itself (experience is the primary criterion for discerning the truth) primary knowledge that human beings acquire without previous experience? Or is it, in turn, like other human knowledge, in being neither innate nor necessary?

If it is primary knowledge previous to experience, then the empirical doctrine, which does not affirm primary knowledge, is falsified; and the presence of necessary human information as independent of experience is affirmed. But if this knowledge is in need of previous knowledge, this would mean that we do not know at first that experience is a logical criterion whose truth is secured. How, then, can one demonstrate its truth, and consider it a criterion of experience when its truth is not yet certain?

In other words, if the above-mentioned principle, which is the cornerstone of the empirical doctrine, is false, then the empirical doctrine collapses due to the collapse of its main principle. (p. 77) If, on the other hand, it is sound, then it will be appropriate for us to inquire about the reason that led the empiricists to believe that this principle is sound.

For if they were assured of its soundness without experience, this would mean that it is an intuitive proposition, and that human beings possess truths that lie beyond the realm of experience. If, however, they were assured of its soundness by a previous experience, this would be impossible, because experience cannot ascertain its own value.

Second, the philosophical notion that is based on the empirical doctrine is incapable of affirming matter. The reason for this is that matter cannot be disclosed by means of pure experience. Rather, all that appears to the senses in the experiential fields are only the phenomena and accidents of matter. Regarding matter itself – namely, the material substance that those phenomena and qualities exhibit – it is not known by the senses.

The rose that we see on the tree, for example, or that we touch with our hand [is such that] we only have sense perception of its odor, color and softness. Even if we taste it, we will [only] have sense perception of its flavor. But in none of these cases do we have sense perception of the substance in which all these phenomena meet. Rather, we know this substance only by means of a rational proof that is based on primary rational knowledge, as we will point out in the forthcoming discussions. For this reason, a number of empiricists or experientialists denied the existence of matter.

The only ground for asserting [the existence of] matter are the primary rational propositions. Were it not

for them, it would not be possible for the senses to confirm to us the existence of matter behind the beautiful smell, the red color and the specific flavor of the rose.

Thus, it becomes dear to us that the metaphysical realities are not the only realities whose demonstration requires the pursuit of the rational method in thinking, but also matter itself.

As a matter of fact, we raise this objection against those who believe on the basis of the principles of the empirical doctrine that a material substance exists in nature. But this objection does not touch those who interpret nature (p. 78) as mere phenomena that occur and change, without admitting a subject in which such phenomena meet.

Third, if the mind were confined to the limits of experience and did not have knowledge independent of experience, then it would not be possible for it at all to assert the impossibility of anything. This is because impossibility, in the sense of 'non-possibility of the existence of a thing', is not within the scope of experience; nor is it possible for experience to disclose it. The most that experience can show is the non-existence of specific things.31

However, the non-existence of a thing does not mean its impossibility. There are a number of things whose existence is not disclosed by experience. Rather, experience shows their non-existence in their specific area. In spite of that, we do not consider them impossible; nor do we strip them of the possibility of existence, as we do in the case of impossible things.

There is a clear difference between the collision of the moon with the earth, the existence of people on Mars, or the existence of a human being who can fly due to specific flexibility in his muscles, on the one hand,32 and the existence of a triangle having four sides, the existence of a part greater than the whole, or the existence of the moon in the case of its non-existence, on the other hand.33

None of these propositions has been actualized, and none of them has been subject to experience. Thus, if experience alone were the main source of knowledge, then we would not be able to distinguish between the [abovementioned] two groups [of propositions]. This is because the word 'experience' is the same in both of them. In spite of this, we all see the clear difference between the two groups.

The first group has not been actualized; however, it is possible essentially. As for the second group, it is not only nonexistent, but it cannot exist at all. The triangle, for example, cannot have four sides, whether or not the moon collides with the earth.

This judgement of impossibility cannot be interpreted except in light of the rational doctrine, as a rational knowledge independent of experience. Because of this, the empiricists are left with two alternatives only. They must either admit the impossibility of specific things, such as the things mentioned in the second group, (p. 79) or they must deny the notion of impossibility of all things.

If they accept the impossibility of things, such as those which we have mentioned [in the second group],

their acceptance must rely on independent rational knowledge, and not on experience. The reason is that the nonappearance of a thing in experience does not indicate its impossibility.

If, on the other hand, they deny the notion of impossibility, and do not admit the impossibility of anything, regardless of how strange that may be to the mind, on the basis of such a denial, there would remain no difference between the two groups already presented, concerning which we have realized the necessity of differentiating between them.

Further, if the notion of impossibility is eliminated, then contradiction – namely, the simultaneous existence and non–existence of a thing, or the simultaneous truth and falsity of a proposition – will not be impossible. But the possibility of contradiction leads to the collapse of all knowledge and' science, and to the failure of experience to remove doubt and hesitancy in any scientific field.

This is because no matter how many experiments and pieces of evidence confirm the truth of a specific scientific proposition, such as 'Gold is a simple element', we still cannot be certain that this proposition is not false, as long as it is possible for things to be contradictory and for propositions to be true and false at the same time.

Fourth the principle of causality cannot be demonstrated by means of the empirical doctrine. As the empirical theory is incapable of giving a sound justification of causality as a conceptual idea, so also is the empirical doctrine incapable of demonstrating it as a principle or an idea of assent. For experience cannot clarify anything to us except a succession of specific phenomena.

Thus, by means of it we know that water boils when it is heated to 100 degrees [centigrade], and that it freezes when its temperature reaches below 0 degrees [centigrade]. As for one phenomenon causing the other, and the necessity between the two, this is something not disclosed by the means of experience, regardless of how precise it is and regardless of our repetition of the experience. But if the principle of causality collapses, all the natural sciences also collapse, as you will learn later.

Some empiricists, such as David Hume and John Stuart Mill (p. 80), have admitted this truth. That is why Hume interprets the element of necessity in the law of cause and effect to be due to the nature of the rational operation that is employed in reaching this law.

He says that if one of the operations of the mind is employed for the purpose of obtaining this law – adding that if one of the operations of the mind always leads to another operation that follows it immediately –then, with the passage of time, a constant strong relation, which we call 'the relation of association of ideas', develops between the two operations.

This association is accompanied by a kind of rational necessity, such that the idea that is linked to one of the two mental operations occurs in the mind, as does the idea that is linked to the other operation. This rational necessity is the basis of what we call the necessity that we grasp in the link between the cause and the effect. There is no doubt that this explanation of the relation between the cause and the effect is

incorrect for the following reasons.

First, from this explanation, it follows that we do not reach the general law of causality except after a series of repeated events and experiments that fasten in the mind the link between the two ideas of cause and effect, even though that is not necessary; for the natural scientist is able to infer a relation of causality and necessity between two things that occur in one event. His certitude is not at all strengthened [later] beyond what it was when he observed the event for the first time. Similarly, the relation of causality is not strengthened by the repetition of other events involving the same cause and effect.

Second, let us put aside two successive external events and turn our attention to their two ideas in the mind – namely, the idea of cause and that of effect. Is the relation between them one of necessity or one of conjunction, as our conception of iron is conjoined to our conception of the market in which the iron is sold?

If it is a necessary relation, then the principle of causality is confirmed, and a non–empirical relation between two ideas – that is, the relation of necessity – is implicitly admitted. (p. 81) [In this case], whether necessity is between two ideas or between two objective realities, it cannot be demonstrated by sense experience. If, on the other hand, the relation is a mere conjunction, then David [Hume] did not succeed in explaining, as he intended, the element of necessity in the law of cause and effect.

Third, the necessity, which we grasp in the relation of causality between a cause and an effect, involves no influence at all on requiring the mind to invoke one of the two ideas when the other idea occurs in the mind. That is why this necessity that we grasp between the cause and the effect is the same, whether or not we have a specific idea about the relation. Thus, necessity of the principle of causality is not a psychological necessity, but an objective necessity.

Fourth, the cause and effect may be completely conjoined, yet in spite of that, we grasp the causation of the one on the other. This is exemplified m the movement of the hand and that of the pencil during writing. These two movements are always present at the same time. If the source of necessity and causality were the succession of one of the two mental operations after the other by means of association, then it would not be possible in this example for the movement of the hand to play the role of the cause loll the movement of the pencil; for the mind grasps the two movements at the same time. Why then should one of them be posited as a cause and the other as an effect?

In other words, explaining causality as a psychological necessity means that the cause is considered as such, not because in objective reality it is prior to the effect and is productive of it, but because knowledge of it is always followed by knowledge of the effect by means of the association of ideas. Due to this, the former is the cause of the latter.

This explanation cannot show us how the movement of the hand becomes a cause of the movement of the pencil, even though the movement of the pencil does not succeed the movement of the hand in

knowledge. Rather, the two movements are known simultaneously. Thus, if the movement of the hand does not have actual priority and objective causality over the movement of the pencil, it would not have been possible to consider it as a cause. (p. 82)

Fifth, it is often the case that two things are associated without the belief that one of them is a cause of the other. If it were possible for David Hume to explain the cause and effect as two events whose succession we often grasp, such that a link of the type of association of ideas occurs between them in the mind, then the night and day would be of this sort.

As heat and boiling are two events that have succeeded each other, until an associational link developed between them, the same must be true of the night and day, their succession and their association, even though the elements of causality and necessity that we grasp between heat and boiling are non-existent between the night and day. The night is not a cause of the day, nor the day a cause of the night. It is not possible, therefore, to explain these two elements by the mere repeated succession which leads to the association of ideas, as Hume tried to do.

We conclude from this that the empirical doctrine unavoidably leads to the elimination of the principle of causality and to the failure of demonstrating necessary relations between things. But if the principle of causality is eliminated, all the natural sciences will collapse, since they depend on it, as you will know.

The natural sciences, which the empiricists seek to establish on the basis of pure experimentation, are themselves in need of primary rational principles that are prior to experimentation. This is because the scientist carries out his experiment in his laboratory on limited objective particulars. Then he puts forward a theory for explaining the phenomena that the experiment in the laboratory had disclosed, and for justifying them by one common cause.

This is exemplified in the theory that states that the cause of heat is motion, on the basis of a number of experiments interpreted in this way. It is our right to ask the natural scientist about how he offers this theory as a universal law applicable to all circumstances resembling those of the experiment, even though the experiment did not apply except to a number of specific things. Is it not the case, then, that this generalization is based on a principle stating that similar circumstances and things alike in kind and reality must share in laws (p. 83) and decrees?

Here, once again, we inquire about how the mind reached this principle. The empiricists cannot claim that it is an empirical principle. Rather, it must be a piece of rational knowledge that is prior to experimentation. The reason is that if it were supported by experimentation, then the experimentation on which this principle is based also, in turn, treats only specific subjects. How, then, can a general principle be based on it? Thus, the establishment of a general principle or a universal law in light of one or more experiments cannot be accomplished except after admitting prior rational knowledge.

With this, it becomes clear that all the empirical theories in the natural sciences are based on a number of pieces of rational knowledge that are not subject to experimentation. Rather, the mind accepts them

immediately. They are the following:

1. The principle of causality, in the sense of the impossibility of chance. That is, if chance were possible, then it would not be possible for the natural scientist to reach a common explanation of the numerous phenomena that appear in his experimentation.

2. The principle of harmony between cause and effect. This principle states that things that in reality are similar necessarily depend on a common cause.

3. The principle of non-contradiction that asserts that it is impossible for negation and affirmation to be true simultaneously.

If the scientist accepts these pieces of knowledge that are prior to experimentation, and then carries out his various experiments on the kinds and divisions of heat, he can, in the last analysis, postulate a theory for explaining the different kinds of heat by one cause, such as motion, for example. On the whole, it is not possible to postulate this theory as a decisive and an absolute one.

The reason is that it can be such only if it is possible for one to be certain of the absence of another explanation of those phenomena, and of the incorrectness of explaining them by another cause. However, in general, this is not determined by experiments. (p. 84) That is why the conclusions of the natural sciences are, for the most part, presumptive, due to a deficiency in experiments, and to an incompleteness in the conditions that make them decisive experiments.

It becomes clear to us from what has preceded that the inference of a scientific conclusion from an experiment is always dependent on syllogistic reasoning in which the human mind moves from the general to the specific and from the universal to the particular, exactly as viewed by the rational doctrine. The scientist is able to draw the conclusion in the above example by moving from the already mentioned three primary principles (the principle of causality, the principle of harmony, and the principle of non-contradiction) to that specific conclusion in accordance with the syllogistic approach.

Regarding the objection raised by the empiricists against the method of syllogistic reasoning- namely, that the conclusion in it is nothing but an echo of one of the two premises, that is, the major premise, and a repetition of it- it is a bad objection, according to the teachings of the rational doctrine.

This is because if we intended to demonstrate the major premise by experiments, and had no other criterion, then we would have to examine all the divisions and kinds, in order to be certain of the soundness of the judgement. The conclusion then would have been also determined in the major premise itself.

But if the major premise were a piece of rational knowledge, which we grasp without need of experiments, such as the primary intuitive propositions and the rational theories that are derived from such propositions, then he who seeks to demonstrate the major premise does not need to examine the

particulars so that the conclusion is necessitated to take on the quality of repetition and reiteration.[34] (p. 85)

Once again, we assert that we do not deny the great value of experience for humanity and the extent of its service in the fields of knowledge. However, we wish to make the empiricists understand that experiments are not the primary criterion and the fundamental source of human thought and knowledge.

Rather, the primary criterion and the fundamental source are rational primary information, in whose light we acquire all other information and truths. Even experience itself is in need of such a rational criterion. Thus, we and others alike are required to admit this criterion on which the principles of our metaphysical philosophy are based. If, after that, the empiricists attempt to deny this criterion in order to falsify our philosophy, they would be, at the same time, attacking the principles that are the foundation of the natural sciences, and without which the empirical experience is completely fruitless.

In light of the rational doctrine, we can explain the quality of necessity and absolute certainty that distinguish mathematics from the propositions of the natural sciences. This distinction is due to the fact that the necessary mathematical laws and truths are supported by the primary principles (p. 86) of the mind, and do not depend on the discoveries of experiments. The scientific propositions are contrariwise.

Thus, the expansion of iron due to heat is not one of the propositions that are given by those principles with no mediation, but is based on experimental propositions. The decisive rational character is the secret of the necessity and absolute certainty in the mathematical truths.

If we study the difference between the mathematical and the natural propositions in light of the empirical doctrine, we will not find a decisive justification for this difference, as long as experience is the only source of scientific knowledge in the two fields.

Some of the defenders of the empirical doctrine have tried to explain the difference on a doctrinal basis by saying that the mathematical propositions are analytic, and that it is not their function to come up with something new.

When we say, for example, 'Two plus two equals four,' we do not say anything against which we can test the degree of our certainty, since 'four' is itself another expression for 'two' plus 'two'. Put clearly, the above-mentioned mathematical equation is nothing other than 'Four equals four'. All mathematical propositions are an extension of this analysis. However, this extension varies in the degree of its complexity.

The natural sciences, on the other hand, are not of this sort. The reason for this is that their propositions are composite; that is, the predicate in them adds new information to the subject. This is to say that it provides new information on the basis of experiments.

Thus, if you say, 'Water boils under such and such a pressure; that is, when its temperature, for

example, reaches 100 degrees [centigrade]', then I would be informed that the term 'water' does not include the terms 'temperature" pressure', and 'boiling'. Because of this, the scientific propositions are subject to falsity and truth.

But, it is our right to remark concerning this attempt at justifying the difference between the mathematical and the natural propositions that the consideration of the former as analytic does not explain the difference on the basis of the empirical doctrine. Suppose that 'Two plus two equals four' is another expression for our statement, 'Four is four'. This would mean that this mathematical proposition depends on accepting the principle of non-contradiction; otherwise, 'four' may not be itself, if contradiction were (p. 87) possible.

According to the teachings of the empirical doctrine, this principle is not rational and necessary; for it denies all prior knowledge. Rather, it is derived from experience, as are the principles on which the scientific propositions in the natural sciences are based. Thus, the problem remains unsolved, as long as both mathematics and the natural sciences are dependent on empirical principles. Why, then, are the mathematical propositions distinguished from other propositions by absolute necessary certainty?

Further, we do not admit that all mathematical propositions are analytic and an extension of the principle 'Four is four'. How could the truth stating 'The diameter is always shorter than the circumference' be an analytic proposition? Are 'shortness' and 'circumference' included in the notion of 'diameter'? And is 'diameter' another expression for the statement, 'The diameter is a diameter'?

We conclude from this study that the rational doctrine is the only doctrine capable of solving the problem of the justification of knowledge, and setting up the criteria and primary principles of knowledge.

Still, it remains for us to study one point concerning the rational doctrine namely, that if the primary information is rational and necessary, then how is it possible to explain its absence in human beings at the beginning [of their existence], and their acquisition of it at a later date? In other words, if such information is essential for human beings, then it must be present whenever they exist. That is, it is impossible for them to be without it at any moment of their lives. If, on the other hand, it is not essential, then there must be an external cause for it – that cause being experience. But with this the rationalists do not agree.

In fact, when the rationalists assert that those principles arc necessary in the human mind, they mean by this that if the mind conceives the ideas that are linked together by means of those principles, then it infers the first principle, without need of an external cause.

Let us take (p. 88) the principle of non-contradiction as an example. This principle, which is an assent stating that the existence and non-existence of a thing cannot be simultaneous, is not available to human beings at the moment they begin to exist. This is because it depends on the conception of existence, non-existence and the simultaneity [of the two].

Without the conception of these objects, it is not possible to make the assent that existence and non-existence cannot be simultaneous. The assent of a human being to something he has no conception of is impossible. We had already learned in our attempt to analyze mental conceptions that all conceptions result and proceed from the senses, whether directly or indirectly.

Thus, by means of the senses, human beings must acquire the group of conceptions on which the principle of non-contradiction depends, so that they will have the opportunity to judge and assent by means of it. Therefore, the fact that this principle appears later on in the human mind does not indicate that it is not necessary, and that it does not proceed from the innermost being of the human soul without requiring an external cause.

Indeed, it is necessary and does proceed from the soul independently of experience. The specific conceptions are necessary conditions for its existence and for its proceeding from the soul. If you wish, compare the soul and the primary principles to fire and its burning [respectively]. As the burning of fire is an essential act of fire, yet does not exist except in light of certain conditions – that is, when fire meets a dry body; so also are the primary judgements necessary and essential acts of the soul when the necessary conceptions are complete.

If we choose to speak on a higher level, we would say that even if primary knowledge occurs to human beings gradually, this gradualness would not mean that it occurs due to external experience. For we have already shown that external experience cannot be the primary source of knowledge. Rather, this gradualness is in accordance with the substantial movement and development of the human soul. Such development and substantial integration is responsible for the increase in the soul's completion and awareness of the primary information and the fundamental principles – thus opening up the capacities and powers that lie latent in it. (p. 89)

This makes it clear that the objection to the rational doctrine as to why the primary information is not present with human beings at the moment of their birth depends on the non-acceptance of potential existence and the unconsciousness that is very clearly indicated by memory. Thus, the human soul itself includes this primary knowledge in potentiality. By the substantial movement, the existence of the soul increases in intensity, until those objects that are known potentially become known actually.

3. Marxism and Experience

The empirical doctrine presented above is applicable to two views concerning knowledge. The first is that which states that all knowledge is complete in the first stage – that is, the stage of sense perception and simple experience.

The second is that which states that knowledge involves two steps: the empirical step and the mental step – that is, application and theory or the stage of experience and that of comprehension and inference. The starting point of knowledge is the senses and experience. The high degree of knowledge

is the formation of a scientific comprehension and a theory that reflects the empirical reality in depth and with precision.

The second view is the one adopted by Marxism concerning the problem of knowledge. However, Marxism recognized that this view in its apparent form will lead it to the rational doctrine, since this view assumes a field or an area of human knowledge external to the limits of simple experience. Thus, it established it on the basis of the unity between theory and application and the impossibility of separating one from the other. With this, it retained the place of experience, the empirical doctrine, and the consideration of it as a general criterion of human knowledge.

Mao Tse-Tung makes the following remark:
The first step in the process of acquiring knowledge is the immediate contact with the external environment – this being the stage of sense perception. The second step (p. 90) is the gathering, the arranging and the ordering of the information which we receive from the sense perception – this being the stage of notions, judgments and conclusions.

By acquiring sufficient and complete information from sense perception (neither particular nor insufficient) and corresponding such information to the real situation (not false notions), then we may be able to form on the basis of such information a true notion and a sound logic.[35]

He also says this:
The continuous social application leads to the repetition of multiple occurrences in people's application of things which they perceive by the senses, and which create in them an impression. At this point, a sudden change in the form of a leap occurs during the process of acquiring knowledge. With this, notions are created.[36]

In this text, Marxism asserts that theory is inseparable from application namely, the unity of theory and application:
It is important, therefore, that we understand the meaning of the unity of theory and application. It asserts that he who neglects theory falls into the philosophy of practice, moving as a blind person moves and falters in the dark. As for him who neglects (p. 91) application, he falls into doctrinal stagnation, and turns into one who has nothing but a doctrine and empty rational demonstration.[37]

With this, Marxism confirmed its empirical position – namely, that sense experience is the criterion that must be applied to all knowledge and to every theory, and that there is no knowledge apart from experience, as Mao Tse-Tung declared in the following:

The theory of knowledge in dialectical materialism gives application the first place. It views people's acquisition of knowledge as requiring no degree of separation from application. It also wages a war against all theories which [it considers] erroneous [for] denying the importance of application, or allowing the separation of knowledge from application.[38]

It seems that Marxism admits two stages of human knowledge, yet it does not wish to accept that some knowledge is separable from sense experience. This is the basic contradiction on which the theory of knowledge in dialectical materialism is based. That is, if the mind does not have some fixed knowledge, which is independent of sense experience, it will neither be able to postulate a theory in light of sense perception, nor to understand the empirical propositions.

This is because the inference of a specific idea from the sensible phenomena in experience is possible for a human being only if he knows, at least, that such phenomena require by nature such an idea. Thus, he establishes the inference of his specific theory on this [knowledge].

To clarify this point, we must know that sense experience, as Marxism admits, (p. 92) reflects the phenomena of things, but does not reveal their substance and their internal laws that regulate and organize these phenomena. No matter how much we repeat the experience and reinstate the practical application, we will achieve at best only a new set of separable superficial phenomena.

Clearly, such empirical knowledge that we acquire through sense experience does not in itself require the formation of a specific rational idea of the external thing. The reason is that such empirical knowledge, which is the first stage of knowledge, may be shared by many individuals; however, not all of them reach a unified theory and a single notion concerning the substance of a thing and its actual laws.

We learn from this that the first stage of knowledge is not sufficient by itself for the formation of a theory –that is, for moving a human being, whether naturally or dialectically, to the second stage of real knowledge. What thing, then, enables us to move from the first to the second stage?

This thing is our rational knowledge which is independent of sense experience, and on which the rational doctrine is based. Such knowledge makes it possible for us to present a number of theories and notions, and to notice the extent of harmony between the phenomena that are reflected in our experiences and sensations [on the one hand] and these theories and notions [on the other hand].

We eliminate every notion that does not agree with such phenomena, until, by virtue of the judgement of the primary rational knowledge, we attain a notion that is in harmony with sensible or empirical phenomena. Then we posit this notion as a theory that explains the substance of a thing and the laws that govern that thing.

If, from the very beginning, we isolate the independent rational knowledge from sense experience, then it becomes totally impossible to move from the stage of sense perception to that of theory and inference, and to be sure about the correctness of the theory and inference by returning to the application and the repetition of experience. (p. 93)

We conclude from this that the only explanation concerning the second stage of knowledge – that is, the stage of judgement and inference – is the assertion on which the rational doctrine is based: namely, that a number of the general laws of the world are known by human beings independently of sense

experience. Such laws are exemplified by the principle of non-contradiction, the principle of causality, and the principle of harmony between cause and effect, as well as other similar general laws.

When scientific experimentation presents human beings with the natural phenomena and reflects such phenomena in their sense perceptions, then human beings apply the general principles to these phenomena, and determine, in light of these principles, their scientific notion about the actuality and substance of a thing. This is to say that they seek to discover what lies behind empirical phenomena, and to delve into higher realities, as the application of the general principles both dictates and seeks.

These realities, which are of a higher value, are added to their previous information. With this, they acquire a larger wealth (of information which they can employ] when they attempt to solve a new riddle of nature in another experimental field. We do not mean by this that application and scientific experimentation do not play an important role in human knowledge of nature and its laws. There is no doubt about their role in this. Rather, we only wish to assert that the elimination of all knowledge which is independent of experience and the rejection of rational knowledge in general makes it impossible to go beyond the first stage of knowledge, i.e. the stage of sense perception and experience.

4. Sense Experience and the Philosophical Edifice

This polarized contradiction between the rational doctrine and the empirical doctrine does not stop at the limits of the theory of knowledge. Rather, its dangerous influence extends to the whole philosophical edifice. This is because the fate of philosophy as a genuine edifice independent of the natural and the empirical sciences is, to a great extent, linked to the method of resolving this contradiction between the above-mentioned two doctrines.

Thus, a discussion of the general criterion of human knowledge and the primary principles of such knowledge is something that would either justify the existence of philosophy, or rule (p. 94) that philosophy must withdraw and leave its task to the natural sciences.

The philosophical edifice has faced this dilemma or this test ever since the empirical method developed and invaded the scientific fields with efficiency and zeal. Here is what happened.

Before the empirical tendency prevailed, philosophy, at the dawn of its history, included almost all human knowledge arranged in general order. Thus, mathematics and the natural sciences were presented on a philosophical level, just as the metaphysical issues were presented. In its general and comprehensive sense, philosophy became responsible for discovering the general truths in all the fields of being and existence.

In all those fields, philosophy used the syllogism as a tool for knowledge -the syllogism being the rational method of thinking, or the movement of thought from general to more particular propositions.

Philosophy remained in control of the human intellectual sphere, until experimentation began to push its

way through, and to perform its role in many fields by moving from particulars to universals, and from subjects of experiments to more general and more comprehensive laws. Thus, philosophy found itself obliged to shrink and limit itself to its basic field, and to open the way for its competitor, science, to become active in the other fields.

With this, the sciences separated from philosophy, and the specific tools and scope of each were determined. Thus, philosophy manipulates the syllogism as a rational tool of thought. Science, on the other hand, employs the empirical method and moves from particulars to higher laws. Similarly, every science treats a branch or a kind of existence proper to it and can be subject to experimentation.

One investigates the phenomena and laws of science in light of the experiments that one carries out. Philosophy, on the other hand, treats existence in general, without limitation or restriction. It investigates its phenomena and principles that do not submit to direct experimentation. (p. 95)

Thus, while the natural scientist investigates the law that governs the expansion of corporeal particles by heat, and the mathematician investigates the mathematical proportion between the diameter of a circle and its circumference the philosopher investigates whether there is a first principle of existence from which the whole universe proceeded, the nature of the relation between the cause and effect, and whether it is possible for every cause to have (another] cause, [and so on) to infinity. He also investigates whether the human essence is purely material or a mixture of matter and spirit.

It is clear at first sight that it is possible to subject to experimentation the content of the issues raised by the scientist. Thus, it is possible for experimentation, for example, to provide evidence that the corporeal particles expand by heat, and that the diameter multiplied by 3.14 over 100 [⚿ X d] equals the circumference of the circle. But the direct nature of philosophical issues is the contrary of this.

The first principle, the nature of the relation between the cause and effect, the infinite progression of causes, and the spiritual element in human beings are metaphysical matters to which sense experience does not extend, and which cannot be observed under the factory lights.

Thus, the duality between philosophy and science developed because of their disagreement on the tools and subjects of thought. This duality or this division of intellectual tasks between philosophy and science seemed proper and accepted by many rationalists who adopt the rational method of thinking, and who admit that there are primary, necessary principles of human knowledge.

Naturally the defenders of the empirical doctrine, who accepted nothing but sense experience, and had no faith in the rational method of thinking, launched a strong attack against philosophy as a field independent of science. This is because they do not admit any knowledge that does not rest on experience. As long as the subjects of philosophy lie outside the sphere of experience and experimentation, there is no hope for philosophy's arriving at sound knowledge.

Therefore, according to the empirical doctrine, philosophy must (p. 96) abandon its task and admit

modestly that the only field that human beings can study is the experimental field that the sciences have divided among themselves, leaving nothing for philosophy.

From this we learn that philosophy's lawful existence is linked to the theory of knowledge and to the faith in, or rejection of, the rational method of thinking that this theory asserts. On the basis of this, a number of modern schools of materialistic philosophy attacked the independent existence of philosophy which is established on the ground of the rational method of thinking. They also permitted the establishment of a philosophy that rests on the ground of the intellectual sum of all the sciences and empirical experiences, and that is not distinguished from science in method and subject.

This scientific philosophy can be employed to uncover the relations and links among the sciences, and to postulate general scientific theories based on the outcome of experiments in all the scientific fields. Similarly, every science has its own philosophy which determines the methods of scientific investigation in that specific field. Foremost among these schools is positivist materialism and Marxist materialism.

5. The Positivist School and Philosophy

The seed of the positivist school in philosophy germinated during the nineteenth century, in which the empirical tendency prevailed. Thus, this school developed under the auspices of this empirical tendency. For this reason, positivist materialism launched a 'bitter attack through accusations against philosophy and its metaphysical subjects.

But it was not satisfied with making the accusations against metaphysical philosophy that proponents of the empirical doctrine usually make against philosophy.

It did not limit itself, for example, to the assertion that the philosophical propositions are useless for practical life and cannot be demonstrated by the scientific method. Rather, the positivists went on to assert that these are not propositions in the logical sense, in spite of their having the form (p. 97) of a proposition in their linguistic construction, because they have no meaning at all.

They are empty phrases and nonsensical expressions, and as long as they are such, they cannot be the subject of any kind of investigation. For only comprehensible phrases, not empty expressions and nonsensical utterances, are worthy of investigation.

The philosophical propositions are empty phrases having no meaning by virtue of the criterion for comprehensible phrases laid down by the positivist school. It estimates that a proposition does not become a comprehensible phrase, and consequently a complete proposition in the logical sense, unless the concept of the world is different in the case of the truth of the proposition from what it is in the case of the falsity of that proposition.

If you say, for example: 'The cold is intensified in winter,' you find that in the case of the truth of this phrase, there is a specific concept and proper sensible givens of the actual world; while in the case of its

falsity, there is another concept and other givens of this world.

Owing to this, we are able to describe the actual circumstances in which we know the truth or falsity of the phrase, as long as there is a difference in the actual world between the fact that the proposition is true and the fact that it is false. But take the following philosophical proposition: 'For everything, there is a substance in addition to its sensible givens.

The apple, for example, has a substance which is the apple in itself, over and above what we perceive of the apple by sight, touch, and taste.' You will not find a difference in external reality between the fact that this proposition is true and the fact that it is false.

This is evidenced by the fact that if you conceive of the apple as having a substance in addition to what you perceive of it by your senses, and then conceive it as not having such a substance, you will not see a difference between the two conceptions.

The reason is that you will not find in either conception anything other than the sensible givens, such as color, odor and texture. But as long as we do not find in the conception that we have sketched for the case of truth anything that distinguishes it from the conception that we have sketched for the case of falsity, the above-mentioned philosophical phrase must be a meaningless discourse, since it does not provide any information about the world.

The same is true of all philosophical propositions that treat metaphysical subjects. These are not comprehensible phrases, due to the fact that they do not meet the basic condition for the comprehensibility of phrases – this condition being the ability to describe (p. 98) the circumstances in which the truth or falsity of a proposition is known.

That is why it is not appropriate to describe a philosophical proposition as true or false, because truth and falsity are attributes of comprehensible phrases, and the philosophical proposition has no meaning that would make it true or false.

We can now summarize the qualities that the positivist school attributes to philosophical propositions:

It is not possible to confirm the philosophical proposition, because the subjects it treats lie beyond the sphere of experimentation and human experience.

It is not possible for us to describe the conditions which, if obtained, the proposition would be true; otherwise, it would be false. This is so, because in the concept of actuality, there is no difference between whether the philosophical proposition is true or false.

Due to this, the philosophical proposition is meaningless, since it does not give any information about the world.

On the basis of this, it is inappropriate to describe it by truth or falsity.

Let us take up the first quality – namely, that the philosophical proposition cannot be confirmed. This point repeats what the proponents of the empirical doctrine reiterate in general. These proponents believe that sense experience is the primary source and highest instrument of knowledge.

But sense experience cannot exercise its function on the philosophical level, because the subjects of philosophy are metaphysical and [therefore], are not subject to any kind of scientific experience. If we rejected the empirical doctrine and demonstrated that at the heart of the human intellect there is prior knowledge on which the scientific edifice in the various fields of sense experience is based, we could reassure [others] about the human mind's potentialities and capacities to study the philosophical propositions, and to investigate them in light of this (p. 99) prior knowledge by the method of induction and the descent from the general to the particular.

Regarding the second quality – namely, that we cannot describe the conditions under which, if they obtained, the proposition would be true; otherwise, it would be false –it is still in need of some clarification. What are these actual conditions and sensible givens to which the truth of the proposition is linked?

Further, does positivism consider it a condition of the proposition that its evidence must be a sensible given, as in the statement: 'The cold is intensified in winter, and rain falls in that season'? Or is it satisfied that the proposition has sensible givens, even though it may have them indirectly?

If positivism rejects every proposition except if its evidence is a sensible given and an actual condition subject to sense experience, then positivism will not only eliminate philosophical propositions, but will also reject most scientific propositions that do not express a sensible given, but a law derived from the sensible givens, such as the law of gravity.

For example, we perceive the fall of the pencil from the table to the ground, but we do not perceive the gravity of the ground. The pencil's fall is sensibly given and is linked to the scientific implication of the law of gravity.

However, this law itself is not sensibly given directly. If positivism is satisfied with that which is sensibly given indirectly, then philosophical propositions have indirect sensible givens, exactly as a number of scientific propositions do; that is, there are sensible givens and actual conditions that are linked to the philosophical proposition. If such givens and conditions are available, the proposition is true; otherwise, it is false.

Take, for example, the philosophical proposition that asserts the existence of a first cause of the world. Even if the content of this proposition has no direct sensible givens, still the philosopher can reach it by way of the sensible givens that cannot be explained rationally except by means of the first cause. This will be pointed out in future discussions in this book.

Positivism can say one thing regarding this point: the derivation of the rational content of a philosophical

proposition from the sensible givens does not (p. 100) rest on empirical grounds, but on rational grounds.

This means that rational knowledge determines the explication of the sensible givens by supposing a first principle, rather than that sense experience proves the impossibility of such givens without the first principle. Unless sense experience proves this [impossibility], such givens cannot be considered even as indirect givens of the philosophical proposition.

This assertion is nothing but another repetition of the empirical doctrine. If, as we learned earlier, the derivation of general scientific notions from the sensible givens depends on prior rational knowledge, then the philosophical proposition is not harmed if it is linked to its sensible givens by means of rational links, and in light of prior knowledge.

Until now, we have not found anything new in positivism other than the givens of the empirical doctrine and its notions concerning philosophical metaphysics. The third quality, however, appears to be something new. This is because there, positivism asserts that the philosophical proposition has no meaning whatsoever, and cannot even be considered a proposition. Rather, it is something that resembles a proposition.

We can say that this accusation is the strongest blow that the philosophical schools of the empirical doctrine direct against philosophy. Let us, therefore, discuss its content carefully. However, in order for us to be able to do so, we must know exactly what positivism intends by the term 'meaning' in the statement: 'The philosophical proposition has no meaning' –, even though this term can be explained in language dictionaries.

Professor Ayer,[39] a leading figure of modern logical positivism in England, responds by saying that, according to positivism, the term 'meaning' signifies the idea whose truth or falsity one can affirm within the limits of sense experience. Because this is not possible in a philosophical proposition, such a proposition, therefore, is meaningless. (p. 101)

In light of this, the phrase, 'The philosophical proposition is meaningless', becomes exactly equivalent to the phrase, 'The content of the philosophical proposition is not subject to sense experience, because it is related to what is beyond nature'. With this, positivism would have asserted an indubitable and an indisputable truth – namely, that the subjects of philosophical metaphysics are not empirical. But it would not have offered anything new except a development of the term 'meaning', and a merging of sense experience with it.

However, stripping the philosophical proposition of meaning in light of this development of the term does not contradict the admission that it has meaning in another use of the term, in which 'sense experience' is not merged with 'meaning'.

I do not know what Professor Ayer and other similar positivists would say about the propositions that are

related to the sphere of nature, and whose truth or falsity a human being cannot assert by means of sense experience. If we say, for example, 'The other side of the moon which does not face the earth is full of mountains and valleys', we will not have – and we may not be given the opportunity in the future to have – the empirical capabilities for discovering the truth or falsity of this proposition, even though it is concerned with nature.

Can we consider this proposition empty or meaningless, when all of us know that science often presents propositions of this kind for exploration, before it acquires a decisive sense experience concerning them? It continues to search for a light that it can shed on them, until at last it either finds it or fails to do so. What, then, is all this scientific effort for, if every proposition, whose truth or falsity is not evidenced by sense experience, is an empty and a nonsensical phrase?

In this respect, positivism attempts to make some revisions. It asserts that what is important is logical possibility and not actual possibility. Thus, every proposition is meaningful and worthy of discussion, if it is theoretically possible to achieve a sense experience that gives guidance concerning it, even if we do not actually have such an experience.

We see in this attempt that positivism has borrowed a metaphysical notion (p. 102) to complete the doctrinal structure it had established for the purpose of destroying metaphysics. This notion is the logical possibility, which it distinguished from the actual possibility. If this were not so, then what is the sensible given of the logical possibility?

Positivism states that if a sense experience does not have real possibility, then what meaning will its logical possibility have, other than its metaphysical meaning that does not affect the picture of external reality, and in whose respect the sensible givens do not differ? Is it not the case that the positivist criterion for the comprehensibility of phrases has become, in the, last analysis, metaphysical, and, consequently, an incomprehensible phrase, according to positivism?

Let us leave aside Professor Ayer and take the word 'meaning', in its traditional sense – that is, without merging it with 'sense experience'. Can we now judge the philosophical proposition to be empty of meaning? The answer is indeed, No. After all, the meaning is the conception that the expression reflects in the mind.

The philosophical proposition reflects conceptions of this sort in the minds of its proponents and opponents alike. As long as there is a conception that the philosophical proposition gives to our minds, then there is room for truth and falsity; consequently, there is a complete proposition worthy of the name [proposition] in the logical sense. If the conception that the philosophical proposition gives to our minds corresponds to an objective thing outside the limits of the mind and expression, the proposition is true.

If not, then it is false. Truth and falsity and, hence, the logical mark of the proposition, are not given by sense experience so that we can say that a proposition which is not subject to sense experience cannot not be described by truth or falsity. Rather, they are two expressions in the form of affirmation or

negation concerning the correspondence between the concept of a proposition in the mind and any fixed objective thing external to the mind and to the expression.

6. Marxism and Philosophy

The Marxist position regarding philosophy is essentially similar to the position held by positivism. Marxism completely rejects a higher philosophy which is imposed on the sciences, and which does not proceed (p. 103) from them. This is because Marxism is empirical in its outlook and method of thinking.

Therefore, it is natural that it does not find room for metaphysics in its investigations. Due to this, it calls for a scientific philosophy –that is, dialectical materialism. It claims that this philosophy rests on the natural sciences and draws its strength from the scientific development in various fields. Here is a passage from Lenin:40

Dialectical materialism is no more in need of a philosophy higher than the other sciences. The only thing that remains of ancient philosophy is the theory and laws of the mind, i.e. formal and dialectical logic.41

Also, Roger Garaudy42 makes the following statement:
To be exact, the task of the materialist theory of knowledge will be never to cut off philosophical thought from scientific thought or from historical practical activity.43

In spite of Marxism's insistence on the scientific character of its philosophy and its rejection of any kind of metaphysics, we find that the scientific limits of investigation do not restrict its philosophy. The reason is that the philosophy, which issues from the scientific experience, must exercise its function in the scientific field, and not step beyond it to other fields.

According to Marxism, even if the proper field of a scientific philosophy, such as that of Marxism, is broader than any other field specified for any science, since it is guided by the various sciences; still, it is not at all permissible that it be broader than all the scientific fields put together – that is, than the general scientific field which is the nature that can be subjugated to sense experience or to organized empirical observation. (p. 104)

It is not the job of scientific philosophy to treat metaphysical issues in its discussions, and to judge them either affirmatively or negatively. The reason is that its scientific resources do not provide it with any [information] concerning such issues. Thus, it is not the prerogative of scientific philosophy to judge, whether affirmatively or negatively, the following philosophical proposition, 'There is a first metaphysical principle of the world', for the content of such a proposition lies outside the realm of sense experience.

In spite of this we find that Marxism takes up this kind of proposition, and responds to it by negation. This makes it rebel against the limits of scientific philosophy and move to a metaphysical discussion. This is so, because negation concerning metaphysical issues is the same as affirmation; that is, both belong to metaphysical philosophy. With this, contradiction appears between the limits at which Marxism

must stop in its philosophical investigation, since it is characterized by having a scientific philosophy and by its advance in investigation to broader limits.

After Marxism linked its philosophy to science, asserting that the philosophical outcome must be in agreement with the natural sciences and the participation of philosophy in the development and integration of science, as a result of the rise [in emphasis on] sense experience and its profundity with the passage of time, it was natural for it to reject every philosophical preoccupation [with anything] beyond science.

This resulted from the mistake of Marxism in the theory of knowledge and its faith in sense experience alone. On the contrary, in light of the rational doctrine and the faith in prior knowledge, philosophy rests on fixed fundamental principles. These principles are pieces of a prior rational knowledge that is absolutely fixed and independent of sense experience. Due to this, it is not necessary that the philosophical content continuously change as a result of empirical discoveries.

We do not intend by this to break the link between philosophy and science. The link between them is firm indeed. At times, science presents philosophy with particular facts (p. 105) in order that philosophy may apply its principles to such facts; so that, it could introduce new philosophical conclusions.44 Similarly, philosophy assists the empirical method in science by means of rational principles and rules which the scientist employs for the purpose of moving from direct experience to a general scientific law.45

Therefore, the link between philosophy and science is strong.46 Yet in spite of this, philosophy (p. 106) may at times not need any sense experience. Rather, it draws the philosophical theory from prior rational knowledge.47 Because of this we said that it is not necessary for the philosophical content to change continuously as a result of empirical experience. Nor is it necessary for the whole of philosophy to accompany the procession of science in its gradual march.

1. At-tasawwur (form, grasping, imaging, apprehension, conception).
2. At-tasdiq (belief, judgement, assent).
3. That is, knowledge with no judgement. This is to say that conception is the grasping of an object without a judgement.
4. Compare this with Ibn Sina's notion of conception and assent in Ibn Sina, Remarks and Admonitions, Part One, Logic, translated by Shams C. Inati, Toronto, Ontario, Canada, Pontifical Institute of Mediaeval Studies, 1984, pp. 5–6 and 49–50.
5. Text: ka-tasawwurina, which we have chosen to translate here as 'grasping', rather than as 'conception', as we are doing for the most part in this work. This is because it would not be helpful to say that conception is exemplified in conception.
6. Text: ka-tasdiqina, which we have chosen to translate here as judgement', rather than as 'assent' in order to explain better what is meant by 'assent'.
7. Some of the empiricist philosophers, such as John Stuart Mill [1806–73], have held a specific theory of assent in which they attempt to explain assent as two associated conceptions. Thus, assent [according to them], can be attributed to the laws of the association of ideas. The content of the soul is nothing other than the conception of a subject and the conception of a predicate.
However, the truth is that the association of ideas is completely different from the nature of assent, for it can be attained in many areas where there is no assent. For example, the conception in our minds of historical figures to whom myths attribute various kinds of heroism is linked to the conception of those heroic acts. The [two] conceptions are then

associated; still, we may not assent to any of those myths.
Assent, therefore, is a new element distinguished from pure conception. The lack of distinction between conception and assent in a number of modern philosophical studies has led to a number of errors. It also made a number of philosophers investigate the issue of the justification of knowledge and perception without distinguishing between conception and assent. You will know that the Islamic theory [of knowledge] distinguishes between the two and explains the issue in each of them by a specific method.
8. For the theory of knowledge as recollection, see Plato, Meno 81 c, 85d, 98a; Philebus 84c; Theaetetus 198d.
9. The Platonic archetypes are also referred to as 'forms' or 'ideas'. They are models of things. They are immaterial, fixed, primary realities, separate, indivisible, unchangeable and incorruptible.
10. Rene Descartes, French philosopher (1596–1650). Descartes reminds us of al-Ghazali who, in search of certain knowledge, began by doubting everything. But if he doubts everything, he must exist in order to doubt; for doubting is a form of thinking, and to think is to exist. 'I think, therefore, I exist' is the first proposition of which he becomes certain. Later, he reaches the knowledge that God exists from the certainty of his knowledge of his self. But by definition God is good. Therefore, He cannot be a deceiver.

Hence, the ideas about the existence of an external world that He causes in us must be true. Also a known view of Descartes is that concerning the duality of soul and body. Because the soul is independent of the body, it can survive without it after their separation. Hence, immortality is possible. His main writings are Discourse on Method, The Meditations, Principles of Philosophy, The Passions of the Soul and Ruler for the Direction of the Mind.

11. Immanuel Kant, German philosopher (1724–1804). Kant's position was a synthesis of the rationalism and empiricism of the day. In his masterpiece, Critique of Pure Reason, 'pure' here is used in the sense of 'a priori' – i.e., that which can be known apart from any sense experience, Kant critically examined the nature of reason. He concluded that there are no innate ideas – i.e., ideas known prior to any sense experience.

However, this did not lead him to draw the conclusion that the empiricists drew, namely that all knowledge is the product of sense experience. Rather, he held that our faculties of sensibility and understanding have formal structures that mould our experience. This means that certain qualities that we perceive in objects are imparted to them from the natural structures of our sensibility and understanding. Sensibility presents us with objects bare of any regularity.

Understanding then takes over and organizes our sense experience as experience of the natural world. Kant is very clear. The regularity of nature is a contribution of our own understanding. He believed that the understanding has twelve concepts or 'categories' that are not derived from sense experience. Apart from sense experience, these concepts are empty, and without them sense experience is disorderly and incomprehensible.

The applicability of these concepts is limited to the sphere of sense experience. The conclusion Kant drew is that speculative metaphysics is futile, since it attempts to apply these concepts to objects beyond the empirical realm. However, such an inappropriate attempt is a natural inclination of the human mind.

Kant wrote two other critiques, Critique of Practical Reason and Critique of Judgement, as well as some other important works, such as Groundwork of the Metaphysics of Morals. But there is no room in this brief account to touch upon Kant's ideas in such works.

We have limited ourselves to a quick presentation of his major views in the first critique, not only because they constitute the main pillars of his philosophical system, but also because they are the most relevant to Our Philosophy.

12. Kant's twelve categories are: (1) quantity, under which there are (a) unity, (b) plurality and (c) totality; (2) quality, under which there are (d) reality, (e) negation and (f) limitation; (3) relation, under which there are (g) inherence and subsistence (substance and accident), (h) causality and dependence (cause and effect) and (i) community reciprocity between agent and patient; (4) modality, under which there are: (j) possibility–impossibility, (k) existence – non–existence and (l) necessity contingency (Critique of Pure Reason, Analytic of Concepts, ch. 1, B95 and 106, A7 0 and 80).

13. John Locke, English philosopher (1632–1704). He denied the existence of innate ideas – i.e., ideas at birth. According to him, the source of all our ideas is experience, which consists of sensation and reflection. His best known philosophical work is Essay concerning Human Understanding (1690).

14. George Berkeley, Irish philosopher (1685–1753). According to Berkeley, what Locke calls primary or objective qualities, such as distance, size and situation, exist only in the mind. To exist is either to be present to a mind – i.e., to be an idea, or to be a mind. His main writings are: A New Theory of Vision, Treatise concerning the Principles of Human Knowledge and Three Dialogues between Hylas and Philonous.

15. David Hume, Scottish philosopher (1711–76). The central theme of his philosophy is this. Experience consists of impressions and ideas. The former are more lively than, and the source of, the latter. There are certain principles that guide our association of ideas. These are resemblance, contiguity and cause and effect. Experience produces in us custom, which is responsible for linking two successive events in a causal manner. He makes an important distinction between matters of fact and relations of ideas. Only the latter involve necessity. His main writings are: Treatise on Human Nature, Enquiry concerning Human Understanding, Enquiry concerning the Principles of Morals, History of England and Dialogues concerning Natural Religion.

16. Put in more detail, the multiplicity of effects shows one of four things: (1) a multiplicity of agents; (2) a multiplicity of recipients; (3) a logical order among the effects themselves; or (4) a multiplicity of conditions. Regarding our issue, there is no doubt that the conceptions, whose source is the subject of our concern, are many and varied in kind, even though there is no multiplicity of agents or of recipients. This is because the agent and the recipient of the conceptions is the soul, and the soul is simple. Also, there is no order among the conceptions. For this reason it remains that we must adopt the last explanation, i.e., that the multiplicity of conceptions depends on external conditions – these conditions being the different kinds of sense perceptions.

17. Such as one. But if there is one simple innate conception in the soul, the question arises as to how a multiplicity of conceptions could arise from this one. If, on the other hand, this limited number of innate conceptions is at most two, then this is a multiplicity.

18. Georges Politzer, French Communist (1908–42). He was born in Hungary, but at seventeen, left his native country for France. From then on, he became one of the most patriotic of Frenchmen. He was a member of the French Communist Party, and made many contributions to the paper of this party, L'Humanite. In 1940, he worked through his party to urge the people to defend Paris against the Germans. In 1941, he wrote and circulated a pamphlet of 45 pages which he called Revolution and Counterrevolution in the Twentieth Century. In 1942, he was imprisoned together with 140 Communists. He was executed the same year. His main work is Elementary Principles of Philosophy.

19. Al-Maddiyya wal-Mithaliyya fi al-Falsafa, p. 75.

20. Ibid., pp. 71–2.

21. Mao Tse-Tung (1895–1976). He was born in central China. At six years old, he started working in the fields with his father, who was a farmer. When he was eight, he attended the local primary school until he was thirteen. After some further education in his own province, he joined the Communist Party in Peking. He led the struggle against the Kuomintang under Chiang Kai-shek. On October 1, 1949, he was made the first chairman of the People's Republic of China. He held this position until 1959.

22. Hawl at-Tatbiq, p. 11

23. Ibid., p. 14.

24. This is the passage that the author has in mind: '. . . but there is nothing in a number of instances, different from every single instance which is supposed to be exactly similar, except only that after a repetition of similar instances the mind is carried by habit, upon the appearance of one event, to expect its usual attendant and to believe that it will exist. This connexion, therefore, which we feel in the mind, this customary transition of the imagination from one object to its usual attendant, is the sentiment or impression from which we form the idea of power or necessary connexion. Nothing farther is in the case. Contemplate the subject on all sides; you will never find any other origin of that idea. This is the sole difference between one instance, from which we can never receive the idea of connexion, and a number of similar instances, by which it is suggested. The first time a man saw the communication of motion by impulse, as by the shock of two billiard-balls, he could not pronounce that the one event was connected, but only that it was conjoined with the other.

After he has observed several instances of this nature, he then pronounces them to be connected. What alteration has given rise to this new idea of connexion? Nothing but that he now feels these events to be connected in his imagination, and can readily foretell the existence of the one from the appearance of the other' (The Enquiry concerning Human Understanding, VII, Edition of 1772, pp. 88–89).

25. i.e., the notions of cause and effect, substance and accident, possibility and necessity, unity and multiplicity, existence and non-existence (see p. 66 of the original text).
26. Text: wa-lidha (because of this).
27. Induction is probable inference.
28. A syllogism is a form of reasoning in which two propositions necessarily lead to a third.
29. There are four figures of the moods of the categorical syllogism according to the position of the middle term in the premises. When the middle term is subject in the major premise and predicate in the minor premise, we get the first figure. When it is predicate in both premises, we get the second figure. When it is subject in both premises, we get the third figure. And when it is predicate in the major premise and subject in the minor premise, we get the fourth figure.
30. Each of the two statements which together yield a conclusion is called 'premise' (premiss).
31. That is, while experience can show us that a thing does not exist, it cannot show us that it is not possible for that thing to exist.
32. These are examples of non-existent, yet possible things.
33. These are examples of non-existent and impossible things.
34. The attempt made by Dr Zaki Najib Mahimud is strange indeed – namely, to ground the previously mentioned objection in syllogistic reasoning, as in our saying: 'All human beings are mortal; Muhammad is a human being; therefore, Muhammad is mortal.' He says that you may say, 'But when I generalize in the first premise, I do not intend human beings one by one, because considering them in this way is impossible. Rather, I intend the [human] species in general.'
If this is what you think, then how can you apply the judgement specifically to Muhammad, since Muhammad is not the species in general? Rather, he is a specific determined individual. Thus, the judgement concerning him which you apply to the species in general is in truth an invalid syllogism (al-Mantiq al-Wad'iyy, p. 250).

This is a strange confusion between first intentions and second intentions (as logicians are accustomed to calling them). A judgement concerning the species in general means one of two things. The first is that the judgement concerning a human being is characterized by what is general or by the species of that human being. It is clear that such a judgement cannot be specifically applied to Muhammad, because Muhammad does not have the quality of generality or of being a species. The second is that the judgement concerning a human being himself is not relative. That is, it does not pertain specifically to him. This kind of judgement can be applied to Muhammad, because Muhammad is a human being. The middle term has the same meaning that is repeated in both the minor and the major premises. Thus, the syllogism yields a conclusion.

35. Hawl at-Tatbiq, p. 14.
36. Ibid., p. 6.
37. Al-Maddiyya wal-Mithaliyya fi al-Falsafa, p. 114.
38. Hawl at-Tatbiq, p. 4.
39. Alfred Ayer, English philosopher (1910–). He is a logical empiricist. He holds that genuine statements are either factual or analytic. The criterion for the significance of the former kind of statements is their verifiability.

However, he does not go as far as the logical positivists in asserting that by verifiability is meant the conclusive establishment of a factual statement in experience, but only that such a statement be rendered probable by experience. His main writings are: Language, Truth and Logic, The Foundations of Empirical Knowledge, Philosophical Essays and Philosophy and Language.

40. Vladimir Ilyich Ulyanov Lenin, founder of the Soviet Union (1870–1924). He was exiled from Russia 1905–17 as a result of the leading role he played in the revolution of 1905. From 1918 to 1924, he was the head of state and leading Marxist theoretician. His best-known works are Materialism and Empiro-criticism, and Imperialism, Final Stage of Capitalism.

41. Lenin, Marx, Engels and Marxism, p. 24
42. Roger Garaudy, Professor of Philosophy at Poitiers University and member of the Politburo of the French Communist Party (19091. In 1965, he spoke at a number of American universities, including Harvard, St Louis and Temple. His best known work is: La Liberte en Sursis.
43. Ma Hiya al-Madda, p. 46.
44. This is exemplified in the fact that the natural sciences demonstrate the possibility of transferring simple elements into simpler elements. This is a scientific truth which philosophy treats as a subject of its investigation, and to which it applies the rational law that states that an essential quality is never absent from the thing.

From this, we conclude that the form of the simple element, such as the form of gold, is not essential for the matter of gold; otherwise, it would be inseparable from it. Rather, it is an accidental quality. But philosophy goes further than this. It applies the law that states that for every accidental quality there is an external cause.

Thus, it reaches the following conclusion: 'In order for matter to be gold, brass, or something else, it is in need of an external cause.' This is a philosophical conclusion resting on the general rules to which the rational method led in its application to the raw material that science presents to philosophy.

45. Examples of this were offered earlier. We saw how the scientific theory stating that motion is the cause or substance of heat requires a number of prior rational principles.
46. So that it would be possible to say in light of what we have determined – contrary to the general tendency we have followed in the book – that there is no dividing line between the laws of philosophy and the laws of science. Such a dividing line is exemplified in the statement: 'Every law resting on rational grounds is philosophical, and every law resting on empirical grounds is scientific.'

For we knew with clarity that the rational grounds and sense experience merge in a number of philosophical and scientific propositions. The scientific law is not the product of sense experience alone. Rather, it is the product of the application of the rational principles to the content of scientific experience.

Nor can the philosophical law always dispense with sense experience. Rather, scientific experience may be a subject of the philosophical investigation or a minor premise in the syllogism, as Aristotelian logic teaches. The difference between philosophy and science is that philosophy may not need an empirical minor premise, nor does it need to borrow raw material from sense experience, as we will soon point out. Science, on the other hand, requires organized empirical experience for all its laws.

47. An example of this is the law of finitude, which states that causes do not ascend infinitely. When philosophy admits this law, it does not find itself in need of any scientific experience. Rather, it draws it from primary rational principles, even if indirectly.

Chapter 2: The Value of Knowledge

In the previous investigation, we studied the primary sources of knowledge or of human perception in general. We will now treat knowledge from another point of view in order to determine its objective value and the possibility of its disclosure of reality. The only way available for mankind to capture the essence of reality and to uncover the secrets of the world is through the totality of the sciences and the knowledge that they possess.

Therefore, before anything, we must inquire as to whether this way can really lead to the goal, and whether human beings are capable of grasping an objective reality by means of the intellectual knowledge and capacities that they possess.
Regarding this issue, Marxist philosophy believes that it is possible for one to know the world, and that the human mind is capable of discovering objective realities. [In other words], it rejects doubt and sophistry.

In contrast to idealism which denies the possibility of knowing the world and its laws, which sees no value to our knowledge, which does not admit objective reality, and which believes that the world is full of things subsisting by themselves and which science will never get to know, the Marxist philosophical materialism rests on the principle which states that it is possible to have exact knowledge of the world and of its laws.

Our knowledge of the natural laws, which is the knowledge achieved by practice and sense experience, is valuable and signifies objective reality. The world does not contain anything that cannot be known. Rather, it contains certain things that are still (p. 108) unknown, but that will be discovered, and will become known by means of the scientific and practical methods.[1]

Again:
The strongest refutation of this philosophical illusion, i.e. the illusion of Kant, Hume and other idealists, as well as of every other philosophical illusion is practice, sense experience and industry in particular.

Thus, if we can prove that we comprehend accurately a natural phenomenon, i.e. a phenomenon which we have not created ourselves, or made it occur by means of fulfilling its conditions in themselves; and further still, if we can employ this phenomenon in achieving our goals; then this would be a decisive blow to the Kantian notion of the thing in itself which is inaccessible to knowledge.[2]

These declarations show clearly that Marxist philosophy was not satisfied with taking the side of sophistry and the schools of denial or skepticism that declared their bankruptcy in the philosophical field. This is because the edifice that Marxism wished to erect must be based on absolute philosophical principles and decisive rules of thought. Unless the principles are certain, then the intellectual edifice that is based on them, cannot be solid and firm.

Now, we would like to try to know whether it is appropriate for this kind of philosophy to claim for itself philosophical certainty, and to claim further that decisive knowledge is possible. In other words, can Marxist philosophy, whose method of thought is along dialectical lines, assert a true knowledge of the world and its laws, and free itself from the grip of skepticism and sophistry?

Put differently, is the philosophy in which the Marxist philosopher rejoices of a higher value and a superior character than knowledge in the philosophy of Kant, (p. 109) the idealists, and the relative materialists who were among the philosophers of the schools of skepticism that were criticized and attacked by Marxism?

In order for us to understand the problem, to find out whether it is possible to solve it on the basis of Marxist philosophy, and to understand the point of view of Islamic philosophy concerning it, we must mention briefly the most important philosophical doctrines that dealt with it, in order that the following will be clearly determined: the position of Marxism regarding this problem, the kind of view that Marxism must adopt in accordance with its main principles, and the analysis and scrutiny that this problem merits.

1. The Views of the Greeks

In the fifth century B.C., a wave of sophistry pervaded Greek thought at a time in which the method of disputation spread in the fields of rhetoric and law, and philosophical views and non-empirical assumptions strongly clashed. Philosophical thought had not yet crystallized, nor had it reached a high degree of intellectual maturity.

Thus, such a conflict and clash among the contradictory philosophical views were the cause of intellectual confusion and deep fear. The habit of disputation nourished that situation by means of ambiguities and invalid syllogisms which it provided to its disputant heroes. On the basis of such ambiguities and invalid syllogisms, these heroes denied the world by rejecting all the human intellectual principles as well as the sensible and intuitive propositions.

Gorgias,[3] one of the prominent leaders of this school, wrote a book on non-existence. In this work, he tried to prove a number of points: (1) nothing exists; (2) if anything exists, one cannot know it; (8) if we assume that one can know it, one cannot communicate it to others. (p. 110)

For quite a while, sophistry had expressed in various ways its disregard for philosophy and science, until Socrates, Plato and Aristotle emerged and held strong positions against it. Aristotle laid down his well-known logic for discovering the sophistical fallacies and for organizing human thought. His epistemological doctrine may be summarized as follows.

Sense knowledge and primary or secondary rational knowledge, which are acquired by taking into consideration logical principles, are truths with an absolute value; due to this, Aristotle permits in demonstration (the absolute evidence in his logical sense) the use of both sense knowledge and rational knowledge.

Later, an attempt was made to reconcile the two opposite tendencies – that is, the tendency leaning toward absolute denial (sophistry), and the tendency asserting affirmation (Aristotelian logic). This attempt was represented in the skeptical doctrine thought to have been founded by Pyrrho[4] who is known for his ten proofs for the necessity of absolute doubt. According to Pyrrho, every proposition can be stated in one of two ways: it can be either affirmed or denied with equal force.

But the doctrine of certitude finally prevailed in the philosophical field, and reason mounted the throne given to it by Aristotle, judging and making decisions while bound by the logical criteria.

The fire of doubt died down for centuries, until around the sixteenth century when the natural sciences became active and made discoveries of unexpected truths, especially in astronomy and the general order of the universe. These scientific developments were similar to the force of disputation in the Greek period. Thus, they revived the doctrines of doubt and denial which resumed their activities with various methods. A conflict arose among the upholders of certitude themselves concerning the limits of certainty on which human beings must depend. (p. 111)

Descartes emerged in this atmosphere, which was saturated with the spirit of doubt and rebellion against the authority of mind. He presented the world with a philosophy of certitude that had a great influence on bringing back some degree of certitude to the philosophical tendency.

2. Descartes

Descartes is one of the prominent rationalists, and one of the founders of the philosophical renaissance in Europe. He began his philosophy with sweeping and stormy doubt. [He reasoned that] because ideas are incompatible, they are, therefore, susceptible to error.

Sense perception, too, is often deceptive; therefore, it must also be discounted. With these two considerations, the wave of doubt raged, rooting out the material and the spiritual worlds, since the way to both of these worlds is through ideas and sense perception.

Descartes insists on the necessity of this absolute doubt. He demonstrates its logic by the fact that it is possible for a human being to be at the merry of a power that takes hold of his existence and mind, and that attempts to deceive and mislead him.

Thus, it inspires him with ideas that do not correspond to reality, and with false perceptions. Regardless of the clarity of such ideas and perceptions, we cannot discount this assumption, which requires us to take doubt as a perpetual doctrine.

However, Descartes excludes one truth which stands firm in the face of the storm and is unshaken by the tendencies of doubt – this truth being his thought, which is an indubitable, actual reality. Doubt does not affect it, except perhaps by strengthening its stability and clarity; for doubt is nothing but a kind of thought.

Even if that deceptive power were to exist, it could not deceive us with regard to our conviction about this thought. The reason is that it would have to deceive us by way of inspiring us with false ideas. This means that thought is a fixed truth in (p. 112) any case; that is, whether the issue of human thought is one of deception and misguidance, or one of understanding and determination.

This truth, then, is the cornerstone of Descartes' philosophy, and the point of departure for philosophical certitude. By means of this truth, Descartes tried to move from conception to existence and from subjectivity to objectivity. Indeed, by means of it, he tried to prove both the subject and the object. Thus,

he began with himself. He demonstrated his existence by this truth, saying: 'I think, therefore, I exist.'[5]

One may notice that this Cartesian proof contains an unconscious acceptance of truths that, for Descartes, are still subject to doubt. This proof is a non–technical expression of the first figure of the syllogism in Aristotelian logic.

Technically, it takes the following form: 'I think, every thinker exists, therefore I exist.' In order for this Cartesian reasoning to be valid, Descartes must accept logic, and believe that the first figure of the syllogism yields a conclusion and that its conclusion is true, even though he is still at the beginning of the first stage, and doubt in his mind is still in control of all knowledge and truths, including logic and its rules.

We must warn against the fact that when Descartes began the demonstrative stage of his thought by 'I think, therefore, I exist', he had not felt the need for accepting the syllogistic figures in logic. Rather, he believed that knowledge of his existence by way of his thought is an intuitive matter that does not require the construction of syllogistic figures and the acceptance of their minor and major premises.

Since the proposition, 'I think, therefore, I exist', is true because it is intuitive, such that it is not subject to doubt, anything of the same degree of intuitiveness is also true. With this, Descartes added another proposition to the first intuitive proposition, and admitted as true that a thing does not come out of nothing. (p. 113)

After he accepted the subjective side, he went on to prove the objective reality. Thus, he arranged human thought in three groups:

I. Instinctive or natural ideas. These are the natural human ideas that appear most evident and clearest, such as the ideas of God, motion, extension, and the soul.

II. Vague ideas that occur in the mind on the occasion of motions that come to the senses from without. These have no foundation in the human mind.

III. Various ideas that human beings construct and compose from their other ideas. These are exemplified in the idea of a human being having two heads.

Descartes began by addressing the idea of God in the first group. He decided that it is an idea having an objective reality, since in its objective reality; it is superior to the human thinker and all his ideas. This is because the human thinker is deficient and limited; while the idea of God is the idea of a being absolutely perfect and infinite. Because Descartes had already accepted the view that a thing does not come out of nothing, he knew that there is a cause of this natural concept in his mind.

He himself cannot be the cause of it, since it is more sublime and complete than he is. A thing cannot be more sublime than its cause; otherwise, increase [in the value of the] caused object would come out of nothing. Thus, the idea of God must have proceeded from an infinite being whose perfection and

greatness are equal to its own. This being is the first external objective reality that Cartesian philosophy admits – this reality being God.

By means of this absolutely perfect being, Descartes proved that every natural thought in the human nature is true and reflects an objective reality. This is because the rational ideas in the first group proceed from God. Thus, if they are not true, (p. 114) then their being given by God to human beings would be deceptive and dishonest. But this is impossible in the case of a being who is absolutely perfect.

Because of this, Descartes accepted the human innate or rational knowledge and the fact that it is valid and true. He accepted the innate ideas only, to the exclusion of any other ideas that proceed from external causes. As a result of this, he divided ideas concerning matter into two types: (1) the innate ideas, such as the idea of extension; and (2) ideas that occur [later] and express specific reactions of the soul, caused by external influences, such as the ideas of sound, odor, light, flavor, heat and color.

The former are real primary qualities, while the latter are secondary qualities that do not express objective realities. Rather, they represent subjective reactions. They are successive mental concepts that arise in the mental realm due to the influence of external bodies to which they have no resemblance.

This is a very brief presentation of the Cartesian theory of knowledge. To begin with, we must know that the fundamental principle on which Descartes based his doctrine and philosophical certitude, 'I think, therefore, I exist', was criticized in Islamic philosophy a few centuries prior to Descartes' time. Ash-Shaykh ar-Ra'is, Ibn Sina,[6] presented it and criticized it as being unfit as a method of scientific evidence for the existence of the human thinker himself.

A human being cannot prove his existence by means of his thought. This is so, because if by saying, 'I think, therefore, I exist', he wishes to prove his existence by means of his specific thought only, then he proves his specific existence at the outset and admits his existence in the very first phrase. If, on the other hand, he (p. 115) wishes to make the absolute thought as an evidence of his existence, he is at fault, because an absolute thought asserts the existence of an absolute thinker, not a specific thinker. Thus, the specific existence of every thinker must be known to him in a primary manner, regardless of any considerations, including his doubt and his thought.

Subsequently, we find Descartes erecting the whole edifice of existence on one point – namely, that the ideas which God created in human beings signify objective realities. If they did not do so properly, God would be a deceiver. But it is impossible for God to deceive.

It is easy to see in Descartes' proof the confusion between reflective knowledge and practical knowledge. The proposition, 'Deception is impossible', is an unfaithful translation of the proposition, 'Deception is abominable'. But this latter proposition is not a philosophical proposition.

Rather, it is a practical idea. How, then, did Descartes doubt everything, without doubting this practical

knowledge on which he based the philosophical reflective knowledge? In addition, the succession of knowledge plays a clear role in the Cartesian doctrine. When he accepted the theological position, he based his acceptance on a proposition whose truth is accepted a priori: 'A thing does not come out of nothing.'

But this proposition in turn requires an affirmation of the theological position, in order to secure its truth. Unless it is shown that human beings are ruled by an undeceptive, wise power, it is not permissible for Descartes to accept this proposition and terminate his doubt concerning a deceptive power in control of the human mind.

Finally, there is no need for us to point out another confusion that Descartes made between the idea of God and the objective reality that this idea signifies, when he asserts that it is impossible for this idea to proceed from human beings, since it is more sublime than they are. The truth is that this idea is not more sublime than human minds. Rather, it is impossible for human beings to create the objective reality of this idea (p. 116)

Actually, our purpose is not to elaborate the discussion on Descartes. Rather, we intend to present his point of view regarding the value of human knowledge, a view that may be summed up in the acceptance of the absolute value of rational knowledge, especially innate knowledge.

3. John Locke

Locke is a primary representative of the empirical or experiential theory, as we learned earlier. His view concerning the theory of knowledge is that knowledge is divided into the following types:

I. Intuitive knowledge (*al-ma'rifa al-wijdaniyya*): this is the knowledge the mind can attain without need for recognizing something else. An example of this is our knowledge that one is half of two.

II. Reflective knowledge (*al-ma'rifa at-ta' ammuliyya*): this kind of knowledge cannot occur without the help of previous information. An example of it is our knowledge that the sum of the angles of a triangle is equal to two right angles.

III. Knowledge that results from empirical knowledge of the known object.

Locke believes that intuitive knowledge is real knowledge, having complete philosophical value. The same is true of the reflective knowledge that can be clarified as valid reasoning. As for empirical knowledge, it has no philosophical value, even though it is taken into the consideration of the standard of practical life. Due to this, Locke does not accept the objectivity of all of the qualities of matter that are known by the senses. Rather, he considers some of them real and objective, such as form, extension and motion, and some others subjective reactions, such as color, flavor, odor and other similar qualities.

This very Lockean theory of knowledge and its philosophical weight are not in agreement with Locke's

own view of the analysis of knowledge. For all knowledge, according to him, is derived (p. 117) from the senses and sense experience. Even intuitive knowledge, such as the principle of non-contradiction and other similar primary principles in the human mind, is not possessed by human beings except in this way.

The senses, the primary source of this knowledge, do not have an absolute philosophical value in Locke's theory of knowledge. The natural conclusion to this is the absolute doubt concerning the value of any human knowledge, since in its essence and primary reality, knowledge is nothing but a sense perception acquired by external or internal experience.

Thus, it seems that Locke's division of knowledge into three groups, and his distinction among these groups from a philosophical point of view, are contradictory to the principles that he established. Similarly, his division of the qualities of sensible bodies, which is analogous to the Cartesian division, is not logically consistent with his principles, even though it may be somewhat logically consistent with Descartes' principles.

This is because Descartes divides knowledge into rational knowledge and empirical knowledge, and accepts the former philosophically, but not the latter. He claims that people's ideas concerning some bodily qualities are among the innate rational ideas, while their ideas concerning some other bodily qualities are empirical. Due to this, it was possible for him to divide these qualities into primary and secondary, and to assert that the primary qualities are real and objective, while the secondary qualities are not.

As for John Locke, he began his philosophical endeavor by eliminating the innate ideas, and asserting the mastery of the senses over all knowledge. Thus, there is no way of knowing the bodily qualities except through the senses. What, then, is the philosophical difference between some of these qualities and some others?

4. The Idealists

Idealist doctrine has deep roots in the history of human thought, and is of various forms. The term 'idealism' is one of the terms that played an important role in (p. 118) the history of philosophy. It exchanged a number of philosophical notions in which it crystallized. Due to this, it acquired a kind of vagueness and confusion.

Idealism played its first role in the philosophical tradition at the hands of Plato, who offered a specific theory of human reason and knowledge. This theory was called 'the theory of Platonic forms'. Plato was an idealist; however, his idealism does not mean a denial of sensible realities, or a stripping of empirical knowledge from the objective realities that are independent of the realm of conception and knowledge.

Rather, he affirmed the objectivity of sense perception. He went further than this to affirm the objectivity

of rational knowledge, which is superior to empirical knowledge, asserting that rational knowledge –that is, knowledge of general types, such as knowledge of the ideas of 'human being', 'water', and 'light', have an objective reality independent of intellection, as was pointed out in the first part of this investigation.

Thus, we learn that ancient idealism was a form of excessive acceptance of objective reality. This is because it accepted the objective reality of sense perception – namely, the knowledge of ideas pertaining to the senses – and of rational knowledge –that is, the knowledge of ideas in general. It did not involve any denial or doubt of reality.

In modern history, idealism took on a meaning completely different from the above–mentioned one. While Platonic idealism emphasized the objective reality of both rational and empirical knowledge, idealism in its modern form was an attempt to shake the foundation of objective reality and declare a new doctrine concerning the theory of human knowledge, by means of which it can eliminate the philosophical value of knowledge. Our concern in the present investigation is to explore and study this new notion of idealism.

This notion was cast in various forms and shapes. (p. 119) Some writers of philosophy went as far as to consider idealism as a description of any philosophy that rests on doubt, that involves an attempt to remove the objective aspect of things from the realm of human knowledge, or that asserts a metaphysical principle of the world. Thus, spiritualism, agnosticism, empiricism, rationalism, criticism and existential phenomenalism are all idealistic philosophies, according to such writers.[7]

In order to clarify the role of idealism in the theory of human knowledge, we will study the important tendencies of modern idealism. These are: (1) the philosophical tendency; (2) the physical tendency; and (3) the physiological tendency.

A. Philosophical Idealism

This form of idealism was founded by Berkeley, who is considered the leader of modern idealism. Berkeley's philosophy is viewed as the point of departure for the idealistic tendency or the conceptual bent in the recent centuries of philosophy.

The essence of idealism in Berkeley's doctrine can be recapitulated in his well–known phrase: 'To exist is to know or to be known.'[8] In other words, it is not possible to assert the existence of a thing, unless that thing knows or is known. The thing that knows is the soul; and the known things are the conceptions and the ideas that subsist in the sphere of sense perception and knowledge.

Thus, it is necessary that we accept the existence of the soul and the existence of these ideas. As for the things that are independent of the sphere of knowledge – that is, the objective things – they are non–existent because they are not known.

Following this, Berkeley takes up for discussion the bodies that philosophers call (p. 120) 'material

substances' in order to eliminate them from the realm of existence. He says that we do not grasp anything about matter that [philosophers] suppose except a group of mental conceptions and sensible phenomena, such as color, taste, shape, odor and other similar qualities.

Berkeley pursues his idealistic notion of the world, saying that he is not a sophist or a skeptic about the existence of the world and its realities and beings. Rather, he admits that, from a philosophical point of view, al! of this exists, and that in this he does not differ from other philosophers. He differs from them only in the definition of the notion of existence.

'Existence', according to him, does not have the same meaning that it has for others. What exists to others also exists to Berkeley, but according to his own way of interpreting 'existence'. This means that the existence of a thing is nothing but its existence in our knowledge of that thing.

Later, Berkeley asked himself this question: 'If matter does not exist, then from where can we get the sensations that flow in us at every moment, without the influence of our personal will over their flow and succession?' Berkeley had the answer ready: God Himself causes these sensations in us. Thus Berkeley ends his philosophical endeavor by retaining for himself two realities in addition to knowledge. One of these realities is the mind, the knowing subject; and the other is God, the reality that creates our sensations.

This theory completely eliminates the issue of human knowledge and the objective study of the value of knowledge; for this theory does not admit the objectivity of thought and knowledge, or the existence of anything outside their limits. (p. 121)

Berkeley's idealistic notion suffers from some vagueness, which makes it possible to interpret this notion in a number of senses differing in the degree of idealism and depth of the conceptual bent. [Of these] we will take up the most idealistic sense – namely, the pure idealistic sense that does not admit anything except the existence of the knowing soul and the successive sense perceptions and knowledge in the soul.

This sense is the best-known among his philosophical statements and is consistent with the proofs by means of which he tried to demonstrate his idealistic notion. The proofs for this notion can be summarized as follows.

The first proof is that all human knowledge is based on, and comes from, the senses. Thus, the senses are the primary principle of knowledge. If we attempt to examine this principle, we find it charged with contradictions and errors.

For example, the sense of sight is always [self]-contradictory with respect to its vision of bodies close up and at a distance. It perceives them as small in size when they are remote from it; while it perceives them as large when they are in its proximity. Similarly, the sense of touch is also [self]-contradictory.

Thus, by means of it, we may have two different pieces of knowledge about the same thing. For the sake of clarification, Berkeley adds: immerse your hands in warm water, after you have immersed one of them in hot water, and the other in cold water. Would not the water appear cold to the hot hand, and hot to the cold hand? But should we then say that the water is hot and cold at the same time? Would not these words be fully nonsensical?

Therefore, you must conclude with me that water in itself does not exist as a matter independent of our existence. It is nothing but a name that we give to our sense perceptions. Therefore, water exists in us. In short, matter is the idea that we posit about matter. If sense perceptions are empty of any objective reality pertaining to the contradictories recognized in them, then there will be no objective value of human knowledge at all; for knowledge in general would rest on the senses. If the basis collapses, then the whole pyramid collapses. (p. 122)

But this proof has no value for the following reasons. First, not all human knowledge rests on the senses and sense experience. For rational doctrine, which we studied in an earlier chapter of the investigation, 'the primary source of knowledge determines the presence of necessary primary knowledge in the human mind.

Such necessary knowledge does not arise from the senses, and no contradiction at all appears in it. One cannot root out such knowledge by the emotions that affect the senses and the sense knowledge. As long as we possess knowledge free from the influence of emotions, it will be easy to establish a sound objective knowledge on the basis of it.

Second, this proof contradicts the philosophical principle of Berkeley's idealism –that is, the empirical theory and the empirical doctrine. For in this proof, Berkeley considers the principle of non–contradiction as a fixed truth and, from the very beginning, finds improbable the possibility of contradiction in objective reality. On the basis of this, he concludes from the contradictory knowledge and sense experience that they are empty of objective reality. It escapes him that the principle of non–contradiction in empirical doctrine is nothing but an empirical principle demonstrated by sense experience.

Thus, if knowledge and sense experience are contradictory, then how is it possible for Berkeley to accept the principle of non–contradiction and demonstrate by means of it the non–existence of objective reality?

Further, why is it that, according to him, there cannot exist an objective reality in which phenomena and things contradict one another? The truth is that Berkeley unconsciously relied on his nature that asserts the principle of non–contradiction as independent of the senses and sense experience.

Third, it is necessary that we distinguish between two issues, one of which is the issue of the existence of the objective reality of knowledge and sense perception; and the other is the issue of the correspondence of this reality to what appears to us in our knowledge and sense perception.

If we distinguish between these two issues, we will be able to know that the contradiction of sense perception cannot be taken as a proof of the non-existence (p. 128) of an objective reality, as Berkeley thought. Rather, it indicates a non-agreement between the idea known by the senses and the external objective reality. This is to say that sense perception need not fully agree with external things. But this is different from Berkeley's attempt to deny the objectivity of sense perception.

When we immerse our hands in water and one of them feels hot, while the other feels cold, we are not required, for the purpose of eliminating contradiction, to deny the objectivity of sense perception absolutely. Rather, we can explain the contradiction in a different way namely, that our sense perceptions are nothing but psychological reactions to external things.

Thus, there must be an external thing if we are to have a sense perception or if we are to have a reaction. But it is not necessary that the sense perception agree with the objective reality; for, since sense perception is a subjective reaction, it is not separate from the subjective aspect.

On the basis of this, we can immediately judge that the water that Berkeley supposes to be warm and not to be hot or cold is the objective reality that causes in us the two contradictory sense perceptions, and that the two sense perceptions contradict one another due to the subjective aspect that we add to things when we know them or when we have reactions to them.

The second proof is that the acceptance of the existence of things outside our souls and conceptions rests on the fact that we see and touch such things; that is, that we believe they exist because they provide us with certain sense perceptions. However, our sense perceptions are nothing but ideas contained in our souls. Therefore, the things that our senses know are nothing but ideas, and ideas cannot exist outside our souls.

In this proof, Berkeley attempts to make the issue of accepting the objective reality of things dependent on direct conjunction with that reality. As long as it is not possible for us under any circumstances to have direct conjunction with things external to our souls, and as long as we are necessitated to know such things in our private conceptions and ideas, (p. 124) then in truth, there is no existence except for these conceptions and ideas. If we destroy such conceptions and ideas, there will be nothing left that we can know or whose existence we can admit.

To begin with, we must notice that this argument, by means of which Berkeley attempts to demonstrate his idealistic notion, is unsound, even according to Berkeley himself. For he agrees with us, though unconsciously, that it is untenable and insufficient for justifying the idealistic notion. This is because it leads to subjective idealism that denies the existence of other individuals, as well as the existence of nature. If reality is limited to knowledge and consciousness themselves because we have no conjunction with anything beyond the limits of the mind and its conscious contents, then such knowledge and consciousness will be my knowledge and my consciousness.

I will have no conjunction with the knowledge and consciousness of others, as I will have no conjunction

with nature itself. This will impose on me isolation from everything, other than my existence and my mind. Thus, it will not be appropriate for me to accept the existence of other human beings, since they are nothing but the conceptions of my mind and subjective thoughts.

Therefore, this inquiry leads to an incredible individualistic idealism. Is it then possible for Berkeley to be driven to adopt an extreme form of his argument and draw from it this kind of idealism? Had he tried something like this, he would have contradicted himself before contradicting others.

[If we are wrong], then with whom did he converse, for whom did he write and compose, and for whose sake did he lecture and teach? Is this not a firm assertion by Berkeley of the objective reality of other individuals? Thus, it becomes clear that Berkeley himself shares with us the non–acceptance of the argument that he had adopted, and the acceptance, though unconsciously, of its falsehood.

Now, it remains for us to clarify the secret behind the fallacy in this proof, in order to understand why people, including Berkeley himself, cannot attain actual conviction concerning it. In this regard, we must remember what we learned in the first part of (p. 125) the investigation, 'the primary source of knowledge' – namely, that human knowledge is divided into two main divisions: assent and conception. We must also know the basic quality that distinguishes assent from conception. This quality is what makes knowledge of the assent type a link between us and the external world.

To put this more clearly, conception is nothing but the presence of the form of one of the essences in our specific intellective faculties. The form may be present in our senses. This sort of presence constitutes the sense perception of this form. Again, the form may be present in our imaginative faculty. By means of this presence, imagination occurs.

Further, the form may be present in the mind in its general abstract nature. This kind of presence is called 'intellection'. Thus, sense perception, imagination and intellection are various kinds of conception, and different ways in which the forms of things are present in the human intellective faculties. We conceive the apple on the tree by perceiving it through vision. Our sense perception of it means that its form is present in our senses.

Later, we retain this form in our mind after we depart from the tree. This latter type of presence is imagination. After this, we can eliminate from this form the qualities that distinguish it, from other apples, retaining only its general idea –that is, the universal idea of apple. This universal form is intellection.

These are the three stages of conception that human, knowledge crosses. Every one of these stages is just the presence of a form in some of our intellective faculties. Therefore, conception, on the whole, is no more than the presence in our intellective faculties of the form of a certain thing, be that a clear and evident conception, such as sense perception, or dull and faint, such as imagining and intellecting.

Because of this, conception cannot pave the way for us to reach beyond the form that we conceive in our intellective faculties, nor does it ensure the movement from the subjective realm to the objective

realm. The reason for this is that the presence of the form of an essence in our intellective faculty is one thing, while the objective and independent presence of that essence in the outside is something else. Due to this, sense perception may make us conceive numerous things that we do not believe to have any independent objective reality. (p. 126)

For example, we conceive a stick immersed in water as broken; yet we know that that stick is not actually broken in water. But we perceive it as such due to the refraction of the light rays in water. Also, we perceive the warm water as very hot, if we immerse our hands in it when they are very cold, even though we are convinced that the heat that we perceive is not objectively real.

Regarding assent – that is, the other type of human knowledge – it is the proper point of our departure from conception to objectivity. Let us, therefore, notice how this is accomplished.

Knowledge of the assent type is nothing but a judgement by the soul that there is a certain reality beyond conception. This is exemplified in our saying, 'A straight line is the shortest distance between two points'. This judgement means that we assert that there is a reality beyond our conception of straight lines, points and distances. That is why it is completely different from the various kinds of pure conception.

First, this judgement is not a form of a specific essence that we can perceive and conceive. Rather, it is a psychological act that links forms. Because of this, it is impossible that it arises in the mind by way of the senses. Rather, it is one of the internal acts of the knowing soul.

Second, this judgement has a subjective property not present in any kind of division of conception. This is the property of revealing a reality beyond the limits of knowledge. For this reason, it is possible that you can conceive or be aware of a thing without, at the same time, believing that it has a reality beyond knowledge and consciousness.

However, it is not possible that you have knowledge of the assent type – namely, that you believe that a straight line is the shortest distance between two points, while at the same time doubting the existence of the objective reality of which your knowledge and consciousness speak. (p. 127)

This makes it clear that knowledge of the assent type is the only thing capable of refuting Berkeley's argument which states that we do not have direct conjunction with reality, but that instead we have conjunction with our ideas.

Thus, there is no existence for anything except for our own ideas. However, even though the soul has no direct conjunction with anything except with its knowledge, nevertheless, there is a kind of knowledge which by nature has essential disclosure (*kashfan dhatiyyan*) of a thing that lies outside knowledge. This is the judgement – that is, knowledge of the assent type. Berkeley's argument is based on his confusion between conception and assent, and on his ignorance of the basic differences between the two.

In light of this, it is evident that the empirical doctrine and the empirical theory lead to the idealistic tendency. Both are necessitated to accept the argument offered by Berkeley. This is because, in accordance with these two principles, the human soul does not at all possess either necessary or natural knowledge. Rather, all its knowledge arises from sense perception, and its various kinds of cognition are based on this kind of perception – sense perception being but a form of conception.

Thus, regardless of the multiplicity and variety of sense perception, it does not extend beyond its conceptual limits, as it is impossible for human beings to use it to move one step in the direction of objectivity.

The third proof is that if human knowledge and cognition are characterized by essential disclosure of the realm that lies beyond their limits, then all knowledge and cognition must be true. This is because by nature and essence, it is revelatory; and a thing cannot be free from its essential attributes. This is so, in spite of the fact that all human thinkers admit that much of the information and many of the judgements that people have are false and do not disclose anything about reality.

Scholars may agree to accept a certain theory, yet later, this theory is shown to be clearly false. How can this be understood in light of the claims made by realistic philosophy – namely, that knowledge enjoys essential disclosure?

Is there any way out for this philosophy other than to concede that knowledge does not enjoy such a quality? (p. 128) But if it concedes this, idealism becomes unavoidable; for then we would be unable to reach objective reality by means of our ideas, as long as we have admitted that they do not enjoy essential disclosure of that reality.

In order for us to respond to this proof, we must know what is meant by the essential disclosure of knowledge. Essential disclosure means that knowledge shows us the object to which it is related as fixed in a reality external to the limits of our knowledge and consciousness.

Our knowledge that the sun rises, and that the triangle is other than the square snakes us see the sunrise and the triangle's difference from the square as fixed in a reality independent of us. Hence,–this knowledge plays the role of a mirror, and its reflection of this independent reality to us is its essential disclosure.

However, such a reflection does not mean that the sunrise truly exists outside, and that the triangle's difference from the square is fixed in reality. That is, the thing's fixedness in reality is other than its being also reflected. From this we know that the essential disclosure of knowledge is not detached from knowledge, even when there is error and ambiguity.

The ancients' knowledge that the sun turns around the earth had the same degree of essential disclosure that our knowledge that the earth turns around the sun has. This means that they saw the sun's turning around the earth as something fixed in reality and independent of them. Thus, the objective

existence of such turning was seen by them; that is, they believed it, even though it was not fixed in reality.9

Therefore, by knowledge of the assent type, human beings naturally move from conception to objectivity (p. 129) due to the essential disclosure of this knowledge. Whether knowledge is actually true or false, it is in either case knowledge and disclosure.

The fourth proof is that if knowledge of the assent type may be erroneous, and if its essential disclosure does not protect it from being so, then why is it not permissible that all our knowledge of the assent type is erroneous? Further, how can we rely on the essential disclosure of knowledge, as long as such disclosure is a necessary attribute of knowledge, both in its false and true matters alike?

This attempt differs in purpose from the previous attempt; for in the latter, idealism seeks to consider human knowledge as a subjective matter that does not pave the way to objective reality. But we have thwarted that attempt by showing the essential disclosure that distinguishes knowledge of the assent type from pure conception.

The present attempt, on the other hand, seeks the total elimination of knowledge of the assent type from human thought. As long as such knowledge may be erroneous, or as long as its essential disclosure does not mean its constant truth, then why do we not doubt it and dispense with it altogether? If we do so, we will have nothing to secure the existence of the objective world.

Naturally, if human thought does not possess a number of pieces of knowledge whose truth is necessarily secure, such doubt will be unavoidable and inescapable. Further, it will be impossible for us to know any reality, regardless of its kind, as long as such knowledge does not rely on a necessary security [of truth], and as long as error is possible in every field.

However, what overthrows this doubt is the rational doctrine which we had studied in the first chapter of the theory of knowledge, the primary source of knowledge. This doctrine asserts that there is necessary knowledge whose truth is secure, or completely free from error.

Rather, error occurs sometimes in the method of making an inference from this knowledge. On the basis of this, human knowledge divides (as was pointed out (p. 130) in the above-mentioned discussion) into knowledge whose necessity is secure, of which the main principle of thought is formed, and secondary knowledge inferred from that principle. It is in this latter type of knowledge that error may occur. Thus, regardless of the degree of our doubt, we cannot doubt that principle, because its truth is necessarily secure.

We would now like to find out whether it is possible for the idealist philosopher, Berkeley, to deny that secure principle and reject the presence of primary necessary knowledge above error and ambiguity. There is no doubt that the answer is in the negative; for he is required to admit the presence of knowledge whose truth is secure, as long as he attempts to demonstrate his idealism by means of the

previously mentioned proofs.

A human being cannot demonstrate something, unless he based his demonstration on fundamentals and rules that are to him of secure truth. If we pay attention to Berkeley's proofs, we find him obliged to admit the following:

a. The principle of non-contradiction on which the first proof is based. If contradiction were possible, one could infer from the contradiction of sense perceptions that this principle is not objective.

b. The principle of causality and necessity. If Berkeley does not admit this principle, his proof will be useless; for a human being bases a proof on his opinion, only because he is convinced that a proof is a necessary cause of knowing the truth of that opinion. If he does not accept the principle of causality and necessity, the proof may be true, but still one cannot demonstrate by it the opinion under consideration.

If knowledge with secure truth is proved in human thought, then there is no (p. 131) doubt that our knowledge of the objective world which is independent of us is a part of this knowledge. The mind finds itself required to accept the existence of the external world as a whole, and to reject all doubt concerning it, regardless of the difference between the mind's awareness and actuality, or between the mind's thought and reality.

Doubt concerning the existence of the independent world will be considered a kind of insanity. We conclude from our discussions of philosophical idealism that realism relies on two principles: the first is the acceptance of the essential disclosure of knowledge of the assent type, and the second is the acceptance of a basic principle of human knowledge whose truth is necessarily secure. We have already found that Berkeley is required to admit each of these two principles. Were it not for the essential disclosure of knowledge of the assent type, he would not have known other individuals, nor would he have fashioned his life on the basis of their existence. Also, were it not for knowledge whose truth is secure in the human thought, he would not have been able to demonstrate his idealistic claims.

B. Physical Idealism

Prior to the last century, physics used to explain nature in a materialistic, realistic fashion as governed by the general laws of mechanics. To the physicists, nature is real, in the sense that it exists independently of the mind and consciousness.

It is also material because, according to their scientific analysis, nature is reduced to small, solid particles not receptive to change or division – such particles being the individual substances that were spoken of in Greek philosophy by Democritus.[10]

These particles or primordial masses of nature are in constant motion. Matter is the sum of those particles, and the natural phenomena in it are the result of the spatial transposition and motion of those masses.

Since this motion requires scientific explanation, physics explained it mechanically, as it explained the motion of the pendulum of a clock or sound waves. (p. 132) It also assumed that those masses involved forces and specific relations among them in order to complete the mechanical explanation of the natural phenomena. These forces and relations must, in turn, also be subject to the mechanical explanation.

Thus, the presumptive notion of air developed in physics, to which a number of functions were ascribed, such as the spreading of light that air was assumed to carry when moving from some masses to some others, as it carries heat, electricity and similar powers of nature. This discussion can be summed up in [the statement] that nature is a material, objective reality governed by a complete mechanical system.

But this physical notion was not able to remain steadfast in the face of modern discoveries that imposed on the scientists a total conversion of their theories about nature. Further, such discoveries proved to the scientists that the scientific mind is still at its beginning. The discovery of the electrons was one of the most important discoveries. It proved that the atom has a composite structure and that its radiation can be decomposed.

While the atom was the primary material unit of which nature is composed, it proved to be composite in turn. But this is not the whole story. It also became possible that the atom evaporates as electricity.

Moreover, while motion was restricted to the sphere of mechanical motion – this being consistent with the mechanical explanation of nature – other kinds of motion were discovered. Again, while the common view asserted that the material mass (this is the mathematical expression for the material substance) endures and cannot change, scientific evidence showed that it is not stable but relative, and that in the real sense, it does not express anything other than a latent power. That is why the bodily mass fluctuates in accordance with its motion.

Thus, it became dear to physicists that materialism had died out, and that the materialistic view of the world became inconsistent with science and the empirical evidence. (p. 183)

Due to this, the scientists were able to form a substantial notion of the world that is more profound than the materialistic notion. Materialism is just an aspect of this new notion. Indeed, some physicists went further than this to claim that the world can be attributed to pure motion. In this, they attempted to dispense with any substantial reality in addition to the world.

In the words of Ostwald:[11]
The stick that strikes Scaban? does not rise on the basis of the existence of the external world. This stick does not exist. The only thing that exists [of it] is its power of motion.[12]

Also, Karl Pearson[13] makes the following statement: 'Matter is the nonmaterial in motion.'[14]
In the midst of these new discoveries that shook the material edifice and showed that matter is a general human illusion about the world, and not a scientific notion that corresponds to the world, the idealistic tendency in physics arose and attracted many physicists.

Thus, they said, because every day science offers a new evidence against the objective value of human knowledge and the material aspect of the world, atoms or the primary structures of matter become – after having disappeared in light of science nothing but convenient ways for expressing thought, and metaphors and signs that do not involve any objective reality. We are told by Eddington:[15]

There is nothing in the whole system of laws concerning natural science that cannot be inferred with clarity from the consideration of, and the reflection on the absolute comprehensive theory of knowledge.

The mind, which does not know our existence, yet (p. 134) knows the order of thought by means of which it explains its empirical experience, is capable of attaining the whole knowledge of natural science which is acquired by way of sense experience. Finally, I say that what I know about the universe is truly and precisely the exact, the very thing which we add to the universe to make it intelligible.[16]

Later, Eddington expressed his hope that
What was concealed in the nucleus of the atom will become known in the very near future, in spite of the presumptions that our minds entertain, namely that this was concealed prior to our time.[17]

Actually, the idealistic tendency of these physicists was the result of an error in philosophical thinking, and not the result of a physical proof in the scientific field. The reason is that the primary issue in philosophy, the response to which divided philosophers into idealists and realists, appeared to them as fallacious.

This primary issue is whether the world has an objective reality independent of our minds and consciousness. These physicists thought that this issue is subject to [one of the] following two responses only. Either the world is attributed to the mind and consciousness and, therefore, has no objective existence; or it is a material reality that exists outside the mind and consciousness.

If we discard the second response from the scientific proofs and experiments that showed that materialism is nothing but a veil covering the reality of the world, we are then required to adopt the first response and accept the pure idealistic notion of the world. However, the truth is that the two responses were not well stated above. The reason is (p. 135) that advancing opposition along idealistic lines does not require us to accept the necessity of the material aspect of objective reality.

This is because realism, which is opposite idealism, does not mean more than the admission of an objective reality independent of the mind and consciousness. Whether this independent objective reality is matter, power, motion or electric waves is another question that realism, which accepts an objective world, must answer in light of science and the experimental discoveries. When we draw a complete distinction between the two issues, we can then attribute the abovementioned idealistic tendency to the error on which it rests.

We have already learned that the first question is this: 'Is the world a reality independent of the human mind?' The two responses to this question are given by idealism and realism. Idealism answers

negatively, while realism answers affirmatively. Both answers must be based on purely philosophical grounds. Science and sense experience have no say in this matter.

The other question is the following: 'What is the independent objective reality; and are the qualities or properties of matter primary concomitants of it?' This question leans toward realism only, for there is no room for it on the basis of the idealistic notion.

Some realists answer it by offering a materialistic notion of the independent objective reality. Others offer different notions. The view of science determines some of these responses. Scientific experiments and discoveries form the realists' scientific notion of the objective world. Thus, if science discards the materialistic notion of the world, this will not mean that science rejects realism and has become idealistic.

This is because scientific discoveries have not proved the non-existence of (p. 136) an independent objective reality. Rather, they have shown that the material aspect is not a necessary element of it. Whether the world is attributed to potency, motion or anything else other than matter is harmless to realism and cannot prove idealism, as long as the world has an objective reality that exists independently of the mind and consciousness.

Thus, if in light of science, matter is transformed into electricity, mass into energy, energy into mass, and if nature expresses a motion free from matter – if all this comes true – it will not change our position at all concerning the first question. In any case, we believe that reality is not just a product of consciousness, but a product of the independent reality.

These scientific theories can make an impact if we have finished answering the first question and taken up the second question, in order to know the nature of the world. From this we learn that the discoveries of modern science do not refute realism at all. Instead, they refute materialism which claims to be the required description of that [objective] reality in general.

It is strange to find some materialists attempting to retain for materialism the same position that it had enjoyed, and to say that the scientific and empirical evidence does not demonstrate the non-existence of the material aspect of the world. Rather, it is a cause of strengthening our understanding of matter and its qualities.

Let us quote from Lenin:
The disappearance of matter determines that the degree of the knowledge of matter that we have reached also disappears, and that our awareness becomes more profound. Thus, some qualities of matter, such as its impenetrability, rest and mass, had appeared to us before as absolute, fixed and primary, but are now disappearing.

They have become known as relative and necessary concomitants of some states of matter only. This is because the only property (p. 137) of matter, whose admission is determined by philosophical

materialism, is the state of matter as an objective reality existing outside our awareness.[18]

The principles of the materialistic notion of the world cannot be shaken by any change in the scientific notion of the qualities of matter. This is not because what is philosophically known about matter has no relation to what is alleged to be scientifically known; but because it is impossible for matter to lose this quality of existing as an objective actual reality which is one of the basic qualities of matter.'[19]

By this, Lenin intended to falsify physical idealism and to strengthen his materialistic notion. However, it is clear from his words that he is ignoring every realistic philosophy, with the exception of the realistic philosophy that rests on material grounds. In order to resolve the contradiction between the materialistic notion and the truths of science and physics, he offered a strange explanation of the notion of matter.

The explanation he gave was extensive and comprehensive enough to cover the objectivity and independence of the reality of matter. By means of this, he attempted to offer materialism instead of idealism as a unique philosophical solution for the issue of the existence of the world. It is clear that if matter is an exact expression of the independent objective reality, and if its only necessary quality is its existence and independence of our awareness, then theological metaphysics must be precisely a materialistic philosophy according to this new notion of matter.

And thus, opposition between metaphysics and the materialistic philosophy and its notion of the world will be completely eliminated. (p. 138) The theological philosopher who accepts metaphysics says exactly the same thing about the world [as does the materialist]. The world, to him, is an objective reality independent of our awareness. The theological principle that is accepted by metaphysical philosophy is nothing but an objective reality independent of our awareness.

The truth is that it is useless to play with words. The expansion of the materialistic notion to the extent that would enable it to cover its opposite notion, and to be consistent with it does not mean anything other than its departure from its own philosophical reality, and its inability to respond to the notions that are its opposite.

Add to this that dialectical materialism does not permit Lenin to admit an absolute reality. For this would be contradictory to the dialectic which asserts the development of all realities in accordance with the contradictions that they involve. Is the basic quality of matter, in the new Leninian sense, an absolute quality that does not develop and does not submit to the law of dialectics and its contradictions?

If the answer is in the affirmative, then the absolute reality that the dialectic rejects and that the Marxist dialectical principles do not accept must exist. If, on the other hand, this quality is a dialectical quality inclusive of the contradictions that cause it to develop and change, as do other realities in the world, this would mean that materialism also suffers from contradiction. Due to this, materialism had to change, to transform and to free itself from the basic quality of matter.

The conclusion that we can draw is that the idealistic tendency of the physicists was the result of failing

to distinguish between the two philosophical issues discussed earlier, and not a direct product of scientific evidence.

In spite of this, we must point out another factor that played an important role in shaking the scientists' certitude about objective reality. This was the collapse of the scientific axioms in the modern scientific field. (p. 139)

Thus, while such axioms had been considered absolute and indubitable truths, science succeeded in falsifying them and proving their erroneousness. With this, the atoms of John Dalton20 quickly melted away, and the law of the imperishability of matter was shaken. Experiments showed that matter is an illusion that people held for thousands of years.

As a reaction to this, doubt reappeared and took hold of the thoughts of a number of scientists. Thus, if the scientific axioms of yesterday are the errors of today, why should we not be doubtful about every reality, regardless of its clarity to us? Further, why should we assume the basic issue – that is, the issue of the existence of objective reality, to be above skepticism or doubt?

Hence, the idealistic tendency or agnosticism arose, not because science proved the correctness and soundness of this tendency, but because the scientists' conviction concerning science was shaken, and their faith in the absolute truth of its axioms collapsed.

However, this factor was only a psychological motive or a psychological crisis that inspired the inclination toward idealism. But this crisis is eliminated by little observation when the issue is studied philosophically. This is because the acceptance of the existence of the objective reality of the world is not the result of empirical and scientific proofs.

We learned earlier that experiments cannot produce such an acceptance and move human beings from conception to objectivity. Rather, it is a natural and necessary acceptance in human nature. For this reason, it is general. Everyone shares in it, including the idealists who rebel against it verbally. They, too, have the very, same conviction, as their practical lives indicate.

All the axioms whose falsehood became evident centered on the structure of the objective world, and the determination of its primary reality and elements. It is clear that axioms of this sort are only confirmed by scientific experiments. Thus, their collapse and evident falsehood – whether due to the incompleteness or imprecision of the experiments on which these axioms rest, or to the unsoundness of the rational inference of the theory from the experiment – does not in any way mean that the necessary rational axioms may be false. (p. 140)

C. Physiological Idealism

This is another sort of idealism adopted by some physiologists. According to their claims, it rests on the physiological truths that science discovers. This idealistic tendency proceeds from the following

indisputable point.

The determination of the subjective form of the human sense perception depends on the composition of our senses and on the organic system in general. Thus, the nature of sense perception which comes to us from the external world does not by itself determine the form of the thing in our sense perception.

Rather, this form is at the mercy of the nervous system more than anything else. On the basis of this, they claimed that the senses do not give us information about the external world. Rather, they inform us about our private organic system. This does not mean that the senses have no relation to external things. Rather, external things are the primary causes that produce the acts of sense perception.

However, it is the nature of the private organic system that crystallizes the acts of sense perception in the manner in which sense perception expresses itself. Due to this, sense perception may be considered symbolic, and not an exact form. This is because a form is required to have some similarity to the thing that it represents. A symbol, on the other hand, need not have any similarity to the thing with which it is concerned.

This idealistic tendency is one of the unavoidable complications of the materialistic notion of knowledge which we completely reject. If knowledge were either nothing but a pure physiological act, or a specific material interaction between the nervous system and the external objective things, the quality of this physiological act must be linked either to the nature of the nervous system [alone], or to both the nature of this system and the nature of the objective things.

Even if this leads to clear idealism and to the negation of the reality of the objective world, nevertheless, as long as we retain for external things the aspect of causing the processes of the nervous system, (p. 141) it is permissible to doubt the degree of correspondence between sense perception and objective reality, and to be skeptical as to whether knowledge is a mere specific reaction that indicates its cause symbolically, and without similarity [to it] in reality and content. We will soon return to this physiological idealistic notion.

5. The Defenders of Modern Skepticism

In fact, modern skepticism can be attributed to the old doctrine of skepticism that was upheld by the Greek school of skepticism headed by Pyrrho, who claimed that human beings are incapable of passing any judgement about things. Modern skepticism developed under circumstances similar to those that surrounded this old school and helped its growth. Greek skepticism arose as a compromise for the conflict that had reached its most intense moments between sophistry and philosophy.

Sophistry was born a few centuries before philosophy. It rebelled against all truths and denied scientific and empirical propositions together. Philosophers confronted sophistry, pointing out its contradictions, and showing its collapse at the hands of criticism, until the wave of denial faded away.

At that point, the notion of doubt asserting absolute agnosticism came about. It attempted to justify this agnosticism by showing the contradictions of the senses and the conflicting ideas that strip it of the quality of scientific confidence.

Thus, it was a light form of sophistry. The same is true of modern skepticism. It attempted to advocate agnosticism as a solution for the contradiction between idealism and realism – if it is appropriate to consider surrendering to doubt as a solution for this contradiction. Due to this, it was a lighter form of idealism.

Modern skepticism did not rely on showing only the contradictions of sense perception and knowledge, but also on the analysis of knowledge which leads to doubt, according to the claims of its proponents. David Hume, who advocated the philosophy of skepticism as a result of Berkeley's philosophy, (p. 142) believed that certainty about the objective value of human knowledge is an inaccessible matter. The instrument of human knowledge is the mind or cogitation.

It is impossible to have anything in the mind but knowledge. It is also impossible to conceive or to form the idea of a thing, if that idea is different from concepts and reactions. Let us direct our attention to the outside as much as we please, and let our imagination survey the skies or the furthest points of the universe, still we will never take one step beyond ourselves.

Because of this, we cannot answer the basic issue in philosophy, concerning which the idealists and the realists fight. Idealism claims that reality is in consciousness and knowledge; while realism asserts that reality exists in an objective and independent manner. Skepticism, on the other hand, refuses to respond to this issue, because [according to it], it is impossible to give an answer to such an issue. Therefore, let this issue be suspended forever.

The fact is that David Hume did not add anything to Berkeley's proofs, even though he has strengthened doubt about realities and disregard for them. His skepticism was not limited to external matter. Rather, he struck down the two realities that Berkeley's philosophy retained – namely, the soul and God. This was in keeping with the extreme form of the empirical principle. For this purpose, he adopted the same Berkeleian style and method.

As the material substance was not, in Berkeley's view, anything but an assembly of phenomena composed artificially in the mind, so also is the soul nothing but an assembly of internal phenomena and their relations. It is impossible to prove 'the I' (the self) by consciousness, because when I penetrate to the heart of what I call 'the 1', I come across a particular phenomenon. Thus, if all knowledge disappears, there will remain nothing that I can call 'the I'.

As for the idea of God, it rests on the principle of causality. However, it is not possible to admit the truth of this principle, according to Hume's claim. The reason is that the senses do not reveal to us a necessity between phenomena and events. Rather, the idea of causality is attributed to mere habit or to a form of association of ideas. (p. 143)

Thus, Hume reached the ultimate points of the empirical theory and the empirical doctrine to which this theory and this doctrine naturally lead. Instead of proving by this method [the necessity of] refuting the empirical or experimental principle in the mind, he was driven after this principle, until it led him to the unavoidable end.

We do not wish to discuss David Hume once again, inasmuch as his arguments are a repetition of Berkeley's proofs and views. Rather, we will take up one point only, namely habit, to which Hume attributed the principle of causality and many relations of things in the mind.

Let us therefore, ask: 'What is habit?' If it is nothing but a necessity existing between the idea of the cause and that of the effect, then it is another expression of the principle of causality. If, on the other hand, it is something else, then it is not different from causality in being an invisible idea to which we have no corresponding sense perception or reaction.

But Hume must reject this [view], as he rejects all the truths that are inaccessible to the senses. In criticizing the empirical doctrine earlier, a response was given to this unsuccessful explanation of causality attempted by Hume. Therefore, let that [response] be attended to.

6. The Relativists

Relativism is considered one of the doctrines that assert the existence of reality and the possibility of human knowledge. However, this knowledge or reality, which the human mind may attain, is a relative knowledge and a relative reality, in the sense that it is not a reality free from subjective attachments, or an absolute reality. Rather, it is a mixture of the objective aspect of the thing and the subjective aspect of the knowing mind. Therefore, objective reality in thought is inseparable from the subjective aspect, and is not free from some foreign addition.

There are two main tendencies of relativism that differ in their idea about relativism and its limits in the human sciences. One of these is the tendency of relativism in the philosophy of Immanuel Kant. The other is the tendency of subjective relativism of a number of modern materialist philosophers. This latter tendency paved the way for developmental relativism, which was advocated by dialectical materialism. (p. 144)

A. Kant's Relativism

To begin with, you must know that a rational judgement, according to Kant, is of two kinds. First, analytic judgement: this is the judgement that the mind uses for the purpose of clarification only, as in our statements: 'The body is extended', and 'The triangle is three-sided'.

The source of the judgement here is the analysis of the notion of the subject, i.e. 'body', or 'triangle', the inference of the elements implied in this notion, such as 'extension', which is implied in the notion of 'body' and 'three-sided', which is implied in the notion of 'triangle', and then the attribution of these

elements to the subject. Analytic judgements do not give us new information about the subject. Their only role is to explain and clarify.

Second, synthetic judgement: this is the judgement whose predicate adds something new to the subject. Examples of this are: 'Bodies are heavy'. 'Heat expands corporeal particles.' 'Two plus two equals four.'

The quality that we impose on the subjects in these propositions is not inferred from them by analysis. Rather, it is additional. Because of this, a new knowledge that was not available before arises. Synthetic judgements are sometimes primary judgements, while at other times they are secondary judgements.

Primary judgements are those that are fixed in the mind prior to sense experience, such as mathematical judgements, as in our saying: 'A straight line is the shortest distance between two points.' The reason for their being so will be pointed out later. Secondary synthetic judgements, on the other hand, are those that are fixed in the mind after sense experience, such as the judgements: 'The sunlight warms the stone,' and 'Every body has a weight' (p. 145)

Kant's theory of knowledge may be summed up in the division of rational knowledge or judgements into three groups.21

a. Mathematics: All rational knowledge in this group is primary synthetic judgements prior to sense experience because it treats natural subjects in the human soul. Geometry specializes in space. The subject of arithmetic is number. Number is nothing but a repetition of the unit. Repetition means succession and following. And this is time, in the Kantian philosophical sense.

Therefore, the two main poles around which the mathematical principles center are space and time. In Kant's view, space (p. 146) and time are two natural forms in people's formal sensibility. In other words, the form of space and that of time are present in the formal sensibility independently of sense experience.

The consequence of this is that all the judgements related to time and space that we attribute to things are derived from our nature. In these judgements, we do not rely on what we acquire from the outside through the senses. That is why all mathematical propositions are derived from the nature of our minds. This means that we create them ourselves, and do not acquire them from the outside, since they focus on time and space that are natural.

Thus, mathematics and the mathematical principles becomes knowable; and mathematical truths become absolutely certain. Therefore, there is no room in the mathematical field for error or contradiction, as long as this field is natural in the soul, and as long as its propositions are produced by us, and are not copied from an objective reality that is independent of us; so that we may doubt the extent of the possibility of knowing this reality and unraveling its innermost secret.

b. Natural science – that is, the human knowledge concerning the objective world that is subject to

sense experience: here, Kant begins by dismissing matter from this field, because the mind does not know anything about nature other than its phenomena.

He agrees with Berkeley that matter is not subject to knowledge and sense experience. However, he differs from Berkeley in another respect. He does not consider the above-mentioned point as a proof for the non-existence of matter and a philosophical justification for its denial, as Berkeley had claimed.

If matter is discounted, nothing will be left for the natural sciences other than the phenomena that are subject to sense experience. Therefore, such phenomena are the subject of these sciences. Because of this, the judgements in these sciences are synthetic and secondary, since they are based on a study of the objective phenomena of nature that are known by sense experience. (p. 147)

If we wish to analyze these secondary synthetic judgements from the perspective of the mind, we find them composed in fact of two elements, one of which is empirical and the other rational. The empirical aspect of these rational judgements is the sense perceptions that sense experience acquires from the outside, after the formal sensibility pours these perceptions in the time intuition and the space intuition.

As for the rational aspect, it is the natural link that the mind imposes on the objects of sense perceptions, so that a science or a rational knowledge may be formed out of them. Knowledge, therefore, is a mixture of subjectivity and objectivity. It is subjective in its form and objective in its matter. This is because it is the product of the union between the empirical matter, which is derived from the outside, and one of the forms of the mind which is naturally ready in the mind.

We know, for example, that bodily particles expand by heat. If we consider this knowledge with some degree of analysis, we find that the raw material of this knowledge – this being the phenomenon of the expansion of bodily particles and the phenomenon of heat –was given by way of sense experience. Were it not for sense experience, we would not have known these phenomena.

On the other hand, the formal aspect of knowledge, – that is, the causation by one phenomena of another – is not empirical. Rather, it can be attributed to the category of causality which is one of the natural categories of the mind. Had we not possessed this prior form, there would not have been knowledge. Similarly, had we not acquired the matters by means of sense experience, we would not have attained any knowledge either.

Thus, knowledge arises as a result of the mind's adapting the empirical subjects to its specific frames and molds, namely, to its natural categories. The mind does not adapt, and its frames and molds do not crystallize in accordance with the known subjects. In this, the mind is similar to a person attempting to put a certain quantity of water in a narrow bottle too small for it. Thus, he resorts to reducing the quantity of water, so that it becomes possible to put it in that bottle, instead of enlarging the bottle to give it the capacity to hold all the water.

Thus, the intellectual revolution made by Kant concerning the issue of the human mind becomes

evident, since he made things center on the mind and crystallize in accordance with its specific frames. (p. 148) This was contrary to the common view – namely, that it is the mind that centers on things and adapts itself in accordance with them.

In light of this, Kant distinguished between 'the thing in itself and 'the thing in us'. The thing in itself is an external reality without any addition from us. This reality that is free from any subjective addition is unknowable; for knowledge is subjective and rational in its form. The thing in us, on the other hand, is a mixture composed of an empirical subject plus the prior natural form which unites with it in the mind.

That is why relativity is imposed on every truth representing external things in our knowledge, in the sense that our knowledge indicates to us the thing's reality in us, and not the thing's reality in itself. In this, the natural sciences differ from the mathematical sciences. Since the subject of the mathematical sciences is present in the soul naturally, these sciences do not involve any duality of the thing in itself and the thing in us.

The natural sciences, on the other hand, are the opposite of this. They treat the external phenomena that are subject to sense experience. These phenomena exist independently of us; and we know them by our natural molds. No wonder then that the thing in itself is distinct from the thing in us.

c. Metaphysics: Kant believes that it is impossible to attain knowledge in metaphysics by means of the theoretical mind, and that any attempt to establish metaphysical knowledge on philosophical grounds is an unsuccessful and valueless attempt.

The reason for this is that there cannot be any primary or secondary synthetic judgements in the propositions of metaphysics. Since the primary synthetic judgements are independent of sense experience, they cannot be applicable to anything other than the subjects that are created in the soul by nature, and are ready in the mind without sense experience.

Examples of this are time and space, the two subjects of the mathematical sciences. (p. 149) As for the things dealt with in metaphysics – namely, God, the soul and the world – they are not of this sort. Metaphysics does not study mental entities. Rather, it attempts to investigate self-subsisting objective things.

Secondary synthetic judgements, on the other hand, treat empirical subjects such as the subjects of the natural sciences that are a part of the empirical field. That is why these judgements are secondary: they require sense experience. It is clear that the subjects of metaphysics are not empirical.

Therefore, it is not possible to form secondary synthetic judgements in metaphysics. Due to this, there is no room in metaphysics for anything other than analytic judgements – that is, elaborations and explanations of the metaphysical notions. But these judgements do not constitute real knowledge at all, as we learned earlier.

The conclusion that Kant draws from this is the following. First, judgements of the mathematical sciences are primary synthetic, and with absolute value. Second, judgements that are based on sense experience in the natural sciences are secondary synthetic. The truth in them cannot be more than relative. Third, the subjects of metaphysics cannot involve sound rational knowledge, neither on the basis of primary synthetic judgements, nor on the basis of secondary synthetic judgements.

The main points in Kant's theory are these. Primary rational knowledge is not a self–subsisting science independent of sense experience. Rather, it is relations that aid in organizing and connecting things. Its only role, therefore, 150) is one of making us know the empirical things, in accordance with its specific frames. The natural consequence of this is the discarding of metaphysics, since this primary knowledge is not a science but relations. In order for it to be a science, it would require a subject that the mind produces or knows by sense experience.

But the subjects of metaphysics are neither produced by the mind, nor known by sense experience. Another consequence of this is that truth in the natural sciences always becomes relative, since those relations are a part of the innermost structure of our knowledge of the external phenomena, and are subjective relations. Thus, the thing in itself differs from the thing in us.

This Kantian theory involves two basic errors. The first is that it considers the mathematical sciences productive of the mathematical truths and their principles. By this consideration, Kant raised the mathematical principles and their truths above the possibility of error and contradiction, since they are created in the soul and derived from it, and not from the outside so that one may suspect they are erroneous or contradictory.

However, the truth on which every realistic philosophy must be based is that science is neither creative nor productive. Rather, it is revelatory of what lies beyond its specific mental limits. Were it not for this [quality of] essential disclosure, it would not be possible at all to respond to the idealistic notion, as was previously done.

Thus, our knowledge that two plus two equals four is the knowledge of a specific mathematical truth. But our knowledge of this truth does not mean that we produce or create this truth in ourselves, as idealism attempts to teach. Rather, knowledge in its nature is like a mirror. Thus, as a mirror shows the real existence of the form reflected in it as lying outside its limits; so also does knowledge reveal an independent truth.

It is for this reason that two plus two equals four, whether or not there exists a mathematician on the face of the earth; and whether or not a human being knows this truth. (p. 151) This means that the mathematical principles and truths have an objective reality. They are operative and applicable laws. The mathematical sciences are nothing but reflections of these principles and truths in the human mind. In this, these principles and truths are very similar to the natural principles and laws in that they are objective realities reflected in the mind.

Thus, we face the question concerning their mental reflection, and the degree of its soundness and precision, as we face the same question in the rest of the sciences. There is only one answer to this question. It is the one offered by the rational doctrine: it states that since those reflections of the mathematical principles in the human mind are natural and necessary, their truth is essentially certain. Thus, the mathematical truths are knowable, not because we create them, but because we reflect them in necessary natural sciences.

The second is that Kant considers the laws that have their foundation in the human mind as laws of the mind, and not scientific reflections of the objective laws that govern and regulate the world as a whole. They are nothing but mere relations present in the mind naturally, and used by the mind to organize its empirical knowledge.

It was previously [mentioned] that this error resulted in the assertion of the relativity of the truths known about the world of nature, and the assertion of the impossibility of studying metaphysics rationally, as well as the impossibility of basing it on the natural rational knowledge, since this knowledge is nothing but relations by means of which the mind organizes its empirical knowledge. As for the subjects of metaphysics, we have no knowledge concerning them so that one can organize it by such relations.

Adopting this critical doctrine unavoidably leads to idealism; for if the primary knowledge in the mind is nothing but dependent relations awaiting a subject in which to appear, then how could we move from conception to objectivity?

Further, how could we prove the objective reality of our various sense perceptions, (p. 152) – that is, the natural phenomena whose objectivity Kant admits? We do know that the method of demonstrating the objective reality of sense perception is the principle of causality that asserts that every empirical reaction unavoidably results from a cause which produces that particular reaction.

Therefore, if in Kant's view causality is attributed to a relation between the empirical phenomena, then it will be naturally incapable of performing anything in addition to relating our sense perceptions, as well as the phenomena that appear in them.

At this point, it is our right to ask Kant about his philosophical justification for accepting an objective reality of the sensible world, when we do not possess a complete natural knowledge, such as the principle of causality by means of which we can demonstrate this reality. Instead, we possess a number of relations and laws for organizing the mind and knowledge.

Due to this, realism must admit that the natural knowledge in the mind is nothing but scientific reflections of independent objective laws. With this, Kant's relativity, which he ascribes to our knowledge of nature, is eliminated. This is because even though all knowledge in the natural sciences requires some natural knowledge on the basis of which scientific inference is drawn from experimentation; still, such a natural knowledge is not purely subjective.

Rather, it is a natural reflection of an objective law that is independent of the sphere of consciousness and knowledge.

Our knowledge that heat causes the expansion of bodily particles is based on an empirical or experimental knowledge of heat and expansion, as well as on a necessary rational knowledge of the principle of causality. Each of these two pieces of knowledge reflects an objective reality. Our knowledge that heat expands bodily particles results from our knowledge of the two objective realities of these two pieces of knowledge.

What Kant calls by the name 'form' (sura) is not a rational form of pure knowledge. Rather, it is a knowledge characterized by the qualities of science – that is, by essential disclosure and the reflection of objective reality in this disclosure.

If we realize that the mind naturally possesses necessary knowledge of a number of laws (p. 158) and objective realities, then we will be able to base metaphysical propositions on a philosophical ground by studying them in light of that necessary knowledge. This is because that knowledge is not just pure relations. Rather, it is a primary knowledge that can produce a new knowledge in the human mind.

B. Subjective Relativism

Following Kant, the subjective relativists emerged to assert the character of relativity of all that appears to people as true, according to the role that the mind of every individual plays in acquiring the truth.

According to this new notion, a truth is nothing but what is necessitated by the circumstances and conditions of knowing. Since such circumstances and conditions differ among the various individuals and cases, therefore the truth in every area is relative to its specific area, according to the circumstances and conditions involved in that area. The truth is not the correspondence of an idea to reality, so that it would be absolute with respect to all cases and individuals.

It is true that this kind of relativism carries the slogan of truth; but this slogan is false. It is clear that this kind of relativism is nothing but one of the doctrines of doubt or skepticism concerning every objective reality.

The subjective relativism under consideration is supported by the idealistic physiological tendency that asserts that sense perception is only symbolic, and that what determines its quality and kind is not the external thing, but the nature of the nervous system.

In fact, the fundamental cause that made it possible for subjective relativism to emerge was the materialistic explanation of knowledge, and the consideration of knowledge as involving a material process in which the knowing nervous system interacts (p. 154) with the objective thing. This is analogous to digestion, which is accomplished by the process of a specific interaction between the digestive system and the nutritive elements.

As nourishment does not interact [with the digestive system] and is not digested except after it undergoes a number of changes and developments, so also the thing which we know cannot be known by us except after changing it and interacting with it.

This kind of relativism differs from Kant's relativism in two ways. First, it subjugates all truths, without exception, to subjective relativity; in contrast to Kant who considers mathematical principles and knowledge as absolute truths. Thus, for him, 'two plus two equals four' is an absolute truth not susceptible to doubt. But in the view of the subjective relativists, this is a relative truth, in the sense that it is necessitated by nothing other than the nature of our knowledge and our specific system.

Second, the relative truth, according to the subjective relativists, differs among individuals. Further, it is not necessary that all people share some specific truths, since every individual has his own role and activity to play.

Therefore, it is not possible to judge that what an individual knows is the same as what another individual knows, as long as it is possible that those two individuals disagree on the methods and nature of knowledge. But for Kant, the formal molds are natural. All human minds participate in them. This is why the relative truths are shared by all people. In our future studies, we will discuss and refute the materialistic explanation of knowledge on which subjective relativism is based.

C. Scientific Skepticism

We saw earlier that the doubt that spread among the natural scientists after their great triumph in the field of physics was not a scientific doubt, nor was it based on a scientific proof. Rather, it was a doubt based on a philosophical error, or on a psychological difficulty. (p. 155)

But in other fields, we find scientific theories that unavoidably lead to doubt, and to the affirmation of the denial of human knowledge – this is in spite of the fact that their proponents did not think of reaching such a result. Instead, they continued to accept the value and objectivity of knowledge. Due to this, we called the doubt resulting from such theories 'scientific skepticism', since these theories are scientific, or, at least, appear scientific. The following are among the most important of these theories: (1) behaviorism, which explains psychology on the basis of physiology; (2) Freud's[22] doctrine of psychoanalysis; (3) historical materialism, which shapes the Marxist views concerning history.

a. Behaviorism

Behaviorism is one of the well-known schools of psychology that expresses a materialistic tendency in this science. The name 'behaviorism' was given to it, because it took the behavior of the living being and his bodily movements, which may be subjugated to scientific observation and experimentation, as the subject of psychology.

It refused to admit the non-empirical subjects, such as the mind and consciousness, which lie beyond

scientific observation and experimentation. It also attempted to explain the psychology of a human being and the whole of his psychological and conscious life without assuming that he has a mind and similar invisible ideas.

This is because the psychologist does not find or does not perceive the minds of others scientifically when he carries out his experiments on them. Instead, he perceives their behavior, their movements and their physiological activities.

Therefore, in order for the research to be scientific, all the psychological phenomena must be explained within the sensible framework. This is done by considering a human being as a machine whose phenomena and movements may also be explained in terms of the mechanical method, and in light of the principle of the causation of the external stimuli which proceed to the machine, thus affecting it.

According to behaviorism, when we study the psychological phenomena, we do not find a mind, (p. 156) a consciousness or knowledge. Rather, we are faced with physiological material movements and activities produced by internal or external material causes.

Thus, when we say, for example, 'The history teacher thinks of preparing a lecture on the individual ownership of the Romans,' we are in fact expressing material activities and movements in the teacher's nervous system that are produced mechanically by external or internal causes, such as the heat of the fireplace in front of which this teacher sits, or the digestive operation which follows his tatting of lunch.

Behaviorism found in the conditioned stimuli, which are based on Pavlov's23 experiments, great support which made it possible for it to assert the multiplicity of stimuli that a human being receives 'due to the growth and increase of these stimuli by way of conditioning'.

Thus, it became possible to say that the totality of 'the natural and conditioned' stimuli corresponds to the totality of the ideas in a human being's life. 'How did behaviorism benefit from Pavlov's experiments?' 'What are the conditioned stimuli that these experiments uncovered – thus multiplying the number of stimuli, something in the light of which behaviorism explained human ideas?' 'To what extent can Pavlov's experiments prove the behavioristic point of view?'

These issues will be addressed in one of the discussions of this book reserved specifically for the discussion of knowledge (Part 2, Chapter 1 of the present work). At the present, however, we are concerned with expounding the behavioristic point of view which subjugates the human intellectual life to a mechanical explanation, and understands the mind and consciousness as physiological activities produced by various material causes.

It is clear that any attempt to postulate a theory of knowledge in light of this sort of behaviorism unavoidably leads to a negative position with respect to the value of knowledge, and to the inadmission of its objective value. Consequently, any discussion concerning the soundness of this or that scientific notion, this or that philosophical doctrine, or this or that social opinion becomes useless and

unjustifiable. (p. 157)

This is because every notion, regardless of its scientific, philosophical or social character or area, does not express anything except particular situations that occur in the bodies of the same individuals that have that notion.

Thus, on the philosophical level, we cannot ask which one of the two philosophies is true: the materialism of Epicurus[24] or the theology of Aristotle; nor can we ask on the scientific level which of the following is true: Newton's[25] idea that asserts that the universe must be explained in terms of gravity, or Einstein's[26] general relativity; Marx's economic thought, or Ricardo's,[27] for example.

The same is true of all fields, because in light of behaviorism, this sort of inquiry appears very much like an inquiry about the digestive operations of the pair of thinkers –namely, which one of the two operations is true.

Thus, as it is inappropriate to inquire about which of the two operations is true – the digestive operations of Epicurus, Newton and Marx, or those of Aristotle, Einstein and Ricardo – so also it is inappropriate to inquire about whose doctrines or ideas are true. The reason is that the ideas of these thinkers are, like the different digestive operations in their stomachs, nothing but bodily functions and organic activities.

Thus, whenever it becomes possible for the activity of the stomach to reveal to us through the digestive operation the quality of nourishment, and to describe to us the nature of nourishment, it becomes possible for the neurological activity in the brains to reflect some external realities. But as long as it is not permissible for us to ask whether the activity of the stomach is true or false, it is also not permissible for us to ask whether the intellectual activity is true or false.

We also find it clear that the idea, according to the behavioristic school, is linked to its stimuli, and not to its evidence. Due to this, the behavioristic school lost confidence in all human knowledge, since it is possible for the idea to change and to be followed by a contradictory idea if the stimuli and external conditions are different.

Therefore, it becomes useless for the thinker to discuss his idea and its evidence. Instead, one must investigate the material stimuli of that idea and their removal. If the idea, for example, was produced by the heat of the fireplace that is in the room in which that thinker thinks, and by his digestive operation, then the only way for eliminating this idea is by changing such things as the atmosphere of the room, and stopping the digestive operation. (p. 158) With this, human knowledge becomes void and empty of objective value.

b. Freud

As for Freud's doctrine of psychoanalysis, it records the same conclusions reached by behaviorism concerning the theory of knowledge. Even though Freud's doctrine does not deny the existence of the

mind, yet it divides the mind in two. One division is the conscious elements: these are a collection of ideas, emotions and desires of which we are aware in ourselves. The other division is the unconscious elements of the mind – namely, our appetites and instincts – which are concealed behind our consciousness.

These are mental forces deeply rooted in ourselves. We cannot control their activities nor have any say in their formation and development. All the conscious elements depend on these concealed elements of which we are unaware. The conscious acts of an individual are nothing but a distorted reflection of the appetites and motives that are hidden in the unconscious.

Consciousness, therefore, comes about by way of the unconscious. This enables the proponents of psychoanalysis to say that the unconscious is that which determines the contents of consciousness, and consequently, rules all human ideas and conduct.

With this in mind, our instinctive appetites become the real foundation of what we believe to be true. The reasoning processes, which lead us to the conclusions that are already imposed on us by our appetites and instincts, are nothing but an elevation or a lifting of these instincts to the conscious level which constitutes the upper division of the mind. On the other hand, the unconscious elements or the concealed instincts and appetites constitute the first level or the foundational lower division.

We can easily realize the influence of this analytic doctrine on the theory of knowledge. In light of it, the mind is not viewed as an instrument for changing the actual world or for producing events in reality.

Rather, its task is to express the demands of the unconscious, and inevitably to attain the results that are imposed by our appetites and instincts and that lie hidden in our innermost being. As long as the mind is an instrument that serves the purposes of our instincts and expresses them, and not reality or actuality, there will be nothing to support (p. 159) the belief that the mind reflects reality.

This is so because it is possible for reality to be in disagreement with our unconscious desires that govern the mind. It would also be impossible to think of giving any assurance about the concordance between our unconscious mental forces and reality. The reason is that such thinking itself is the product of our unconscious desires and an expression of them, and not of actuality or reality.

c. Historical Materialism

Following this, the role of historical materialism emerges, and again reaches the same conclusion to which behaviorism and psychoanalysis led. This is in spite of the fact that all the proponents of historical materialism reject skepticism and accept philosophically the value of knowledge and its capacity for revealing reality.

Historical materialism expresses the complete Marxist notion of history, society and the laws of the composition and development of society. That is why it treats general human ideas and knowledge as a

part of the composition of human society. Thus, it gives its opinion regarding the manner in which the various political and social conditions arise.

The basic idea of historical materialism is that the economic condition, which is determined by the means of production, is the real basis of society in all its aspects. Thus, all social phenomena are the product of the economic condition, and develop in accordance with its development. In Britain, for example, when the economic condition was transformed from feudalism to capitalism and the windmill was replaced by the steam mill, all the social conditions there changed and adapted to the new economic condition.

After historical materialism upheld this view, it became natural for it to link human knowledge in general to the economic condition also, since knowledge is a part of the social structure which, as a whole, depends on the economic factor.

That is why we find it asserting that human knowledge is not the product of the functional activity of the brain (p. 160) only. Rather, its primary source lies in the economic condition. Human thought is a mental reflection of economic conditions, as we' as of relations produced by such conditions. [Thus] human thought grows and develops in accordance with those conditions and relations.

It is easy to see here that in historical materialism, the economic forces occupy the same position as that of the unconscious elements of instincts and appetites in Freud's theory. Thus, while, according to Freud, thought is an inevitable expression of the demands of hidden instincts and appetites, in the view of historical materialism, thought becomes an inevitable expression of the demands of the economic forces and the general economic condition.

But in both, the result is the same. It is the lack of confidence in knowledge, and the loss of confidence in the value of knowledge, since knowledge becomes an instrument for carrying out the demands of a firm force that controls thought – this is the force of the unconscious, or the force of the economic condition. We do not know whether the economic condition provides our minds with reality or with its opposite.

Further, even if we did know this, this knowledge would be, in turn, a new expression of the demands of the economic condition. But the correspondence of such knowledge to actuality is something of which we are not yet certain.

From this we learn that the Marxist doctrine of history imposed on Marxist skepticism. However, Marxism refused to yield to skepticism. Instead, it declared in its philosophy that it accepts knowledge and its value.

Later, we will touch upon the Marxist philosophical theory of knowledge. But our concern at the present is to point out that the inevitable results of the Marxist doctrine of history – that is, historical materialism – are in contradiction with the Marxist philosophical theory of knowledge. The reason is that the inevitable

link between thought and the economic factor in the historical doctrine of Marxism eliminates confidence in any human knowledge, in contrast to the Marxist theory of knowledge which asserts this confidence, as we will see later.

At this point, we will not enter any dispute against these three theories: behaviorism, (p. 161) the theory of the unconscious and historical materialism. We will dispute behaviorism and its alleged scientific wealth of Pavlovian experiments in our study of knowledge (Chapter 5 of Part 2 of the present work). There, we succeed in proving that behaviorism does not provide an acceptable explanation of the mind.

Similarly, in the book Our Economy, we studied and criticized historical materialism extensively, since it is the scientific foundation of Marxist economics. The conclusions we reached condemn historical materialism in its philosophical and scientific contents, and show various contradictions between it and the direction of the historical movement in actual life. As for Freud's theory of psychoanalysis, the place reserved for its discussion is in the book Our Society.

Therefore, we are not concerned here with discussing these theories in relation to their specific fields. Instead, we will limit ourselves to mentioning them only in so far as they relate to the theory of knowledge.

Within the limits of the relation of these theories to the theory of knowledge, we can say that a proof by a scientific theory arguing against human knowledge and its objective value involves a contradiction, and consequently, a scandalous impossibility.

This is because a scientific theory, which is advanced against human knowledge and for the purpose of eliminating confidence in knowledge, also condemns itself, destroys its foundation, and is, therefore, discounted from consideration, since it is nothing but a part of the knowledge that it fights and whose value it doubts or denies. That is why it is impossible to consider a scientific theory as an evidence for philosophical doubt and as a justification for stripping knowledge of its value.

The behavioristic theory portrays thought as a material state that occurs in the body of the thinker due to material causes, just as the state of blood pressure occurs in his body. Because of this, the behavioristic theory strips thought of–its objective value.

However, from the point of view of behaviorism itself, this theory must be nothing other than a specific state that occurs in the very bodies of the advocates of this theory, and does not express anything but this. (p. 162)

Similarly, Freud's theory is a part of his conscious mental life. Thus, if it is correct that consciousness is a distorted expression of the unconscious forces and an inevitable result of the control of those forces over human psychology, then Freud's theory loses its value, since in light of this it is not an instrument for expressing reality. Rather, it is an expression of Freud's appetites and instincts that are hidden in the unconscious.

The same can be said about historical materialism which links the mind to the economic condition, and consequently, makes itself a product of a specific economic condition that Marx lived, and that was reflected in Iris mind as an expression of his demands concerning the notions of historical materialism. Hence, it becomes inevitable that historical materialism changes in accordance with the change of the economic condition.

7. The Theory of Knowledge in our Philosophy

We can infer from the study and criticism of the above doctrines the main points of our own doctrine concerning this subject. These points may be summarized as follows.

First, human knowledge is of two kinds, one of which is conception and the other assent. Conception, including its various forms, has no objective value. This is because it is nothing but the presence of a thing in our intellective faculties. If conception is stripped of all additional elements, it will not demonstrate the objective existence of a thing outside knowledge.

But assent or knowledge of the assent type is the only thing that has the quality of essentially disclosing objective reality. Thus, it is assent that discloses the existence of the objective reality of conception.

Second, all knowledge of the assent type can be attributed to necessary primary knowledge whose necessity cannot be proved and whose truth cannot be demonstrated. However, (p. 163) the mind is conscious of the necessity of accepting it and believing its truth. Examples of such knowledge are the principle of non-contradiction, the principle of causality and the primary mathematical principles. Such principles are the first rational light rays.

By the guidance of these rays, all other knowledge and assents must be made. The more careful the mind is in applying and directing this light, the further away it is from error. It follows that the value of knowledge is dependent on the degree to which knowledge rests on these principles, and the extent to which it draws its conclusions from them.

For this reason, it is possible in light of these principles to acquire true knowledge in metaphysics, mathematics and natural science. This is so, even though the natural sciences differ in one respect: namely, that acquiring natural knowledge by applying the primary principles depends on experimentation, which prepares the conditions of application for human beings. In metaphysics and mathematics, on the other hand, application may not need external experimentation.

This is the reason why the conclusions of metaphysics and mathematics are, for the most part, certain, in contrast to the scientific conclusions in the natural sciences. Since application of the primary principles in the natural sciences requires experimentation that prepares the conditions of application, and since, on the whole, experimentation is deficient and falls short of disclosing all the conditions, the conclusions based on such experimentation, therefore, are not certain.

Let us take heat as an example of this. If we wish to discover the natural cause of heat, we perform a number of scientific experiments, and at the end, we postulate the theory that states that motion is the cause of heat. This natural theory is in fact the result of the application of a number of necessary principles and pieces of knowledge to the empirical data that we collected and studied. That is why this result is correct and certain, inasmuch as it rests on those necessary principles.

To begin with, the natural scientist gathers all the phenomena of heat (the subject under consideration), such as the blood of certain animals, hot iron, burned bodies, and other objects that are among the thousands of hot things. Then he begins to apply to these objects a necessary rational principle – the principle of causality that states that for every event there must be a cause. (p. 164)

By this he knows that there is a specific cause of such phenomena of heat; but even then, this cause is still unknown and fluctuates among a group of things. How then can one determine this cause amid that group of things? At this stage, the natural scientist seeks the aid of one of the necessary rational principles – that is, the principle that states that a thing cannot be separated from its cause.

In light of this principle, he studies that group that includes the real cause of heat. He considers a number of things as improbable, and thus eliminates them from further consideration. Animal blood, for example, cannot be the cause of heat, for there are certain animals which are cold blooded.

If animal blood were the cause of heat, it would not have been possible for heat to be separated from it. But some animals have cold blood. It is clear that considering as improbable that animal blood is the cause [of heat] is nothing but an application of the above–mentioned principle that dictates that a thing cannot separate from its cause.

In this way, the natural scientist studies everything that he believes to be a cause of heat, and proves that it is not a cause by virtue of the judgement of a necessary rational principle. If, by means of his scientific experiments, he can grasp whatever may be a cause of heat and prove that it is not a cause – as he did regarding animal blood – then at the end of the scientific analysis he will grasp the real cause (of course, after eliminating other things from consideration).

At that point, the scientific result becomes a decisive truth because it rests on necessary rational principles. If, on the other hand, two or more things remain at the end and he could not determine the cause in light of the necessary principles, the scientific result in this area will be presumptive.

From this we learn the following:

The necessary rational principles are the general ground of the scientific truths, as was stated at the beginning of this investigation.

The value of scientific theories and results in experimental fields (p. 165) depends on the degree of the precision of those theories and results in applying the necessary principles to the totality of the empirical

data collected. That is why one cannot give a scientific theory with full certainty, unless the experiment covers all the possible objects relevant to the issue under consideration, and is broad and precise enough to make it possible to apply to these possible objects the necessary principles; and consequently, to establish a unified scientific result on the basis of that application.

In non-experimental fields, as in metaphysical issues, the philosophical theory rests on the application of the necessary principles to those fields. However, this kind of application may be made in those fields independently of experimentation.

Thus, concerning the issue of demonstrating [the existence of] the first cause of the world, for example, it is incumbent upon reason to apply its necessary principles to this issue in order to posit its affirmative or negative theory in accordance with these principles. As long as the issue is non-experimental, the application occurs by means of an operation of thinking and a pure rational inference independent of experimentation.

In this, the metaphysical issues differ from natural science with regard to many of their aspects. We say, 'with regard to many of their aspects', because sometimes, drawing a philosophical or a metaphysical conclusion from the necessary principles also depends on experimentation. With this, a philosophical theory has the same value and rank as the value and rank of scientific theories.

Third, we have learned that knowledge of the assent type is that which discloses to us the objectivity of conception and the existence of an objective reality of the concept present in our minds. We also learned that this kind of knowledge is certain inasmuch as it rests on the necessary principles. The new issue is the extent to which the mental concept corresponds to the objective reality whose existence we believe by virtue of this concept – in other words, whether this concept is precise and correct. (p. 166)

The answer to this issue is that the mental concept that we form about a specific objective reality is two-sided. One side is the form of the thing and its specific existence in our mind. Due to this, the thing must be represented in it; otherwise, it would not be a form of that thing.

However, in another respect, it is fundamentally different from the objective reality. The reason for this is that it does not have the properties of the objective reality of that thing, nor does it have the various forms of effectiveness and activities of that reality. The mental concept that we form about matter, the sun or heat cannot, regardless of its precision and detail, perform the same effective role played by the external objective reality of the mental concepts.

With this, we are able to determine the objective side of the idea as well as the subjective side; that is, the side drawn from the objective reality and the side that is attributed to the private mental formation.

Thus, the idea is objective inasmuch as the thing is represented in it mentally. But due to the subjective management, the thing that is represented mentally in the form loses all the effectiveness and activity that it enjoyed in the external world. This difference between the idea and reality is, physically speaking,

the difference between quiddity[28] and existence, as we will see in the second investigation of this work.[29]

8. Developmental Relativism

Now that we have touched upon the various philosophical schools of the theory of knowledge, we come to the role of the dialectic concerning it. Dialectic materialists have attempted to distance their philosophy from skepticism and sophistry.

Hence, they rejected idealism and subjective relativism, as well as the various forms of skepticism and doubt to which a number of doctrines led. They asserted the possibility of knowing the world. Thus, at their hands, the theory of knowledge took the form of philosophical certitude which rests on the principles of the empirical theory and the empirical doctrine.

What then did they rely on for this important project and large philosophical plan? They relied on sense experience for refuting idealism. They also relied on motion for refuting relativism.

A. Sense Experience and Idealism

Engels[30] makes the following statement concerning idealism:
The strongest refutation of this philosophical illusion and of every other philosophical illusion is work, trial, and industry in particular. If we can prove the soundness of our understanding of a certain natural phenomenon, by creating this phenomenon in ourselves and producing it by means of fulfilling its conditions, and further, if we can use it in achieving our ends, then this will be a decisive judgment against the Kantian notion of the thing in itself.[31] (p. 168)

Again, Marx says:
The issue of knowing whether the human mind can grasp an objective reality is not a theoretical, but a practical issue. This is because a human being must establish the evidence for the reality of his mind on the basis of the practical field.[32]

It is clear from these texts that Marxism attempts to demonstrate objective reality by sense experience, and to solve by scientific methods the great basic problem in philosophy, namely, the problem of idealism and realism.

This is one of many facets in which confusion occurs between philosophy and science. Some have attempted to study many of the philosophical issues by means of scientific methods. Similarly, some thinkers studied a number of scientific issues philosophically. Thus, error occurred in both philosophical and scientific issues.

The problem over which idealists and realists quarreled is one in which sense experience cannot have the highest authority, nor the quality of being scientific. This is because the dispute concerning this

problem centers on the issue of the existence of the objective reality of sense experience.

The idealist claims that things do not exist except in our sense perception and empirical knowledge. The realist, on the other hand, asserts an external existence independent of sense perception and experience. It is self-evident that this issue places sense experience itself under examination and testing.

Thus, the realist cannot demonstrate the objectivity of sense experience and sense perception by sense experience and sense perception themselves, nor can he refute idealism (p. 169) by means of them, since[33] they themselves are the subject of disputation and inquiry between the two groups, the idealists and the realists.

Hence, every objective problem can be considered scientific, and can be solved by the experimental scientific methods, only if the validity and objectivity of the scientific experiment has already been admitted.

Thus, one can employ scientific methods in studying and solving the problem of the size of the moon, the distance of the sun from the earth, the structure of the atom, the composition of the plant or the number of simple elements. But if the same experiment is made the subject of investigation, and if the discussion focuses on its objective value, then by virtue of the experiment itself, there would be no room for scientific evidence in this area concerning the validity of the experiment and its objective value.

Therefore, the objectivity of sense perception and experimentation is the foundation on which the structure of all the sciences depends. No scientific study or treatment can take place except on the basis of it. Hence, this foundation must be tackled in a purely philosophical manner, before taking up any scientific truth.

If we study the issue philosophically, we find that the experimental perception is nothing but a form of conception. Thus, regardless of variation in the totality of experiments, nevertheless they provide human beings with different empirical pieces of knowledge. We have already discussed sense perception in our study of idealism. There, we said that as long as sense perception is nothing but conception, it does not prove objective reality and demolish the idealistic notion.

In fact, we must start with the rational doctrine, in order to establish on its basis the realistic notion of sense perception and experimentation. Thus, we must accept that there are necessary principles in the mind that are true. In light of such principles, we demonstrate the objectivity of sense perception and experimentation.

Let us now take as an example of this the principle of causality, which is one of those necessary principles. This principle asserts that for every event there is a cause external to it, and that on (p. 170) the basis of such a cause, we are assured of the existence of the objective reality of the sense perception and ideas that occur in us, for they require a cause from which they can proceed, this cause

being the objective reality.

Thus, by means of the principle of causality, we can prove the objectivity of sense perception or sense experience. Is it possible for Marxism to adopt the same method? Of course not. The reasons are these.

First, it does not accept necessary rational principles. According to it, the principle of causality, for example, is nothing but an empirical principle demonstrated by sense experience. Therefore, it cannot be considered a basis for the validity and objectivity of sense experience.

Second, the dialectic explains the development and events of matter by means of contradictions internal to matter. According to its explanation, natural events do not require an external cause. This point will be studied in full detail in the second investigation.

Thus, if this dialectical explanation is sufficient for justifying the existence of natural events, why then do we go further than this and are required to suppose an external cause and an objective reality for any knowledge that arises in our souls? Indeed, it becomes possible for idealism to assert about the phenomena of knowledge and sense perception exactly the same thing that the dialectic asserts about nature, and to claim further that such phenomena are, in their occurrence and succession, subject to the law of contradiction (*qanun naqd an-naqd*[34]) which attributes change and development to the internal content.

From this we learn that the dialectic does not only veil us from a cause external to nature, but consequently also veils us from this nature itself, as well as from anything external to the world of consciousness and knowledge.[35] (p. 171)

Let us present some of the Marxist texts that had attempted to treat this problem [in a manner] not in accordance with the nature and philosophical character of Marxism.

We quote first from Roger Garaudy:
The sciences teach us that human beings appeared on the face of the earth at a very late stage. The same is true of the mind accompanying them. For us to assert that the mind had existed on earth prior to matter is to assert that such a mind was not the human mind. Idealism in all its forms cannot escape theology.[36]

Again:
The earth had existed even prior to any sensitive being, i.e. prior to any living being. No organic matter could have existed on (p. 172) this planet in the very early stages of the existence of this planet. Inorganic matter, therefore, preceded life which had to grow and develop throughout many thousands of years before the appearance of human beings accompanied by knowledge. Thus, science leads us to ascertain that the world had existed in states in which no form of life or sensibility was possible.[37]

This is how Garaudy considers the scientific truth which asserts the necessary priority of the growth of

inorganic matter over organic matter as evidence for the existence of the objective world. For as long as organic matter is the product of a long development, and one of the late stages of the growth of matter, it is impossible for matter to be created by the human consciousness which, in turn, is posterior to the existence of living organic beings that have a central nervous system. It is as if Garaudy had supposed in advance that idealism admits the existence of organic matter. On this supposition, he based his reasoning.

However, there is no justification for this supposition, for matter in its various kinds and divisions – be they organic or otherwise – is not, according to the idealistic notion, anything but a mental form that we create in our perception and conception. The evidence that Garaudy gives us involves a *petitio principii* (*musadara*)38, and begins with a point that idealism does not admit.

Second, the following is a passage from Lenin:
If we wish to present the issue from the only sound point of view; that is, from the point of view of dialectical materialism, we must ask whether electrons, air, etc., exist outside the human mind, and whether or not they have an objective reality.

The answer to this question (p. 173) must be given by the scientists of natural history whose answer is always unwavering and affirmative, since they do not hesitate to admit the priority of the existence of nature over the existence of human beings [or] over the existence of organic matter.39

In this text, we notice the same sources that Garaudy used, together with high praise for science and a consideration of it as a final determinant of this issue. Since the science of natural history has demonstrated that the existence of the world predates the appearance of consciousness and knowledge, it is incumbent upon the idealists to submit to the scientific truths and to accept them.

However, the science of natural history is only a form of human knowledge. But idealism denies the objective reality of all knowledge, regardless of its form. Science, according to it, is only pure subjective thought. Is science not the result of various experiments, and are not such experiments and sense perceptions the subject of the debate that centers on whether or not they have an objective reality? How then can science have the decisive word concerning this issue?

Third, this is what Georges Politzer says:
No one doubts that the material life of society is independent of human consciousness, for there is none, whether a capitalist or a proletariat, who desires an economic crisis, even though such a crisis occurs unavoidably.40

This is a new style that Marxism adopts in responding to idealism. Thus, in this text, Politzer (p. 174) does not rely on scientific truths. Instead, he bases his evidence on intuitive truths, on the ground that every one of us is aware intuitively that he does not wish many of the events that take place, nor desires their existence. Still, such events occur and exist contrary to one's wishes. Therefore, events and their continuous succession must have an independent objective reality.

However, this new attempt is no closer to success that the previously mentioned attempts. The reason is that the idealistic notion, according to which all things are attributed to conscious ideas and perceptions, does not claim that such conscious ideas and perceptions are the product of people's choice and their free will, nor subject to general laws and principles.

Rather, idealism and realism agree that the world runs in accordance with laws and principles that apply to it and govern it. They differ from each other, however, in the explanation of this world and the consideration of it as subjective [or] as objective.

Once again, the conclusion we assert is that it is not possible to attribute a sound view to the realistic philosophy, and to accept the objectivity (*al-waqi'iyaa*) of sense perception and sense experience, except on the ground of the rational doctrine which asserts the presence of necessary rational principles independent of sense experience. But if we begin the investigation of the issue of idealism and realism with sense experience or sense perception that is the source of conflict between the idealists and realists, we will run in an empty circle from which we will not be able to emerge with a result in favor of philosophical realism.

B. Sense Experience and the Thing in Itself

Marxism opposes some forms of the notion of the thing in itself as presented by Kant. Similarly, it opposes the idealistic conceptual notions. Let us, therefore, examine its method with regard to this matter.

Georges Politzer makes the following statement: (p. 175)
In fact, the dialectic, including the idealistic dialectic of Hegel, asserts that a distinction between the qualities of a thing and the thing in itself is an empty distinction. If we know all the qualities of a certain thing, we also know that thing in itself. [How then could it be]41 that the qualities of that thing are independent of it? It is particularly in this, that the meaning of the materiality of the world is determined.

However, since one knows the qualities of this objective reality, one cannot say of it that it is unknowable. Thus, it is nonsense to say, for example, that your personality is one thing and your qualities and defects are another, and that I know your qualities and defects, but not your personality. This is because the personality is precisely the totality of the defects and qualities.

Similarly, the art of photography is the totality of the acts of taking pictures. It is, therefore, nonsense to say that there are paintings, painters, colors, styles and [painting] schools, [on the one hand], and that there is also photography in itself which is suspended above reality and is unknowable. There are no two divisions to reality. Rather, reality is any unified thing whose various successive facets we discover by application.

The dialectic has taught us that the different qualities of things reveal themselves by means of the internal conflict of opposites, and that it is this conflict that creates change. Thus, the state of fluidity in

itself is precisely the state of relative equilibrium whose internal contradiction is revealed at the point of freezing or boiling.[42]

Concerning this, Lenin says:
There is no basic difference, and there cannot be such a difference between the phenomenon and the thing in itself. Further, there is no difference between what is known and what will be known later. The deeper our knowledge of reality is, the more the thing in itself gradually becomes a thing for us.[43] (p. 176)

In order for us to study Marxism in this text, we must distinguish between two meanings of the notion of separating the thing in itself from the thing for us.

First, since human knowledge depends, according to the experiential or empirical principle, on the senses, and since the senses do not deal with anything except the phenomena of nature, and do not penetrate to [its] heart and essence, human knowledge, therefore, is limited to these phenomena that are accessible to sense experience. Due to this, there is a gap separating the phenomena and the essence. The phenomena are the things for us, since they are the external and knowable aspect of nature. The essence, on the other hand, is the thing in itself to which human knowledge does not penetrate.

Georges Politzer attempts to destroy this duality by eliminating either the matter or the essence from objective reality. He emphasizes that the dialectic does not distinguish between the qualities of the thing and the thing in itself. Instead, it considers the thing as the totality of the qualities and phenomena.

It is clear that this is a kind of idealism Berkeley advocated when protesting against the philosophers' conviction that there is a matter and an essence behind the qualities and phenomena that appear to us in our sense experience. This is the kind of idealism which is made inevitable by the empirical or experiential principle. As long as the senses are the primary foundation of knowledge and do not grasp anything except the phenomena, it is necessary to drop the essence out of consideration. But if the essence is dropped out, there would remain nothing on the scene other than the phenomena and qualities that are knowable.

Second, the phenomena that one can perceive and know are not in our cognitive faculties and senses as they are in their objective reality. The duality here is not between the phenomena and the essence, but between the phenomena as they appear to us and the phenomena as they exist objectively and independently. Can Marxism destroy this kind of duality and prove that the objective reality appears to us in our ideas and sense perceptions as it is in its independent external realm? (p. 177)

Our answer is in the negative, since knowledge, according to the materialistic notion, is purely a physiological act. With respect to this, we must know the kind of relation that exists, according to the materialistic notion – both on the basis of mechanical materialism and dialectical materialism – between knowledge, thought and sense perception and the objective thing.

On the basis of mechanical materialism, the concept or the sense perception is a mechanical reflection in the nervous system of the objective reality, as the reflection of a picture is in a mirror or a lens. Mechanical materialism does not acknowledge that matter involves motion and essential activity. Instead, is explains all phenomena in a mechanical fashion. Due to this, it cannot understand the relations of external matter to the mental activity of the nervous system except in that fixed form of reflection.

At this point, mechanical materialism faces the following two questions:

(1) is there any objective thing in sense perception – that is, anything which is independent of human beings, and which is transferred to the senses from the external reality of matter?

(2) if there is such a thing in sense perception, then how is it transferred from the objective reality to the senses?

Mechanical materialism cannot answer the first question affirmatively. This is because it is affirms the presence of an objective thing in sense perception, then it has to justify the manner in which the objective reality is transferred to the private sense perceptions; that is, it has to answer the second question and explain the process of transference.

But this is something it cannot do. That is why it is necessary to posit the theory of reflection and to explain the relation between the idea and the objective thing as it explains the relation between the picture in a mirror or a lens and the objective reality that is reflected in them. (p. 178)

As for dialectical materialism, which does not allow the separation between matter and motion, and considers as motion the manner in which matter exists, it has attempted to give a new explanation of the relation between the idea and the objective reality on the basis of this (inseparability of matter from motion]. Thus, it claimed that the idea is not a pure mechanical picture of that reality. Rather, reality is transformed iota an idea; for each, the reality and the idea is a specific form of motion.

The qualitative difference among the forms and kinds of motion does not prevent the movement of the transformation from one form to another. Thus, since in the manner of existing objective matter is a specific form of motion, the physical motion of a thing changes into a psychophysiological motion in our senses. The physiological motion changes into a psychological motion of the idea.44 Thus, the position of the mind is not one of negativity, nor is the reflection mechanical, as mechanical materialism asserts.

This attempt on the part of dialectical materialism cannot succeed in revealing the relation between a thing and its idea except as a relation between a cause and its effect or a reality and its reflected picture. The reason is that the transformation of the physical motion of a thing into a physiological motion, and consequently into a psychological motion, is neither a sound notion nor a reasonable explanation of sense perception or thought.

The transformation means the perishing of the first form of the motion and its transmission into a new form, as we say concerning the motion of the hammer over the anvil – namely, that it is transformed into heat. Heat and mechanical motion are two forms of motion.

The force which expresses its existence in a specific form of motion – that is, mechanical motion – is transformed from that form into a new form, heat, in which it expresses itself. Heat retains the same amount of force that had expressed its existence in mechanical motion. This is the exact meaning of the transformation (p. 179) of motion from one form into another.

Let us assume that this is possible. Still, it is not possible to explain sense perception or thought by means of such a process of transformation. The reason is this. The physical motion of the sensible objective reality is not transformed by sense perception into a psychological motion; for transformation means the change of motion from one form to another.

It is clear that the natural or physical motion of sensible matter is not changed thus into a physiological and [then] into an ideational motion. This is because its change in this way means the elimination of the first form of the motion; and consequently, the elimination of the matter which expresses its existence in that particular form.

The objective motion of a sensible thing is not like the motion of the hammer. Again, sense perception is not a transformation of that objective motion (the manner in which matter exists) into a psychological motion, as the motion of the hammer is transformed into heat; otherwise, sense perception would be a process of substituting matter by the idea, as the mechanical motion is substituted by heat.

Because of this, the issue of perception is not one of the transformation of the physical motion into a psychological motion which is nothing in itself other than a transformation of the objective reality into an idea. Rather, for die sensible or perceptible thing, there is an objective reality; and for sense perception, there is another reality in us.

But as long as there are two kinds of existence, a subjective existence of sense perception and thought, and an objective existence of the sensible thing, we cannot understand the relation between these two kinds of existence except as we understand the relation between a cause and an effect, or as we understand the relation between a reality and a picture reflecting that reality.

With this, we clearly encounter the basic issue that concerns us. Since the idea is an effect of the objective thing, and since. the understood relation between both of them is that of causality, why then should we assume that this effect and its cause differ from other effects (p. 180) and their causes, and are distinguished from them by a certain characteristic – namely, that this effect pictures for us its cause and reflects it fully?

There are many physiological functions that are effects of specific external causes. But we have not found any of these effects capable of picturing its cause. Instead, they vaguely indicate that they have

causes external to their sphere. How then can we acknowledge that the idea has more than this vague indication?

Suppose that Marxism succeeds in explaining thought and perception by means of a process of transformation of physical motion into psychological motion. Would this mean that the idea can fully correspond to the objective reality? This explanation makes us view the idea and its external reality as we view heat and the mechanical motion which is transformed into heat. It is clear that the qualitative difference between the two forms of motion in both heat and the mechanical motion makes them non-correspondent to each other. How then can we suppose correspondence between the idea and its objective reality?

The Marxist school appears troubled and confused at encountering this problem. We can draw from a number of various confused texts two pieces of evidence offered by this school concerning the present point. One of these is philosophical evidence, and the other scientific biological evidence.

The philosophical evidence is summed up in the following text:
Thought is capable of full comprehension of nature. This is because it is a part of nature, due to the fact that it is the product of nature and the highest expression of it. Thought is nature conscious of itself in the innermost being of humanity.[45]

Also, Lenin says:
The universe is the motion of matter which is governed by laws. Since our knowledge is nothing other than a superior product of nature, it cannot but reflect (p. 18 1) these laws.[46]
In his book, Anti-Duhring, Engels tried to show the following:

Philosophical materialism is the only thing capable of establishing the value of knowledge on firm principles, since it considers consciousness and thought as two givens. At times, they were opposite nature and existing things. Therefore, this unavoidably leads us to find as very great the full agreement between our consciousness of nature, the thought of existents, and the laws of thought.

But if we inquire about what thought and consciousness are and about their origin, we find that human beings themselves are the product of nature. They grew in a community and with the growth of that community. Because of this, it becomes unnecessary to show how the products of human thought, which in the last analysis are the products of nature, are not in contradiction, but in agreement with the rest of the solid nature.[47]

Thought, in the Marxist view, is a part of nature or a superior product of it. Let us assume that this view is true, [even though] it is not. Is it sufficient for proving the possibility of full knowledge of nature? It is true that if thought is a part of nature and a product of it, then it will indeed represent the laws of nature.

But this does not mean that, by virtue of this, thought becomes a sound knowledge of nature and its laws. Are not the metaphysical thought and the idealistic thought thoughts, and consequently, part of

nature or products of it, according to the claims of materialism? Further, are not all the contents of the physiological processes natural phenomena and products of nature? (p. 182)

The laws of nature, therefore, are represented in the thought of dialectical materialism and operate in accordance with it, as they are represented in the idealistic thought and the metaphysical thought alike. Similarly, they are represented in all the natural processes and phenomena. Why then should the Marxist thought be the sound knowledge of nature, to the exclusion of any other such thoughts, even though all such thoughts are natural products reflecting the laws of nature?

From this we learn that the mere consideration of thought as a natural phenomenon and product is not sufficient for constituting true knowledge of nature. Indeed, the only relation it posits between the idea and its subject is that of causality which is fixed between every effect and its natural cause. Rather, an idea is true knowledge if we accept chat it has the quality of disclosure and picture taking which distinguishes is from everything else.

The biological evidence concerning the correspondence of knowledge or sense perception to objective reality is expounded in the following text:

At the level of sense perception, [an idea] cannot be beneficial biologically in preserving life, except if it reflects objective reality.[48]

Again:
If it were true that sense perception is merely symbolic and has no resemblance to the [actual] thing, and if, consequently, it were possible for numerous different things to correspond, or for illusory and actual things to have exact resemblance to each other, then the biological adaptation to the community would be impossible – if we assume that the senses do not permit the determination of our direction with certitude concerning the position of things and the response to them effectively.

However, all the biological practical activity of human beings and of animals indicates the degrees of the completeness of this awareness.[49] (p. 183)

It is clear that the relativity of sense perception does not mean that numerous different things share in one sensible symbol so that this symbol becomes completely deficient in value, and cannot specify the direction which preserves our lives and determines our stand regarding external things.

Rather, the physiological relativity theory is based on the principle that every kind of sense perception is a symbol pertaining to a specific objective reality that cannot be symbolized by any other kind of sense perception. In light of such symbols, we can determine our stand with regard to things, and respond to them with the effectiveness which is harmonious with the symbol and which the nature of life requires for the symbol.

C. The Dialectical Movement of Thought

Subsequently, Marxism took up the relativity theory of truth. It considered it a kind of sophistry; for, according to this theory, relativity means a change in the truths from a subjective point of view. Marxism asserted relativity in a new form in which it clarified that truths change in accordance with the laws of development and change in the external matter.

Thus, there are no absolute truths in the human mind. Rather, the truths that we know are always only relative. What is at one time true is itself false ac another time. This is something on which both relativism and Marxism agree. Marxism adds that this relativity and this change and development are in fact nothing but a reflection of the change of reality and the development of matter which we represent in the truths of our ideas.

In truth, relativity in itself is an objective relativity, and not a subjective relativity produced by the thinking subject. That is why it does not mean the absence of true human knowledge. Rather, the developing relative reality which reflects nature in its development is the true knowledge according to the dialectical view. Again, we cite a passage from Lenin: (p. 184)

The comprehensive complete flexibility of nations, i.e. the flexibility that extends as far as to represent opposites is the crux of the matter. If such flexibility is used in a subjective manner, it leads to purism (*al-intiqd'iyya*) and sophistry. But the flexibility which is used objectively, i.e. the flexibility that reflects all the aspects of the movement and unity of the material development is the dialectic only which is the proper reflection of the everlasting development of the world (*ad-Dafatir al-Falsafiyya, p.* 84).[50]

He also says:
By our proceeding from the pure relativity theory, we can justify all kinds of sophistry (ibid, p. 328).[51]

Further, Kedrov[52] says:
But there may be a certain subjective tendency, not only when we operate on the basis of the fixed and frozen categories of formal logic, but also when we operate by means of flexible and changing categories. In the former case, we reach metaphysics; while in the latter case, we reach the relativity theory, sophistry and purism.[53]

He adds:
The Marxist dialectical method requires that the reflection of the objective world in the human mind corresponds (p. 185) to the reflected thing, and that is involves nothing foreign to that thing, i.e. nothing which is brought in by the subjectivity. From the point of view of relativism and the flexibility of notions, the subjective interpretation is a completely foreign addition. This is exemplified in the exaggeration of subjective metaphysics concerning the abstract concepts of formal logic.[54]

These texts show that Marxism wished to erect its philosophical certitude on the basis of its attempt to apply the law of the dialectical to reality. If human beings do not possess one absolute truth in the totality

of their ideas, the denial that their ideas have absolute truths is not due to the fact that their ideas are an aggregate of absolute errors which makes sound knowledge completely impossible for them, but to the fact that the truths possessed by the human mind are progressive truths that grow and integrate in accordance with the laws of the dialectic. For this reason, these truths are relative and in continuous development.

Here is another citation from Lenin:
The mind, i.e. the human [mind] must not conceive truth as a mere motionless, faint or dull scene or picture. Knowledge is the infinite endless closeness of the mind to the thing. One must understand the reflection of nature in the human mind not as a motionless static abstract thing free from contradictions, but as an endless process of the development of motion for creating contradictions, and for resolving these contradictions (p. 186) (ibid, p. 167–8).[55]

He continues:
In the theory of knowledge, as in all other areas of knowledge, it is important that thought be dialectical, i.e. that no assumption be made that our consciousness is fixed and resists development.[56]

Kedrov says:
The dialectical method does not encounter this judgment as a complete thing, but as an expression of an idea capable of growth and movement. Regardless of the simplicity of a certain judgment, and regardless of how common that judgment appears to be, it contains the seeds or elements of dialectical contradictions within whose scope, all human knowledge moves and grows.[57]

Kedrov points to a statement in which Lenin determines the style of the dialectical method of thought. This statement is the following:
The dialectical method requires that a thing be taken in its development, growth, and change.[58]

He follows this by saying:
Contrary to the dialectical method, formal logic resorts for solving the problem of truth to solving this problem in the most basic manner; that is, by means of the formula 'yes–no.' It knows in one word and in an absolute fashion the answer to the question: 'Does (p. 187) that phenomenon exist or does it not?'

The answer, for example, is 'yes' to the question: 'Does the sun exist?' And the answer is 'no' to the question: 'Does a square circle exist?' In formal logic, a human being stops at very simple answers, [such as] 'yes' or 'no,' i.e. at a coral distinction between truth and falsity. Due to this, truth is encountered as something given, stable, fixed, final and fully incompatible with falsity.[59]

From these Marxist texts, we draw three views that are closely linked to one another. The first is that truth grows and develops in a way that reflects the growth and development of reality. The second is chat truth and falsity may come together, such chat one idea may be false and crate [at the same time]. There would be no absolute incompatibility between falsity and truth, as formal logic asserts, according to Kedrov. The third is that any judgement, regardless of how clear its truth appears, involves a specific

contradiction; and consequently, an aspect of falsity. It is such a contradiction that makes knowledge and crush grow arid become whole.

But does the truth in the human mind develop and integrate as a truth? Further, is it possible for the truth to come together with falsity? Further still, does every truth involve its contradictory, and grow by virtue of this internal contradiction? This is what we actually wish to find out. (p. 188)

a. The Development and Movement of Truth

To begin with, we must know what is intended by the phrase 'the truth in the human mind' whose growth and integration Marxism asserts. Realism asserts the existence of a reality outside the limits of consciousness and mind, and considers any kind of thinking as an attempt to reflect and know this reality.

Due to this, the truth is the idea that corresponds to and resembles this reality. Falsity, on the other hand, is represented in the idea, opinion or belief that does not correspond to this reality or resemble it. The criterion that distinguishes between the true and the false, and between truth and falsity, is the correspondence of the idea to reality.

Truth, according to this realistic notion, is the subject of the sharp philosophical dispute between the realists on the one hand and the conceptualists and sophists on the other hand. The realists affirm the possibility of such a criterion, while the conceptualists and sophists deny such a possibility, or waver as to whether human beings can attain it.

However, the expression 'truth' has been used in a number of other senses that are completely different from its above-mentioned realistic sense. And thus, this different sense was distanced from the basic area of disputation between the philosophy of certitude and those of skepticism and denial.

The development of subjective relativism was one of the recent developments chat truth underwent. This development sought to posit a new meaning for the expression 'truth'. Thus, it considered truth as nothing but the knowledge that agrees with the nature of the nervous system and the conditions for knowledge in this system.

We have already discussed subjective realism, and have said that to attribute this sense to truth means that truth is no more than a subjective thing. Therefore, it would not be truth, except nominally. That is why, in the sense given by subjective relativism, truth loses its quality as the subject of the philosophical dispute and conflict in philosophy between (p. 189) the tendency of certitude and that of skepticism and denial. Hence, subjective relativism is one of the doctrines of skepticism covered by the veil of truth.

There is another philosophical interpretation of truth. This is the interpretation offered by William James[60] in his new doctrine of human knowledge – that is, pragmatism or the doctrine of instrumentalism.[61] But this interpretation is neither closer to realism nor more distant from the

philosophies of skepticism and denial than the previous interpretation that was attempted by subjective relativism.

The doctrine of pragmatism is summed up in advancing anew criterion for measuring thoughts and for distinguishing between their truth and falsity. This criterion is the capacity of a specific idea to accomplish the goals of a human being in his practical life.

Thus, if opinions are in conflict and opposition, the most real and true among them would be the most beneficial and useful – that is, the opinion whose benefit is demonstrated by practical experience. The ideas that do not achieve a practical value and do not have beneficial effects when encountering life experiences are not at all true. Rather, they must be considered empty expressions carrying no meaning whatsoever.

Thus, according to this doctrine, all truths can be attributed to a higher truth concerning existence, namely, primarily, the preservation of life and then, secondarily, its elevation to perfection. Hence, every idea that can be used as an instrument for reaching this highest truth is clearly proper and a truth that must be accepted. On the other hand, any idea that does not function in this way must not be adopted.

On the basis of this, Bergson62 defined truth as a creation of something new, and not a discovery of something that had already existed.63 Schiller64 defined it as that which serves human beings alone. Dewey65 identified the function of the idea by saying that the idea is an instrument for elevating life, and not a means for knowing things in themselves. (p. 190)

This doctrine involves a clear confusion between the truth itself and the basic goal of attempting to attain the truth. The goal of attaining truths may be to utilize them in the practical field and to be enlightened by them during life experiences. However, this is not the meaning of truth in itself. In what follows, we will sum up our response to the above view of truth.

First, to give truth a pure practical meaning and to strip it of the quality of disclosing what exists and what is prior is an unrestricted admission of philosophical skepticism for whose sake conceptualism and sophistry fight. The mere retention of the expression of truth in another sense is not sufficient for rejecting it or getting rid of it.

Second, it is our right to inquire about this practical benefit that pragmatism considers the criterion of truth and falsity. Is it the benefit of a specific thinking individual, or the benefit of a group? (If the latter) then who is this group, and what are its limits? Does it refer to humankind as a whole, or only in part? None of these assumptions66 gives this new doctrine a reasonable explanation. If the individual benefit is the proper criterion of truth, then truths must differ in accordance with the interests of individuals.

But with this, a frightening social chaos would occur when every individual chooses his own truths, without any attention to the truths of others, which proceed from their own interests. This chaos constitutes a serious harm to all individuals. If, on the other hand, the general human benefit is the

criterion, then this criterion will be dependent on a number of investigations and fields, due to the fact that human interests are often in conflict and at variance.

Indeed, at that point, one cannot determine any truth, regardless of its kind, unless it were subject to long social experience. This means that James himself cannot consider as true his doctrine of pragmatism, unless it has undergone such experience, and has asserted its own worthiness in practical life. Thus, James puts an end to this doctrine itself. (p. 191)

Third, the fact that there is a human benefit in the truth of a certain idea is not sufficient for accepting this idea. The disbeliever cannot accept religion, even if he agrees that it plays an effective role in rectifying mankind, and even if he lives its hopes and consolation in his practical life. George Santayana,67 for example, describes belief as a beautiful mistake, more in harmony with the inclinations of the soul than life itself.

Thus, accepting a certain idea is not the same as the other kinds of practical activity that human beings can perform if assured of their benefit. Thus, pragmatism is based on the undifferentiation between acceptance (a specific mental activity) and the various practical activities that human beings perform in light of their interests and benefits.

We conclude from this study that the only notion of truth that realism can adopt is that it is the idea that corresponds to reality. If Marxism that preaches the possibility of true knowledge and, because of this, rejects the conceptual, skeptical and sophistical tendencies means by 'truth' something other than the realistic sense, then it is not at all incompatible with these tendencies.

For the tendency of skepticism and chat of sophistry reject truth only in the sense of the correspondence of the idea to reality, and do not reject truth in just any sense. Therefore, Marxism cannot be free from the tendencies of skepticism and sophistry, just because it takes the expression of truth and recasts it in a new notion.

For the purpose of truly rejecting those tendencies, Marxism must adopt truth in the realistic sense on which the philosophy of realism rests, if one is to consider Marxism a realistic philosophy that truly upholds the objective value of mind.

If we understand the proper realistic notion of truth, it becomes possible for us to find out whether truth, in this sense on which realism rests, can develop and change through a linear movement, as Marxism primarily taught. (p. 192)

It is impossible that truth develops and grows, while being limited at every stage of its development by the specific limits of every stage. Indeed, the idea, or every idea, must be one of two things: it is either an absolute truth, or it is a falsity.

I know that these words evoke disgust in the Marxists and instigate them to bombard metaphysical

thought with the accusations they have become accustomed to ascribe it. Thus, they say that metaphysical thought freezes nature and considers it a state of fixedness and stability, for metaphysical thought accepts absolute truths and rejects the principle of development and movement in nature. But the principle of absolute truth has completely collapsed due to the discovery of the development and movement of nature.

However, the fact that our dear reader must understand is that acceptance of absolute truths and the rejections of change and movement in nature do not at all mean the freezing of nature, nor do they negate the development and change of objective reality. Our philosophical notions accept development as a general law in the natural world, and its external presence as a continuous state of becoming. But at the same time, we reject all temporality and change of truth.

To clarify this point, let us assume that a certain cause makes heat more intense in a specific water. The temperature of this water is actually in continuous movement and gradual development. This means that every degree of temperature that this water reaches is a temporary degree. In the rise of its temperature, water will bypass this degree to a higher one. In this case, there is no absolute degree of temperature for this water. This is also the case with the objective reality that exists externally.

If we measured its temperature at a certain moment, and found that, when the measurement has been affected by this reality's temperature, the temperature has reached, for example, 90 [degrees centigrade], we would have attained a. truth by means of experimentation. This truth is that the degree of the temperature of water at that specific moment is 90 [degrees centigrade]. We say of it that it is a truth, because it is an idea about whose correspondence to reality –that is, the reality of temperature at a certain moment – we have been assured. It is natural that (p. 198) the temperature of water does not stop at this degree. Rather, it keeps on rising, until it reaches the degree of boiling.

However', the truth that we have attained is the truth unchanged, in the sense that when we notice this particular moment at which we measured the temperature of water, we judge with all certainty that the temperature of water was at 90 [degrees centigrade].

Therefore, even if the 90–degree temperature that water reached is a temporary degree at a specific moment in time, and is quickly superseded by the temperature's rise to a higher degree, still the idea chat we had acquired by means of experimentation – this idea being that temperature at a certain moment was at 90 degrees – is a sound idea and an absolute truth. Because of this, we can always assert its truth.

By 'always assert its truth', we do not mean that the 90–degree [temperature] was always a fixed degree of the temperature of the water. The truth that we have acquired by experimentation does not touch upon the temperature of the water except at a certain moment.

Thus, when we describe it as an absolute, and not as a temporal truth, we intend by this chat temperature at that particular moment has been fully determined at 90 degrees. Thus, even if it were

permissible that the temperature of water reaches, for example, 100 [degrees centigrade] after that moment, still, it is not permissible that what we have known about the degree of temperature at that particular moment be false after it had been true.

If we know that the truth is the idea that corresponds to reality, and learn that if the idea corresponds to reality at a specific circumstance, it cannot after that become contrary to that reality at that specific circumstance; I say that if we know all of this, it becomes clearly evident that it is erroneous to apply the law of movement to truth. This is because movement affirms change in the truth and makes it always relative and restricted to the time of its specific stage of development. But we have learned that truths do not change and are not temporal. Similarly, the development and wholeness of truth mean that by means of movement, the idea becomes more intensely true. (p. 194)

Again, by movement, temperature rises to a higher degree, even though truth differs from temperature. Temperature may become more intense and stronger; but truth, as we have already learned, expresses the idea that corresponds to reality, and it is not possible for the correspondence of the idea really to become more intense and stronger, as is the case with temperature. But it is possible for the human mind to uncover a new side of that reality chat it had not known prior to that time.

However, this is not a development of the truth that had been known in advance. Rather, it is a new truth that the mind adds to the previous truth. Thus, if we know, for example, that Marx was influenced by Hegelian logic, this knowledge would be the first truth we have about the relation of Marx to Hegelian thought. If after that, we study Marx's history and philosophy, we know that he was in opposition to Hegel's idealism.

We also know that he applied his dialectic in a material fashion to history, society and other intellectual relations between their two personalities. All of this is a new knowledge that reveals various aspects of reality, and not a growth or a development of the first truth that we acquired at the beginning.

The enthusiasm of the Marxist school to subjugate truth to the law of movement and development is just to abolish absolute truths which metaphysical philosophy accepts.

However, the Marxist school does not know that it abolishes its own doctrine by the enthusiasm for [upholding] this law. If movement is a general law governing truths, then it is impossible to affirm any absolute truth. Consequently, the law of movement itself would fall short of being an absolute truth.

It is curious that Marxism asserts the movement and change of truth in accordance with the law of the dialectic, and considers this revelation the central point of the Marxist theory of knowledge. It ignores, however, the fact that this revelation itself is one of those truths (p. 195) whose movement and change Marxism accepts.

Thus, if this truth moves and changes in accordance with the dialectical method, as do all other truths, it must, therefore, involve a contradiction that will be dissolved by its development and change, as the

dialectic makes inevitable. If, on the other hand, this crush were absolute and free from movement and change, this would be sufficient for rejecting the application of the dialectical laws and movement to [all] truths and knowledge, and would constitute a proof that truth does not submit to the principles of the dialectical movement.

The dialectic which is intended to govern human truths and knowledge involves a scandalous contradiction and a clear assertion for destroying itself in either case. If it is considered an absolute truth, its own rules would be violated, and it becomes clear that the dialectical movement is not in control of the sphere of truths. If it were in control of this sphere, there would not be a single absolute truth, even if this truth were the dialectic itself. If, on the other hand, it is considered a relative truth subject to development and change, then by virtue of its own internal contradictions, it will change. The dialectical method will disappear and its contradictory will become an established truth.

b. The Union of Truth and Falsity

In the Marxist texts presented above, it was seen that Marxism finds fault with formal logic (as Marxism puts it) for accepting absolute opposition between falsity and truth, even though the two can come together, since falsity and truth are two relative matters and since we do not possess an absolute truth.

The Marxist idea that asserts the union of truth and falsity is based on two ideas. One of them is the Marxist idea of the development and movement of truth. This idea affirms that every truth is in a continuous movement and change.

The other is the Marxist idea of the contradiction of movement. This idea affirms that movement is nothing but a series of (p. 196) contradictions. Thus, the thing that moves at every moment is at a specific point, and not ac that specific point. Due to this, Marxism considers movement as a refutation of the principle of identity.

The result of these two ideas is that truth and falsity unite, and that there is no absolute opposition between them. This is because, since truth is in motion, and since motion means continuous contradiction, truth, therefore, is truth, and it is not so by virtue of its moving contradictories.

We are clear from the above about the extent of the falsity of the first idea of the movement and development of truth. We will discuss the second idea in detail when we take up the dialectic in a complete study of the second issue, the philosophical notion of the world. At that point, the error and ambiguity in the laws of the dialectic in general, and in its application to the idea in particular, will become clearer.

It is evident that the application of the laws of the dialectic of contradictions and development to ideas and truths in the alleged manner leads to the collapse of the secure value of all rational knowledge and judgements, regardless of their clarity and self-evidence. Even the logical judgements or the simple mathematical judgements lose their value, because they submit, by virtue of the contradictions that they

involve according to the dialectical view, to the laws of continuous development and change.

Therefore, one cannot be sure of the truths that we now know, such as 'two plus two equals four', and 'the part is smaller than the whole', [for] they change by virtue of the dialectical contradictions, so that we know them in a different form.[68]

D. Scientific Revisions and Absolute Truths

In criticizing the principle of absolute truth that asserts that absolute truth cannot come together with falsity by way of the revisions made in the scientific theories and laws, Engels tells us:
Let us illustrate this by the well-known Boyle's[69] law which states that the volumes of gases are inversely proportionate to the pressure exerted on them – if the degree of their temperature remains fixed.

Regnault[70] found that this law is not true in certain cases. If Renan were one of the realists, he would have reached the following conclusion: 'Since Boyle's law is susceptible to change, therefore, it is not completely true. This means that it is not (p. 199) at all a truth. Thus, it is a false law.'

If Renan followed this path, he would have committed a greater error than that committed in Boyle's law. The little truth that his criticism of this law involves would have been lost and buried in the midst of the sand of falsity.

In the last analysis, this would have led him to distort the sound truth that he had attained, and to transform it into a conclusion with clear errors, if compared with the conclusion reached by Boyle's law which appears as sound, in spite of the specific errors that attach to it.[71]

This criticism may be summed up in [the statement] that if the metaphysical notion were correct in its assertion that truths are absolute and totally incompatible with falsity, then it would be necessary to reject every scientific law just because it is evident that it is in part not true and inapplicable in some cases.

Thus, according to the metaphysical method of thought, Boyle's law is either an absolute truth or a pure falsity. If in the experimental field, this law is shown to be untrue at times, this necessitates its being an absolute falsity having no truth at all; for truth cannot unite with falsity. Because of this, science loses the aspect of truth of this law.

According to the dialectical method, on the other hand, this relative falsity is not considered a proof that the law must be completely dropped out, but that, at the same time, it is a relative truth. Indeed, truth and falsity unite.

If Engels knew well the metaphysical theory of knowledge, and understood what it intends by 'absolute truth', he would not have criticized it in this way. Truth and falsity do not unite in one truth, neither in

Boyle's law, nor in any other scientific laws.

The truth of Boyle's law is an absolute truth free from falsity, and what is false of this law is completely false. The scientific experiments, (p. 200) which Renan carried out and which showed him that Boyle's law, for example, is not true when the pressure reaches the point at which gases are transformed into fluids, did not convert truth into falsity.

Rather, they divided the law into two parts. They clarified that one of these two parts is a pure falsity. Therefore, the union of falsity and truth is a nominal union and is not a union in the real sense.

Put clearly, every true scientific law involves truths equal to the number of the cases with which it deals and to which it is applicable. If experimentation shows its falsity in some of those cases and its truth in some other cases, this does not mean that truth is relative and that it unites with falsity. What this means is that the content of the law is applicable to reality in some cases, to the exclusion of some other cases. Thus, falsity has its place, and in that place, it is a pure falsity. Truth also has another place, and in that place it is an absolute truth.

Metaphysical thought does not impose on the natural scientist a complete rejection of a law if it is proved that that law is untrue in some cases. The reason is that metaphysical thought considers every case as representing a proposition pertaining to that case. It is not necessary that a proposition that pertains to a specific case be false if the proposition pertaining to another case is false.

Instead of the childish attempts that Engels made to justify relative truth and its union with falsity, he should have learned the difference between simple and composite propositions. He should have learned that a simple proposition is that which cannot be divided into two propositions, as in our statement, 'Plato died before Aristotle,' and that a composite proposition is that which is composed of a number of propositions, as when we say, 'Bodily particles expand by heat'. This statement is an assembly of propositions. We can express it in a number of propositions, thus saying, 'Iron expands by heat,' (p. 201) 'Gold expands by heat' and 'Lead expands by heat'.

Because a simple proposition is a single proposition, it cannot be true in one respect and false in another. Thus, the death of Plato before Aristotle is either true or it is false. But since a composite proposition is the meeting place of a number of propositions, it is, therefore, possible for one aspect of it to be true and for another to be false.

If, for example, we assume that iron expands by heat, but not gold, then the general natural law, i.e. chat bodily particles expand by heat, is considered true in one respect and false in another. But this does not mean that truth and falsity unite, thus rendering the same proposition both true and false. Rather, falsity is in the proposition, for example: 'Iron expands by heat.' Therefore, neither falsity is true nor truth is false.

In returning to the developmental movement of truth and knowledge as a part of the dialectic for whose

study we reserve the second chapter of the following investigation, the philosophical potion of the world, we will discuss the Marxist reasoning and forms of demonstration for the development of truth and knowledge, as well as the extent of its weakness and fallacy.

In particular, we will discuss the Marxist attempt at considering the natural sciences in their remarkable development throughout history, their multiple activities, and their powerful leaps as in agreement with the developmental movement of truth and knowledge, even though the development of the sciences, in the philosophical sense intended by Marxism, has no connection to the development of truth and knowledge throughout the long history of these sciences.

The sciences develop, not in the sense that their truths grow and become whole, but in the sense that their truths are increased and multiplied [in number] and their errors decreased and reduced. The clarification of this matter will be reserved to a future discussion in the second investigation.

The conclusion we draw from this study is the following. (p. 202) First, truth is absolute and unprogressive, even though the objective reality of nature continuously develops and moves. Second, truth is fully incompatible with falsity. A single simple proposition cannot be both true and false.

Third, the application of the dialectic to truth and knowledge imposes on us complete skepticism concerning every truth, as long as truth is in continuous change and development. Indeed, the dialectic also sentences itself to death and change, since it itself is one of those truths that must change in accordance with its specific developmental method.

E. The Marxist Relapse into Subjectivism

Finally, we must point out that in spite of the fact that Marxism insists on rejecting subjective relativism by raising [itself above this form of subjectivism], emphasizing the objective character of its own relativism, and [asserting] that Marxism is a relativism that accompanies the progressive reality and reflects the relativity of this reality.

In spite-of all of this, Marxism once again regresses and falls in the grip of subjective relativism when it links knowledge to the class element and asserts that it is impossible that philosophy, for example, can rid itself of the class and political element. This led Morris Cornforth[72] to say the following: 'Philosophy had always expressed, and cannot but express a class point of view.'[73] Again, Chiang[74] says: 'Lenin has struggled with firmness and determination against the objective tendency in theory.'[75]

It is clear that this Marxist tendency links knowledge to subjectivity. (p. 208) However, this is class subjectivity, and not individual subjectivity, as the subjective relativists had asserted. Consequently, truth becomes the correspondence of the thinker's idea to class interests. This is because no thinker can know reality except from the perspective of these interests. In light of this, no one can secure the truth of any philosophical or scientific idea, in the sense of the correspondence of that idea to objective reality. As long as Marxism upholds the necessity of the class character, it cannot offer us its notion of the

universe and society as an expression corresponding to reality. Rather, all that it can assert is that this notion reflects the aspects of reality that agree with the interests of the working class.76

1. Al-Maddiyya ad-Dialaktikiyya wal-Maddiyya at-Tarikhiyya, p. 17.
2. Ludwig Feuerbach, p. 54
3. Gorgias of Leontini, Greek philosopher, orator and teacher of rhetoric (483-380 B.C.). He was born in Sicily and moved to Greece, and he spent most of his life in Athens. He was known as a leader of sophistry who plays a central role in Plato's dialogue, Gorgias.

In this dialogue the thesis held is that rhetoric is the art of persuasion which results in belief about just and unjust things. His best known work, which is lost, is On Nature or the Non-existent. In it Gorgias argues as follows. (1) Nothing exists. if it does, it must come out of nothing or out of something. It is impossible that something comes out of nothing.

Also, on the basis of Eleatic philosophy, it cannot come out of something else. (2) If anything exists, it cannot be known, since thought and things are different. (3) If anything can be known, it cannot be communicated, since intention and understanding are different.

4. Pyrrho, Greek philosopher (360-270 B.C.). Pyrrho was a skeptic who taught the following. It is impossible to know the nature of anything. Every statement has its contradictory which is equal to it in validity. Since this is so, judgement must be suspended. But since judgement must be suspended, silence must be maintained with regard to all things. This requires that a human being must withdraw into himself and live in serenity.
5. See The Philosophical Works of Descartes, translators Elizabeth S. Haldant and G.R.P. Ross, Cambridge University Press (1967), II, 101.
6. Ibn Sina known to the West as Avicenna (A.D. 980-1037). Even though he excelled .in many areas, such as medicine, astronomy, physics and poetry, he is best known for being one of the most original and important Muslim philosophers.

His early philosophical career is characterized by Aristotelianism, but his later works show a tendency to mysticism. His most important works are: ash-Shifa' (an encyclopedic work covering, among other things, logic, physics and metaphysics), an-Najat (a summary of ash-Shifa'), al-Isharat wat-Tanbihat (a late, and perhaps the latest work Ibn Sina wrote, consisting of four parts: logic, physics, metaphysics and sufism). He also left a number of mystical treatises, such as Hayy Bin Yaqzan and Risalat at-Tayr.

7. Ma Hiya al-Madda, p. 5.
8. The following are two passages that express Berkeley's view that unless a thing is a mind, the only way for it to exist is to be perceived or to be present to a mind. This is the only way, for example, in which sensible things can exist:

Sensible things are all immediately perceivable; and those things which are immediately perceivable are ideas; and these exist only in the mind . . . . unto me it is evident . . . that sensible things cannot exist otherwise than in a mind or spirit.

Whence I conclude, not that they have no real existence, but that seeing they depend not on my thought, and have an existence distinct from being perceived by me, there must be some other mind wherein they exist. As sure, therefore, as the sensible world really exists, so sure is there an infinite, omnipresent spirit who contains and supports it. (Dialogues Dolphin-Doubleday ed., pp. 253-6).

That there is no substance wherein ideas can exist besides spirit, is to me evident. And that the objects immediately perceived are ideas, is on all hands agreed. And that sensible qualifies are objects immediately perceived, no one can deny.

It is therefore, as evident that there can be no substratum of those qualities but spirit, in which they exist, not by way of mode or property, but as a thing perceived in that which perceives it. I deny therefore that there is any unthinking substratum of the objects of sense, and in that acceptation that there is any material substance.

But if by material substance is meant only sensible body, that which is seen and felt (and the unphilosophical part of the world, I dare say, mean no more), then I am more certain of matter's existence than you or any other philosopher, pretend to be. If there be anything which makes the generality of mankind averse from the notions I espouse, it is a misapprehension that I deny the reality of sensible things: But as it is you are guilty of that and not I, it follows, that in truth their aversion is against your notions, and not mine.

I do therefore assert chat I am as certain as of my own being, that there are bodies or corporeal substances (meaning things that I perceive by my senses); and that granting this, the bulk of mankind will take no thought about, nor think themselves considered in the fate of, those unknown natures and philosophical quiddities which some men are so fond of. (Ibid., pp. 280–1)

9. In the technical philosophical sense, the close tie between that which discloses (knowledge) and that which is disclosed by accident (the thing which is external to the sphere of knowledge) is not fixed between the existence of the former and the existence of the latter so that one cannot detach from the other.

Rather, it is between the essential disclosure of knowledge and the accidental disclosedness of the thing that lies outside the limits of knowledge. It is clear that the two necessarily accompany each other and, therefore, cannot detach from each other.

10. Democritus, Greek philosopher c.460–c.362 B.C.). His philosophy is materialistic and atomistic. Atoms are the ultimate elements of all substance. They are indivisible and imperceptible. But although atoms are solid, they are separated by void or empty space.

Therefore, the ultimate principles of reality are atoms and the void. Atoms differ among themselves quantitatively. Their qualitative differences are results of their quantitative differences. The atoms of fire and those of the soul are different from other atoms in being round and small.

The more our souls lose of these aromas, the weaker is our consciousness. Death is the complete absence of such atoms in us. Personal immortality is impossible.

11. Fredric Wilhelm Ostwald, Russian–German physical chemist (1853–1932). His work on catalysts won him the Nobel Prize for chemistry in 1909. Ostwald was one of the founders of the first journal of physical chemistry, and one of the founder of modem physical chemistry. He also started a journal in the philosophy of science.
12. The author does not give any reference for this passage and we have not been able to locate it.
13. Karl Pearson, British scientist and philosopher of science (1857–1936). Science, according to him, is descriptive, and its models are intended to facilitate the correlation of data. His main philosophical works are: The Ethic of Free Thought and The Grammar of Science.
14. Again, the author does not give any reference for this passage, and we have not been able to locate it.
15. Arthur Stanley Eddington, British astronomer and physicist (1882–1944). Eddington showed that the larger the mass of a star, the greater the internal pressure in that star, and the greater the temperature and radiation pressure; hence, the more luminous is that star. This is known as the 'mass luminosity law'. His principal work is The Expanding Universe.
16. No reference is given for this passage.
17. No reference is indicated here either.
18. Ma Hiya al–Mddda, pp. 20–21.
19. Ibid., p. 23.
20. John Dalton, British meteorologist and chemist (1766–1844). His experiments led to the establishment of what came to be called 'Dalton's law of partial pressures'. This law asserts that a component of a mixture of gases exerts the same pressure that it exerts if it occupies by itself the whole volume of the mixture at the same temperature. Also, like Democritus twenty–one centuries earlier, Dalton asserts on the basis of experimentation that all elements are composed of small indivisible atoms and that all the substances around w are composed of combinations of such stoma.

Therefore, changing the combination of atoms in a substance given to a different substance. His principal writings are: Meteorological Observations and Essays and A New System of Chemical Philosophy.

21. The reader must know something about the analysis of knowledge in Kant's view, so that he will be clear about Kant's theory of the value and possibility of knowledge. Kant believes that sense experience takes the empirical subjects in a confused manner. Owing to this, different sense perceptions are produced. The flavor that hits the tongue has no relation to the odor that penetrates the nose, nor to the quick flash of light that affects the retina of the eye, nor again to the sound that strikes the ear.

These different sense perceptions unite in two sense intuitions (text: qalabayn mawjudayn fi al-his bil-fitra [two molds existing in the senses by nature]). These are the intuition of time and that of space. This results in the sense perception or sense knowledge of a specific thing. In its matter, this knowledge is derived from sense experience, and in its form, it is natural and attributable to time and space. Sense perception is a raw material presented, in rum, to the mind, so that out of it rational knowledge may be formed. The mind possesses a number of intuitions similar to the intuitions possessed by the senses. Thus, the mind pours this raw material into its intuitions, and shapes is in accordance with those frames. With this, rational knowledge occurs.

Thus, sensible things are composed of a matter grasped by the senses and a spacio-temporal form produced by the formal sensibility (al-hasasiyya as-suwariyya), i.e., the sensibility which produces the unified form of the various sense perceptions.

Rational things are also composed of a matter which is the phenomena that are woven by the formal sensibility in accordance with the spacio-temporal frame, and a form which is the matrix which produces and unifies those phenomena by means of formal understanding.

22. Sigmund Freud, founder of psychoanalysis (1856-1940). Through a study of the effect of hypnosis on hysteria, he reached his view on psychoanalysis. In 1910, he founded the International Psychoanalytical Association.

His writings are numerous and well known. Among them are the following: The Interpretations of Dream, The Psychopathology of Everyday Life, Introductory Lectures in Psychoanalysis, Humor and Its Relation to the Unconscious, The Ego and the Id, The Problem of Anxiety and The Future of an Illusion.

23. Ivan Petrovich Pavlov, Russian physiologist (1849-1936). He was awarded the Nobel Prize in medicine and physiology in 1904. Pavlov's famous experiment ran as follows. h was observed that a hungry dog salivates any time he is presented with food. This is an unconditioned or natural reflexive act. A bell was made to ring anytime this dog was presented with food.

Eventually, the dog began to salivate whenever the bell rang, even if he did not see the food. This is a conditioned reflexive act. That is, the sound of the bell was associated with the sight of the food, and hence brought about the same response that the sight of the food produced. The result of this experiment was an important contribution to physiological psychology. It led to the theory that much behaviorial development is the result of conditioned reflexive acts.

24. Epicures, Greek philosopher (341-270 B.C.). He was influenced by Democritus, from whom he borrowed the atomistic theory. The permanent subject of change is the atom, which is the smallest observable entity, and which is simple and solid in its nature. The atoms differ only in size and shape. It is the addition or subtraction of atoms that account for the qualitative difference of objects. His main writings are: On Nature and The Cannon.

25. Isaac Newton, English physicist and natural philosopher (1642-1727). Newton and Leibniz are thought to have invented the differential calculus independently. His main writings are the following: Mathematical Principles of Natural Science and Optics.

26. Albert Einstein, German, Swiss and American mathematician and atomic physicist (1879-1955). He received the Nobel Prize in physics in 1921. It is interesting that as a child, Einstein appeared so slow intellectually that there was some fear he might be retarded. He dropped out of high school. And were it not for his competence ac mathematics, he might not have

made it to college, for he was a poor student in most other subjects.

Among Einstein's important contributions is the relativity theory, according to which all motion is relative. He also determined the interrelationship between mass and energy to be as follows: E = mc2 – E being energy, m mass, and c velocity of light. Energy and mass are different aspects of the same reality. Energy is a form of mass, and vice versa. In light of this view, the older theories of the conservation of energy and the conservation of mass could no longer hold. It is this discovery that made it possible to transform huge quantities of mass into energy, and hence, make the atomic bomb.

27. David Ricardo, British economist (1772–1823). Ricardo is known for an abstract and difficult style. He stressed the principle of diminishing returns in connection with the rent of land. His main writings can be found in David Ricardo: Works and Correspondence (11 vols.) ed. Piero Sruffa with the collaboration of M.H. Dobb.
28. Al–mahiyya. The quiddity of a thing is its nature or essence in abstraction.
29. This subjective aspect which the mental concepts involve is, according to us, different from the subjective aspect of which Kant speaks, and which the subjective relativists assert. The subjective element, according to us, is not due to the conceptual aspect of knowledge, as Kent claims, nor to the fact that knowledge is the product of a material interaction. An interaction requires action on both sides. Rather, it is based on the difference between the two kinds of existence, i.e. the mental and the external. Thus, contrary to the view of the relativists, the thing that exists in the mental concept is the same as that which exists outside. However, the kind of existence it has in the concept is different from the kind of existence it has externally.
30. Friedrich Engels, (1820–1895). He was born in Bremen into a wealthy family. In 1844, he met Karl Marx in France. Engels was in agreement with Marx on the materialist theory of history. The two became close friends and collaborated on a number of works, the best–known of which is The Communist Manifesto (1848).
31. Ludwig Feuerbach, p. 54.
32. Ibid., p. 112.
33. Text: ma' anna (even though).
34. Literally, the law of contradicting contradiction. Instead, it should read 'the law of contradicting non–contradiction', since it asserts that contradiction is possible. Thus, it is the contrary of the principle of non–contradiction which asserts the impossibility of contradiction.
35. Engels asserts in the above quoted passage that the creation and development of a phenomenon have objective value, and that in this there is a decisive refutation of the idealistic tendencies.
I think that if this assertion is made by the Marxist school, it would not involve any specific philosophical meaning.

This is in spite of the fact that it is possible for the philosophical researcher to construct out of this a specific evidence that shows that the objective reality rests on the knowledge of the thing in itself (al–'ilm al–huduriyy), due to the fact that the agent is known by means of its effects and by the knowledge of the thing in itself that it creates. The knowledge of a thing in itself is the same as the objective existence of that thing.

A human being, therefore, is in contact with the objective reality of the things that he knows in themselves. Hence, if idealism discounts from objective knowledge knowledge of the form of a thing (al–'ilm al–husuliyy), which does not link us to anything other than our ideas, then knowledge of the thing in itself will be sufficient for realism.

However, this evidence is based on a false notion of knowledge of the thing in itself. The ground for our knowledge of a thing is nothing but the knowledge of the form of that thing. The knowledge of the thing in itself, on the other hand, does not mean anything other than the presence of the real, known object to the knower. For this reason, every human being knows his soul in itself, even though many people deny the existence of the soul. The space designated for this study does not permit elaboration of this point.

36. Ma Hiya al–Madda, p. 32.
37. Ibid., p. 4.
38. A petitio principii is a logical fallacy assuming in the premises the conclusion that must be proved.

39. Ibid., p. 2 1.
40. Al-Maddiyya coal-Mithaliyya ft al-Falsafa, p. 68.
41. Text: ma yabga (it remains that).
42. No reference to this passage is given by the author. It is not clear that it ends here either.
43. Ibid., pp. 108-9.
44. See Ma Hiya al-Mfidda, p. 48.
45. No reference to this passage is given by the author.
46. No reference to this passage is given by the author.
47. Ibid., pp. 46-7.
48. Ma Hiya al-Madda, p. 62.
49. Ibid., p. 36.
50. AI-Mantiq ash-Shakliyy wal Mantiq ad-Dialaktikiyya, pp. 50-1.
51. Ibid., p. 51.
52. Kedrov, Boniface Mikhailovitch, Russian philosopher, chemist and historian of natural science (1903-). His works, especially in the various branches of science, are best known in Russia. Among his most important works are the following: Engels and the Natural Science (1947), The Atomism of Dalton (1949) and Great Discovery (1958).
53. Ibid., p. 50.
54. Ibid., p. 51.
55. Ibid., p. 10.
56. Ibid., p. 11.
57. Ibid., pp. 20-1.
58. No reference to this passage is given by the author.
59. Ibid., p. 14.
60. William James, American philosopher and psychologist, and the brother of Henry James, the novelist (1842-1910). He received an M.D. from Harvard, at which he later taught anatomy, psychology, physiology and philosophy. From Charles Peirce he borrowed and popularized the term 'pragmatism'. According to this doctrine, the meaning and truth of any statement can be reduced to a specific consequence in the future practical life. His best-known works are: The Pins of Psychology, The Will to Believe, The Varieties of Religious Experience, Essays in Radical Empiricism.
61. Pragmatism or the doctrine of instrumentalism is a recent philosophical movement according to which the criterion of the meaning and, according to some, such as William James, the truth of propositions must be interpreted through their consequence.
62. Henri Bergson, French philosopher (1859-1941). He taught that philosophy must mold itself in accordance with the data of experience. We are endowed with intuition and reason. The former perceives the dynamic aspect of things - this is the more basic and real aspect of consciousness - while the latter tends toward their static aspect. These two states of consciousness correspond to two states in the universe. His most important writings are: Matter and Memory, Laughter, Introduction to Metaphysics, Creative Evolution and The Two Sources of Morality
63. Bergson: Hayatuh wa-Falsafatuh: Muntakhabat, Silsilat Zidni 'Ilman, (25), manshurat 'Uwaydat. [No page number is given.]
64. F.C.S. Schiller, English philosopher (1864-1937). According to Schiller, both truth and reality are similar to goodness and beauty in that they are, in part, the result of human intention and desire. Schiller is a strong believer in human freedom and creativity. His best-known works are: The Riddles of the Sphinx, Humanism, Logic for Use, Must Philosophers Disagree? and Our Human Truths.
65. John Dewey, American philosopher (1859-1952). His most important works are: Psychology, Ethics, Reconstruction Philosophy, Human Nature and Conduct, Experience and Nature, The Guest for Certainty, Art as Experience and Experience and Education.
66. That is, no affirmative answer to any of these questions makes sense in the context of the doctrine of pragmatism.
67. George Santayana, Spanish-American philosopher: (1863-1952). He was born in Madrid into a wealthy family, but his education and academic experience was mostly achieved in the United States, at Harvard in particular. His main works are

the following: Sense of Beauty, Life of Reason, Skepticism and Animal Faith and Realms of Beings.
68. Those attempts that are made in the name of knowledge, for the purpose of rejecting rational self-evident propositions, whether mathematical or logical, are curious indeed. This is in spite of the fact that knowledge cannot but rest on such propositions. In what follows, examples of such attempts will be given by Dr Nuri Ja'far. He mentions them in his book, Falsafat al-Tarbiya (Philosophy of Education), p. 66:

In light of what we have mentioned, we can say (p. 197) that all the laws of knowledge are relative. They operate in specific areas, beyond which they do not extend. What we have said is also true of the laws of mathematics and some of their expressions which, at first glance, appear as if they are self-evident matters that do not change by the change of time and space. Thus, for example, the sum of 'two plus two' does not always equal 'four'.

Similarly, for example, if we add two volumes of alcohol to two volumes of water, the result will be less than four mixed volumes. The reason for this is that the parts of one of the two fluids differ from (the parts of) the other fluid in the intensity of solidity. Thus, at the point of mixing, the parts of the fluid that arc more solid, i.e. the part of water, penetrate through the relative gaps that exist among the parts of the alcohol.

The result is similar to the mixture of a quantity of oranges with a quantity of watermelon, where a part of the oranges penetrate through the gaps that exist in the watermelon. Further, the result of the addition of one gallon of water to one gallon of sulphuric acid is a frightening explosion.

If this union occurs with scientific precision and in a manner in which the occurrence of the explosion is avoided, the result will still be less than two gallons of the mixture. However at some other time, two plus two equals two. If, for example, we mix two gases, the temperature of each of which being two degrees centigrade, the degree of the temperature of the mixture remains two.

This text presents us with three mathematical formulae. First, if we add 2 volumes of alcohol to 2 volumes of water, the sum is less than 4 volumes. This formula involves the following fallacy: in fact, we do not add 2 volumes plus 2 volumes; rather, we lose something in the addition. Hence, the loss appears in the result. This is because the volume of the alcohol is not constituted by its parts only.

Instead, it is constituted by its parts and the relative gaps existing among its parts. Thus, if we prepare 2 volumes of alcohol, these 2 volumes will express parts and gaps among those putts, and not parts only. When 2 volumes of water are poured over the alcohol, and the parts of the water penetrate through the relative gaps that exist among the parts of the alcohol thus occupying such gaps – we would then lose these relative gaps that had enjoyed a portion of the volume of the alcohol.

Therefore, we do not add 2 volumes of alcohol to 2 volumes of water. Instead, we add 2 volumes of water plus the parts of 2 volumes of alcohol. As for the relative gaps that were present among such parts, they are eliminated. It becomes clear that if we wish to be careful in positing this mathematical formula, we must say that the addition of 2 complete volumes of water to 2 volumes of alcohol (excluding the gaps that are among its parts) equals 4 volumes (excluding those gaps themselves).

The case of these volumes is not unlike thousands of natural analogies and examples that all people observe in their daily lives. What can we say about a cotton body whose length is t meter and a piece of iron whose length is also 1 meter? If (p. 198) we place one of these two bodies against the other, will the result be the length of 2 meters? Further, if we place some soil whose height is 1 meter against some water with the same height, will the result be double that height? Of course not. Is it permissible to consider this as a proof for rejecting the mathematical axioms?

Second, the addition of 1 gallon of water plus 1 gallon of sulphuric acid does not produce 2 gallons. Rather, it produces a terrifying explosion. This, too, is not incompatible with the mathematical axiom concerning the addition of numbers. The reason is that I plus 1 equals 2 only if neither one of them nor both perish during the addition or mixing; otherwise, there would be no addition in the real sense between 1 plus 1. In this example, the two units – i.e., the 2 gallons – were not

present at the point of completing the process of addition, so that the result would be 2 [gallons].

Third, the addition of two gases, the temperature of each of which is 2 degrees centigrade, produces a mixture with the same degree of temperature, i.e. without multiplication. This is another kind of distortion, for the process added and mixed the two gases, and not the 2 degrees of temperature. The 2 degrees of temperature would have been added, if (each) degree of temperature is doubled in its subject. We have not added one temperature to another temperature to expect a higher degree of temperature. Rather, we have added and mixed something with a certain temperature to something else with a certain temperature.

Thus, it becomes clear that any skepticism or rejection of the necessary rational self-evident propositions is indeed attributed to a kind of fallacy or to the lack of a good understanding of those self-evident propositions. This will become fully clear when we present the Marxist criticism which attempts to refute the principle of non-contradiction

69. Robert Boyle, British physicist and chemist (1627-91). Boyle studied gases and showed that the compressibility and expansibility of air is inversely proportionate to the pressure exerted. This came to be known as 'Boyle's law'. If pressure is increased ten times, for example, the volume of air is decreased ten times. Conversely, if pressure is decreased ten times, the volume expands ten times. His principal work is The Skeptical Chemist.
70. Henri Victor Regnault, French chemist and physicist (1810-78). He is best known for his work on the properties of gases. In 1835, he began a series of studies in organic chemistry on the halogen and other derivatives of unsaturated hydrocarbons. His work in physics was careful and accurate.

He designed standard instruments for a large number of measurements. He made precise determination of the specific heat of many solids, liquids and gases. He studied the expansion of gases by heat, and proved that no two gases have the exact coefficient of expansion, as some had held earlier.

He showed that Boyle's law of elasticity of a perfect gas is only approximately true for real gases. Regnault's hydrometer, an instrument for measuring humidity, was of his own design. His principal work can be found in Memoires de l'Academie de Science, Vols. 21 and 23.

71. Did Duharnak al-Falsafa, p. 153.
72. Text: Kunfurt. However, we assume this is the British professor, Morris Cornforth.
73. Al-Maddiyya ad-Dialaktikiyya, p. 32.
74. Chiang. We are unable to identify this figure.
75. Ar-Ruh al-Hizbiyya fi al-Falsafa wal-'Ulum, p. 70.
76. For clarification, see the book Our Economics, by the author, pp. 93-100.
