Chapter 3

RATIONALISM
Aristotle's Philosophy was in many ways ideally suited as an instrument for a rational formulation of the Christian faith, since he had no competitors of equal intellectual rank, philosophy assumed a predominantly Aristotelian character. The 13th-century philosophical system builders confined themselves to interpreting Aristotle's theories, making them more precise, modifying them whenever it appeared necessary, and utilizing them for the presentation of Christian theology as a rational system. The 14th-century philosophers of the time spoke of themselves as representatives of the *via moderna* (the new way), while regarding the Thomists and other more orthodox Aristotelians of the 13th century as plodding along the *via antiqua* (the old way). The intellectual climate in which the modern thinkers worked was characterized by less interest in, and a certain skepticism about, theologico-philosophical systems of the kind developed, by enthusiasm for logic, by an inclination to nominalists or conceptualists ideas, by an empiricist tendency, and by an interest in mathematics and mathematically formulated philosophy of nature. In many ways they were harbingers of new physics, which was to acquire its experimentally verified and theoretically systematized form in the 17th century.

Reason becomes the authority in science and philosophy. Modern philosophy has retained most of its part upon an individualistic and subjective tendency. The notion begins to prevail that truth is something to be acquired, achieved by free and impractical inquiry. "Modern age" may be noted a freedom of thought marked by a skeptical attitude to accepted "authorities", what may be called ego consciousness as well as by empiricism, materialisms and this worldliness against the medieval submission to authority, scholasticism and otherworldliness. Modern philosophy may be seen primarily in response to challenging new scientific ideas. Most of the great thinkers of modern thought were interested in the practical applications of the results of scientific investigations and look forward with an enthusiastic optimism to coming era of wonderful achievement in mechanical arts, technology, medicine, as well as in the field of political and social life. Modern philosophy is rationalistic in the sense that it makes the human
reason the highest authority in the highest pursuit of knowledge. The rationalists are the intellectual descendents of Plato, Aristotle and the realists among the schoolmen in their general theory of knowledge and empiricists are the continuers of the nominalistic traditions.

Modern philosophy in its beginning, breathes the spirit of modern times. It is independent in search of truth, resembling ancient Greek thought in this respect. It is rationalistic in the sense that it makes the human reason the highest authority in the pursuit of knowledge. It is naturalistic in that it seeks to explain outer and inner nature without supernatural presupposition. The early modern thinkers criticize the Scholastic method, but many of the old conceptions are bodily taken over by them and influence both their problems as well as results.

Rationalism according to A.W. Benn means the hostile criticism of theological dogma, "the mental habit of using reason for the destruction of religious belief." The use of rationalism whether as a war cry or as a term of reproach, is a use belonging to popular philosophy, and cannot be pressed with too much exactness. J.B. Bury defines rationalism as, "the uncompromising freedom by reason of her absolute rights throughout the whole domain of thought is termed rationalism, and the slight stigma which is still to the world reflects the bitterness of the struggle between reason and the forces arrayed against her. The term is lifted to the field of theology, because it was in that field that the self assertion of reason was most violently and pertinaciously opposed."

There can scarcely have been a century or a country in the history of the world where rationalistic thoughts have not prevailed in none man's minds. In the Western world the rationalism enters into a history with the criticism brought by the Ionian philosophers against the popular mythology of Greece. Early Christian apologists attacked paganism or rationalistic grounds. In the development of Christian thought rationalistic contributions have stood sometimes inside it. Rationalism may exhibit fragments of many histories, because some part of the negative criticism in any generation may be the cutting edge of a single positive, brought forward by a rival religion, or by a school of philosophy or sciences, whose own development makes a true history.
"Rationalism" (from Latin ratio "reason") has been used to refer to several different outlooks and movements of ideas. By far the most important of these is philosophical outlook, which stresses the power of apriori reason to grasp the substantial truths about the world, and correspondingly tends to regard the natural sciences as basically apriori enterprise. The philosophy, which falls under this general description have appeared at various times, the spirit of rationalism in this sense, is particularly associated with certain philosophers of the 17th and early 18th centuries.

According to rationalism intellect is an independent source of knowledge, it gives apriori ideas, or us innate and knowledge consists in these innate ideas alone. Self-evident truths are given by our intellect of which mathematics is the best example for e.g., \(2+2=4\), experience does not constitute but serves an occasion for the exercise of intellect, whose innate ideas constitute knowledge, therefore sense experience serves only an opportunity for the play of intellect and its innate ideas. Our intellect is an independent source of knowledge, which supplies us with self-evident innate ideas. Knowledge rationalists' hold is possible only through innate ideas; the knowledge so gained is universal and necessary. But sense-experience is not fully discarded. Sense-experience can clarify but does not constitute knowledge; it illustrates universal truth given by our intellect. Mind by empiricists is considered passive while rationalists hold it to be active Kant transformed the theory of innate ideas into that of apriori truths. Now rationalism does explain universality and necessity involved in knowledge.

Descartes, Spinoza and Leibnitz are the great pioneer thinkers of rationalism. The rationalist tendency which first appeared in Descartes' thought developed in Spinoza's philosophy and reached its zenith in the philosophy of Leibnitz. The various sources of knowledge are complementary and not antagonistic in attempts to discover truth. Montague discusses THE WAYS OF KNOWLEDGE the "federation of methods." He sees them as complementary methods for the discovery of knowledge. He says that empiricists "acquire food of science," while rationalists "digest and assimilate it."

In discussing empiricism and rationalism J.A.Leighton says the sound position may be called rational empiricism or empirical rationalism. In contrast with a priori rationalism it stresses the dependence of all our knowledge on experience. In contrast with sensationalistic empiricism, it insists on the purposive activity of the mind in
knowing and holds the success of this activity implies a vital intercourse between the mind and reality. Such a point of view makes an organic synthesis of the valid claims of both rationalism and empiricism. From this standpoint we explicitly hold that the materials of knowledge come to us in experience, but the material thus given are organized by the activity of reason and the texture of our science. Rationalists hold knowledge as intellectual; the basis of knowledge is intellect. Truths are apriori. True ideas are innate, mind is active. Reason is the testimony of knowledge and the limits of reason are the limits of knowledge.

RATIONALISM

Rene Descartes  
(1596-1650)  

Benedict Spinoza  
(1632-1677)  

Gottfried Wilhelm Leibnitz  
(1646-1716)  

3.1 Rene Descartes (1596-1650)

Descartes has been the real imitator of modern rationalism. He believes in the power of human reason to reach sure and universal knowledge. With the help of self-evident concept and principles, which have their seat in the mind, he undertakes to construct a universal theory as binding on reason as the proposition on geometry. The fundamental aim of Descartes was, to attain philosophical truth by the use of reason. 'I wished to give myself entirely to the search after truth.' Descartes was seeking to develop a system of true propositions, in which nothing would be pre-supposed which was not self-evident and indubitable. There would then be an organic connection between all parts of the system, and the whole edifice would rest on a sure foundation.

Descartes was impressed with science and mathematics, he wanted philosophy to be no less practical and exact, it was this, which led him to adopt a mathematical methodology in his solution of philosophical problems. Descartes by, 'Philosophy means the study of wisdom, and by wisdom we understand not only prudence in affairs but also a perfect knowledge of all things which man can know both for the conduct of his life.
and for the conversation of his health and the invention of all the arts. Descartes not only included metaphysics but also physics or natural philosophy; the three principal ones are medicine, machine and morals. According to Descartes morals means, "the highest and most perfect moral science which, presupposing a complete knowledge of the other sciences, is the last degree of wisdom".

Descartes insisted on the practical value of philosophy. He speaks of 'opening to each the road by which he can find in himself, and without borrowing from any other, the whole knowledge which is essential to him for the direction of his life'. Descartes charged the Aristotelians not only with relying on Aristotle's authority but also with failing to understand him properly and with pretending to find in his writings solutions to problems 'of which he says nothing and of which he possibly had not thought at all'. For Descartes it was only one kind of knowledge worthy of the name, certain knowledge Descartes was determined to attain and work with clear and distinct ideas and not, as he accused the Scholastics of sometimes doing, to use terms without any clear meaning or possibly without any meaning at all. For example, 'when they (the Scholastics) distinguish substance from extension or quantity, either they mean nothing by the word substance or they simply form in their minds a confused idea of incorporeal substance which they falsely attribute to corporeal substance'. For confused ideas Descartes would substitute clear and distinct ideas. When Descartes hoped to get his *Principles of philosophy* adopted as a philosophical textbook by the Jesuits, he diminished to some extent his attacks on the Scholasticism and renounced the frontal attack, which he had threatened; but his point of view remained, that a clear break must be made with the past.

3.1.1 Aim

Descartes wished to find and supply the right method in the search for truth, a method which would enable him to demonstrate truths in a rational and systematic order, irrespective of whether these truths had been previously acknowledged or not. Descartes set himself systematically to doubt all that could possibly be doubted as a preliminary to the establishment of certain knowledge, he did not assume from the outset that none of the propositions which he doubted would turn later to be certainly true. Descartes says.
I argued to myself that there was no possibility in the claim of any private individual to reform a State by altering everything and by overturning it throughout, in order to set it right again. Nor, again, is it probable that the whole body of the sciences, or the order of teaching established by the Schools, should be reformed. But as regards all the opinions which up to this time I had embraced, I thought that I could not do better than endeavour once for all to sweep them completely away, so that they might later on be replaced either by others or by the same when I had made them conform to a rational scheme.

In the above quotation Descartes refers to make truths conform to a rational scheme. His ideal scheme of philosophy was that of an organically connected system of scientifically established truths, of truths so ordered that the mind passes from fundamental self-evident truths to other evident truths applied by the former. This ideal was suggested in large part by mathematics. Both in his Rules and in the Discourse Descartes speaks explicitly about the influence exercised by mathematics on his mind. In his latter work he tells us that in his earlier days he had studied mathematics, geometrical analysis and algebra, that he was impressed by the clarity and certainty of these sciences when compared with other branches of study, and it is necessary to investigate the peculiar characteristics of the mathematical method, which give it its superiority, with a view to applying this method in other branches of science. Descartes thought all sciences taken together 'are identical with human wisdom which always remains one and the same, however applied to different subjects.' Ultimately there is only one science, though it possesses interconnected branches; hence there can be one scientific method. The notion that all sciences are ultimately science or, rather, organically connected branches of one science; which is identified with human wisdom or understanding, constitutes a major assumption, but the full proof of its validity, according to Descartes, cannot be given in advance. By employing the right method in building up a unified body of science, an orderly system of the sciences, capable of indefinite progressive development, we can manifest its validity.

Descartes' theory that all the sciences are ultimately one science and that there is one universal scientific method separates him from the Aristotelians. Aristotelians believed that the different subject-matters of different sciences demand different methods. To illustrate, we cannot apply in ethics the method, which is appropriate in mathematics; for the difference of subject-matter excludes any such assimilation of ethics.
to mathematics. Aristotle, asserted that geometry and arithmetic constitute distinct sciences, but he had denied that geometrical propositions can be proved arithmetically. Descartes attacks this point, he indeed recognized, a distinction between the sciences, which depend entirely on the mind’s cognitive activity, and the arts, which depend on exercise and disposition of the body. But there is one science; and it does not become differentiated into diverse types through differences of subject matter. Descartes turned his back on the Aristotelian and Scholastic idea of different type of sciences, with their different methods of procedure, and substituted instead the idea of one universal science and of one universal method. Therefore, Descartes' ideal aim was to construct this comprehensive scientific philosophy.

3.1.2 Descartes' Method

Descartes' method in general approach and in detail reflects passionate desire for certainty: "I always had an excessive desire to learn to distinguish the true from the false, in order to see clearly in my actions and walk with confidence in this life." This desire was natural in an age that overthrown all the authorities on which, for many centuries, the institutions of West had been grounded. In an age of secure faith, insistence on sharp distinction between philosophy and science had seemed to insure the tenets of religion. In an age of reason, abandonment of the Thomistic notion of a natural theology merely debarred from an effective share in the practical affairs of life. Descartes in his method formulated twenty-one Rules for the Direction of the Mind. The most important of these rules are Rule III, IV, V, VI, VIII.

In rule III Descartes shows us that our intuition springs from the light of reason alone. By deduction, we understand all necessary inference from other facts that are known with certainty. Rule IV shows a need of a method for finding out the truth. In rule V Method consists entirely in the order and disposition of the objects towards which our mental vision must be directed if we would find out any truth. We shall comply with it exactly if we reduce involved and obscure propositions step by step to those that are simpler, and then starting it with intuitive apprehension of all those that are absolutely simple, attempt to ascend to the knowledge of all others by precisely similar steps. Rule VI illustrates to separate out what is quite simple from what is quite complex, and arrange these matters methodically. In rule VIII Descartes shows that if in the matters to be
examined we come to a step in the series of which our understanding is not sufficiently well able to have an intuitive cognitive, we must stop short there. We must make no attempt to examine what follows; thus we shall spare ourselves superfluous labour.

The theory of innate ideas implied by Descartes runs directly counter to the Scholastic age *nihil est in intellectu nisi prae fuerit in sensu*. The key doctrine of unity of the sciences is new, with its consequent denial of the hierarchy of kinds of knowledge and degrees of certainty based on the essential diversity of the objects of knowledge. Descartes rejects the Scholastic doctrine of abstraction, as he rejects the doctrine of matter and form, and of act and potency, whose advocates he describes in the *Regulae* as trying to tie a knot in a bulrush. In the Scholastic doctrine, the *phantasmata* are neither material nor intelligible in their nature; they may said to partake of the dual nature of the substantial unity which is man. Descartes considers that they are genuinely and purely corporeal in nature, while not necessarily linked to any particular corporeal substance. This consequence of the dichotomous distinction between body and soul, assumed in the *Regulae*, has an important effect on his theory of method. In rule XII Descartes says: 'We experience whatever we perceive by sense, whatever we hear by from others, and generally whatever comes to our understanding, either from outside or from its reflection upon itself' The doctrine of method, in the early rule of the *Regulae*, is mainly concerned with the 'pure' use of the *vis cognoscens*, in which alone rule VIII places 'truth or falsity.'

3.1.3 The Method Of Doubt

Descartes begins with a meditation upon the nature and extent of doubt, and finds, soundly enough, that most so-called knowledge rests upon sensuous experience and memory. But it is obvious that the senses sometimes deceive us, and the same is true of memory also. It follows that the eternal skepticism should attach to all knowledge resting upon so doubtful basis. Descartes proceeds to apply the method of doubt by suspending his belief in anything in which he can find, or indeed, imagine, the slightest ground of doubt, in this way he succeeds in suspending the belief in the entire physical universe, including his own body in God; in the past and even in the truths of simple propositions of mathematics. Descartes begins by doubting everything. In the whirlwind of doubt, he found that at least the doubting is real. Therefore, the reality of doubt is the reality of thinking. In philosophy, Descartes held that one must look first for some metaphysical
Descartes undertook to show that there are serious reasons for doubting. Descartes’ doubt was methodological: He undertook simply to suspend his beliefs until he could prove them consciously. As quoted by Descartes:

“As regards all the opinions which up to this time I had embraced, I thought I could not do better than endeavour once for all to sweep them completely away, so that they might later on be replaced, either by others which were better, or by the same, when I had made them conform to the uniformity of the rational scheme.” 18

“[Surely I] cannot reasonably . . . doubt . . . I am here, seated by the fire, attired in a dressing gown, having this paper in my hands and other similar matters. And how can I deny that these hands and this body are mine, . . . At the same time I must remember that I am . . . in the habit of sleeping, and in my dreams representing to myself the same things or sometimes less probable things, than do those who are insane in their waking moments. . . . On . . . reflection I see . . . manifestly that there are no certain indications by which we may clearly distinguish wakefulness from sleep . . . . . . at the same time we are bound to . . . confess that there are at least some other objects yet more simple and more universal, which are real and true . . . .” 19

“[Surely] Arithmetic, Geometry and other sciences of that kind which only treat of things that are very simple and very general, without taking great trouble to ascertain whether they are actually existent or not, contain some measure of certainty and an element of the indubitable . . . Nevertheless I have long had fixed in my mind the belief that an all-powerful God existed by whom I have been created such as I am. But how do I know that He has not brought it to pass that . . . [Moreover, we cannot be certain] that God . . . is supremely good and the fountain of truth . . . ‘I shall consider that the heavens, the earth, the colours, figures, sound, and all other external things [may be] ought but the illusions and dreams of which this genius has availed himself in order to lay traps for my credulity . . . . At the end I feel constrained to confess that there is nothing in all that I formerly believed to be true, of which I cannot in some measure doubt, but for reasons which are very powerful and maturely considered’.” 20

Hence, Descartes found one thing that he certainly and infallibly knew— that he doubted. He says further, that I may doubt that a sheet of paper is now before my eyes; I -
may even doubt that $2+3=5$. But if I try to doubt my own existence, this doubt disproves itself. I must surely exist in order to doubt that I exist.

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Descartes employed methodic doubt with a view to discovering whether there was any indubitable truth and he found this truth in the affirmation *Cogito, ergo sum*, ‘I think, therefore I am.’ However much I doubt, I must exist: otherwise I could not doubt. In the act of doubting my existence is manifest. ‘If I am deceived, I must exist to be deceived if I am dreaming, I must exist to dream.’ This point had been made by St Augustine centuries before. And we might perhaps expect Descartes to follow Augustine in expressing his fundamental existential truth in the form, *Si fallor, sum*, ‘If I am deceived, I exist.’ But doubting is a form of thinking. ‘By the word *thought* I understand that all that of which we are conscious as operating in us.’ And though the absolute certainty of my existence becomes most manifest to me in the act of doubting, Descartes, while drawing his attention to the *Si fallor, sum*, prefers to formulate his truth in the non-hypothetical form, *Cogito, ergo sum*.

This certainty of my own existence obtains only when I am thinking, when I am conscious. ‘I am, I exist, that is certain. But how often? Just when I think, for it might possibly be the case that if I ceased entirely to think, I should likewise cease altogether to exist.’ ‘If I had only ceased from thinking, even if all the rest of what I had ever imagined had really existed, I should have no reason for thinking that I had existed.’ From the fact that I exist when I think and while I think, I cannot conclude without more ordo that I exist when I am not thinking. ‘I am, I exist, is necessarily true each time that I pronounce it or that I mentally conceive it.’ Descartes speaks of the proposition ‘*I think, therefore I am*’. Descartes had already said that ‘each individual can mentally have an intuition of the fact that he exists and that he thinks.’ The question arises, therefore, whether according to Descartes I intuit or infer my existence. The answer follows is, ‘He who says, *I think, hence I am or exist*, does not deduce existence from thought by a syllogism, but by a simple act of mental vision, he recognizes it as if it were a thing which is known through itself (per se) This is evident from the fact that if it were deduced syllogistically, that major premise, that everything which thinks is or exists, would have to be known previously; but it has been learned rather from the individual’s experience- that unless he exists he cannot think. For our mind so constituted by nature that general propositions are formed out of the knowledge of particulars. In the *principles of philosophy*
Descartes says that ‘I did not deny that we must first of all know what is knowledge, what is existence, what is certainty and that in order to think we must be, and such like.’ While admitting to Burman Descartes had said in the Principles he explains that the priority of the major premises, ‘whatever thinks, is’, is implicit, not explicit. ‘For I attend only to what I experience within myself, namely, namely, I think, therefore I am, and I do not give attention to that general notion, whatever thinks, is.’ Descartes may not express himself either with perfect clarity or with perfect consistency. But his general proposition is this. I intuit in my own case the necessary connection between thinking and my existing. That is to say, I intuit in a concrete case the impossibility of my thinking without my existing. And I express this intuition in the proposition Cogito, ergo sum. Logically speaking, this proposition presupposes a general premiss. But this does not mean that I first think of a general premiss and then draw a particular conclusion. On the contrary, my explicit knowledge of the general premiss follows my intuition of the objective and necessary connection between my thinking and my existing.

Hence, we can say that it is concomitant with the intuition, in the sense that it is discovered as latent in or intrinsically implied by the intuition. Whatever, however, is meant by ‘think’ in the proposition Cogito, ergo sum? ‘By the word I thought I understand all that of which we are conscious as operating in us. And that is why not only understanding, willing, and imagining but also feeling are here the same thing as thought.’ The Cogito, ergo sum is therefore the indubitable truth on which Descartes proposes to found his philosophy. ‘I came to the conclusion that I could accept it without scruple as the first principle of the philosophy for which I was seeking. This is the conclusion, I think, therefore I am, is the first and the most certain of all which occur to one who philosophizes in an orderly way.’ Descartes is concerned with the existing reality, and his primary principle is an existential proposition.

We have to remember that when Descartes says that this proposition is the first and most certain, he is thinking of the ordo cognoscendi. This is why he says that it is the first and most certain of all which occur to a man who philosophizes in an orderly way. He does not mean to imply, for example, that our existence is more firmly grounded than God’s existence as far as the ordo essendi is concerned. He means simply that in the ordo cognoscendi or ordo invendi the Cogito, ergo sum is fundamental since it cannot be doubted. It is obviously possible to doubt whether God exists; for there are in fact
people who doubt this. But it is not possible to doubt my own existence, since the proposition ‘I doubt whether I exist’ is self-contradictory. I could not doubt unless I existed, at any rate during the period of doubt. I can, of course, utter the words, ‘I doubt whether I exist’. But in uttering them I cannot help affirming my own existence. This was Descartes’ main point.

Descartes claims to have derived two central and closely related doctrines from the cogito:

1. “I” whose existence he has proved is a substance whose whole existence is to think.

2. This substance is “really distinct from” any physical body that he has. The real distinction between mind and body is regarded by Descartes as one of the two central doctrines of Meditation.

3.1.5 Descartes’ Conception Of Substance

Descartes defined substance as ‘an existent thing which requires nothing but itself in order to exist.’ In strict and literal sense this definition applies to God alone. ‘To speak truth, nothing but God answers to this description, as being that which is absolutely self-sustaining; for we perceive that there is no created thing which can exist without being sustained by His power.’ To Descartes it never occurred to subject the concept of substance to criticism in accordance with his program of systematic doubt, even though he was prepared to doubt the existence of things that are “observed by us.” Like Bacon, Descartes illustrates both the characteristic desire of the new age to make an absolutely fresh start and the difficulty—not to say the impossibility—of managing to do so. Hobbes was more critical of the notion of the substance:

"Do you understand the connection of substance and incorporeal? If you do, explain it in English; for the words are Latin. It is something you will say, that being without body, stands under-. Stands under what? . . . . . . . . Substance and body signify the same thing; and therefore substance incorporeal are words, which when they are joined together, destroy one another, as of a man should say, an incorporeal body.”

The Hobbesian skepticism about substance was congenial to the empirical criterion of meaning that gradually developed in England. As a result, the whole concept
of substance, corporeal and incorporeal, came under there. In England wherever the ideas of British empiricism did not penetrate, substance for a long time remained a prime metaphysical category. Indeed, the substantival way of thinking is still deeply embedded in Western culture, and many of the traditional values of the West have remained bound up with substance.

Descartes did not draw the Spinozistic conclusion that there is only one substance, God, and all creatures are simply modifications of this one substance. He concluded instead the word 'substance' cannot be predicated in a univocal sense of God and of other beings. He thus proceeds in the opposite way, so to speak, to that in which the Scholastics proceeded. For while the latter applied the word 'substance' first to natural things, the objects of experience, and then in an analogical sense to God, Descartes applies the word primarily to God and then secondarily, and analogically, to creatures. This procedure is in accordance with his professed intention of going from cause to effect rather than the other way round. If we leave God out of account and think only of substance in its application to creatures, we can say that there are two kinds of substances and that the word is predicated in a univocal sense of these two classes of things. 'Created substances, however, whether corporeal or thinking, may be conceived under this common concept, for they are things which need only the concurrence of God in order to exist.'

3.1.5.1 Attributes

What we perceive are not substances as such but rather attributes of substances. As much as these attributes are rooted in different substances and manifest the latter, they give us knowledge of substances. All attributes are not on an equal footing, 'there is always one principal property of substance which constitutes its nature and essence, and on which all the others depend.' Descartes went on to assign to each kind of substance a principal attribute which he proceeded to identify to all intents and purposes with the substance itself. Descartes principal attribute of spiritual substance is thinking. Descartes tells Arnauld that ‘I have no doubt that the mind begins to think at the same time that it is infused into the body of an infant, and that it is at the same time conscious of its own thought, though afterwards it does not remember it; because the specific forms of these thoughts do not live in the memory’. He again asks Gassendi: ‘But why should it (the soul or mind) not always think, when it is a thinking substance/
Why is it strange that we do not remember the thoughts it has had when in the womb or in the stupor, when we do not even remember most of those which we know we have had when grown up, in good health, and aware? If the essence of the soul is to think, it must obviously either always think, even when at first sight it does not do so, or cease to exist when not thinking. But then, what is the principal attribute of corporeal substances? It must be extension. We cannot conceive figure or action, for example, without extension; but we can conceive extension without figure or action. ‘Thus extension is length, breadth and depth constitutes the nature of corporeal substance, considered apart from the motion and energy’.

These principal attributes are inseparable from the substances of which they are attributes. There are also modifications, which are separable, not in the sense that they can exist apart from the substances of which they are modifications, but in the sense that the substance can exist without those particular modifications.

3.1.5.2 Mode

Though thinking is essential to the mind, the mind has different thoughts successively. Though a thought cannot exist apart from the mind, the latter cannot exist without this or that particular thought. Similarly, though extension is essential to corporeal substance, a particular quantity or shape is not. The size and figure of a body can vary. These variable modifications of the attributes of thought and extension by Descartes are called ‘modes’. He does not say that ‘when we here speak of modes we mean nothing more than what are elsewhere termed as attributes or qualities,’ Descartes proceeds to distinguish his uses of these terms and adds that because in God there is no change we should not describe to Him modes or qualities but only attributes. When we consider thought and extension as ‘modes’. Of substances we are thinking of them as modifiable in diverse ways. In particular, therefore, the word ‘mode’ should be restricted to the variable modifications of created substance.

3.1.6 Mind And Body

The human being consists of two separate substances, and the relation of mind to body is analogous to that of the pilot in the ship. In Scholastic Aristotelianism the human
being was depicted as a unity, soul standing to body as form matter. The soul was regarded as the principle of biological, sensitive and intellectual life. Thomism was depicted, as giving existence to the body, in the sense of making the body what it is, a human body. Clearly, this view of the soul facilitated insistence on the unity of the human being. Soul and body together form one complete substance. For Descartes it would be difficult to maintain that there is any intrinsic relationship between the two factors. In the sixth Meditation Descartes stated that the self is not lodged in the body as a pilot in a ship. He says there must be some truth in all things which nature teaches. Matter and mind are different substances and sense perception can be explained only by their presupposing interaction. Descartes's matter/mind dualism has implications for our understanding of perception.

Descartes says if soul and body are said to be incomplete substances because they cannot exist by themselves... I confess that it seems to me to be a contradiction for them to be substances... Taken alone they are complete (substances) And I know that thinking substance is a complete thing no less than that which is extended. Here Descartes says that soul and body are complete substances, underlining the direction between them. At the same time 'it is true that in another sense they can be called incomplete substances; that is, in a sense which allows that in so far as they are substances they have no lack of completeness, which merely asserts that in so far as they are referred to some other substance, in unison with which they form a single self-subsistent thing... Mind and body are incomplete substances viewed in relation to the man who is the unity which they form together.'

3.1.7 Interaction

The combination of two lines of thought, the distinction between soul and body and that of accepting and trying to explain interaction and the total unity of man is reflected in Descartes' thought. Descartes was aware of empirical data, which militate against the truth of the conclusion. He was aware; that the bodies by the soul influences the soul and that they must in some sense constitute a unity. He tried to ascertain the point of interaction. But how is it possible, within the framework of Descartes's thought, to account for the alleged fact of interaction on which his procedure has rested? If mind and body are two different substances that the Cartesian compromise required them to be, how can they interact in sense perception and emotion?
In order to understand all these things more perfectly we must know that the soul is really joined to the whole body, and that we cannot, properly speaking, say that it exists in any one of its parts to the exclusion of the others, because it is one and in some manner indivisible. (But) it is likewise necessary to know that although the soul is joined to the whole body, there is yet a certain part in which it exercises its functions more particularly than in all the others; and it is usually believed that this part is the brain, or possibly the heart. But, in examining the matter with care, it seems as though I have clearly ascertained that the part of the body in which the soul exercises its functions immediately is in no way the heart, nor the whole of the brain, but merely the most inward of all its parts, to wit, a certain very small gland which is situated in the middle of its substance and which is so suspended above the duct whereby the animal spirits in its anterior cavities have communication with those in the posterior that the slightest movements which take place in it alter very greatly the course of these spirits; and reciprocally that the smallest changes which occur in the course of the spirits may do much to change the movement of this gland.

Hence, according to Descartes, interaction occurs in the pineal gland, which is located between the two hemispheres of the brain. Localization of the point of interaction does not, indeed, solve the problems arising in connection with the relationship between an immaterial soul and a material body; and from one point of view it seems to underline the distinction between soul and the body. However, it is clear that Descartes had no intention of denying interaction.

3.1.8 Innate Ideas

The doctrine of innate ideas would be literally the doctrine that some of our ideas are inborn with them and have them at the moment that we are born. The alternative to this would be the doctrine that all our ideas are acquired from birth onwards. The rationalist doctrine of innate ideas is the doctrine that these ideas are not merely innate and contributed by the mind, but are ideas contributed by the mind distinguished as the reason for understanding. It is sometimes claimed that only some of our ideas are innate, and sometimes that all our ideas are innate. As long as ideas are regarded as the mental links between minds and their world, it is necessary to distinguish between:

(1) The cause of the truth of the idea.
(2) The cause of anyone’s having the idea at all.
(3) The cause of someone’s having the idea now.
According to the doctrine that ideas represent things, the cause of the truth of an idea will always be something real, non-ideal thing to which the idea corresponds. According to Descartes even if an idea is clear and distinct, we can affirm its existence but cannot trace out its "connection" with ideas. However, without any connection between ideas there can be no real knowledge.

Descartes's matter/mind dualism has implications of our understanding of perception. Seeing something will now have to be construed as a case of the substance, mind, being causally affected by the substance matter. An effect is produced in a mental thing by a material thing. But what are these effects, required by the theory, to be called? In his *Rules for the Direction of the Mind* Descartes lists various suppositions about perception. There is a soft part of the brain which, like a piece of wax, receives shapes or forms from the external senses. Descartes calls this soft part of brain 'the fancy or imagination' and the forms or shapes impressed on it he calls 'ideas', in keeping with an old use of the word "idea" to mean something like a shape. Descartes further proceeds to use the same word, 'idea', for the effect in the mind, Thomas Reid was later to suggest that he did this because of 'analogical reasoning from a supposed similitude of mind to body', but it seems more likely that it was because he held a very strange theory to the effect that imagining something involves the mind applying itself to physical image in the brain.

Descartes recognizes how confusing it is to have both a shape or form impressed on the brain, and something in the mind, called by the same name, 'idea', and decides to refuse the title of 'ideas' to impressions on the brain. Descartes sometimes calls the 'ideas' which are effects in the mind 'images' to distinguish them from a different category of 'ideas'. In the *Meditations* Descartes says that, 'of my thoughts some are, so to speak, images of the things, and to these alone are the title "idea" properly applied. Ideas in the extended sense are 'ideas of common notions'. Common notions, for example, the notion that 'that which can effect what is greater or more difficult, can also accomplish what is less.'

In his example Descartes takes a piece of wax from the honey comb, certain things are apparent for example; the taste of honey, smell of flowers, things that have certain colour, size shape, it is hard and cold, if struck emits sound, but when put near fire these qualities change, although wax persists; so we can see that we observed with our
senses was all apparent to the senses and whatever appeared to the senses was not wax itself. The wax itself cannot be sensible, since in all the appearance of the work to the vicious senses it is involved equally. Here the perception of the wax is an inspection of mind and not a vision, touch or imagination. Knowledge of external things must be by the mind, not by the senses, for knowledge by sense is confused. This leads us to a consideration of different kinds of ideas.

In the idea of a “triangle” the cause of my thinking about it at this moment may be some sense perception, for example, a figure drawn on a blackboard. Descartes held, that this sense perception cannot be the cause of the truth of my idea, for the interior angles of the drawn figure do not exactly equal to $180^\circ$. Nor can the sense perception be the cause of my thinking of “triangle” in the first place for I could not identify the drawn figure as a triangle unless I was already acquainted with the idea “triangle”. From where does the idea of a “triangle” do I obtain? According to Descartes God has implanted it in me. I can be sure that a beneficent God would not let me be deceived about anything whose nature I understand so clearly and distinctly. Since, Descartes in his new account of the new method, was not thinking in terms of metaphysically distinct substances, he assumed that the mind is immediately in the presence of its real and rational object. Hence, the complication that has arisen in Descartes’ theory of knowledge was a result of dual substance theory.

Descartes supposes at one point that some of our ideas draw their origin from the senses, and should be placed in the class of adventitious ideas; but further thought convinces him. In the Notes Against a programme, Descartes asserts that: “No ideas of things, in the shape in which we envisage them by thought, are presented to us by the senses . . . . in our ideas there is nothing which was not innate in the mind, or faculty of thinking, accept only these circumstances which point to experience. . . nothing reaches our mind from external objects through the organs of sense beyond certain corporeal movements . . . . but even these movements . . . . are not conceived by us in the shape they assume in the organs of senses . . . . Hence it follows that the ideas of the movement and figures are themselves innate in us. So much the more must the ideas of pain, colour, sound, and the like be innate . . . . for they have no likeness to the corporeal movements”50 Hence, if the ideas of secondary qualities are innate, they can hardly be at the same time adventitious. Corporeal movements stimulate the senses, and on the occasion of these movements the mind produces its ideas of colour and so on. In this sense they are innate.
Indeed, in the *Notes Against a Programme* Descartes says that all ideas are innate, even the ideas of corporeal movements themselves; for we conceive them in the precise form in which they exist. Therefore, we must distinguish between the corporeal movements and the ideas of them, which we form on the occasion of our being stimulated by them. This theory implies a representative theory of perception. What is perceived is in the mind, though it represents what is outside the mind. This theory gives rise to obvious problems. But, quite apart from this point, the distinction between innate, adventitious and factitious ideas appears to break down if it turns out that all ideas are innate. It appears that Descartes first intended to restrict innate ideas to clear and distinct ideas, distinguishing them from confused and adventitious ideas, but later on he came to think that all ideas are innate, in which case, of course, not all innate ideas are clear and distinct. There is evidently a link between these different ways of speaking in which he speaks about the relation between soul and body. For if there can be real relations of efficient causality between body and mind, there can be adventitious ideas whereas on an occasionalistic hypothesis all ideas must be innate, in Descartes' sense of the word 'innate'.

When Descartes recalled the dual-substance theory, he saw that the mind knows only its own states and that there is nothing about any of these states to guarantee that it represents its object adequately. This problem did not arise, in connection with the ideas of colours, sounds and odors, for these do not represent the real world adequately, according to Descartes. But Descartes's whole position depended on the assertion that our ideas of simple natures (for example, of mathematical entities) are adequate; and he could make sure of their adequacy only by claiming that our ideas of simple natures have been implanted in us by God, that is, they are innate.

Hence, all the complications radically reflect a new orientation in philosophy. The distinctions that had characterized earlier philosophical thinking, such as those between form and matter and between universal and particular, had been distinctions between classes of the mind's of object. Plato and Aristotle had held that what the mind knows is reality itself, whether this was understood to be a "form" or an "essence" or whatever. In this Aristotle was as much realist as Plato: even though he did not agree that the universals are separate from the particulars, even though he held that they had to be known in and through the particulars, he still held that what the mind knows is the
universal itself; it is not an idea of the universal. When we consider Descartes’ doctrine of innate ideas and Plato’s doctrine of reminiscence, there are obvious similarities. But whereas Plato could hold that the forms are present in our minds and sense perception reminds us of them, Descartes had to hold that sense perception only reminds us of our ideas of mathematical entities and other simple natures. Further, these ideas require authentication by an omnipotent, all-good power. And if the ideas of simple natures are implanted by God, we do not need sense perception even as a “reminder” of the simple entities. Hence Descartes minimized the role of sense perception even more than Plato did. This caused Descartes to oversimplify the method of modern science; and it also brought him into conflict with Church doctrine.

Thomas, following Aristotle’s lead, had held that all our knowledge, even the knowledge of most generic universals, is “collected” by the mind from the particulars of sense. From Thomism point of view Descartes was guilty of the sin of intellectual pride in attributing to man a knowledge of the kind that can be had only by angels, who are unlimited by “body.” It would seem that Church was right to suspect this position; for the 18th century rationalists, who had agreed with Descartes that the human mind has direct access to an absolute and eternal truth, rejected the Church’s claim to be the sole channel by which God communicates his massage to man. These rationalists were like the medieval mystics in this respect, though they held that the proper method for approaching God was, not prayer and ascetic discipline, but “reason.”

3.1.9 Major Problem

The major problem that Descartes faced was not how to explain interaction; it was how to save the Cartesian compromise. For Interaction, if it were a fact brought the mind back into the mechanistic world of nature and so seemed to subject it to the fate that Hobbes had foreseen. As long as it was possible to forget, about interaction, the Cartesian compromise had a specious plausibility. According to the dual-substance theory minds are completely free and spontaneous. Since they are unextended, the laws of motion does not apply to them. Since mind and body are absolutely distinct, and since the truths about each follows from the distinct nature of each, the since of minds and science of bodies cannot conflict. Body is body and mind is mind, and never the twain shall meet. But for Descartes they meet at least at one point in man. A man’s mind acts on his body and his
body acts on mind. But the assertion that a completely free mind produces a change in its body is ultimately fatal for Descartes. For example I will to move my finger, and it moves. Did my will freely move it? If so, my soul has disrupted the mechanical sequence of causes in the material universe. Did my will not move it? Then the causality of will (except perhaps in the internal world of mind) is an illusion, and man is as much a machine as is an animal—doubtless a more complicated machine, but still a machine.

Thus the substantial dualism that was intended to segregate mind from the body fails to prevent a conflict between the presuppositions of the theologians and the presuppositions of the physicists. For example if the soul is an immaterial spontaneous cause, then, in so far as it brings about changes in the body, and through its body in the other Galilean bodies out there, the behaviour of the material universe is not determined by antecedent events in time. On the other hand, if the material universe is completely deterministic system that the new science seems to require it to be, man must be (as Hobbes held) only so much more matter as in motion, and his free will is an illusion. If the theologians are correct, physics is not a universal and necessary science of bodies; if the physicists are correct, man is a machine, the soul is not immortal, and God is merely a local condition in a part of the plenum. The same difficulty arises with respect to thought. Descartes was willing to allow that “passion” is entangled in the material universe because he believed that he could exempt “will” from his involvement, so he was willing to allow that perception was entangled in the material universe because he believed that he could reverse the thought as a pure activity of soul, uncontaminated by interaction with body. Something presumably occurred Descartes’ cortex when he was intuiting his timeless essences and simple natures; hence his thought was not a pure spiritual act. If we shut up thought in mind, how does it come to know reality? If we let it loose in the world, how does it preserve its virginity? If the world were what Descartes’ thought reported it to be, the thought that knew this could not be the kind activity that Descartes took it to be.

In view of this unsatisfactory position of uneasy balance it is understandable that Cartesian maintained a theory of occasionalism according to which there is no real causal interaction between soul and body. On the occasion of act of my will, for example, God moves the arm, Descartes had himself given grounds for the development of such a theory. He speaks of external objects transmitting to the mind through the organs of sense, not ideas themselves, but ‘something which gave the mind occasion to form these
ideas, by means of an innate faculty, at this time rather than at another. A passage like this inevitably suggests the picture of two series of events, ideas in the mental series and movements in the corporeal series, the latter being the occasion on which the former are produced by the mind itself. Descartes stressed the constant conserving activity of God in the world, this conservation being interpreted as an ever-renewed creation; one might draw the conclusion that God is the only direct causal agent. Descartes maintained that interaction takes place, but his treatment of the subject understandably led to the assertion of an occasionalist theory, offered partly as an explanation of what ‘interaction’ really means, by those who maintained Descartes’ general position with regard to the nature and status of mind.

3.1.9.1 Evaluation

Descartes’s philosophy compromises two dualisms. There is the dualism of two types of substance, matter and mind; and there is even the dualism of two kinds of ideas. There are what may be called ‘image-ideas’ and ‘proposition-ideas’. As if it were not enough that he should have reversed the Aristotelian position on the philosophy of science by elevating efficient over final causes, Descartes reverses the Platonic position on the relation of the intelligible to the sensible by making image-ideas and ideas in the strict sense, and proposition-ideas in an extended sense. Sensible colour would be an idea in the strict sense for Descartes, but the notion that ‘shape is that in which a solid terminates’, or that a circle is ‘the thing which has everywhere equal distances between its extremities and its centre’, would be an idea only in the extended sense. There are four problems relevant to the history of ‘ideas’:

1. The problem of the difference between shapes or forms impressed on the brain and the ideas in the mind.
2. The problem of the relation of proposition-ideas to image-ideas.
3. The problem of how do we know the ‘external’ world exists.
4. The problem of ‘ideas’, which are neither image-ideas nor proposition-ideas.

Descartes answer to the question: are images-ideas presented to us by the sense, or innate, the impression on the brain being merely the occasion for us to form them by means of an innate faculty, is that ‘nothing reaches our mind from external objects through the organs of sense beyond certain corporeal movements... but even these
movements, and the figures which arise from them, are not conceived by us in the shape they assume in the organs of sense', from which 'it follows that the ideas of the movements and figures are themselves innate in us'. Descartes continues 'so much the more must the ideas of pain, colour, sound, and the like be innate . . . . for they have no likeness to the corporeal movements'. Descartes then abruptly switches from image-ideas to proposition-ideas, and writes:

"Could anything be imagined more preposterous than that all common notions which are inherent in our mind should arise from these movements, and should be incapable of existing without them? I should like our friend [Regius] to instruct me as to what corporeal movement it is which can form in our mind any common notion, e.g. the notion the 'things which are equal to the same thing are equal to one another', or any other he pleases: for all these movements are particular, but notions are universal having no affinity with movements and no relation to them."

It is in this connection as if, Descartes wants to treat image-ideas as on a part with proposition-ideas.

There is a possible solution to the problem of the relation of proposition-ideas to image-ideas in the theory that thinking is mental vision of image-ideas in some sort of relation. Descartes's advocacy of the mental vision doctrine is nowhere more evident than in his Rule for the Direction of the Mind. The second paragraph of Rule 9 begins: 'Truly we shall learn how to employ our mental intuition from comparing it with the way in which we employ our eyes'. Descartes in Rule 12 says that the only mental effort needed to know the difference between two 'simple natures' is that of 'isolating them from each other and scrutinizing them with steadfast mental gaze': 'We must be content to isolate them from each other, and to give them, each of us, our individual attention, studying them with that degree of mental illumination which each of us possesses'. The Rules were not published until after Descartes's death, but there was a manuscript copy at Port Royal. The Port Royal Logic took over Descartes's mental vision doctrine, and added a doctrine of abstraction. This, in turn was taken over by Locke without change.

Descartes dealt with the problem by invoking God. We know by the light that our ideas of material things must be caused by something with at least as much as reality is attributed in the ideas. We have a natural impulse to believe the causes to resemble the
ideas, that is, to be material things. But, God not being deceitful, we can rely on the natural impulse he has given us to believe the causes to be material things. Berkeley found comfort in the thought that his idealism could not be shown to be inconsistent with language. The proper use of words being 'the making of our conception or things only as they are known and perceived by us' it follows that idealism 'is nothing inconsistent with the right use and significance of language'. In other words, if one accepts the theory that thinking is mental vision of image—ideas in some sort of order, and that language is translating such thought into words, then one must also accept that idealism is consistent with the right use of language. Descartes and Locke split the Aristotelian (and commonsense) notion of a sensible quality into two: it became a sensible 'idea' in the mind, and an unsensed 'power' in matter. Implicit in both Plato and Locke there is the notion that languages should be shown to conform reality, but in both Plato and Locke the status 'real' is assigned in such a way that language and reality cannot be straightforwardly compared. We have the notion of language reality conformity, but no way of putting the notion to use. Kant from Descartes and the British empiricists inherited some of these problems. He wanted to provide an alternative answer to skepticism to those of Descartes and Berkeley; and he wanted to prove our right to use the concepts (of cause, substance, etc.) with which the empiricists had had such problems.

3.1.10 Knowledge

In Descartes's view, there is a single kind of knowledge, an identical order of abstraction, one level of intelligibility, one kind of certainty, and one single method to obtain this certainty, which will give us the unimpeachable guarantee of truth. The sciences are nothing but 'universal wisdom' applied to various subjects, nothing but the illumination thrown on various and diverse fields of the knowable by a single spiritual light. Hence, we must reject the distinction accepted in Thomistic Philosophy between the various kinds of knowledge based on the essential diversity of knowable objects, this diversity leading to discursive reasoning to different orders of abstraction, entailing different levels of intelligibility and different degrees of certainty. We try to think only of the 'natural power of reason', the 'good sense', the power of intellectual discernment, which is at work in all sciences, in all department of knowledge. It is this, which we have to cultivate, to strengthen and to increase. 'We must, in studying, think solely of
increasing the natural light of reason, not with a view of solving this or that scholastic problem, but in order that, in all the happenings of life, our intellect may show our will what alternative to select.  

Descartes does not exclude the various and legitimate results, desirable and valuable in themselves, which may be obtained from the study of the sciences: the increase of the comforts of life; to which he was himself quite sensible; the alleviation of human suffering; the prolongation even of the term moral existence; the solution of this or that particular problem which may hold an intense intellectual pleasure; the vision of truth which may be the supreme and unalloyed pleasure possible in human experience. In the Regulae, Descartes seems to hold a theory of judgment; it is more exact to say that he does not appear to have formed any definite doctrine of his own, and tends to take for granted the accepted view of the prevalent Scholastic philosophy.

In the Notae in Programma Descartes asserts:

> I however saw that, over and above perception, which is required in order that we may judge, there must needs be affirmation, or negation, to constitute the form of judgment and that it is often possible for us to withhold our assent, even if we perceive a thing. I referred to the act of judging, which consists in nothing but assent, that is in affirming or negating, not to the perception of understanding but to the determination of the will.

Here Descartes maintains that the act of the judgment is the product of two distinguishable faculties of the mind:

1. The passive acceptance or recognition of a content, that is, the apprehension of certain states or modifications of consciousness; this is attributed to understanding.
2. The active assent or dissent, affirmation or negation of the ideas apprehended; to active assent or dissent to will.

Descartes asserts, 'all the modes of thinking, of which we are aware in ourselves, may be referred to two general modes, of which the one is perception, or the operation of the understanding, and the other volition, or the operation of will.' Descartes following an Aristotelian doctrine, insists that 'passion' and 'action' are two aspects of same change. Apprehension is a
passion in respect to mind, an action in respect to the source of mental modification. But this does not affect the present distinction for, in respect of the mind, apprehension is a passion and volition is an action.

Descartes's insistence on the unity of thought and science is: 'All the sciences united are nothing but the human understanding.' In all true knowledge the activities of the mind are one and the same. This insistence on the singleness of the vis cognoscens, the power of knowing, is worded in such a way to imply that all the data within the given science, as all the domains of the different sciences, are 'single' or 'one' because, from the careful examination of any item of true knowledge, we can by abstraction discover the universal nature of the mind which constructed it. Thus, the vis cognoscens can be said to be 'one' or 'single', but also the task of discovering the nature and limits of this power of knowing becomes one with the task of discovering the method of guiding our mind so that we may pass 'solid and true judgements' on all the matters which may come before our consciousness. This supposition contains within itself the germ of the whole Cartesian revolution. Science is one because it contains in one single law of evidence, because it is determined by the human mind in which the 'natural light of reason' is always, and in all circumstances, self-identical, and because there is no difference of kinds of knowledge from the point of view of intelligibility.

According to Descartes, sense imagination and memory are functions of the body. For the element of knowing which is present in them as they occur in man, a being who is composed of body and soul, is due to the single spiritual power and is one and the same in character throughout all its manifestations. In other words, this or that singular sensation is a change produced in accordance with the physical laws governing changes in extension and motion; this or that image, of memory, is likewise produced in accordance with the same physical laws. If we desire to think properly, to acquire knowledge, the one essential condition must be that our thinking should be the thinking of the human intelligence functioning in accordance with its own nature. A complete account of the method will be ipso facto a complete account of the fundamental nature and processes of human knowledge. As all knowledge depends on this spiritual power, the vis cognoscens, it follows that by a study, involving reflection, of this power and its processes, of the data with which it operates in thinking, of the method by which it acquires and uses these data we arrive at certain truth and knowledge.
The *bona mens* of the *Regulae* are 'the reasonings of each individual with reference to the affairs in which he is personally interested; where', says Descartes, 'I should find more truth than in the reasonings of a man of letters in his study on speculative matters of no practical import'.

Descartes in this opinion anticipated by Montaigne firmly believed that right thinking is the perquisite and privilege of no class of Scholars in particular but common gift of all reasoning men, the only condition being the rule of evidence, the *vertas index sui*, and the knowledge and practice of a suitable method to discover and exploit properly the results of the vision of truth. Provided that a man possesses the criterion of evidence, clear and distinct ideas, and practices the right method there is nothing, in general, that another man can know that he 'is not himself capable of knowing, provided that he applies his mind to it in a proper way.' All knowledge however systematic in appearance, which is based in fact on memory and due to our capacity to recapitulate or remember, even should this knowledge be concerned with objects pertaining to the mathematical sciences. What we can clearly and evidently see or what we can infer with certainty is the only way in which knowledge is acquired. Descartes, concludes; certainty depends on the observance and practice of two main conditions of proper thinking.

1. In all mathematical and in all certain, demonstration we must first start from self-evident data.
2. We must make sure that every step in our deductive progress from the data must be itself self-evident.

No conclusion must be affirmed as true unless it follows in an uninterrupted sequence of self-evident steps from the initial vision of self-evident data. These two fundamental conditions of certainty of demonstration, correspond to two functions of the intellect, the *vis cognoscens*, which expresses its proper nature and which, in so far as the intellect functions properly, are exempt from the possibility of error. These two functions are:

1. *Intuitus*, intellectual intuition which is the power of apprehending the self-evident data.
2. *Deductio*, deduction or inference, which is the power of moving, by an uninterrupted sequence of self-evident steps, from the data to their consequents.

Hence, these two functions of the intellect are the primary conditioning factors in all knowledge. They are the expressions of the very nature of the human intellect and no
abstract theory of method can teach the intellect to perform them. They are presupposed in all knowledge and a theory of method can do no more than facilitate the right exercise of them. 'Unless our intellect were already able to use them, it could not understand any of the percepts of the very method itself, not even the simplest percept.'75 Hence, the first task is to attempt to understand the true functioning of the human mind in its primary and simplest operations.

3.1.11 The Role Of Experience

Descartes begins by the general statement that 'the whole conduct of our life is dependent on our senses and of these the sense of vision is the most universal and the noblest.'76 Hence the primordial role of vision in the acquisition of knowledge makes any possibility of increasing its power a major point of interest to all. Descartes may have found himself forced in practice to have recourse to purely experimental means in order to establish his theories, while professing a thoroughgoing rationalism when describing his method. His biographers from Baillet to Adam give the evidence of his keen and assiduous interest in all types of experimental work. In the Discours, Descartes tells us of his nine years of travel and study combined during which 'I made a variety of observations and acquired a quantity of experience.'77 There are frequent references in his letter which echo the phrase of the sixth part of the Discourse where he speaks of being 'hindered either by the shortness of life or the want of experiments', and further on that 'I noticed, moreover, with respect to experiments, that they become always more necessary the more we advance in knowledge.'78 All this is quite sincere and expresses a real profound conviction on the part of Descartes. Descartes in discussing his treatise Le Monde with Mersenne, he tells how he hopes soon to get to the study of 'particular objects' and that he has already been studying the different natures of oils, spirits (or brandies), common waters, salts, & c., and adds. 'I hope to open the route sufficiently so that in the course of time one can know them all [substantial natures of particulars], by adding experience to reasoning'.79 What can experience add to reasoning? Descartes gives his views on Galileo and theories. Descartes was unable to formulate the law in mathematical terms. He writes:

"I find, in general, that he (Galileo) philosophizes better than the usual run, and he gets away as much as he can from the errors of the Schools and tries to examine the
problems of physics by mathematical reasoning. On that point I agree with him entirely and I consider there is no other way to discover truth. But it seems that he is continually wandering from the point and does not explain any matter thoroughly; which goes to show that he has not examined the points in order and, without having considered the first causes of nature, he has merely looked for the causes of certain particular facts, building thus without any foundation. 80

The Cartesian assumption is obvious: If geometrical extension constitutes the ultimate nature of the material world, and movement is an essential mode of this extension, then while the basic laws are deducible by a priori mathematical methods, they can only be deduced as possible. To say that extension and its modes exist requires a justification over and beyond the analytical deduction itself. In other words, the physical sciences need a metaphysical justification in order, so to speak, to set themselves up in complete independence. Before extension and its modes have received the guarantee of real substantiality from a veracious God, they have only a quasi-regulative value as governing the whole deductive series and thus enabling the mind to tend downwards the unity of nature. The general laws derivative from extension must be universal. But in the Regulae, it is made clear that we cannot by reasoning discover a new kind of being and we cannot deduce from the universal anything but the universal. Hence, it follows that the universal laws, deducible from the simple natures which constitute the 'material world', cannot give us knowledge of particular bodies. We are in error, 'whenever we judge that it is possible to deduce something general and necessary from a contingent fact.'81 Therefore is essential to the preliminary survey of a problem which results in a classification of the quaesita and data. It is through the classification of data derived from sense-perception that the problem is 'set out' in such a way that the particular field of knowledge to be covered can be summed up in a few contrasting alternatives.

Experience in a sense may be said to set the deductive process going on. What are these data that have to be surveyed? We know nothing but simple natures and their 'mixture' or composition, and we are warned that it is easier 'to be aware of several of them joined together (conjunctas) than to separate one from the other'.82 Further Descartes states: 'those natures which we call compound are known to us either because experience shows us what they are or because we have formed them ourselves.'83 Descartes goes on to explain that the term 'experience' covers whatever we experience through the sense as well as what we may hear from others. In the case of the data
problems of physics, we deal with the second class of simple natures, 'the purely material' natures, and also partially with the third class of 'common natures' as known 'by the understanding intuïting the images of material things'. This appeal to sense experience may well appear to run counter to the Cartesian doctrine that sense perception is confused and obscure, described in the *Regulae* as the 'fluctuating testimony of the senses'. Rule 12 insists that 'no direct experience can ever deceive the understanding, if the understanding restricts its attention precisely to that which is presented to it'.

Descartes is not denying that sense-experience is confused or obscure, but he is insisting that error or falsity cannot as such be attached to perception; it is only to judgement that the qualifications of truth and falsity can be rightly attributed. Simple natures are divided into spiritual or corporeal or those which are 'at once spiritual and corporeal'. A division is also made between the 'complex and composite natures'. Amongst these latter, 'there are some which the understanding experiences to be such [i.e. complex] before it judges that it can determine something about them; others, however, it compounds itself'. Descartes adds, 'there can be no falsity save in the last class which are compounded by the understanding'.

Descartes's attitude to sense-perception is fully expressed in Rule 12:

"No direct experience can ever deceive the understanding, if the understanding restricts itself precisely to that which is presented to it, in so far as it has the object either in itself or in an image and if it, moreover, does not judge that the imagination faithfully reports the objects of the senses, or that the senses takes on the true shapes of things, or finally that external things are always such as they appear to be; for in all these we are exposed to error."

The essential nature of external world is not, revealed in the confused and composite data of sense perception. The whole object of methodical analysis is to elicit from these confused and complex ideas the simple natures, which are their explanation. In case of physical sciences, analysis begins with the composite data given in sense perception and the first operation to be performed is that of enumeration, the preliminary survey and classification of the data, which determines the limits of the particular *quaestiones*. We know natures, which are composite or complex, either because we experience what they are or because we ourselves compound them, and this alternative is meant to state the difference, which arises when either we are faced with obscure and involved *quaestionones*, posited by composite nature of the data, or when we are dealing
with the intricate judgements or deductions which the understanding has performed, 'by impulse, by conjecture, or by deduction'.

Sense experience provides not only the data, which set out the possibilities of the scientific field to be covered; it also provides the material with which scientific conjecture or hypothesis can be constructed. The use of enumeration in the sense of analogical induction clearly implies, when dealing with 'purely material' natures, our use of sense data, at least in the initial steps of deduction. Take for example 'what is the magnet?' a person who 'reflects' will first 'collect all the observation with which experience can provide him', then 'from these he will try to deduce [by analysis] what mixture of simple natures is necessary to produce all those effects which have been experienced in connection with the magnet; this once discovered, he can confidently assert that he has discovered the nature of the magnet in so far as it could be discovered by the human mind and the given experiments'. The final verification of the deduction by enumeration will include not only the checking of the various links and linkages of the deduction itself but also a checking of the composite attained by the deduction with the composite given in the initial experiences. 'There must hence be a necessary connection not only within the several steps of the deduction but also between the original experienced effects and the mixture of simple natures which, as their explanation, is the conclusion of the deduction.'

Descartes took pains to point out that we cannot, by reasoning, discover a 'new kind of being'. If, from what is already known, we deduce an unknown, all that this deductive knowledge amounts to is this: the perception that the res quaesita participates in this or that manner, in the nature of our data. Descartes, like Locke, would say that it is impossible to argue a man who had been blind from birth into perceiving the colours, 'to discourse into him the ideas of light and colours'. The most human mind could achieve in such case would be 'to perceive with complete distinctness that combination of already known beings or natures which produce the same effects as now appear in the magnet'. Hence, the understanding presupposes an essential condition of its deductive moment already, an existent knowledge of certain kinds of being', of certain 'natures'. While in the physical sciences, we are concerned with 'purely material' simple natures, we are not in the first instance dealing with 'purely intellectual' data, and the Cartesian doctrine
seems to imply that the sine qua non of all deductive reasoning is a sensuous or at least imaginative knowledge.

Descartes attacked Regius's 13th article in the Notae in Programma he declares that:

"In our ideas there is nothing which is not innate in the mind or power of knowing, except only those circumstances which point to experience, namely, the fact that we judge that these or those ideas, which we now have present to our thought, refer to certain things external to us, not because these external things transmitted the ideas themselves to the mind through the organs of sense, but because they transmitted something which has given it the occasion, by its innate faculty, of forming these ideas at this time rather than at another." 93

The difficulties inherent in Cartesian dualism appear in the vague reference to 'the occasion' given by the sense experience to the mind to make ideas explicit, which are presumed to be already implicit in mind. The role experience would seem to be that of allowing for the reference of ideas to objects and providing at the same time the initial experience by which the mind attends to and thus becomes aware of the implicit ideas of simple natures. The simple natures, or innate ideas, are not derived from experience, nor are they derivable from experience. They are evoked or elicited 'on the occasion' of sense experience. But it remains true that the deduction from general laws cannot give knowledge of particulars and, on the other hand, experience of particulars, even if it be submitted to rigid control, cannot finally yield knowledge of general laws Descartes does in fact infer certain general laws about physical phenomena from experiments conducted on rigorously methodical principles Professor Roth describes Descartes's method in the physical sciences as follows:

"The method is essentially deductive. It is modelled on the conventional conception of the process of geometrical reasoning. It sets out from a view self-evident principles, and from those principles educes consequences which are, as it were, the 'propositions' of science. But propositions are by nature general, and general propositions have only a limited value in the field which we know to be all-important for Descartes, the field of Practical application to the concrete problems of the individual. There is a 'gap', definite and unbridgeable, between the general laws deduced by the help of the method and the particular facts with which we have to deal." 94
Hence, Descartes, made perfectly plain his method of analysis differed entirely from the ‘conventional conception’ of the geometers, which he called the ‘synthetic’ method. The key to all problems of the physical sciences lies in the general laws and principles, which are base by Descartes on the view that nature is...

"The realization of the simplest conceivable mathematical ideas. I am convinced that we can discover by means of purely mathematical constructions the concepts, and the laws connecting them with each other, which furnish the key to the understanding of natural phenomena. Experience may suggest the appropriate mathematical concepts, but they most certainly cannot be deduced from it. Experience remains, of course the sole criterion of the physical utility of a mathematical construction. But the creative principle resides in mathematics. In a certain sense, therefore, I hold that pure thought can grasp reality, as the ancients dreamed."

These words express the ideal of Cartesian science, but they were written some three hundred years later by Einstein. 96

3.1.12 Objections

1. The objection brought against Descartes is that he makes a real distinction between soul or mind or consciousness and body, he has no right to make such a distinction, since he has not proved that no corporeal thing can think or that thinking is an essentially spiritual process. It is true, of course, that by applying hyperbolical doubt to the existence of the body and by then declaring that even in the face of this hyperbolical doubt I cannot deny the existence of myself as a thinking thing, Descartes implies that this thinking thing, which is called ‘myself’, is not the body but he insists that in the II\textsuperscript{nd} Meditation he did not assume that no corporeal thing can think: all he intended to assert was that I whose existence I assert in the Cogito, ergo sum is a thinking thing. And to state that I am a thinking thing is not the same as to state that soul and body are ontologically distinct, the one being immaterial and the other being material. As far as the actual point is reached is concerned, we can say that whether a corporeal thing can think or not, the thinking is there, and it is of this thinking that I affirm the existence as an indubitable fact.
Descartes insists his doctrine of mind and body, in the VIth Meditation 'But besides this you here ask how I prove that a body cannot think. Pardon me if I reply that I have not yet given ground for the raising of the question; for I treat it of in the VIth Meditation.'

In the reply to the 3rd set of objections Descartes remarks: 'a thing which thinks, he says, may be something corporeal; and the opposite of this has been assumed, not proved. But infact, I did not assume the opposite, neither did I use it as a basis for my argument; I left it wholly undetermined until Meditation VI in which its proof is given.' Hence, it can hardly be repeated too often that Descartes proceeds in the Meditations according to the ordo cognoscendi or invenendi in a methodical and systematic manner, and he does not wish to be interpreted as asserting more at any given stage of his reflections than is required at the moment.

2 It is said, Descartes had no right to assume that thinking requires a thinker. Thinking, or rather thoughts, constitute a datum; but he had no justification for asserting that I am 'a thing which thinks'. What he did was to assume uncritically the Scholastic notion of substance when this doctrine ought really to have been subjected to the test of doubt. It seems to be true that Descartes assumes that thinking requires a thinker. In the Discourse on Method, after pointing out that to doubt or to be deceived I must exist and that if I ceased from thinking I should have no reason for saying that I existed, he remarks: 'From that I knew that I was a substance the whole nature of which is to think, and that for its existence there is no need of any place, nor does it depend on any material thing. It may be objected that, it is illegitimate to press what is said in the Discourse on the Method. In this work he talks, for example, as though the real ontological distinction between soul and body were known immediately on the establishment of the Cogito, ergo sum, whereas in the replies to objections he draws attention to the fact that he treats of this distinction in the VIth, and not in the second Meditation. However, in the IInd Meditation Descartes seems to assume that thinking requires a thinker, in his reply to the third set of Objections he simply asserts that 'it is certain that no thought can exist apart from a thing which thinks, no activity, no accident can be without a substance in which to exist.'

The charge against Descartes that he assumed a doctrine of substance is justified. It is true that critics who bring this charge are sometimes phenomenalists,
who think that Descartes was misled by grammatical forms into making the false assumption that thinking requires a thinker; but it is not necessary to be a phenomenalist in order to admit the validity of the charge. For the point to be, not that Descartes was wrong in saying that Descartes was wrong in saying that thinking requires a thinker, but that the exigencies of his method required that this proposition should be submitted to doubt and not be assumed. It is to be remarked that both in the *Principles of Philosophy* and in the *Meditations* Descartes treats of substance after proving the existence of God. And it might be said therefore, that the assertion of the doctrine of substance as an ontological doctrine is not simply assumed, but that it is established only when Descartes has proved the existence has proved the existence of God as guarantor of the validity of all our clear and distinct ideas.

Descartes having discovered an indubitable truth, *Cogito, ergo sum*, inquires what is required in a proposition for it to be true and certain. By examining a proposition which is recognized to be true and certain, he hopes to find a general criterion of certainty; and he comes to the conclusion that there is nothing in the proposition, *I think, therefore I am*, which assures him of its truth except that he sees very clearly and distinctly what is affirmed. Hence, ‘I came to the conclusion that I might assume as a general rule that the things which we conceive very clearly and distinctly are all true’.

Similarly, ‘it seems to me that I can establish as a general rule that all things which I perceive very clearly and distinctly are true’.

3. Another difficulty is that it does not follow from the truth of arithmetic and geometry being objectively necessary that we cannot be mistaken about them. Objective *necessity* is not the same as justified subjective *certainty*. Descartes recognized the need for a ‘criterion’ and argued as follows: the intuition ‘I think, therefore, I am’ is true without any possibility of doubt. What assures me of its truth is my clear and distinct perception of it. Therefore clear and distinct perception of anything should be a sufficient condition of its being true. But the solution to the problem of the gap between objective necessity and subjective certainty raises more difficulties than it is intended to resolve. Yet Descartes writes as though the thinker is sure not only of the characteristic, thinking, but also of a thing characterized, a thinking thing. He thinks the thinker is sure of this because he (Descartes) accepts the Aristotelian requirement that you cannot have a characteristic without a thing characterized.
The basic idea of Descartes' compromise followed immediately from his belief that in proving the existence of self and matter he had proved each to be an independently existing substance. If mind and body are completely different kinds of things, And if the truths about each follow from the distinct nature of each, it is impossible for the science of minds and the science of bodies to contradict each other. The views of leading Continental Rationalists, a considerable of Descartes' supporters believed that interaction was the major problem faced. They reasoned as follows: If mind and body interact, they are not metaphysically distinct substances; if they are metaphysically distinct substances, they cannot interact. Since all these thinkers agreed with Descartes that the dual substance theory was essential to preserve the independence of physics and technology, they set themselves away to explain the interaction. But if mind and body really do not interact, they certainly seem to do so. Then how can this apparent interaction be accounted for?

The separation of self-consciousness from existence can only take place *per abstractionem intellectus*. The *Cogito, ergo sum* is shown, on analysis to be fundamentally a movement of thought from implicit to explicit within the single intuitive whole. Thus intellectual intution and deduction merge, as it were into one single living moment of thought. 'Whenever single facts have been deduced immediately the one from the other, they have already been reduced, if the illation is evident, to a true intellectual intuition.' Descartes does not conceive intellectual intution, or what the *Ethics* calls *Scentia Intuitiva*, as an immediate knowing exclusive of reasoning. To see, in sense, is to reason: 'the eyes of the mind, with which it sees and observes, are the demonstrations themselves.'

The key to truth is purely rational intuition. We cannot say simply that perception is delusive; but it must submit itself to the final judgement of pure intelligence. The mathematical spirit is paramount in "Descartes" thought. Then he goes on to ask himself if there is more, essentially, to this thinking thing than that it is thinking. He decides that there is not, since if I *do not know* with certainty that something...
is the case (viz. that I am a bodily as well as a conscious being) then I do know with certainty that it is not the case. Here the parallel ends

Hence, the balance of reasoning to prove the self a substance—Descartes gives arguments to prove the existence of soul even though his arguments failed to prove the soul is a substance because we do not experience it. “I think” means “I exist” but not that “I am a substance”. So Descartes does not give any reasoning to prove that soul is a substance. Descartes considers soul body relationship to be absolutely different substances; it is difficult to understand how the two will be interrelated. Descartes fails to explain this relation because no dualism can relate two ultimate realities. There is a logical difficulty in dualism. Descartes admitted soul and matter to be two different independent substances; their relation can be physical or non-physical, but not both at the same time. Descartes has taken self as an object of knowledge; but self is the knower and cannot become the known. Therefore it is wrong to believe the soul to be a substance. According to David Hume, whenever we look within ourselves we find ideas coming and going and no self besides this stream of ideas. Hence experience therefore does not prove the existence of soul non-physical, invisible and eternal substances. Thus existence of such a substances cannot be accepted. It can be concluded if there is any self it is this changing thought and besides it there is no unchanging soul substance. Descartes views are based on the experience and faith of common man. In our common-sense experience we see that physical status corresponds with dream, imagination, thinking and other mental activities. Therefore the mind or self is to be admitted a non-physical substance, such is the view of Descartes. Although he was a rationalist he could not deny the importance of experience and thus was forced into many assumptions, which contradicted each other.

It was Descartes whose subjective knowledge at the centre of epistemology—and thereby made idealism a possible position for a modern philosopher to take. mean by this that it is not until someone brings the question ‘Is there anything other than mind?’ into the centre of philosophical attention that the replies to it—the affirmative reply of realism, and a fortiorti the negative reply of the idealism—will commend themselves of, and requiring explicit defence. Descartes knew what he was doing, that he had a lively appreciation of the ways in which his thought transcended the limitations of ancient tradition.
The first thinker to undertake a more thoroughgoing "correction" of Cartesianism than that proposed by the parallelists was Benedictus de Spinoza. Nobody would wish to claim, that he derived his monism from Cartesianism in the sense of borrowing or adopting it from Descartes, for the latter was not a monist. It was Spinoza who developed the logical implications of Cartesianism in a monist direction. Descartes defined substance in such a way that the definition applied literally to God alone and Spinoza adopted monism under the influence of this definition.

3.2 Benedictus De Spinoza (1632-1677)

Most of the thinkers who have traced the history of Western philosophical thought have argued that Spinoza's philosophy is based on the preconceptions borrowed from Descartes's system of thought and that Spinoza has only improved as well as amplified them. But such conclusions are not intended to detract the originality of Spinoza's thought. Like Descartes Spinoza believed that the aim of philosophy was to achieve complete knowledge, which could be obtained through Meditation. Apparently Spinoza follows the method of Descartes, but his solution to the problem is more rational and objective. Spinoza assumes the Cartesian definition of substance, subjects it to a logical examination and as a result reaches the philosophy of pantheism. It is here that the difference between Descartes and Spinoza becomes obvious. Descartes was inclined more towards the scientific Spinoza's thought exhibits a greater degree of mysticism and religiosity. Descartes' views on God reflected great measure the medieval thinking before him, but Spinoza confounded all dogmatic thinking on the subject, even at cost of his own life, and propounded much original thought.

Spinoza's fundamental goal was a search for comprehensibility in intellectual exposition. On the improvement of understanding, Spinoza explains how he was driven to philosophy by a need for some lasting satisfaction. Like Descartes Spinoza was seeking for an absolute principle which might sustain him during all the crisis of life. Descartes found this principle in the method of doubt, which ultimately became the method of faith in the powers of reasoning. Spinoza found this principle in the God, for everything in nature that is real and substantial is reduced to the being of God.
### 3.2.1 Works

Two works of Spinoza were published during his lifetime, of which only one appeared under his name. His exposition ‘in geometrical form’ of part of Descartes’ *Principles of Philosophy* (*Renati des Cartes Principiorum philosophiae partes prima et secunda more geometrico demonstratae. Accesserunt Cogitata metaphysica*) appeared in 1663, while his *Theological-Political Treatise* (*Tractatus theoligico-politicus*) was published anonymously in 1670. The *Opera posthuma*, which were published after Spinoza’s death, include his *Treatise on the Correction of Understanding* (*Tractatus de intellectus emendatione*), which was written during his residence near Leyden, the *Ethics demonstrated according to the Geometrical Order* (*Ethicaordme geometrico demonstrare*), which is his most important work, and the *Political Treatise* (*Tractatus politicus*). His *Short Treatise on God, Man and his Well-Being* (*Tractatus brevis de Deo et homme ejusque felicitate*) was discovered in 1851 and is generally known as the *Short Treatise*. The complete works of Spinoza include one or two essays and a collection of his correspondence.

### 3.2.2 Spinoza’s Geometric Method

Spinoza’s starting point was similar to that of other thinkers of the new age. He sought certainty; he considered mathematics to be the best example of certain knowledge. Spinoza was doubtless impressed by Cartesianism; but he never looked on it as the complete truth. In writing a letter to Henry Oldenburg, who had asked him what he considered to be the chief defects in the philosophies of Descartes and Bacon, he asserted that the first and chief defect was that ‘these philosophers have stayed so far from the knowledge of the first cause and origin of all things’. Spinoza expounded part of Descartes’ philosophy *more geometrico*, though he was not even at that time an adherent of the Cartesian system. The first consequences of Spinoza’s greater consistency in developing Descartes’ assumptions was the application of geometry in metaphysics. True philosophy could be presented without the use of geometrical adornments and forms. Conversely a false philosophy could be presented in a geometrical dress. It is, therefore, true to say that Spinoza did not regard the method as infallible if one is thinking simply.
of externals. But if by the method one means not so much the external geometrical
trappings as the logical deduction of propositions from definitions expressing clear and
distinct ideas and from self-evident axioms, it seems that the method was certainly in
Spinoza's eyes an infallible means of developing the true philosophy

Spinoza proposed, quite logically, a systematic application of Descartes' procedure. He
would begin with self-evident metaphysical truths and develop an absolutely certain
science of reality by demonstrating successively the various theorems applied by these
truths. Let us have a look on Spinoza's definitions:108

I. By that which is self-caused, I mean that of which the essence involves existence, or that of which the nature is only conceivable as existence, or that of which the nature is only conceivable as existent.

II. A thing is called finite after its kind, when it can be limited by another thing of the same nature.

III. By substance, I mean that which us in itself, and is conceived through itself in other words, that of which a conception can be formed independently of any other conception.

IV. By attribute, I mean that which the intellect perceives as constituting the essence of substance.

V. By mode, I mean the modifications of substance, or that which exists in, and is conceived through, something other than itself.

VI. By God, I mean a being absolutely infinite —that is, a substance consisting in infinite attributes, of which each expresses eternal and infinite essentially.

VII. That thing is called free, which exists solely by the necessity of its own nature, and of which the action is determined by itself alone.

VIII. By eternity, I mean existence itself, in so far as it is conceived necessarily to follow solely from the definition of that which is eternal.

If we look on Spinoza's definition, we can notice that they are true as far as the wording goes on, for they simply express ways in which Spinoza chooses to understand certain terms. But Spinoza was convinced that each definition expressed a clear and distinct idea and that 'every definition or clear and distinct idea is true.'109 If the intellect operates with clear and distinct ideas and deduces their logical implications it cannot err;
for it is operating according to its own nature, the nature of reason itself. Hence, Spinoza criticizes Francis Bacon for assuming that 'the human intellect is liable to err, not only through the fallibility if the senses, but also solely through its own nature.' But suppose we say that Spinoza did not regard his geometrical method as infallible we may have in mind the following point: Spinoza regarded the Logical deduction from clear and distinct ideas as providing an explanatory account of the world, as rendering the world of experience intelligible And this point of view involves the assumption that the causal relation is akin to the relation of logical implication. The order of ideas and the order of causes are the same.

The logical deduction of conclusions from the appropriate set of definitions and axioms is at the same time a metaphysical deduction and affords us knowledge of reality. Here we have an assumption or hypothesis. If Spinoza were called upon to justify it, he would have to reply that the assumption is justified by the power of the developed system to give a coherent and comprehensive explanatory account of the world as we experience it. Hence, the employment of the method is justified by results; that is, by the power of the system developed with the aid of this method to do what it professes to do. I think to be extremely doubtful whether Spinoza would have been willing to speak of hypothesis or assumptions. Let us see the axioms as mentioned by Spinoza in his *Ethics*:

I. Everything, which exists, exists either in itself or in something else. ✓

II. That which cannot be conceived through anything else must be conceived through itself.

III. From a given definite cause an effect necessarily follows; and, on the other hand, if no definite cause be granted, it is impossible that an effect can follow.

IV. The knowledge of an effect depends on and involves the knowledge of a cause.

V. Things which have nothing in common cannot be understood, the one by means of the other; the conception of one does not involve the conception of the other.

VI. A true idea must correspond with its ideate or object. ✓

VII. If a thing can be conceived as non-existing, its essence does not involve existence.

According to Spinoza 'the order and connection of ideas is the same as the order and connection of things'. In the proof of this proposition he remarks that its truth is clear from the fourth axiom of the first part of the *Ethics*. Further Spinoza adds, 'For the
idea of everything which is caused depends on the knowledge of the cause of which it is an effect.\textsuperscript{112} It is arguable, that even if we grant that to know an effect adequately involves knowing its cause, it does not follow that the causal relation is akin to the relation of logical implication. The point here appears is that Spinoza appears to have regarded the assertion of this affinity as something clearly true and not as mere assumption or hypothesis. Hence, it would be quite possible for him to appeal to the coherence and explanatory power of the developed system as evidence of its truth. Thus Spinoza did not regard the system as resting on an assumption or hypothesis, which was capable only of pragmatic or empirical confirmation. Writing to Albert Burg, Spinoza remarked, ‘I do not presume the true philosophy; I know that I understand the true philosophy.’\textsuperscript{113} This remark seems to express his attitude admirably.

Spinoza speaks of those thinkers who ‘have not observed the order of philosophical argument. For the divine nature which they ought to have considered before all things, because it is prior to knowledge and nature, they have thought to be the last in the order of knowledge, and things which are called the objects of senses they have believed to be prior to all things.’\textsuperscript{114}

In adopting this view Spinoza separated himself from Scholastics and Descartes. The philosophy of Saint Thomas Aquinas the mind does not start with God, but with the objects of sense-experience, and through reflection on the latter it ascends to the affirmation of God’s existence. Hence, so far as philosophical method is concerned, God is not prior in the order of ideas, though He is ontologically prior in the order of nature. Similarly, Descartes begins with the Cogito, ergo sum, and not with God. Neither Thomas Aquinas nor Descartes thought that we can deduce finite things from the infinite Being, God. However, Spinoza rejects the procedure of Scholastics as well as of Descartes. The divine substance must be regarded as prior both in the ontological order and in the order of ideas. At least God must be regarded as prior in the order of ideas when a properly philosophical ‘order of argument’ is observed.

According to Spinoza himself, the result is knowledge of reality – reality is one eternal, necessary. According to Hobbes, Spinoza has only shown the consequences of his arbitrarily chosen definitions. If “cause” is defined in such and such a way, “eternity” in such and such a way. “Substance” in such and such a way, it can be shown that substance is self-caused and eternal but if these terms are defined differently then another
set of consequences follows. Therefore Hobbes preferred his own definitions and theorems. Because these theorems enable us to control our physical environment for example to predict the rate of fall of a freely falling body at the nth second, whereas Spinoza’s theorems in Hobbes opinion enable us to control nothing. Spinoza wholly denied Hobbesian nominalism. From the realistic premises he adopted in common with Plato, Descartes and many other philosophers, it follows that when the mind knows, it is traversing and communing with objective reality. By knowledge Spinoza means knowledge of something: the possibility of an absolute certain knowledge proves the existence of an absolutely real object. Hence, the correct procedure for ascertaining the nature of reality is to analyze the nature of knowledge and to show what it implies about the nature of reality. Although everyone must allow the appropriateness of this general line of procedure, many people would hold Spinoza’s conclusions to be invalidated because he virtually identified knowledge with mathematical thinking. Hence, though he supposed that his analysis was exposing the nature of reality, it was at best only making clear what is implied by the mathematical factor in scientific method.

The two things here to be noted are:

(1) If we propose to start with the infinite divine substance, and if the affirmation of the existence of this substance is not to be regarded as an hypothesis, it has to be shown that the definition of the divine essence or substance involves its existence. In other words Spinoza is committed to using the ontological argument in some form or the other. Otherwise God would not be prior in the order of ideas.

(2) If we propose to start with God and to proceed to finite things, assimilating causal dependence to logical dependence, we must rule out contingency in universe. It does not follow that the finite mind is capable of deducing the existence of particular finite things. Nor did Spinoza think that it was. But if the causal dependence of all things on God is akin to logical dependence, there is no place for free creation, nor for contingency in the world of material things, nor for human freedom. Any contingency that there may seem to be is only apparent. And if we think that some of our actions are free this is only because we are ignorant of their determining causes.
3.2.3 God The Sole Substance

In the philosophy of Spinoza we find the many beings of experience causally explained by reference to the unique infinite substance which Spinoza called ‘God or Nature’ *Deus sive Natura*. God whose existence Spinoza believed is very different from the Christian God. God is not transcendent; but He is the totality of everything that is. He is that rational system whose existence Spinoza had held to be guaranteed by the certainty of mathematical knowledge. Spinoza believes in only one infinite substance, if there were several substances they would limit each other, they encroach upon each other, and this condition would detract from their independence. Therefore the concept of plural substance is logically contradictory. Descartes called only God the absolute substance, while mind and matter were called relative substances. To Spinoza God is the only substance, and is identified with God. He says, God is eternal, cannot be destroyed, has neither intellect nor will; it does not act teleologically.

In order to know a thing, one must know its cause. The knowledge of effect depends upon the knowledge of cause and involves the same. To explain thing is to assign its cause or causes. Spinoza defines substance in the first part of his treatise Ethics in these words “ *that which is in itself and is conceived through itself: I mean that the conception of which does not depend on the conception of another thing from which it must be formed*”. But that which cannot be known through itself alone cannot have an external cause. Then what is substance? Spinoza calls substance ‘cause of itself’; is explained through itself and not by reference to any external cause. Hence, the definition applies is, that substance is completely self-dependent; it does not depend on any external cause either for its existence or form its attributes and modifications. To say this is to say that its essence involves existence; ‘I understand that to be cause of itself the essence of which involves existence and the nature of which cannot be conceived except as existing’.

Hence, in Spinoza’s view clear and distinct idea of substance, and in this idea we perceive that existence pertains to the essence of substance is seen ‘If anyone says, the, that he has a clear and distinct idea of substance and nevertheless doubts whether such substance exists, he is like one who says that he has a true idea and yet doubts whether it may not be false’. Since ‘existence appertains to the nature of substance, its definition must necessarily involve existence, and, therefore from its mere definition its existence can be concluded.” Later
on Spinoza argued that there is one and only one substance, infinite and eternal, and this substance is God. Since the essence of God excludes all imperfection and involves absolute perfection, by that very fact it removes all doubts concerning His existence and marks it most certain, which will be manifest I think, to such as to pay it the least attention.\textsuperscript{119}

The definition of substance as pointed out by Spinoza, so called the finite substances of whose reality almost all other philosophers were convinced, are a contradiction in terms. Even Thomas and Descartes had had to allow that the infinite substance they called God and the various dependent beings they called finite substances were not “univocally”\textsuperscript{130} substantial. Both Descartes and Thomas held that the finite beings were created and so are dependent on God, their creator. If they are dependent, they are not independent, if they are not independent they are not substances. Why call them substances, Spinoza asked, when your own argument shows that they are not substances? Dogmatic considerations required that everything be dependent on God, but these thinkers nevertheless wanted some these dependent beings to have individuality and, as it were, personality in their own right. Hence, they called their dependent beings “finite substances” – “finite” as a mark of dependence, “substance” as a mark of independence.\textsuperscript{131} But, Spinoza held, this is equivocation and confusion.

The question arises, why did Spinoza insist that only one substance exists? The answer is that, though dogmatic considerations did not require him to hold that everything is dependent on a creator God, his analysis of the nature of knowledge led him to conclude that there can be but one substance and that this substance is the totality of everything, that is, If there were a plurality of independent substances, there would be not one universe but several. He thought this was absurd. According to Spinoza’s view of the nature of knowledge, to understand anything is to be able to deduce it from something else, and in order to be deduced, the thing in question must stand in an implicatory relation to that other thing. Hence either several allegedly independent substances are implicatorily related (in which case they are not independent substances) or the universe contains entities that are in principle incomprehensible. Since this second alternative conflicted with one of Spinoza’s deepest convictions, he concluded that nothing, except the one whole, stands alone, and this whole is a single implicatorily related system.
Spinoza's idea is obviously that the existence of a plurality of substances would need explanation, and 'explanation' needs reference to a cause. Substance has been defined in such a way that it cannot be said of it that it is the effect of an external cause. We must come in the end to a being, which is 'cause of itself', its own explanation, and infinite. For if substance were limited and finite, it could be acted upon, it could be the term of causal activity. But if it is liable to be affected by an external cause, it cannot be understood purely through itself. And this is against the definition of substance. It follows that substance, so defined, must be infinite. Conversely, if god is infinite, there cannot be other substances. Finite things cannot be understood or explained apart from God's causal activity. Therefore, they cannot be substances in the same sense in which Spinoza has defined the term 'substance'. They must then be in God. 'Whatever is, in God, and nothing can exist or be conceived without God.' Indeed, this proposition could be accepted by theistic philosophers if it were taken to mean simply that every finite being is essentially dependent on God and that God is present on all finite things, upholding them in existence. But Spinoza meant that finite beings are modifications of God, the unique substance. God possesses infinity of attributes, each of which is infinite; of these, two are known to extension, and us, thought. Finite minds are modes of God under the attribute of thought, and finite bodies attributes of God under the attribute of extension. Nature is not ontologically distinct from God; and the reason why it cannot be ontologically distinct is that God is infinite. He must comprise in himself all reality. St. Thomas Aquinas agreed with Spinoza, that there is one universe; but he held that this universe is finite, not infinite. Because it is finite, Thomas reasoned it is necessary, in order to understand it, to pass beyond it to a transcendent creator God. Spinoza, on the other hand, maintained that we couldn't pass outside the universe and that, since it is infinite, we do not need to do:

3.2.4 Substance Attributes And Modes

God's nature is conceived as the totality of everything that is. In turning from God to world we merely leave of considering the totality as it is in itself and begin considering it under different aspects or from different points of view. Every part of God is necessarily what it is. Only God, that is, the totality of everything that is, is free. God is not free in the sense of having a free will; he is free merely in the sense that, because He is the totality, His nature is not limited by anything outside it. Everything else is limited
by other parts of the totality, that is, is implicatorily to other things in such a way that its existence and nature can be deduced from those other things. This necessity is the logical necessity and not physical necessity. With this account of the universe as a system of implicatorily related propositions, Spinoza gave an account of it in the traditional terms of substance and property. According to this reasoning, what is not substance must be a property of a substance. Since there is one substance, every part of the whole must be a property of that substance. We find Spinoza saying that everything that is not God is either an "attribute" or a "mode" of God; as follow in his from his Definitions III, IV, and V, and axiom I. But what does it mean to call a part of an implicatorily related whole "an attribute"? And what is the difference between a property that is an attribute and one that is a mode? Bo aspect of Spinoza's philosophy has given rise to more widely varying interpretations than this distinction between attributes and modes.

Spinoza in the logical process of deduction does not pass from infinite substance to finite modes in between as it would be said. In Spinoza's doctrine of divine attributes we perceive two, thought and extension. Nothing more can be said of other attributes since we cannot know them. In proceeding from consideration of God as an infinite substance with divine attributes to consideration of the modes of God the mind is passing from Natura naturans to Natura naturata, this is, from God in Himself to 'creation', though one must take the last phrases to mean that the world is distinct from God. But what happens, in Spinoza's view, to Descartes' material and thinking substances? They become attributes of the one whole substance. And what happens to Thomas' innumerable individual substances, each an amalgam of matter and form? They become modes of this one substance. Mind and body are basic determinations of substance; modes are particular, local specifications of these basic determinations.

The intellect can discern certain changeless and eternal properties of the universe when it considers the universe under the attributes of thought and extension. For Spinoza, Physics was the science of the attributes of extensions. He never asked himself, how he could be sure that the extended matter studied in physics has those properties that are clearly and distinctly cognized in geometry. Descartes had appealed to God's goodness to establish the geometric character of the physical world, whereas an empiricist would rely
on empirical observation, Spinoza simply took for granted that the laws of physics are a set of theorems whose implicatory relations reflect the necessary properties (under the attributes of extension) of a rational-real, he held, is infinite and continuous. The intellect can discern certain changeless and eternal properties of the universe under the attributes of thought and extension. The logically prior state of substance under the attribute of extension is motion and rest. For Spinoza there can be no question of movement being impressed upon the world by an external cause. Descartes depicted God as conferring, as it were, a certain amount of movement upon the extended world at creation.

Complex bodies are composed of particles. If each particle is looked on as an individual body, things like human bodies or the bodies of animals are individuals of a higher order that is they are complex individuals. They may gain or loose particles, and in thus sense they change; but so long as the same proportion of motion-and-rest is preserved in the complex structure they are said to retain their identity. We can conceive increasingly complex bodies; ‘and if we thus proceed still further to infinity, we can easily conceive that all nature is one individual whose parts, that is, bodies vary in infinite ways without any change of the individual as a whole’. 121 This ‘individual as a whole’, that is, Nature, considered as a special system or system of bodies, is the mediate infinite and eternal mode of God or Nature under the attribute of extension. It is also called the ‘face of the universe’. Spinoza held the rational-real is infinite and continuous. All distinctions in it, between its parts, are ultimately unreal. Spinoza quotes:122

"Assuredly it is not less absurd to assert that extended substances is made up of bodies or parts, than it would be to assert that . . . a line [is made up] of points . . . For if extended substance could be so divided that its parts were really separate, why should not one part admit of being destroyed, the others remaining joined together as before? . . . . Surely in case of things, which are really distinct one from the other, one can exist without the other, one can remain in its original condition . . . . If anyone asks me the further question, why are we naturally so prone to divide quantity? I answer, that quantity is conceived by us in two ways: in the abstract and superficially, as we imagine it; or as a substance, as we conceive it solely by the intellect and the imagination, especially if it be remembered, that matter is everywhere the same, that its parts are not distinguishable, except in so far as we conceive matter as diversely modified, whence its parts are distinguished, not really, but modally "

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The view followed from Spinoza's point is only reason, not perception that is adequate. Here the conclusion depends on the assumption that reality is rational. The real properties of extension are not those that we perceive but those that we deduce it to have. To suppose that extension is made of extended parts is like supposing a surface to be put together out of lines. We can "mark out" various plane figures on a surface and as well can arrange them in the ways that will "fill up" the surface; but surface is not composed of figures, on contrary it is the logical presupposition of all such figures. The relation of space (extension) to its parts is exactly the same as the relation of an argument to its steps. Steps can be distinguished, but they do not exist as independent entities, the reality that is rational is a single whole.

Hence, it follows that bodies are distinguished from each other not "in respect of substance," but solely "in respect of motion and rest." Moreover, everybody is...

"...determined to motion or rest by another body, which other body has been determined to motion or rest by a third body, and that third again by a fourth, and so on to infinity .... Hence it follows, that a body in motion keeps in motion, until it is determined to a state of rest by some other body; and a body at rest remains so, until it is determined to a state of motion by some other body. This is indeed self-evident ....... So far as we have been speaking only of the most simple bodies .... We now pass on to compound bodies. Definition. - When any given bodies of the same or different magnitude are compelled by other bodies to remain in contact, .... so that their mutual movements should preserve among themselves a certain fixed relation, we say that such bodies are in union, and that together they compose one body or individual, which is distinguished from other bodies by this fact of union."123

According to Spinoza movement must be a characteristic of Nature itself; for there is no cause distinct from Nature, which could confer or impress movement upon Nature. Motion-and-rest is the primary characteristic of extended Nature, and the total proportions of motion-and-rest remain constant, though the proportions in the case of individual bodies are constantly changing. The human body is such a compound body, that is, it is a complex of motions of different velocities maintaining a relatively stable pattern among themselves. The science of physiology is the set of theorems that formulate the necessary relations holding among such patterns of motions. The total amount of energy in the universe as an intrinsic property of the universe and that it remains constant. The physical universe is a self-contained system of bodies in motion.
Spinoza calls this total amount of motion-and-rest, or of energy the ‘infinite and eternal immediate mode’ of God or Nature under the attribute of extension. The immediate infinite and eternal mode of God or Nature under the attribute of thought is called by Spinoza ‘absolutely infinite understanding’.\(^{124}\) Spinoza apparently means that just as motion-and-rest is the fundamental mode of extension, so understanding or apprehending is the fundamental mode of thought. It is presupposed, for example, by love and desire.

\[\text{The modes of thinking such as love, desire, or any other name by which the modifications of the mind are designated, are not granted unless an idea in the same individual is granted of the thing loved, desired, etc. But the idea can be granted although no other mode of thinking be granted.}^{125}\]

If this account of the immediate and eternal mode under the attribute of thought is correct, it means that ‘thought’ in general includes, as with Descartes, all conscious activity as such, though the fundamental mode of ‘thinking’, on which the others depend is apprehending.

Spinoza does not make clear the mediate infinite and eternal mode under the attribute of thought. Since for him the attributes of thought and extension were attributes of the same substance or different aspects of the one substance, his scheme seems to demand that the mediate and eternal mode of substance under the attribute of thought should be the strict counterpart of ‘the face of the universe’, the total system of bodies. Here it is the case of the total system of minds. ‘It is apparent that our mind, in so far as it understands, is an eternal mode of thinking, which is determined by another mode of thinking, and this one again by another, and so on to infinity. so that they all constitute at the same time the eternal and infinite intellect of God’.\(^{125}\) It should be noted that ‘the eternal and infinite intellect of God’ belongs to Nature naturata and not to Natura naturans. We cannot speak of God as He is in Himself as having an intellect, distinct from the infinite system of minds. If we do so, the word ‘intellect’ has no meaning for us. ‘If intellect and will appertain to the eternal essence of God, something quite other must be understood by these two attributes than what is commonly understood by men. For intellect and will, which would constitute the essence of god, must differ toto xaelo from our intellect and will, nor can they agree in any thing save name, nor any more than the dog as a heavenly body agrees with the dog as a barking animal’.\(^{126}\)
'Infinite things in infinite modes must necessarily follow from the necessity of divine nature.' According to Spinoza, in other words it is assumed that substance must have modes; and the conclusion is drawn that as substance is infinite it must have infinite modes. It is clear that for Spinoza finite modes are caused necessarily by God. 'In the nature of things nothing contingent is granted, but all things are determined by the necessity of divine nature for existing and working in a certain way.' Things could not have been produced by God in any other manner or order than that in which they were produced. It is true that 'the essence of things produced by God does not involve existence.' For if it did involve existence, they would be cause of themselves. In fact, each would be infinite substance, and this is impossible. Finite things can be called 'contingent', therefore, if by a 'contingent' thing one simply means a thing the essence of which does not involve existence. But they cannot be called 'contingent' if by giving them this name one means that they follow contingently, and not necessity, from the divine nature. It is true, that we may not be able to see how a given thing follows of necessity from the divine nature, but 'nothing can be said to be contingent save in respect to the imperfection of our knowledge'.

If one speaks of God creating infinite things and of finite things being caused and determined by God, one inevitably tends to form a picture of a transcendent God who creates necessarily in the sense that his infinite perfection necessarily expresses itself in finite beings, which are distinct from Him, even though they flow necessarily from Him. For example Spinoza states, that 'the things were produced by the consummate perfection of God, since they followed necessarily from a given most perfect nature.' This kind of remarks tends to suggest that Spinoza had in mind an emanation-theory of the Neo-Platonic type. But such an interpretation would be based on a misunderstanding of Spinoza's use of terms. God is identified with Nature. We can consider Nature either as an infinite substance, without reference to its modifications, or as a system of modes. According to Spinoza a given mode is caused by a preceding mode or preceding modes, which are themselves caused by other modes, and so on indefinitely. There is an endless chain of particular causes. The chain of finite causes is logically and ontologically dependent on Nature considered as a self-dependent and self-determined unique substance (Natura naturans). Nature necessarily expresses itself in modifications, and in this sense Nature is the immanent cause of all its modifications or modes. 'God is the indwelling and not the transient cause of all things' for all things exist in nature or

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God. This does not mean that God exists apart from the modes and can interfere with the chain of finite causes. The chain of finite causality is the divine causality; or it the modal expression of God's self-determination.

There is one infinite system; but it can be looked at from different points of view. It can be conceived under the attribute of thought or under the attribute of extension. To every mode under the attribute of extension there corresponds a mode under the attribute of thought. Spinoza calls the second mode 'idea'. To every extended thing there corresponds an idea. The word correspond suggests two orders, two chains of causes, namely the order of bodies and the order of ideas. According to Spinoza in reality there is only one order, though it can be conceived by us in two ways. 'The order and connection of ideas is the same as the order and connection of things'. 134 'Whether we consider Nature under the attribute of extension or under the attribute of thought or under any other attribute, we shall find one and the same order and one and the same connection of causes: that is the same things follow in either case'. 135 There is no question of reducing bodies to ideas or ideas to bodies since there is one order of Nature. But if we are considering things as modes under one particular attribute we ought to do so consistently and not change our points of view and language in an irresponsible manner.

3 2 5 Mind And Body

'Man consists of mind and body' 136 'the human mind is united to the body'; 137 but the human body is man considered as a mode of the attribute of extension, and human mind is man considered as a mode of the attribute of thought. They are two aspects of one thing. Hence the Cartesian problem of 'interaction' between soul and body is, therefore, no real problem. If the natures of mind and body are understood, it must also be recognized that the problem of interaction does not and cannot arise. Spinoza avoided this problem by not reducing mind to body or body to mind but by declaring that they are simply two aspects of one thing. It may be said, of course, that Spinoza's doctrine about the relation between mind and body must be true if his general doctrine about substance and its attributes is true.

According to Spinoza the mind is the idea of the body. That is to say, the mind is the counterpart under the attribute of thought of a mode of extension, namely, the body. The
body is composed of many parts, and to each part there ‘corresponds’ an idea. Therefore, it follows, that ‘the idea which constitutes the formal being of human mind is not simple but composed of many ideas.’\textsuperscript{138} When the human body is affected by an external body, the idea of the modification in the human body is at the same time an idea of the external body. Hence ‘the human mind can perceive the nature of many bodies at the same time as the nature of its own body.’\textsuperscript{139} The mind regards the external body ‘as actually existing or as present to itself until the body is affected by a modification which cuts off the existence or presence of that (external) body.’\textsuperscript{140} If the modification of one’s own body continues when the external body is no longer actually affecting it, one may continue to regard the external body as present when it really is no longer present. Further, ‘if the human body has once been affected at the same time by two or more bodies, when the mind afterwards remembers any one of them it will straight way remember the others.’\textsuperscript{141} In this way Spinoza explains memory, ‘memory is nothing else than a certain concatenation of ideas involving the nature of things which are outside the human body, and this concatenation takes place according to the order and concatenation of the modifications of the human body.’\textsuperscript{142}

We can consider a mode of thinking without relation to its object, and we have then the idea of an idea. ‘Thus if a man knows anything, by that very fact he knows that he knows it, and so on to infinity.’\textsuperscript{143} All self-consciousness has a physical basis, in the sense that ‘the mind has a knowledge of itself save in so far as it perceives the ideas of the modifications of the body.’\textsuperscript{144} If a person considers his theory of mind and body in itself, its chief interest lies in his insistence on the physical dependence of mind. If the human mind is the idea of the body, it follows that the perfection of mind corresponds to the perfection of body. This is another way of saying that we depend on perception for our ideas. It follows that the relative imperfection of an animal’s mind depends on the relative imperfection of its body as compared with the human body. Spinoza did not think that for example animals have ‘minds’ in the sense in which we ordinarily talk about minds. But from his general theory of attributes and modes it follows that to every animal’s body there ‘corresponds’ an idea of that body; that is a mode under the attribute of thought, and the perfection of this ‘idea’ or ‘mind’ corresponds to the perfection of the body. To what extent mental activities are dependent on non-mental factors is a question, which can hardly be answered \textit{a priori}. If one detaches the theory of physical dependence of mind from its general metaphysical framework, one can regard it as a programme for
scientific research into the ascertainable dependence of mind on body. It is on this Spinoza regarded his view as the result of a priori logical deduction and not as a generalization from empirical investigations.

3.2.6 Knowledge

Spinoza in his Treatise on the correction of the understanding distinguishes four levels of perception.

1. First level of perception is of the lowest level. Spinoza illustrates this perception, what he means by an example: 'By hearsay I know my birthday, that certain people were my parents, and the like: things of which I had never had any doubt.' I do not know by personal experience that I was born on a certain day, but I know this truth only 'by hearsay' through the testimony of others.

2. The second level of perception is the perception of knowledge, which we have from vague or confused experience. 'By vague experience I know that I shall die; and I assert this because I have seen my equals undergo death, although they did not all live for the same length of time nor die from the same illness. Again, by vague experience I know also that oil is good for feeding a flame and that water is good for extinguishing it. I know also that a dog is a barking animal, and man a rational animal; and in this way I know nearly all things which are useful in life.'

3. The third level of perception is 'the essence of one thing is inferred from the essence of another, but not adequately': for example I conclude that some event or thing has a cause, though I have no clear idea of the cause, nor of the precise connection between cause and effect.

4. The fourth and the final level of perception is that whereby 'a thing is perceived through its essence alone or through a knowledge of its proximate cause.' For illustration, if in virtue of the fact that I know something I know what it is to know anything, that is to say, if in a concrete act of knowing I perceive clearly the essence of knowledge, I enjoy this fourth degree of perception. Again, if I possess a knowledge of the essence of the mind such that I see clearly that the mind is essentially united to a body, I enjoy a higher level of perception than if I merely conclude from my feelings with regard to my own body that there is a mind in me and is somehow
united with this body, though I do not understand the mode of union. This forth level of perception is also enjoyed in mathematics. ‘But the things which I have so far been able to know by this knowledge have been very few.’

3.2.6.1 Spinoza Gives Three Levels Of Knowledge In The Ethics

1. The second level of perception of the Treatise appears in the Ethics as knowledge of the first kind (cognitio primi generis), opinion (opinio) or imagination (imaginatio). By ‘cognitio primi generis’, Spinoza meant knowledge of the first (and lowest) type. Human body is affected by other bodies, and every modification so produced is reflected in an idea. Ideas of this kind are more or less equivalent, therefore, to ideas derived from sensation and Spinoza calls them ideas of imagination, they are not derived by logical deduction from other ideas, and in so far as the mind consists of such ideas it is passive and not active. For these ideas do not spring from the active power of the mind but reflect bodily changes and states produced by other bodies.

An individual body is affected by other individual bodies, and its changing states are reflected in ideas, which do not represent any scientific and coherent knowledge. On the level of sense-perception the human being has knowledge of other human beings, but its knowledge is knowledge of them as individual things, which affect it in some way. It has no scientific knowledge of them, and its ideas are inadequate. Though I necessarily know my own body in so far as it is affected by another body, since the state produced in my body is reflected in an idea, this knowledge is inadequate. Therefore knowledge that is purely dependent on sense perception is called ‘inadequate’ and ‘confused’ knowledge by Spinoza. ‘I say expressly that the mind has no adequate but only confused knowledge of itself, of its body and of external bodies when it perceives a thing in the common order of nature, that is, whenever it is determined externally, that is, by fortuitous circumstances, to contemplate this or that.’

There is association of ideas; but on the level of sense-perception or confused and ‘vague’ experience, these associations are determined by associated modifications of our bodies and are not by clear knowledge of objective causal relations between things. For Spinoza general or universal ideas belong to this level of experience. A human body is frequently affected by, other human bodies. The
ideas, which reflect the bodily modifications so produced, coalesce to form a confused idea of man in general, which is nothing but a sort of confused and composite image. This does not mean that there is no adequate general ideas; but according to Spinoza it means that the general ideas which are dependent on sense-perception are confused composite images. The human body, since it is limited, is only capable of distinctly forming in itself a certain number of images; and if more than this number are formed, the images begin to be confused; and if this number of images which the body is capable of forming in itself is much exceeded, all will become entirely confused one with the other. In this way arise the ideas of 'being', 'thing', etc. And from similar causes have arisen those notions which are called universal or general, such as man, dog, horse, etc. These common ideas or composite images vary from individual to individual; but in so far as there is similarity it is due to the fact that human bodies resemble one another in structure and are frequently affected in ways which resemble one another.

To understand Spinoza's doctrine of 'vague or causal experience' two things must be borne in mind. In the first place, although he denies the adequacy of the first and the lowest level of knowledge he does not deny its utility. Speaking of knowledge obtained by 'vague experience', he says: 'And thus I know nearly all things that are useful in life.' While illustrating his theory of levels of knowledge he speaks of the following problem: three numbers are given, and one has to find a fourth which stands in the same relation to the third as the second stands to the first. He mentions tradesmen who unhesitatingly multiply the second by the third and divide the product by the first because they have not forgotten the rule once given to them by the schoolmaster; though they have never seen any proof of the rule and could give no rational account of their procedure. Their knowledge is not adequate mathematical knowledge; but its practical utility can hardly be denied. In the second place, the inadequacy of an idea does not involve that idea being false when it is taken in isolation.

'There is nothing positive in ideas on account of which they could be called false.' Spinoza says for example, 'when we look at the sun it seems to be only some two hundred feet distant from us.' In so far as we consider this impression entirely by itself it is not false; for it is true that the sun appears to us to be so near.
But once we stop talking about the subjective impression and say that the sun is actually only two hundred feet distant from us, we make a false statement. What makes it false is a privation, namely, the fact that we lack knowledge of the cause of the impression and of the true distance of sun. But this privation is not the sole cause of our false statement or ‘idea’; for we would not say that the sun is only two hundred feet distant from us unless we had a certain impression or ‘imagination’. Therefore, Spinoza says that, ‘falsity consists in privation of knowledge which is involved by inadequate or mutilated and confused ideas’. Ideas of imagination or confused experience do not represent the true order of causes in Nature: they will not fit into a rational and coherent view of Nature. In this sense they are false, though no one of them is positively false if it is taken entirely by itself and considered simply as an isolated ‘idea’ reflecting a bodily modification.

2. Second level of knowledge involves adequate ideas and is scientific knowledge (cognitio secundi generis). According to Spinoza this level of knowledge is the level of ‘reason’ (ratio) as distinguished from the level of ‘imagination’. This does not mean that it is accessible only to scientists, because all men have some adequate ideas; and all human bodies are modes of extension while all minds are ideas of bodies. Hence, all minds will reflect some common properties of bodies; that is, some pervasive features of extended Nature or common properties of extension. Spinoza does not particularize; but we can say that ‘motion’ is one of these common properties. If a property is common to all bodies in such a way that it is equally in the part and in the whole, the mind necessarily perceives it and its idea of it is an adequate idea. ‘Hence it follows that certain ideas or notions are granted common to all men. For all bodies agree in certain things which must be adequately or clearly distinctly perceived by all.’ These ‘common notions’ are the foundations of the fundamental principles of mathematics and physics. Since the conclusions that can be logically derived from these principles also represent clear and distinct ideas, it is the ‘common notions’, which make possible systematic and scientific knowledge of the world. But Spinoza apparently did not confine the term ‘common notions’ to the fundamental principles of mathematics and physics; he used it to cover any fundamental and, in his opinion, self-evident truths.
According to Spinoza second kind of knowledge (cognitio secundi generis) is necessarily true. This knowledge is based on adequate ideas. Adequate idea is defined as 'an idea which, in so far as it is considered without regard to the object, has all the properties or intrinsic mark of a true idea.' There is no sense, then, in seeking for a criterion of the truth of an adequate idea outside the idea itself: it is its own criterion, and we know that it is adequate by having it. 'He who has a true idea knows at the same time that he has a true idea, nor can he doubt concerning the truth of the thing.' Hence, truth is its own standard and criterion. It follows that any system of propositions, which are logically derived from self-evident axioms, is necessarily true and that we know that it is true. To doubt the truth of a self-evident proposition is not possible. Nor can one doubt truth of a proposition which one sees to be logically entailed by a self-evident proposition.

By advancing from the first to the second level of knowledge one passes from logically unrelated impressions and confused ideas to logically related and clear propositions and adequate ideas; but at the same time one abandons the concreteness of sense-perception and imagination for the abstract generality of mathematics, physics and other sciences. Spinoza was perfectly well aware, that even if the essential characteristics of bodies can be deduced or discovered by logical analysis it would be beyond the power of the human mind to exhibit the whole Nature, with all its concrete modes, as a logically interrelated system. Philosophical deduction is a deduction of general propositions, it deals with timeless truths rather than with transitory individual modes as such. Thus means, that knowledge of the second kind is not the highest and most comprehensive level of knowledge, which is conceivable. As a limiting ideal at least, to which the human mind can only approximate, we can conceive a third level of knowledge, 'intuitive' knowledge, by which the whole system of Nature in its all richness is grasped in one comprehensive act of vision.

3. Intuitive knowledge (scientia intuitiva) is the third level of knowledge according to Spinoza. This level of knowledge arises from the second level of knowledge and is not a disconnected stage. 'Now this kind of knowing proceeds from an adequate idea of the formal essence of certain attributes of God to the adequate knowledge of essence of things.' This quotation seems to equate knowledge of the third with knowledge of the second kind. Elsewhere he says that 'as all things are in
God and are conceived through Him, it follows that we can deduce from this knowledge many things which we can adequately know and thereby form the third kind of knowledge.\footnote{163}

The passage from one way of looking at things to the other is made possible only by ascending from the first to the second level of knowledge, which is an indispensable preliminary stage for attaining the third level. Spinoza says, 'the more we understand individual things, the more we understand God.'\footnote{164} 'The greatest endeavor of mind and its greatest virtue is to understand things by the third class of knowledge.'\footnote{165} But 'the endeavour or desire of knowing things according to the third class of knowledge cannot arise from the first but (only) from the second class of knowledge.'\footnote{166} The vision of things in God is not something which can be fully attained but something to which the mind can approximate. 'The more advanced, then, everyone in this class of knowledge, the more conscious he is of himself and God, that is, the more perfect or blessed he is.'\footnote{167} The vision which is in question is an intellectual contemplation of the eternal and infinite system of Nature and of one's own place in it. There are religious overtones in what Spinoza says; but these derive more from his upbringing and perhaps from a personal piety than from requirements of his philosophical systems. Spinoza says, 'Whatever increases or diminishes, helps or hinders the power of action of our body, the idea thereof increases or diminishes, helps or hinders the power of thinking if our mind.'\footnote{168} Hence according to Spinoza the perfection of mind increases in proportion, as the mind is active.

Spinoza declared that the human mind enjoys no existence apart from the body, which can be described in terms of duration. He says, 'our mind can only be said to last, in so far as it involves the actual existence of the body.'\footnote{169} Spinoza spoke of mind being eternal in some sense, 'we are certain that the mind is eternal in so far as it conceives things under the species of eternity.'\footnote{170} Spinoza says, 'the human mind cannot be absolutely destroyed with the human body, but there is some part of it which remains eternal.'\footnote{171} Spinoza was careful about terms one ought to be able to gain some light from looking at his definition of eternity. 'I understand eternity to be existence itself, in so far as it is conceived to follow necessarily from the definition of an eternal thing.'\footnote{172} Spinoza then explains that 'the existence of a thing, as an eternal truth, is conceived to be the same as its essence.' One can say, then, that the human mind is 'eternal' in so far as if conceived to follow necessarily from the nature of substance or God. Since connections

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in Nature are akin to logical connections, one can regard the infinite system of Nature as a logical and timeless system, and in that system each human mind, expressing the idea or truth of a mode of extension, is a necessary moment. In the sense of infinite system every human mind is ‘eternal’1 And in so far as a given mind rises to the third level or degree of knowledge and views things *sub specie aeternitatis* it is conscious of its eternity.

Spinoza speaks of the mind’s eternity as lacking any relation to time: the mind is eternal just as much ‘before’ as ‘after’ the existence of the body as a distinct finite entity.173 We do not attribute duration save as long as the body lasts174 but the mind can be considered as a necessary moment in God’s consciousness of Himself, just as the intellectual love of God is a moment of God’s love of Himself, when both are considered *sub specie aeternitatis*. Hence, according to Spinoza it seems to be that the mind, in so far as it actively understands, is ‘an eternal mode of thinking’ and that all eternal modes of thinking ‘constitute at the same time the eternal and infinite intellect of God.’175 Thus in some sense all human minds for Spinoza were eternal in essence.

3 2.7 Evaluation

In Spinozism many strands come together—rationalism, naturalism, determinism, mysticism. From the point of view of many people today, the inclusiveness and coherence are likely to seem artificial and unreal. To those who do not agree with Spinoza that the real is rational without remainder, Spinozism seems a dream philosophy In a culture that has grown steadily more empirically minded—more concerned with facts, with the concrete, with the practical, with the thickness and the here-and-nowness of the actual—Spinozism can have only a limited appeal

Spinoza thought that just as a man’s body is a finite mode of God under the attribute of extension, so his mind is finite mode of God under the attribute of thought. A man’s mind may be defined as the idea of his body, just as his body is the extension of his mind. But though there is this general correspondence between mind and body, ideas have one property that bodies lack: Ideas are reflexive All men start, whether they recognize it or not, with more or less fragmentary ideas of their own bodies This is where inanimate objects and very simple organisms remain If men advance beyond this
level of awareness, it is only by not staying where they began. Even as children we find that our bodies are in a world containing other bodies. Gradually we realize that the mode we call our body is not merely "in" the world, but that it is tied by necessary connections to other bodily modes, and these to others, and so on.

Spinoza's analysis of knowledge led him to a conclusion about the human mind that corresponded exactly with the conclusion he had already reached, as a result of his analysis of the nature of extension, about the human body. Being exactly parallel aspects, what is true of one must be true of the other. Neither a man's body nor his mind is autonomous, independent entity that it seems to be; each is only a finite mode, the one of the attribute of extension, the other of the attribute of thought. Nevertheless, according to Spinoza, it is a mistake to conclude that because everything is ultimately one, all distinctions fade into nothingness.

We cannot accept Spinoza's method because we cannot accept his metaphysics, we cannot believe that interconnections of the parts of the universe are logical because we hold that, scientific laws are to be discovered by observation and not by reasoning alone. For Spinoza geometrical method was necessary and was bound up with most essential parts of his doctrine. Spinoza was attacked by philosophers on one hand and by theologians on the other hand, his philosophy hardly appeared worthy of serious considerations. Romantics took Spinoza as the 'pantheist' who did not place God in a transcendence remote but saw in nature a theophany or immanent manifestation of God, substance was inadequate; for God should be conceived as spirit. According to Spinoza attributes are inferior to God, modes are inferior to attributes but then all the three are said to be infinite. Spinoza was regarded by his earlier critics as an atheist and by romantics as pantheist, the tendency of a number of modern writers represent Spinoza as a speculative forerunner of a completely scientific view of the world.

In the whole history of Western culture, there have been a great many-a very great many-first-rate minds who have agreed with Spinoza and who have held that what may be disposed to call his "blind spot" for the actual was not blindness at all, but acute vision. Here, then, we come once again to a fundamental parting of ways; whether to take the ideal or the actual as the real is not so much a question to be settled by philosophy as it is a starting point for philosophical systems. Starting from the real-is-rational
presupposition that Spinoza took over from Descartes, it is possible to avoid the Spinozistic version of God, self, and value. Must the consistent rationalist conclude with Spinoza that the only real value consists in recognizing that values are subjective attitudes and that the only real freedom consists in realizing that everything we do is infallibly determined? Must he admit that self disappears into God that god is merely the rationale that validates our thought? Is religion reconciled with science only by making a religion of science? It is difficult to avoid the impression that Spinoza tried to have it both ways; to maintain a thorough determinism, based on a metaphysical theory, and at the same time to propound an ethic, which makes sense only if determinism is not absolute. Leibnitz held that these are not the inevitable consequences of rationalism. Leibnitz constituted to correct Cartesian dualism from within, and to correct it in a rationalistic spirit.

3.3 Gottfried Wilhelm Leibnitz (1646 – 1716)

Gottfried Wilhelm Leibnitz was born at Leipzig (Germany) in 1646. He studied both Greek and Scholastic philosophy. Leibnitz approached philosophy as a diplomatist—seeking for each specific crisis a formula in which divergent parties could be brought to agree. But the disputes whose agreements he sought were all rationalists; the “empiricist,” as Leibnitz scornfully called them, were left outside the fold and permitted to enter, if at all, only on his terms. Making the acquaintance of modern thinkers like Bacon, Hobbes, Descartes, he found in them examples of a ‘better philosophy’. According to his reminiscences he debated within himself during solitary walks whether to retain the Aristotelian theory of substantial forms and final causes or to adopt mechanism. He tried to combine Aristotelian elements with new ideas.

It never occurred to Leibnitz and permitted him to criticize the concept of substance or the doctrine that mathematics is the ideal of knowledge. He simply thought that the conclusions Spinoza reached from the Cartesian starting point were unsound. For Leibnitz, Spinoza had made quite unnecessary concessions to “science” (understood of course, as all the rationalists understood it, as a body of demonstrative truths). The monism, Naturalism, and pantheism that deemed to Spinoza the logical conclusions of Cartesian rationalism were unpalatable to Leibnitz, who set himself to find a place in the new rationalism for a transcendent and creative God, for real individuals, and for
objective purposes. He saw that Cartesianism was inadequate as it stood, yet he really wanted to get back to the Cartesian kind of compromise—a compromise that took the orthodox conception of God and the notion of a teleological universe seriously and that sought to show the new scientific world view was compatible with these traditional beliefs.

The influences, which helped to form Leibnitz's philosophy, are not directly relevant to the purpose of the present work, and have, besides, been far treated by commentators than the actual exposition of his final system. He was an eleetic; but he differed from the usual type of eleetic by transmuting what he borrowed, and of forming, in the end, a singularly harmonious whole. The four successive influences were: Scholasticism, Materialism, Cartesianism, and Spinozism. The precise relations between Leibnitz and Spinoza are not very clear. The former criticized and continued to criticize the latter's theories, and when he had studied Spinoza's posthumously published works he made persistent attempts to compromise Descartes by representing Spinozism as the logical outcome of Cartesianism. The philosophy of Descartes, according to Leibnitz, leads by way of Spinozism to atheism. On the other hand, it is clear that Leibnitz's insatiable curiosity in intellectual matters produced in him a lively interest in Spinoza's doctrine, even if he made no very profound study of it, and that he found it stimulating. Leibnitz had already arrived at some of the main ideas of his own philosophy by the time he studied Spinoza, and though certain affinities between their respective philosophies stimulated his interest and probably also his eagerness to dissociate himself publicly from Spinoza, the differences between their respective positions were far-reaching.

What, exactly, was the scientific world view? What metaphysics did physics entail? According to Leibnitz both Spinoza and Descartes here had gone wrong; both assumed that mechanics was about something they called "extension" or "matter", or "body". They reasoned since physics investigates the properties of extension, extension must be real, the only question (for them) was about its status and its relation to mind. Descartes thought that extension must be a substance, but since substances are independent by definition, it followed, as the Parallelists pointed out, that it was out of relation to every other real, including mind. Accordingly Spinoza said that extension was only an "attribute" of substance, but in Leibnitz's opinion this did not help, extension remained completely closed, irreducible system. As long as the subject matter of physics was conceived to be utterly different from the subject matter of the moral sciences, it did
not matter much whether extension was a substance or an attribute. But what if, appearances to the contrary, extension were not an ultimate? What if analysis showed that extension was a derivative concept and that the really basic concept in physics was a psychic concept? In this event, there would be a way of reconciling physics and the moral sciences.

In the *De arte combinatoria* Leibnitz proposed the development of a method suggested by the writings of Raymond Lull, the medieval Franciscan, and by modern mathematicians and philosophers. First of all he envisaged the analysis of complex terms into simple terms. 'Analysis is as follows. Let any given term be resolved into its formal parts, that is, let it be defined. Then let these parts be resolved into their own parts, or let definitions be given of the terms of the (first) definition, until one reaches simple parts or indefinable terms.' These simple or indefinable terms would form an alphabet of human thoughts. As all words and phrases are combinations of the letters of the alphabet, so can propositions be seen as a result from combinations of simple or indefinable terms. Secondly Leibnitz’s plan consists in representing these indefinable terms by mathematical symbols. If, then, one can find the right way of combining these symbols, one will have formed a deductive logic of discovery, which would serve not only for demonstrating truths already known but for discovering new truths. Leibnitz did not think that all truths can be deduced *a priori*: there are contingent propositions which cannot be deduced in this way for example Christ was born at Bethlehem is truth known by research into the facts of history, not by logical deduction from definition.

Leibnitz dreamed of a universal science, of which logic and mathematics would form only parts. The discovery of his proper mathematical symbolism would provide a universal language, a *characteristica universalis*, and by using this language in different branches of study human knowledge could be indefinitely developed in such a way that there would be no more room for rival theories than this pure mathematics. Leibnitz was led to extend the scope of the deductive method beyond the frontiers of formal logic and pure mathematics largely because of his conviction that the universe forms a harmonious system. In the *De arte combinatoria* Leibnitz draws attention to Bisterfeld’s doctrine of essential connections between all beings. A deductive system of logic or of mathematics is an illustration of the general truth that the universe is a system. Hence there can be a deductive science of metaphysics, a science of being.
3.3.1 Interpretation

Divergent interpretations prevail in Leibnitz's philosophy. There are inconsistencies and contradictions in his thought. His ethics and theology are at variance with his logical premises. In Bertrand Russell's opinion the explanation of Leibnitz is that, having an eye to edification and to the maintenance of his reputation for orthodoxy, shrank from drawing the logical conclusions of his premises. 'This is the reason why the best parts of his philosophy are the most abstract, and the worst those which nearly concern human life.' Jean Baruzi, in his *Leibnitz et l' organisation religieuse de la terre d' après des documents medits*, maintained that Leibnitz was primarily a religious-minded thinker, animated above all by zeal for the glory of God. Kuno Fischer, saw in Leibnitz the chief embodiment of the spirit of the Enlightenment. For Windelband, and also for the Italian idealist Guido de Ruggiero, Leibnitz was essentially the precursor of Kant. In the *New Essays* Leibnitz showed his belief that the life of the soul transcends the sphere of distinct consciousness or clear awareness, and he foreshadowed the idea of the deeper unity of sensibility and understanding, which the rationalists of the Enlightenment had tended to separate with undue sharpness. He influenced Herder on this matter. 'More important still was another effect of the work of Leibnitz. It was no less a thinker than Kant who undertook to build up the doctrine of the *Nouveaux Essais* into a system of epistemology.' Further Louis Daville, in his *Leibnitz historien*, emphasized the historical activities of Leibnitz. It is difficult to pigeon-hole Leibnitz in any one compartment.

3.3.2 Two Principles

Leibnitz distinguished two main principles of reason: the principle of *contradiction* (by which we distinguish between true and false), and the principle of *sufficient reason* (which tells us for every event or fact there is a sufficient reason, even though we may know what it is). The principle of sufficient reason proves the existence of God; for there must be a sufficient reason for the universe, and that is its creator, God. Leibnitz goes on to develop a new theory of substance, while for Spinoza substance is a total category that includes both God and material universe, for Leibnitz substance consists of metaphysical units or atoms, which he called *monads*. If reality were merely rational, we would need only one principle—the principle of contradiction. But since the rational is only the possibly real, a second principle is needed. We would probably think
of this principle in Empirical terms and use observation and experiment to distinguish between what is real and what is only possibly real. Because Leibnitz held that what makes the possibly-real real is God's choice of the best, his second principle was teleological. He called it the "principle of sufficient reason." The principle of contradiction yields what Leibnitz described as "truths of reason"; the principle of sufficient reason, "truths of fact." The two principles, and the truths derived from them, supplement each other; any satisfactory account of things involves the use of both. Truths of reason are implicatory propositions like those of arithmetic and geometry, and they are absolutely necessary.

3.3.3 Proposition

According to Leibnitz every proposition possesses the subject-predicate form or can be analysed into a proposition or set of propositions of this form. The subject-predicate form of proposition is thus fundamental. And truth consists in the correspondence of a proposition with reality, possible or actual. "Let us content ourselves with seeking truth in the correspondence of the propositions in the mind with the things in question. It is truth that I have also attributed truth to ideas in saying that ideas are true or false; but then I mean in reality the truth of proposition affirming the possibility of the object of the idea. In the same sense we can say also that a being is true, that is to say the proposition affirming its actual or at least possible existence." 180

The view that a subject and a predicate are to be found in every proposition is a very ancient and respectable doctrine. Bradley's logic consists wholly of the contention that every proposition ascribes a predicate to Reality, as the only ultimate subject. 181 The plainest instances of propositions not so reducible are the propositions which employ mathematical ideas. All assertions of numbers, as e.g., "There are three men," essentially assert plurality of subjects, though they may also give a predicate to each of the subjects. Such propositions cannot be regarded as a mere sum of subject-predicate propositions, since the number only from the singleness of the proposition, and would be absent if three propositions, asserting each the presence of one man, were juxtaposed. 182

Leibnitz neglected relational propositions. He dealt with the main type of such propositions, and endeavoured to reduce them to the subject-predicate form. As regards propositions asserting numbers, he held aggregates to be mere phenomena: they are what he calls "semi-mental entities." Their unity which is essential to the assertion of the number, is, added by perception alone, by the very fact of their being perceived at one
time. Then all that is true in such judgements, is the individual assertions of subject and predicate, and the psychological assertion of simultaneous perception as a predicate of the percipient. For Leibnitz numbers have the nature of relations, and hence are in some manner beings. But relations founded in things, drive their reality from the supreme reason; God sees not only individual monads and their various states, but their relations also, and in this consists the reality of relations. As regards space and time, Leibnitz always endeavoured to reduce them to attributes of the substances in them. Position, he says, like priority or posteriority, is nothing but a mode of thing. The whole doctrine is collected in New Essays. "Units are separate, and the understanding gathers them together, however dispersed they may be. Yet although relations are from the understanding, they are not groundless or unreal. For the primitive understanding is the origin of things; and indeed the reality of all things, simple substances excepted, consists only in the foundation of the perceptions of phenomena in simple substances." Thus relation and aggregates have only a mental truth; the true proposition is one ascribing a predicate to God and to all others who perceive the relation.

In the belief that propositions must have a subject and a predicate, Leibnitz does not differ either from his predecessors or from his successors. Kant's belief in an unknowable thing-in-itself was largely due to the same theory. Philosophers have differed, not so much in respect of belief in its truth, as in respect of their consistency in carrying it out. But Leibnitz's assumption of a plurality of substances made the denial of relations peculiarly difficult, and involved him in all the paradoxes of the pre-established harmony.

3.3.4 Contingent Propositions

In Leibnitz's system, generally speaking, as such, contingent propositions assert actual existence. In the case of the necessary existence of God, may be provided for by saying that contingent propositions are such as involve a reference to parts of time. This seems to be Leibnitz's meaning when he says: "The notion of eternity in God is quite different from that of time, for it consists in necessity, and that of time in contingency." Thus necessary propositions are such as have no reference to actual time, or such as have no reference to actual time, or such as—except in the case of God—do not assert the existence of their subjects. "As for the eternal truths," Leibnitz says, "we must observe that at bottom they are all conditional, and say in fact: Such a thing posited, such another
thing is "192 Again: "philosophers, who distinguish so often between what belongs to essence and what to existence, refer to existence all that is accidental or contingent."193 He points out also that the truth of a necessary proposition does not depend upon the existence of its subject.194

Propositions about contingency itself, and all that can be said generally about the nature of possible contingents, are not contingent; on the contrary, if the contingent be what actually exists, any proposition about what might exist must be necessary. Hence, Leibnitz says195

"The notion of a species involves only eternal or necessary truths, but the notion of an individual involves, sub ratione possibilitatis, what is of fact, or related to the existence of things and to time"

The notion of an individual, as Leibnitz puts it, involves reference to existence and time sub ratione possibilitatis, i.e. the notion is exactly what it would be if the individual existed, but the existence is merely possible, and is not, in the mere notion, judged to be actual. "Possibles are possible," he says:

"Before all actual decrees of God, but not without sometimes supposing the same decrees taken as possible. For the possibilities of individuals or of contingent truths contain in their notion the possibility of their causes, to wit, the free decrees of God; in which they are different from the possibilities of species or eternal truths, which depend only upon the understanding of God, without involving his will"196

Possible existents involve possible causes, and the connection between a possible cause and a possible effect is similar to that between an actual cause and an actual effect. But so long as we do not assert existence, we are still in region of eternal truths. The individual once posited, all its properties follow: "every predicate, necessary or contingent, past, present, or future, is comprised in the notion of the subject".197 But it does not follow that this notion represents a subject, which exists: it is merely the idea of a subject having the general qualities distinguishing existents. Existence is thus unique among predicates. All other predicates are contained in the notion of the subject, and may be asserted of it in a purely analytic judgment. The assertion of existence, alone among predicates, is synthetic, and therefore, in Leibnitz's view, contingent.198 It is not only that the existence of such and such a subject is contingent, but also the connection of any two predicates expressing the states of that subject at different times.
Leibnitz states:

"The connection of events, though certain, is not necessary, and it is open to me to make or not to make this journey, for though it is included in my notion that I shall make it, it is also included in it that I shall make it freely. And there is nothing in me, of all that can be conceived generally, or by essence, or by a specific or incomplete notion, whence it can be concluded that I shall do so necessarily, whereas from my being a man it can be concluded that I am capable of thinking; and consequently, if I do not make this journey, that will not combat any eternal or necessary truth. Nevertheless, since it is certain that I shall do so, there must be some connection between me, who am the subject, and the execution of the journey, which is the predicate; for, in a true proposition, the notion of the predicate is always in the subject. Consequently, if I did not do so, there would be a falsity, which would destroy my individual or complete notion." 199

Hence, those predicates, which are concretes, i.e. those expressing states of a substance at particular parts of time, are in a different position from such abstract predicates as human and rational. Concrete predicates, though they are connected with each other, are not necessarily connected; the connections as well as predicates are contingent. All the predicates are necessarily connected with the subject, but no concrete predicates are necessarily connected with each other. Thus Leibnitz often speaks of them as contingent predicates. A subject is defined by its predicates, and therefore if the predicates were different, the subject could not be the same. Thus it follows, from a subject's being the subject it is, that it will have all the predicates that it will have; but from one or more of its predicates, this does not follow necessarily. The existence of each separate instant is a contingent truth, for each is presupposed in the assertion that just such a subject exists. There is a difficulty on this view, in distinguishing a subject from the sum of the predicate.

Leibnitz even goes far as to say that it is in the Dynamics that we learn the distinction of necessary and contingent propositions. 200 Besides these, there is the general law, equally contingent, but equally without exception, "that man will always do, though freely, what seems the best". 201 The fact seems to be, that these general but not necessary laws are regarded by Leibnitz as essentially referring to every part of actual time. That is to say that they do not hold of the sequences in other possible time orders, but only of actual sequences. Moreover they are deduced from actual preceding state, which elements lead to the sequence, and are logically prior to it. Hence, these laws, though they have an a priori proof by means of final causes, are yet of the nature of empirical
generalizations. They have held, they hold now, and they will hold hereafter. They apply to every moment of actual time, but they cannot be stated without such reference. In Leibnitz’s system, the laws of motion and the law of volition are existential, and do have an essential reference to the parts of actual time. They are peculiar only in referring to all parts of time. They may be contrasted, in this respect, with the properties of time itself, which are metaphysically necessary, and the same in all possible worlds; whereas the existence of time is contingent, since it depends upon God’s free resolve to create a world.

Hence, it follows that Leibnitz’s dichotomy of propositions amounts to the assertions—
All true positions not involving actual existence, but referring only to essences or possibles, are necessary; but proposition asserting existence except in the case God- are never necessary from any other existential proposition, nor yet from the fact that the subject has all the qualities distinguishing all the existents. If, then, existential propositions are to have any interrelations, and are to be in any way systematizes, there must be some principle by which their merely particular and contingent character is mitigated. This brings us to the principle of sufficient reason; which is usually supposed to be, by itself, adequate to the deduction of what actually exists.

3.3.5 Definition

Definition is only possible in respect of complex ideas. Broadly speaking, in the analysis of complex ideas into their simple constituents. Since one can only be defined by another, we should incur a vicious circle if we did not admit some indefinable ideas. This truth is fully recognized by Leibnitz, and the search for simple ideas, which form the presupposition for all definition, constitutes the chief part of his studies for universal Characteristic. Hence, Leibnitz says: \(^{202}\) "When a truth is necessary, its reason can be found by analysis, resolving it into more simple ideas and truths, until we come to those which are primary... In short, there are simple ideas, of which no definition can be given; there are also axioms and postulates, in a word, primary principles, which cannot be proved, and indeed have no need of proof; and these are identical propositions, whose opposite involves an express contradiction." \(^{203}\) Hence, Leibnitz’s theory of definition consisting of analysis into indefinable simple ideas, is inconsistent with the doctrine that the “primary principles” are identical or analytic; and that the former is correct whereas the latter is erroneous.
Leibnitz distinguishes the real definitions from the definitions that are only nominal. According to Leibnitz, arithmetic is analytic, because, for example, the number 3, is defined as $2+1$, but he confesses that 3, so defined, must be seen to be possible. In one passage, Leibnitz even confesses that ideas in general involve a judgment, namely a judgment that they are possible. A possible idea, for him, is that which is not self-contradictory. In an early proof of the existence of God submitted by Leibnitz to Spinoza at Hague, is actually used to show that God is possible. Here Leibnitz defines God as the subject, which has all positive predicates. Leibnitz takes A and B two simple predicate to show what is sufficiently evident cannot be mutually contradictory, and concludes God so defined, is possible. But when all ideas, when correctly analyzed, must, for Leibnitz, be ultimately predicates or collection of predicates, hence it follows that all ideas will be possible. Indeed as Leibnitz himself urges in this proof, any relation between simple ideas is necessarily synthetic; for analytic relation can only hold between ideas of which at least one is complex. If there were no synthetic relations of compatibility and incompatibility, all complex ideas would be equally possible. Hence, in definition there is always involved, the synthetic proposition that the simple constituents are compatible. If this is not the case, the constituents are incompatible—e.g. good and bad, or two different magnitudes of the same kind—and this is also a synthetic relation, and the source of negative propositions.

### 3.3.6 Judgement

The two questions are the meaning and range of analytic judgments, and their claim to exclusive necessity. Leibnitz agreed with the claim to exclusive necessity of analytic judgments wholly with his predecessors; on the first, by the discovery that all causal laws are synthetic, he made an important change, which prepared the way for Kant's discovery that all propositions of mathematics are synthetic. As regards the range of analytic judgments, Leibnitz held that all propositions of logic, Arithmetic and Geometry are of this nature, while all existential propositions, except the existence of God, are synthetic. The discovery which determined his views on this point was, that the laws of motion and indeed all causal laws, are synthetic, and therefore in his system, also contingent. As regards the meaning of the analytic judgments of the instances which Leibnitz suggests, suffers from one or other of two defects. Either the instances can be easily seen to be not truly analytic—for e.g., in Arithmetic and Geometry—or they are tautologies, and so not properly propositions at all. Thus Leibnitz says, that primitive truths of reason are
identical, because they appear only to repeat the same thing without giving any information. For example: "A is A," "I shall be what I shall be", "The equilateral rectangle is a rectangle," or negatively, 'A B cannot be non-A." Most of these propositions assert nothing; the remainder can hardly be considered the foundations of any important truth. Hence, Leibnitz frequently asserts, that analytic propositions are necessarily concerned with essences and species, not with assertions as to individuals.211

Leibnitz goes on to say that the truth of hypothetical proposition lies in the connection of ideas.212 The subject is a collection of attributes, and the predicate is a part of this collection. The proposition becomes hypothetical: "If a thing is red, it is coloured." Leibnitz says, the eternal truths are all hypothetical, and do not assert the existence of their subjects.213 Here the hypothetical proposition evidently presupposes the proposition "red is a colour" Thus in analytic judgments, when they are not expressed in the derivative hypothetical form, the subject is a complex idea, i.e., a collection of attributes, while the predicate is some part of this collection Here, however, the collection is the weak point of analytic judgments This brings us to the doctrine of definition, in which Leibnitz, like all who held analytic propositions to be fundamental, was guilty of much confusion.

3.3 7 • The Law Of Contradiction

The Law of contradiction applies to judgments, but not to ideas: It asserts that every proposition is a true or false.214 A mere idea cannot be self-contradictory. Only a complex idea, which involves at least two propositions, can be self-contradictory. Thus the idea "Round Square" involves the proposition "round and square are compatible," and this involves the compatibility of having no angles, and having four angles. Contradiction is only possible because round and square are both complex, and round and square involve synthetic propositions asserting the compatibility of their constituents, while round involves the incompatibility of its constituents with the possession of angles. But for this synthetic relation of incompatibility, no negative proposition would occur, and therefore there could be no proposition involved which would be directly contradictory to the definition of a square. Leibnitz admits this, when he urges that truths are not arbitrary, because, "notions are not always reconcilable among themselves."215 Since the possibility of God, as defined by Leibnitz, depends upon
the fact that all simple ideas are "reconcilable among themselves," and since all notions are composed of simple ideas, it is difficult to see how the two views are combined.

In Leibnitz's sense, two simple ideas can never be mutually contradictory, since mere analysis will not reveal any further predicate possessed by the one and denied by the other. Hence, a self-contradictory idea, if it be not a mere negative, such as non-existent, must always involve a synthetic relation of incompatibility between two simple notions. In Leibnitz's sense, the impossible idea presupposes the idea which is impossible on account of some synthetic proposition; and conversely the possible complex idea is possible on account of a synthetic proposition asserting the compatibility of its simple constituents. Hence, 2+1 in arithmetic be indeed the meaning of 3, still the proposition that 2+1 is possible is necessarily synthetic. A possible idea cannot be merely an idea, which is not contradictory; for the contradiction itself must always be deduced from synthetic propositions. Hence, the propositions of Arithmetic, as discovered by Kant are also synthetic. In Geometry Leibnitz regards the triple number of dimensions, he says, follows analytically from the fact that only three mutually perpendicular lines can be drawn through one point. 216 He says, no instance could be more proper for illustrating a blind necessity independent of God's will.

Leibnitz did not perceive, that the proposition from which the three dimensions are supposed to be deduced is in fact precisely the same as the three dimensions, and that, so far from being proved, it is wholly incapable of deduction from any other proposition, and about as synthetic as any proposition in the whole range of knowledge. Kant in his first published work, 217 points out the circularity of Leibnitz's deduction of the Theodicee, and proceeds, being still a Leibnitzian, to infer the number of dimensions is synthetic and contingent, and might be different in other possible worlds. 218

Arguing from the general point of view we can see that the law of contradiction states simply that any proposition must be true or false, but cannot be both. Hence, it gives no indication as to the alternative to be chosen, and cannot of itself decide that any proposition is true. Even, it cannot of itself, yield the conclusion that such and such a proposition is true or false, for this involves the premiss "such and such is a proposition," which does not follow from the law of contradiction. Hence, the doctrine of analytic proposition seems wholly mistaken. Leibnitz does not discuss necessity. The statement that analytic propositions are necessary is significant, and the opposite statement -that

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synthetic propositions are contingent is certainly regarded by Leibnitz. It would seem ultimate and indefinable

In holding necessary propositions to be analytic, Leibnitz agreed with all his predecessors, and with those of his successors who preceded Kant. But by the discovery that the laws of motions are synthetic, and by his strict determinism, he rendered the denial of necessary synthetic propositions highly paradoxical in its consequences, and prepared the way for Kant's opposite assertion. Leibnitz and Kant both held that there is a fundamental distinction between propositions that are necessary, and those that are contingent, or, in Kant's language, empirical. Thus the propositions of mathematics are necessary, while those asserting particular existence are contingent. As long as the distinction of analytic and synthetic propositions subsisted, there was some plausibility in maintaining a corresponding distinction in respect of necessity. But Kant, by pointing out that mathematical judgments are both necessary and synthetic, prepared the way for the view that this is true of all judgments. The distinction of the empirical and a priori seems to depend upon confounding sources of knowledge with grounds of truth. Hence, whatever view we adopt, however, as regards the necessity of existential propositions, it must be admitted that arithmetical propositions are both necessary and synthetic, and this is enough to destroy the supposed connection of the necessary and analytic.

3 3.8 The Law Of Sufficient Reason

In Monadology Leibnitz states the law of sufficient reason as follows.

"our reasonings are found upon two great principles, that of contradiction, ... and that of sufficient reason, in virtue of which we judge that no fact can be found true or existent, no statement variable, unless there is a sufficient reason why it should be so and not otherwise, although these reasons usually cannot be known to us. There are also two kinds of truths, those of reasoning and those of fact. Truths of reasoning are necessary, and their opposite is impossible; truths of fact are contingent, and their opposite is possible. When a truth is necessary, the reason of it can be found by analysis. But there must also be a sufficient reason for contingent truth or truths of fact, i.e. for the sequence of things which are dispersed throughout the universe of created beings, in which the resolution into particular reasons might go into endless detail."
This leaves us entirely uninformed as to what is meant by sufficient reason. In the paper “On the Ultimate Origination of Things” (1697) Leibnitz says:

“In eternal things, even though there be no cause, there must be a reason, which, for permanent things, is necessity itself, or essence; but for the series of changing things, if it be supposed that they succeed one another from all eternity, this reason is, as we shall presently see, the prevailing of inclinations, which consist in not necessitating reasons i.e. reasons of an absolute and metaphysical necessity, the opposite of which involves a contradiction, but in inclining reasons.”

In 1686, Leibnitz refers to his formula as a “vulgar axiom” which follows as a corollary. He says: “There must always be some foundation of the connection of terms in a proposition, which must be found in their notions. This my great principle, with which I believe all philosophers, must agree, and to which one of the corollaries is this vulgar axiom, that nothing happens without a reason...though often this reason inclines without necessitating.”

In Metaphysics Leibnitz presupposes two great principles, namely: (1) the law of contradiction, and (2) “that nothing is without a reason, or that every truth has its a priori proof, drawn from the notion of the terms, although it is not always in our power to make this analysis.”

Leibnitz says, “Generally, every true proposition, (which is not identical or true per se) can be proved a priori by the help of axioms or propositions true per se, and by the help of definitions or ideas. For as often as a predicate is truly affirmed of a subject, some real connection is always judged to hold between the predicate and the subject, and thus in any proposition: A is B (or, B is truly predicated of A), B is always in A itself, or its notion is in someway contained in the notion of A itself; and this either with absolute necessity, in proposition of eternal truth, or with a kind of certainty depending upon a suppose decree of a free substance, in contingent things; and this decree is never wholly arbitrary and destitute of foundation, but always some reason for it (which however inclines, and does not necessitate), can be given, which could itself be deduced from analysis of the notions (if this were always within human power), and certainty does not escape the omniscient substance, which seems everything a priori by means of ideas themselves and its own decrees. It is certain, therefore, that all truths, even the most contingent, have an a priori proof, or some reason why they are rather than are not, And this is itself what people commonly say, that nothing happens without a cause, or that nothing is without a reason.”

Hence, the law of sufficient reason as applied to actual existents, reduces itself definitely to the assertion of final causes, in the sense that actual desires are always
directed towards what appears the best. In all actual changes, the consequent can only be deduced from the antecedent by using the notion of the good. Where the change depends only upon God, it really is the best; where it depends upon a free creature, it is such as seems best to the creature, but is often, owing to confused perception, not really the best possible change. Such a connection can only be regarded as contingent by admitting, as Leibnitz does, that a law may be general, i.e. may apply to every part of time, without being necessary, i.e. without being capable of a statement in which no actual part of time is referred to. "As possibility is the principle of essence," Leibnitz says, "so perfection, or a degree of essence (by which the greatest number of things are compossible), is the principle of existence." When we enquire into the relation of the law of sufficient reason to the law of contradiction, we find that Leibnitz makes some remarks on the subject, and those few give a meaning to the law of sufficient reason, in which it applies equally to all possible worlds. Then further we require a principle, applicable only to the actual world, from which actual existence may be inferred, this is to be found in final cause.

In writing to Des Bosses, Leibnitz mentions:

"I certainly maintain that a power of determining oneself without any cause, or without any source of determination, implies contradiction, as a relation without foundation; but from this the metaphysical necessity of all effects does not follow. For it suffices that the cause or reason be not one that metaphysically necessitates, though it is metaphysically necessary that there should be some such cause." Here Leibnitz is evidently thinking of the volitions of free creatures. In a letter to the Princess of Wales, accompanying the fourth paper against Clarke, Leibnitz says, "God himself could not himself choose without having a reason of his choice." In order that a notion may be the notion of a possible existent, there must be another notion, which, if existed, would be an sufficient reason for such an imagined existent. Leibnitz continues: "there were an infinity of possible ways of creating the world, according to the different designs which God might form, and each possible world depends upon certain principal designs or ends of God proper to itself." If the principle applies to possible as well as actual existents, then how will it help in determining what does actually exist? It merely gives a general quality of what might exist, not a source of actual existents. Hence, Leibnitz admits, that, the relation of cause and effect can never be purely external one; the cause must be always, in part, a
desire for the effect. This form of causality is the essence of activity, which Leibnitz declares to be metaphysically to substance. In this form, the law of sufficient reason is necessary and analytic, not a principle coordinate with that of contradiction, but a mere consequence of it. The actual sufficient reason of creation was the desire for the maximum of good, and not for anything that the other possible worlds would have realized. Therefore, Leibnitz says:

"It is reasonable and assured that God will always do the best, though what is less perfect does not imply contradiction." It would be possible to desire what does not appear best, but it is a contingent fact that actual desires, which are sufficient reasons, are always directed to what the free spirit holds to be the best possible.

3.3.8.1 Evaluation

Leibnitz, holding fast to the doctrine that a necessary proposition must be analytic, discovered that existential propositions are synthetic, and also, like Hume and Kant, that all causal connections among existents differing in temporal position are synthetic. Leibnitz accordingly inferred, that the actual world does not exist necessarily, and that, within this world, causes do not produce their effects necessarily. The reason he perpetually repeats inclines without necessitating. This was his solution of the problem raised by the fact, which he perceived as clearly as Hume and Kant, that causal connections are synthetic. Hume inferred that causal connections do not really connect; Kant inferred the synthetic may be necessary, and Leibnitz inferred that a connection might be invariable without being necessary. It was because Leibnitz never dreamt of denying that the necessary must be analytic, this was his only possible escape from a total denial of causal connections.

3.3.9 Substance

The Cartesians had defined substance as that which needs, for its existence, only God’s concurrence. This practically meant, that its existence was not dependent upon relation to any other existents: for God’s concurrence was an awkward condition, which had led Descartes to affirm that God alone was properly and strictly a substance. Practically they admitted two substance, mind and matter, even though whenever they
took God seriously, they were compelled to deny the substantiality of everything except God. This inconsistency was remedied by Spinoza, to whom substance was \textit{causa sui}, the self-caused, or that which is in itself and conceived through itself. Therefore, substance to him was God alone—a remedy which Leibnitz regarded as condemning the original definition.\textsuperscript{232} To Spinoza, thought and extension did not constitute separate substances, but attributes of the one substance. Like Descartes in Spinoza, the notion of substance, though not by them clearly analyzed into elements, was a notion dependent, in some undefined manner, upon the purely logical notion of subject and predicate. The attributes of a substance are the predicates of the subject; and it is supposed that predicates cannot exist without their subject, though the subject can exist without them. Hence the subject becomes that whose existence does not depend upon any other existent. Leibnitz proceeds, “with an innovator who is but too well-known, that God is the only substance, and creatures are mere modifications of him”? If the independence is to extend only to created things, then, Leibnitz thinks, force and life, abstractly at least, can be so conceived. He says, independence in conception does not belong only to substance, but also to what is essential to substance.

Leibnitz perceived, that the relation to subject and predicate was more fundamental than the doubtful inference to independent existence.\textsuperscript{233} Therefore, Leibnitz brought his notion of substance into independence upon this logical reason. Leibnitz urges against Locke that there is good reason to assume substance, since we conceive several predicates in one and the same subject, and this all that is meant by the words \textit{support} or \textit{substratum}, which Locke is using as synonymous with substance.\textsuperscript{234} As a rule besides the logical notion of subject, there has been another element in the meaning people have attached to the word substance, and this is the element of persistent through change. Change implies something which changes; it implies a subject which has preserved its identity while altering its qualities. Therefore, this notion of a subject of change is not independent of subject and predicate, but subsequent to it; it is the notion of subject and predicate applied to what is in time. It is this special form of the logical subject, combined with the doctrine that there are terms which can only be subjects and not predicates, which constitutes the notion of substance as Leibnitz employs it. He says,

“\textit{If we are said to hold that I am the same person as I was, we must not be content with mere experience, but must have an a priori reason. This can only be that my present and past attributes are predicates of the same subject.}”\textsuperscript{235}
Kant has pointed out the necessity of substance in the sense of a subject of change in the first analogy of experience. But to Kant this subject is as phenomenal as its predicates. The distinctive feature of substance, when used as the basis dogmatic metaphysics, is the belief that certain terms are only and essentially subjects. When several predicates can be attributed to a subject, and this in turn cannot be attributed to any other subject then Leibnitz says, we call the subject an individual substance. This is important; for it is plain that any term may be made a subject. I may say "two is a number," "red is a colour" and so on; but such terms cannot be attributed to others, and therefore are not substances. The ultimate subject is always a substance. Hence, substance is that which can only be subject, not predicate, which has many predicate and persists through change. In short it is the subject of change. The different attributes, which a substance has at different times, are all predicate of the substance, and though any attribute exists only at a certain time, yet the fact of its being an attribute at time is eternally a predicate of the substance in question. For the substance is the same subject at all times, and therefore had always the same predicates, since the notion of the predicate, according to Leibnitz, is always contained in the notion of the subject.

Leibnitz connected the psychological origin of the idea of substance with Self-consciousness. 'To think a colour and to observe that one thinks it are two very different thoughts, as different as the colour from the ego which thinks it. And as I conceive that other beings may also have the right to say ‘I’, or that it could be said for them, it is through this that I conceive what is called “substance” in general.' It is also the consideration of the ego itself which furnishes other metaphysical notions, like cause, effect, action, similarity, etc., and even those of logic and ethics. There are primitive truths of fact as well as primitive truths of reason: and the proposition 'I exist' is a primitive truth of fact, an immediate truth, though it is not the only one. The primitive truths of fact are ‘immediate internal experiences of an immediacy of feeling’ they are not necessary propositions but propositions ‘founded on an immediate experience’. I am certain, then, that I exist, I am aware of myself as a unity. Hence I derive the general idea of substance as unity. At the same time, the connection of the idea of substance with the self-consciousness of the ego militates against the Spinozistic conception of a unique substance of which I am but a mode.

However, some of Leibnitz’s speculations may have pointed towards Spinozism, his lively awareness of spiritual individuality made it impossible for him to entertain
seriously the general metaphysic of Spinoza. Leibnitz was not prepared to follow Descartes in making the Cogito the one fundamental existential proposition; but he agreed that 'the Cartesian principle is valid', though 'it is not the only one of its kind.'

It is not possible to demonstrate any argument giving absolute certainty the external world exists, and 'the existence of spirit is more certain than that of sensible objects.' We certainly discover between phenomena and connections which enable us to predict, and there must be cause of some constant connection; but it does not follow as an absolutely certain conclusion that bodies exist, for an external cause, Berkeley's God, might present to us orderly successions of phenomena. We observe that visible bodies, the objects of the senses, are divisible: that is to say they are aggregates or compounds. This means the bodies are composed of simple substances, without parts. There must be simple substances, since there are compound substances, for the compound is only a collection or aggregatum of simple substances. These simple substances, of which all empirical things are composed, are called by Leibnitz 'monads'. They are 'the true atoms of nature and, in a word, elements of things'.

3.3.10 Monads

'Monas' is a Greek word which signifies unity or that which is one. Each monad differs qualitatively and intrinsically from every other monad; yet the universe is an organized and harmonious system in which there is an infinite variety of substances combining from a perfect harmony. Each monad develops according to its own inner constitution and law; it is insusceptible of increase or diminution through the activity of other monads, since the simple cannot have the parts added to it or subtracted from it. But each one, being gifted with some degree of perception, mirrors the universe, that is the total system in its own way. Hence, Leibnitz reaffirmed the existence of a plurality of individual substances; and on this point he agreed with Descartes; but he did not agree with the conception of matter as geometrical extension.

Leibnitz agreed with Spinoza that the logic of substance that the logic of substance requires the substance to stand alone, it means that it must enter into no relations. Since Spinoza held that things do not stand alone, he concluded that there is but one substance, since Leibnitz wanted to avoid Spinoza's all embracing -substance, he had no alternative but to make each unit of force a substance in its own right. But how do all individual substances differ from one another? They cannot differ in size or in space.
occupancy, for these concepts imply extension; extension cannot be used to explain force, since it is a more basic concept than extension. Leibnitz derived this conclusion from the general Cartesian principle that everything that is not body is mind: If a monad is not a body, it must be a mind. Leibnitz believed that this was confirmed in experience: what we experience in ourselves as “being alive” is nothing but that drive or thrust that, Leibnitz held it necessary to presuppose as the basis of physical movement and change. The net result of this was a universe consisting of a vast assemblage of individual lives.

Each substance or monad is the principle and source of its activities: it is not inert but has an inner tendency to activity and self-development. Force, energy, activity are of the essence of substance. “The idea of energy or virtue, called by the Germans Kraft and by the French la force, and for the explanation of which I have designed a special science of dynamics, adds much to the understanding of the notion of substance.” Substance can be defined as ‘being capable of action.’ Activity is the activity of a substance. It means that in monads there is a principle of activity otherwise a primitive force, which can be distinguished from the actual successive activities of the monad. Therefore Leibnitz introduces the idea of entelechy or substantial form. The entelechy or substantial form involves a conatus or positive tendency to action, which invariably fulfils itself unless it is hindered.

Leibnitz considers monad the Prime matter and Secondary matter as the aggregate of monads. An aggregate substances or monads Leibnitz refers to it as an organic body or an organic machine. Organic body is truly a unified body, by possessing a dominant monad, which acts as the entelechy or substantial form of its organic body. Leibnitz calls this compound of the dominant monad and an organic body a corporeal substance. ‘I distinguish this (i) the primitive entelechy or soul; (ii) primary matter or primitive passive force; (iii) the monad completed by these two, (iv) mass or secondary matter or the organic machine, to which innumerable subordinate monads concur; (v) the animal or corporeal substance, which is made into one machine by a dominant monad’. Each monad forms a world apart, in the sense that it develops its potentialities from within. Leibnitz did not deny that on the phenomenal level there is what we call efficient or what we call mechanical causality; but we must distinguish between physical level at which this statement is true and the metaphysical level at which we speak about monads. Each monad is like a subject, which virtually contains all its predicates, and the primitive force or entelechy of the monad is, as it were, the law of its variations and changes. ‘Derivative
force is the actual present state while tending to or pre-involving the following state, as everything present is big with the future. But that which persists, in so far as it involves all that can ever happen to it, has primitive force, so that primitive force is, as it were, the law of the series, while derivative force is the determination which designates a particular term of the series. According to Leibnitz monads are 'windowless'. There is infinity in them, as understood in the light of Leibnitz's denial that there can be an actual infinite number. 'Instead of an infinite number, we ought to say that there are more than any number can express'.

The universe is an ordered system in which each monad has its particular function. The monads are so related to one another in the pre-established harmony that each reflects the whole infinite system in a particular way. "The law of continuity declares that nature leaves no gap in the order she follows; but every form or species is not the whole order. As for spirits or genii, as I hold that all created intelligences have organized bodies, whose perfection corresponds to that of the intelligence, or the mind, which is in this body in virtue of the pre-established harmony, I hold that in order to gain any conception of the perfections of spirits above us, it will be of great service to imagine these perfections also in bodily organs which surpass our own". The universe is thus a system in the sense that if one thing were taken away or supposed different, all things in the world would have been different from those which now are. Each monad or substance expresses the whole universe, though some express it more distinctly than others as they enjoy a higher degree of perception, but there is no direct causal interaction between monads.

'The union of soul and body, and even the operation of one substance on another, consists only in this perfect mutual agreement, purposely established by the order of the first creation, in virtue of which each substance, following its own laws, agrees with what the other demands, and the operations of the one thus follow or accompany the operation or change of the other'. According to Leibnitz the pre-established harmony is 'at once intelligible and natural'. It can even be proved a priori though showing that the notion of the predicate is contained in the subject. In speaking about the relation between soul and the body, Leibnitz compares God to a clockmaker who so constructs two clocks that they ever after keep perfect time without there being any need for repair or adjustment to make them synchronize. The occasionalists assume that God is constantly adjusting the clocks which he has made; but according to Leibnitz, this involves a Dues ex machina unnecessarily and unreasonably. Therefore, there remains the theory of pre-established
harmony. By this Leibnitz means to say that the world needs to be conserved by God and depends on Him for its continued existence, but it is a clock, which goes without needing to be mended by Him.

All the activities form a part of the harmonious system pre-established by God according to the principle of perfection. 'Souls act according to the laws of final causes, by appetitions, ends and means. Bodies act in accordance with the laws of efficient causes or motion. And the two realms, that of efficient causes and that of final causes, are in harmony with each other.' Finally, history moves towards the establishment of 'a moral world within the natural world' and so towards harmony between 'the physical kingdom of nature and the moral kingdom of grace.' Thus, nature leads to grace, and grace, while making use of nature, perfects it.

In a letter to Remond (1715) remarks that 'since one can conceive that by the development and change of matter the machine which forms the body of a spermatic animal can become a machine such as is necessary to form the organic body of man, the sensitive soul must be capable of becoming rational owing to the perfect harmony between the soul and the machine.' Leibnitz adds, that 'as this harmony is pre-established, the future state is already in the present, and a perfect intelligence would recognize long before in the present animal the future man in the case of both soul and body. Thus a pure animal will never become man, and human spermatic animals, which do not arrive at the great transformation by conception, are pure animals'. Hence, we can say there are hints of an evolutionary theory in Leibnitz; but he was thinking in terms of a Monadology, which was foreign to the mind of the pioneers of the scientific hypothesis of transformistic evolution.

3.3.10.1 Soul And Body

The relation of soul to body is that of a dominant monad to an assemblage of monads, certain basic ideas must, however, be presupposed by any interpretation.

1) The human soul is an immaterial substance, and the human body also consists of immaterial monads, its corporeality being a phenomenon bene fundatum.

2) This statement follows from the first statement. There is no interaction in the sense direct physical influence between the monads composing the human being.
3) The harmony or agreement between the changes in the individual monads composing the human being is due to the pre-established harmony.

4) The relation between the human soul or dominant monad and the monads composing the human body must be explained in such a way as to make it possible to attach a meaning to the statements that the soul and the body form one being and that in some sense the soul rules the body.

According to Leibnitz 'action is attributed to the monad in so far as it has distinct perceptions, and passion in so far as it has confused perceptions'. Thus in so far as the human soul has distinct perceptions it is said to be active, and in so far as the monads composing the human body have confused perceptions they are said to be passive. In this sense the body is said to be the subject to the soul and the soul to dominate or rule the body. In a strict sense there is no interaction between soul and body, the changes in the inferior monads composing the human body take place, according to the pre-established harmony, with a view to or for the sake of the changes in the soul, which is a superior monad. The human soul or spirit acts on accordance with its judgment about the best thing to do, and its judgment is objective in proportion as its perceptions are clear and distinct. The changes in the inferior monads composing the body are correlated by God with the changes in the superior monad or human soul. Therefore, in this sense, the soul in the virtue of its greater perfection, can be said to dominate the body and to act upon the body. This is what Leibnitz means when says that 'one creature is more perfect than another in that there is found in it that which serves to account a priori for what takes place in another, and it is in this way that it is said to act upon the other.' In establishing the harmony between monads God correlates the changes in the inferior monads with the changes in the more perfect monads, and not the other way round. Soul and body do not interact, but only agree, the one acting freely, according to the rules of final causes, the other acting mechanically, according to the laws of efficient causes, but this does not derogate the liberty of the soul. For every agent, which acts according to final causes, is free.
3.3 11 Theory Of Knowledge

Knowledge is simply the perception of the connection and agreement, or of the opposition and disagreement, which we find between two of our ideas. Whether we imagine, conjecture, or believe, it is always that. For example we perceive, by this means, that white is not black, and that angles of a triangle and their equality to two right angles have a necessary connection. But knowledge has a still more general significance, so that we find it also in ideas or terms, before we reach ideas or truths. The problem we are concerned with is: What are the general conditions of truth? Or, what is the nature of propositions? It is entirely the subsequent problem, how do we and other people come to know any truth? What is the origin of cognitions as events in time? The two questions have been confused—at any rate since Descartes—because people have supposed that truth would not be true if no one knew it, but becomes true by being known.

In the New Essays, Leibnitz endeavours, to show the innateness of necessary truths, though he is bound to hold, owing to the independence of monads, that all the truths that ever come to be known are innate. He uses the expression innate truth in the New Essays, to denote a truth in which all the ideas are innate, i.e. not derived from sense; but he explains that there is a different use of the word. In the sense in which he uses it, “the sweet is not bitter” is not innate, because sweet and bitter come from external senses. But “the square is not the circle” is innate, because square and circle are ideas furnished by the understanding itself. The question arises, how does Leibnitz distinguish ideas of sense from other ideas? For Leibnitz cannot hold, that ideas of sense are impressed from without, nor can he hold that they are such as alone are capable of representing external things, for they are one and all confused, and would be absent in a true knowledge of the world. Therefore, sense-ideas must be distinguished by their own nature, and not by a reference to external causes. For this, the nearest approach to a definite explanation is in the Discourse de Metaphysique.

Leibnitz speaks of the action of objects of sense upon us. There is a sense in which substances may be said to act upon eachother, “and in this same sense it may be said that we receive knowledge from without, by the ministration of senses, because some external things contain or express more particularly the reasons which determine our soul to certain thoughts.” Again the sense-ideas are confused and express the external world. “Direct ideas are a representation of God, confused ideas are a representation of the universe.”
Leibnitz explains, “the ideas which are said to come from more than one sense, like those of space, figure, motion, rest, are rather from common-sense, that is from the mind itself, for they are ideas of the pure understanding, but they are related to the external, and the senses make us perceive them”. Hence, the qualities that appear as external are ideas of sense, but all that is involved in externality itself is not sensational. And the qualities that appear as external are confused, since they cannot, as they appear, be states of monads. On the contrary, ideas derived from reflection, are not necessarily confused, for if they truly describe our own states of mind, they describe something actual and not a mere phenomenon. Besides reason, by reflection we discover the categories or predicaments, according to Leibnitz. There is much that reminds us of Kant in Leibnitz’s theory of knowledge. He says, existence cannot be found in sensible objects but by the aid of reason, and hence, the idea of existence is derived from reflection. To the maxim that there is nothing in the intellect but what comes from the senses, Leibnitz adds, except the intellect itself. “It is very true,” he says, “that our perceptions of ideas come either from external senses, or from the internal sense, which may be called reflection”; but this reflection is not limited to the mere operations of the mind, as is stated (by Locke); it extends even to the mind itself, and it in perceiving the mind that we perceive substance.

According to Leibnitz, the soul is innate to itself, and therefore contains certain ideas essentially. It comprises being, unity, substance, identity, cause perception, reason and many other notions which the senses cannot give; and these ideas are presupposed in any knowledge that can be derived from the senses. Further, Leibnitz points out, that, necessary truths are certainly known, though the senses cannot show them to be necessary. It follows that such truths are developed from the nature of the mind. Leibnitz dwelt on necessary truths because; in their case knowledge cannot be supposed due to a causal action of what is known upon the mind. For what is known, in this case, is not in time, and therefore cannot be the cause of our knowledge. This made it easier to suppose that knowledge is never caused by what is known, but arises independently from the nature of the mind.

To the general theory that all truths which are known are innate, which Leibnitz should have adopted, there is no answer but one which attacks the whole doctrine of monads. In the New Essays Leibnitz adopts the common-sense view that sense perceptions are caused by their objects, while innate truths are incapable of such a cause, there are answers, which apply equally against Kant’s doctrine that a priori is subjective.
The argument for subjectivity seems to be: When what we know is existence of something now, our knowledge may be supposed caused by that existence, since there is a temporal relation between them. But when what we know is an eternal truth, there can be no such temporal relation. Hence the knowledge is not caused by what is known, but nothing else, it is held, could have caused it unless the knowledge had been already obscurely in the mind. Hence, such knowledge must be, in some sense, innate.

There is a great difficulty as to what Leibnitz meant by ideas, which are innate. Locke is made to ask, "Is not true that the idea is the object of the thought?" Leibnitz replies, "I admit it, provided you add that it is an immediate internal object, and that this object is an expression of the nature or the qualities of things. If the idea were the form of thought, it would spring up and cease with the actual thoughts which correspond to it; but being the object, it may be before and after the thoughts." Thus an idea, though it is in the mind, is neither knowledge nor desire; it is not a thought, but what a thought thinks about. Here it is clear that the only reason Leibnitz had for saying ideas exist in the mind is that they evidently do not exist outside of it. Leibnitz never seems to have asked himself why they should be supposed to exist at all, nor to have considered the difficulty in making them merely mental existents. To illustrate, let us consider the idea 2. This is not, Leibnitz confesses, my thought of 2, but something, which my thought is about. This something exists in my mind, and is therefore not the same as the 2, which someone else thinks of. Hence, we cannot say that there is one definite number 2, which different people think of; there are as many numbers 2 as there are minds. It will be said, that all these have something in common. But this something can be nothing but another idea which will, therefore, in turn, consist of as many different ideas as there are minds. Thus we are led to an endless regress.

It is not only that no two people think of the same idea, but even they cannot think of ideas that have anything in common, unless there are ideas which are not essentially constituents of any mind. We must not seek to evade the consequence that an idea is not something merely in the mind, nor must we seek to give every idea an existence somewhere else. Precisely the same criticism applies to the statement that knowledge; ideas and truths "are only natural habits, i.e. active and passive dispositions and aptitudes".

Leibnitz does not properly distinguish sense-knowledge from intellectual knowledge by its genesis, but by its nature. It differs in that the qualities with which it deals are spatially extended, and are one and all confused. From their confusion it follows.
that those which seem simple are in reality complex, though we are unable to make the
analysis. For example the green, though it appears simple, Leibnitz thinks, is really a
mixture of insensible portions of blue and yellow; \( ^{282} \) but how would blue and yellow
appear, if they were distinctly perceived, Leibnitz does not inform us. However, he seems
to think, as was natural to one who believed in analytic judgments, that the nature of our
evidence for necessary and for sensational truths is different. The first truth of reason
according to Leibnitz is the law of contradiction, while the first truths of fact are as many
as the immediate perceptions. That I think is no \textit{more} immediate than that various things
are thought by me, and this is urged as criticism of Descartes’ \textit{cogito}.\( ^{283} \) Hence the law of
contradiction is the sole ultimate premiss for necessary truths, but for contingent truths
there are as many ultimate premisses as there are experiences. Leibnitz says, nothing
should be taken as primitive principles, except experiences and the law of identity or
contradiction, without which last there would be no difference between truth and
falsehood.\( ^{284} \)

Thus many truths of fact have no evidence except self-evidence, but this is only
the case, among necessary truths, as regards the law of contradiction. The self-evident
truths of fact, however, are psychological: they concern our own thoughts. To this extent
Leibnitz is at one with Descartes and with Berkeley. Where he is more philosophical than
either is in perceiving that truths of fact presuppose necessary truths, and that our own
existence is not therefore an ultimate and fundamental premiss for all truths. He says, my
own existence is an axiom, in the sense of being indemonstrable, not in the sense of being
necessary.\( ^{285} \) Like all finite existence, it is contingent, but it is just as \textit{certain} as necessary
truths.\( ^{286} \) Leibnitz agrees with Locke that we have an intuitive knowledge of our own
existence, a demonstrative knowledge of God’s existence, and a sensitive knowledge of
that of other things.\( ^{287} \) But the sensitive knowledge may be doubted, and cannot be
accepted without some general ground for the existence of other things.\( ^{288} \) This theory in
its general outlines is more or less Cartesian.

The two distinct advances upon Descartes are: 1) My own existence is not taken
as a premiss, for necessary truths; 2) The existence of my various thoughts is as certain as
the existence of myself. Leibnitz did not discover, what seems equally true, that the
existence of external things is just as certain and immediate as that of my own thoughts,
and thus he was unable to justify his belief in an external world. Leibnitz refined upon
Descartes in the doctrine known as the quality of ideas. This is developed in the
"Thoughts on Knowledge, Truth and Ideas". Descartes held that whatever is clearly and distinctly conceived is true. Leibnitz points out, this maxim is useless without criteria of clearness and distinctness. Finally, Leibnitz states that knowledge is either obscure or clear. Clear knowledge is confused or distinct. Distinct knowledge is adequate or inadequate, and is also either symbolic or intuitive. Perfect knowledge is both adequate and intuitive.

A notion is obscure when we are unable to recognize the thing represented or distinguish it from other similar things; it is clear when it does not enable us to recognize the thing represented. Clear knowledge is confused when we are unable to enumerate the marks required to distinguish the thing known from the other things, although there are such marks. Clear knowledge is distinct, either when we can separately enumerate the marks of what is known- i.e. when there is a nominal definition-or where what is known is indefinable but primitive, i.e. an ultimate simple notion. A composite notion for example Gold, is distinct when all its marks are known clearly; it is adequate, if all the marks are also known distinctly; if they are not known distinctly, the knowledge is inadequate Leibnitz is not certain whether there is any perfect example of adequate knowledge, but he thinks, Arithmetic approaches it very nearly. Distinct knowledge is also divided according as it is symbolic or intuitive. It is symbolic or blind, when we do not perceive the whole nature of the object at one time, but substitute signs or symbols, as in Mathematics, whose meaning we can recall when we will. When we embrace in thought at once all the elementary notions which compose an idea, our thought is intuitive. Thus our knowledge of distinct primitive ideas, if we have it, must be intuitive, while our knowledge of complex notions is, in general, only symbolical.

Leibnitz makes some important observations on definition. A definition is only the distinct exposition of an idea, but it may be either real or nominal. It is nominal when it merely enumerates marks, without showing them to be compatible. It is real when all the marks are shown to be compatible, so that what is defined is possible. The idea then defined is real, even if nothing ever exists of which it can be predicated. The law of continuity of forms gives Leibnitz some trouble in regard to definition, and compels him to admit that we may be in doubt whether some babies are human or not. But he points out, against Locke that though we may be unable to decide the question, there always is only one true answer. If the creature is rational, it is human, otherwise it is not human; and it always is either rational or not rational, though we may be in doubt as
to the alternative to be chosen. There is, however, a real difficulty in all cases of continuity, that an infinitesimal change in the object may make a finite change in the idea; as the loss of more hair may just make a man bald. In such cases, Leibnitz thinks that nature has not precisely determined the notion; but this seems an inadequate reply.

3.3 11.1 Evaluation Of Knowledge

The philosophic axiom that there is nothing in the soul which does not come from the senses one must accordingly add 'except the soul itself and its affections. Nihil est in intellectu quod non fuerit in sensu, excipe: nisi ipsa intellectus'. Leibnitz therefore rejects the idea that the mind is originally a blank tablet or tabula rasa, if this means that 'truths would be in us as the figure of Hercules is in the marble when the marble is wholly indifferent to the reception of this figure or of some other'. It is more like a piece of marble which is so veined that the figure of Hercules can be said to be virtually contained in it, although labour is required on the sculptor's part before this figure can be revealed. 'Thus it is that ideas and truths are for us innate as inclinations, dispositions, habits or natural propensities and not as actions, although these propensities are always accompanied by some actions, often insensible, which correspond to them'.

Our knowledge does not extend beyond our ideas, nor beyond the perception of their agreement or disagreement. It cannot always be intuitive, because we cannot always compare things immediately, for example, the size of two triangles upon one and the same base, equal, but very different. Our knowledge, also, cannot be always demonstrative, for we cannot always find mediate ideas. Finally, our sensitive knowledge regards only the existence of things which actually strike our senses. Thus not only our ideas are limited, but also our knowledge is more limited than our ideas. I do not doubt however that human knowledge can be carried much farther if men will devote themselves sincerely to discovering the means of perfecting truth, with entire freedom of mind and with all the application and industry they employ in coloring or maintaining falsehood, in defending a system in favour of which they have declared themselves, or else a certain party and certain interests, with which they find themselves united. But after all our knowledge can never embrace all we may wish to know concerning the ideas we have.

Truth of sensible things is justified by their connections, which depends upon the intellectual truths grounded in reason and upon constant observations in the sensible
things themselves even when reasons do not appear. And as these reasons and observations give us the means of judging the future as related to our interest, and as success corresponds with our rational judgment, we could not demand, nor have indeed, a greater certainty regarding these objects. We can even give a reason for dreams themselves, and for their slight connection with other phenomena. We might extend the appellation of knowledge and of certainty beyond actual sensations, since clearness and manifestness go beyond a species of certainty; and it would be folly seriously to doubt whether there are men in the world when we do not see any. To doubt seriously is to doubt in relation to the practical, and we might take certainty as a knowledge of truth which we cannot doubt in relation to the practical without madness; sometimes we take it still more generally, and apply it to cases where we do not doubt without deserving it to be seriously blamed. But evidence would be a luminous certainty; i.e. where we do not doubt because of the connection we see between ideas.

3.3.12 Conclusion

Spinoza and Leibnitz ingeniously overcame, even if they did not solve, the mind-body problem that puzzled Descartes. Spinoza had no need to consider interaction between mind and body, since he made them two parallel aspects of the same monistic reality. Leibnitz's monad had no interaction, since they existed in a pre-established harmony in the universe, in which all physical and mental events were perfectly synchronized by God.

Leibnitz's theory does not so much bring opposing views into real agreement as it allows them to go on differing. It is like an ingenious diplomatic formula that everyone can accept because everyone understands it in his own way. Leibnitz's diplomacy does not even resolve some of the theological dilemmas. Is God a monad? Apparently so. What, then, is His relation to the created monads? Is not the whole universe to be conceived of as God's body? Yes, it would seem that the universe of created monads are grouped around God as their dominant monad, just as Man's body monads are grouped around his soul monad. But this comes dangerously close to pantheism. These divergences from orthodoxy are relatively minor points. A more serious problem is connected with Leibnitz's belief in the existence of other monads. Leibnitz never tried to prove their existence; he just took it for granted. Leibnitz started from the Cartesian
assumption that there are minds and bodies; then having worked out the notion of a monad, he concluded that the Cartesian bodies must "really" be monads.

Just as Descartes had assumed that a plurality of bodies exists, in the same way Leibnitz had assumed that a plurality of monads exists. But Leibnitz held that monads are substances, that substances are independent, and hence that every monad is windowless, a closed life. It follows that the only monad I know is "me"—my own soul monad, which knows itself. How, then, can I know that its states represent other monads? If I knew on independent grounds that other monads exist, I might argue that, by means of a pre-established harmony, I represent those others adequately. Pre-established harmony does not prove that representation occurs; it only proves, assuming that representation does occur, that it is adequate. But how shut forever inside myself by the exigencies of the substance doctrine, could I ever hope to find evidence for the existence of other monads or to show that my states represent anything at all? It seems, then, that Leibnitz really ended, like Spinoza, with one substance, the only difference being whereas Spinoza's "one" was a self-transcending whole, Leibnitz's was a whole-consuming self. But whether we have a world that has swallowed the self or a self that has swallowed the world seems almost a matter of indifference. In both cases, we are a long way from the kind of real world that the physicists supposed themselves to be investigating.

The Leibnitzian actual is in fact a Pickwickian actual—it is actual by decree, and the test of its reality, once it has been decreed into existence, is still rationality. Actually Leibnitz wanted to argue in opposition to Spinoza, that something more is involved in scientific knowledge. But instead in place of empirical element, Leibnitz offered a teleological "fact". It is this "instead" that causes the trouble. Hence, Leibnitz's important contribution was towards effecting a synthesis between the traditional view, which was teleological in character, and the new mechanical view; but then also, Leibnitz's account of scientific knowledge and of the world view it implies is inadequate. With Leibnitz ends the period of rationalism and the new phase of thinking starts empiricism called the empirical period.

After having considered the philosophical rationalism we will now have a forward look towards philosophical empiricism as considered by modern empiricist philosophers. Do we gain knowledge only through rationalism is not quite correct but does it follow that we may be able to gain knowledge only through empiricism what the modern
empiricists philosophers are of the view? How can we think over it for the concrete answer and whether the incoming of all knowledge is empirical only and not rational or knowledge can be followed only through empirical basis as said by Locke and not approached through innate ideas like the rationalists philosophers (Descartes, Spinoza, Leibnitz). For this quite clear cut consideration we shall go through philosophical empiricism of modern empiricist philosophers-Locke, Berkeley and Hume

References

2 Descartes was the real founder of analytic or co-ordinate geometry. At least, his *Geometrie* (1637) was the first work on the subject to be published.
3 DM 4, A T, VI, 31
4 PP, Prefatory Letter, A T, I X, 2
5 PP, Prefatory Letter, A T, IX, 14
6 ST, A T, X, 496
7 DM, 6, A T, 70
8 PP, II, 9, A T, I DM, 2, X B, 68
9 DM, 2, A T, VI, 13-14
10 DM, 2, A T, VI, 17
11 R D, I, A T, X, 36
12 Anal Post, I, 7
14 Rules for the Direction of the Mind, translated by Haldane and Ross, in Works, op cit., Vol I, pp 5, 7-9, 14-17, and 22
15 'Les phantasmata ne sont ni materiaels ni intelligibles' (Gilson, Etudes sur le role de la pensee moderne (Paris, 1930), p 22) In his later works Descartes inclines to a similar view He writes, for instance, to Mersenne, in 1641 "C'est en un autre sens que j'enferme les imaginations en la definition de la pensee, et en un autre que je les en exclus, a savoir: Formae sive species quae esse debent in cerebro ut quid imaginemur, non sunt cogitations, sed operato mentis imaginatis sive ad istas species se convertentis, est cogitatio (AT 36)"
16 'Experimur quidquid sensu percipimus, quid ex alius audimus, et generaliter quaecumque ad intellectum nostrum, vel alius peruenent, vel ex sua ipsius contemplatione reflexa' (AT X 422).
17 'Veritatem prope vel falsitatem non nisi solo intellectu esse possese (AT x 39154)
18 Discourse on Method, translated by Haldane and Ross, op cit, Vol I, p 89
19 Meditations on First Philosophy, translated by Haldane and Ross, in Works, op cit., Vol I, pp 145-48
20 Ibid
21 De libero arbitrio, 2, 3, 7 St Augustine, however did not attempt to construct a philosophy systematically on this basis His si fallor, sum is an example of an indubitable truth which refutes
skepticism, but it does not play in Augustine's philosophy the fundamental role which is played by
the Cogito, ergo sum in the system of Descartes
22 P P, I, 3; A T, VIII, 7, cf IX B, 28
23 For example, 'We cannot doubt our existence without existing while we doubt' (P P, I, 7, A T, IX
B, 27, cf VIII, 7). Again, 'I doubt, therefore I am, or, which is the same thing, I think, therefore I
am' (S T, A T, x, 523)
24 Meditation 2; A T, VII, 27, cf IX, 21.
25 D M, 4; A T, VI, 32-3
26 Meditation, 2, A T, VII, 25
27 Principles of Philosophy, 1, 10, A T, VIII, 8, cf IX B, 19
28 R D, 3, A T, X, 368
29 R O., 2, 3, A T, VII, 140-1, cf IX, 110-11
30 Principles of Philosophy, 1, 10, A T, VIII, 8, cf IX B, 29.
31 According to Descartes, knowledge of what existence, certainty and knowledge are and of the
proposition that in order to think we must be is innate knowledge (R O., 6, 1, A T, VII, 422, cf IX,
225).
32 P P, I, 9, A T, VIII, 7, cf IX B, 28
33 D M, 4; A T, VI, 32
35 P P, I, 51, A T, VIII, 24, cf IX S, 47
36 Ibid
37 Considerations upon the Reputation, Loyalty, Manners, and Religion of Thomas Hobbes Written
by himself, in The English Works of Thomas Hobbes, edited by Sir W Molesworth (J. Bohn,
Vol III (1839), Part III, Ch 34
38 Principles of Philosophy, 1, 52, A T, VIII, 25, cf IX B, 47
39 Ibid, 1, 53, A T, VIII, 25, cf IX B, 48
40 Cf the Scholastic term species as used for a mental modification or idea
41 R O., 5, 2, 4, A T, VII, 356-7
42 R O., 2, 4, 2, A T, VII, 240, cf IX, 190
43 Principles of Philosophy, 1, 56, A T, 26, cf IX B, 49
44 Descartes remarks that there are in created substances invariable attributes. The existence and
duration in the existing and enduring thing' (P P, I, 56, A T, VIII, 26 cf IX B, 49) These
should not be called modes.
45 R O., 1, A T, VII, 222, cf IX 173
46 Ibid
47 P S, 1, 10, A T, XI, 334-5
48 P S, 1, 30, A T, XI, 351-2
49 A T, VIII B, 359
50 A T, VIII B, 359
51 H R, I, 38
52 H R, I, 39, 185
53 H R, II, 52
54 H R, I, 159
55 H R, II 56

273
56 Meno, 76a
57 Ep., VII, 342c
58 HR, I, 443
59 Descartes HR, I, 443, 28

60 HR, I, 28
61 HR, I, 46
62 Principles, LXXXIII
63 Cf AT x 36111-14
64 Cf the opinion of St Thomas: 'virtues intellectus sunt circa diversas materias ad invocem non ordinates, sicut patet in diversis scientis, et artibus, et ideo non inventit in eis connexio quae invenerit in virtutibus moralibus', Summa Theol. IIa, Iae, 65, 1, ad, 3am
65 AT v 36118-21.
66 AT vni (Part III), 36515-20
67 AT vni 1719-25 'Omnes modi cogitandi, quos nobis experimur, ad duos genera referri possunt: quorum unus est percepito, sive operatio intellectus, alius vero volitio, sive operatio voluntatis.' He sometimes uses intellectus to cover, in a wide sense, all ideas, perceptions, or apprehensions, sometimes he uses it, in a narrow sense, as the totality of our clear and distinct ideas. When, for instance, the will is said to be 'wider' than the intellect, intellectus means the totality of clear and distinct ideas. Spinoza calls attention to this ambiguity in his criticism of the Cartesian conception of free-will in the Scholium to Ethica, n 49
68 Cf Traite des passions, xvi 'Et bien qu'au regard de notre ame, ce soit une action de vauloir quelque chose, on peut dire que c'est aussi en elle une passion d'apercevoir qu'elle veut' (AT xi 34515-20)
69 AT x 36012 K. Jaspers, in Descartes und die Philosophie (Berlin, 1948), says 'Wenn also alle Erkenntis dasselbe ist, dann gibt es nur eine Methode, die Universale Methode, dann muss eine Wissenschaft alles Wissen tragen. Es ist mathesis universalis' (p 42)
70 Discours, Part I (AT vi 94-104)
71 Cf the advice of Montaigne to Diane de Foix in Essais, i, chap Xv 'On a grand tort de la philosophie première inaccessible, et d'un visage froissé, sourcilleux et terrible qui me l'a masquée de ce faubu, paste et hideux. Il n'est rien plus ga, plus galliard, plus emoue, et a peu que ce ne die folastre' (Cf ed. Lefevre, 818, i 242) On Montaigne's influence on Descartes, Brunschvicg, Descartes et pascal, lecteurs de Montaigne (Neuchatel, 1945), pp 95-133
72 AT x 39615-18
73 Ibid 505
74 AT x 36611-14
75 Rule 4 (AT x 37215-22)
76 La Droitspraque, I (AT vi 811-3) 'Je faisais diverses observations et acquerras plusieurs experiences (AT vi 917-28) The Latin text has 'et multa experientia colligebam' (ibid 556)
77 AT vi 6315-20 Cf his letter to Hugens in 1638 'mais parce que j'ai besoin de beaucoup de temps et d'expériences' (AT. i 50713-11)
78 Letter of 1632 (ibid 14315-17) : 'en ajoutant l'expérience a la ratiocinatio' Cf also the author's letter serving as a Preface to the French translation of the Principia 'si j'avais la
commodité de faire toutes les experiences don't j'aurais besoin pour appuyer et justifier mes raisonnements' (AT ii 9Part II), 1713-16)

Letter of 1638 (AT ii 380-16) On the problem of the velocity of falling bodies and Descartes's attempts to solve it see A. Koyre, Études galiléennes, II, 'Descartes et Galilée' (Paris, 1939) M. Koyre notes that 'l'attitude mentale de Galilée diffère sensiblement de celle de Descartes. Elle n'est pas purement mathématique, elle est physico-mathématique' (p. 74) He also note that 'en revanche c'est Descartes, et non Galilée, qui a formulé, expressément du moins, le principe d'inertie.'

81 AT x 424-27 In the Notae in Programma Descartes argues that nothing comes from external objects to the mind through sense-perception but 'motus quosdam corporae'; and that nothing could be more absurd to think that the 'communes notiones' arise from these motions for, he adds, 'omnes enim isti motus sunt particulares, notiones vero illae, universales, et nullam cum motibus affinitatem, nullamve ad ipsos relationem, habentes' (AT iii (Part II), 359-38)

82 AT x 422-23

83 'Descimus sexto, naturas illas quas composites appellamus, a nobis cognosci, vel qua experimur quarum vel, vel qua nos ipsi componimus.' (ibid 422-23)

84 'Intellactum a nullo unquam experimento deceptum posse, si praeceps tantum intuatur rem sit obectam' (AT x 423-24).

85. Descartes, writing to Plempius in 1637, makes this distinction between sensus and ratio: 'nempe in eo quod cognitio sensus sit apprehensiva et simplex, nullique idea falsitati obnoxia cognitio vero rationis sit Paulo magis composita.' (AT x 415-16) This is the well known Scholastic doctrine that the simplex apprehensio cannot be deceived and that truth or falsity lie only in the judgement. St Thomas puts it thus: 'Verum est tantum in intellectu componente, vel dividente; non autem in sensu, vel intellectu quod est rei consciente' (Summa Theol 1, Q 16, a 2). Cf Aristotle's doctrine in De Anima, 430b26

86 AT x 399b-16

87 Ibid 423-14

88 AT x 424-23

89 AT x 427b-26

90 A. Gewertz, in an excellent study of the 'Role of experience in the Cartesian Method', Journal of the History of Ideas, Apr 1941, p 198

91 Locke, Essay on Human Understanding, ii 4, 6

92. AT x 439b-20. The Logique or the Art of Thinking (1685), Part IV, has an obvious reference to this passage: 'And therefore we are to believe that we have found out all that can be found by human invention, could we conceive distinctly, that such a mixture of Beings and Natures, which are known to us, could produce those effects which are known to us in the Loadstone' (p. 177)

93 The 13th article of the Regius runs 'Atque ideo omnes communes notiones menti insculpunt, ex rerum observatione vel traditione origine ducunt' (AT vi (Part III), 345b-59). The text quoted from the Note is at 356b2-359b1 'quod ei dedit occasiun ad ipsas

94. L. Roth, Descartes' Discourse on Method, p. 78. There is also a gap between 'expliquer' and 'prouver', recognized fully by Descartes in the Discourse, Part VI (AT vi 760b)

95. Descartes: L. Roth, Descartes' Discourse on Method, p 78 There is also a gap between 'expliquer' and 'prouver', recognized fully by Descartes in the Discourse, Part VI (AT vi 760b)

96 A. Einstein, The World as I see It, p 136

97 R O., 2, 1, A T., VII, 131, cf IX, 104

. 275
The Scholastics were aware of the difficulty involved in inserting that God is infinite and that the same time that Nature is distinct from Him. Their answer was that though the creation of finite things adds to the number of beings (the term 'being' was understood ontologically) it does not increase, so to speak, the amount of being. God and finite things are incommensurable, in the sense that their existence adds nothing to the infinite divine being and perfection.
Ibid, note
Ibid, prop 13, corollary
Ibid, note
E, P II, prop 15
Ibid, prop 16, corollary
Ibid, prop 17
Ibid, prop 18
Ibid, note
E, P II Prop 21, note
Ibid, 23
Treatise on the Correction of the understanding, 4, 20.
Ibid
Treatise on the Correction of the Understanding, 4, 193
Treatise on the Correction of the Understanding, 4, 19, 4
Treatise in the Correction of the Understanding, 4, 22
E, P II, prop 40, note 1
Ibid, prop 40, note 1
Ibid
Treatise on the Correction of the Understanding, 4, 20.
E, P II, prop 40, note 2
Ibid, prop 33
Ibid, prop 35, note
Ibid, prop 35
E, P II, prop 38, corollary
Ibid, prop 41.
E, P II, def 4
Ibid; prop 43.
E, P II, prop 40, note 2
Ibid, prop 47, note
E, P V, prop 24
Ibid, prop 25.
Ibid, prop 28
Ibid prop 31, note
E, P prop II
E, P prop 23, note
E, P V, prop 31, note
Ibid, prop 23.
Ibid, note
Cf E, P V, prop 33, note
Ibid, proof
Ibid, prop 40, note
Leibnitz seems to have sometimes realized the difficulty involved in the compatibility of all single predicates. Thus he says "It is yet unknown to men what is the reason of the incompossibility of different things, or how it is that different essences can be opposed to each other, seeing that all purely positive terms seem to be compatible" inter se (G VII 195, quoted by Caird, Critical Philosophy of Kant, I 93-4) (The date is before 1686)
I) The principle of sufficient reason, in so far as it is independent of final causes, occurs in Spinoza (Ethics, I II, 2nd dem). “For the existence or non-existence of anything it must be possible to assign a cause or reason.” Leibniz was aware of this agreement, as appears from the following comment on Schuller’s account of Spinoza “This is rightly observed, and agree with what I am wont to say, that nothing exists unless a sufficient reason of its existence can be given, which is easily shown not to be in the series of causes.” [G I 138].

D. 103, L. 342-3; G VII 304. Perfection here has its metaphysical sense, as the “amount of positive reality” (Monadology, 4I, D. 224), but Leibniz certainly thought metaphysical perfection good.

Cf. G II 225 De Volder objects to Leibnitz that to conceive the existence of a substance we require a cause, but not to conceive its essence “I retort,” Leibnitz replies, “to conceive its essence we require the conception of a possible cause, to conceive its existence we require the conception of an actual cause.”

This appears from a passage [G. II. 40] where Leibnitz explains that the present state of the world follows from the first state only in virtue of certain laws freely decreed by God. These laws, therefore, among which is the pursuit of the best, must be contingent.

G VI 582

1 In a letter to Foucher.

On the Supersensible Element in Knowledge and on the Immaterial in Nature (to Queen of Prussia), G, 6, 493; D, p. 151.

New Essays, 4, 2, 1, p 410; G, 5, 347

New Essays, 4, 7, 7, p 469; G, 5, 392

New Essays, 4, 2, 1, p 410; G, 5, 348

New Essays, Appendix 12, p 719; G, 7, 320

New Essays, 2, 23, 15, p 229; G, 5, 205

G, 1, 372-3 (in a letter to Foucher)

Monadology, 2, G, 6, 607, D, p. 218.

Monadology, 5, G, 6, 607, D, 218

The Principles of Nature and of Grace, 1, G, 6, 598, D, p 209
248 The Principles of Nature and of Grace, 1; G., 6, 598; D., p. 209.
249 On the Reform of Metaphysics and the Notion of Substance; G., 4, 469; D. p 69
250 G., 2, 252 (in a letter to de Volder)
251 G., 2, 262 (in a letter to de Volder)
252 G., 2, 304 (in a letter to des Bosses)
254 G., 2, 226 (in a letter to de Volder).
255 G., 136 (in a letter to Arnaud)
256 G., 3, 144 (in a letter to Basnage).
257 Cf. G., 2, 58 (to Boyle)
258 G., 4, 498; D., pp. 90-3
259 Monadology, 79, G., 6, 620; D., p. 230
260 Monadology, 86; G., 6, 622; D., p. 231
261 Monadology, 87, G., 6, 622; D., p. 231
262 The Principles of Nature and of Grace, 15; G., 6, 605; D., p. 215
263 Monadology, 49; G., 6, 615; D., p. 225.
264 G., 3, 635
265 Monadology, 50; G., 6, 615, D., p. 225
266 G. v. 66 (N. E. 70).
267 G. v. 79; N. E. 84
268 G. V. 77, 109; N. E. 82, 120.
269 G. IV. 452.
270 G. V. 99, N. E. 109
271 G. V. 116, N. E. 129
272 of G. II. 265
273 G. V. 117, N. E. 130
274 G. V. 100, N. E. 111
275 G. V. 23, N. E. 24
276 G. III. 479, G. v. 93; N. E. 100.
277 G. V. 100, N. E. 111
278 G. V. 77, N. E. 81
279 G. V. 99, N. E. Book II. p. 109
280 Cf. also G. III 659 (D. 236), IV. 451.
281 N. E. 105, G. V. 97.
282 G. V. 275, N. E. 320.
283 G. IV. 357, D. 48
284 G. V. 14, D. 94; N. E. 13
285 G. V. 39, N. E. 460
286 N. E. 499, G. V. 415
287  Ibid
288  G V 117, N E 130 s
289  D 27-32, G IV 422-6 (1684)
290  G IV 425, D 31
291  G V 92, N E 99
292  G V 279, N E 325
293  G V, 290, N. E 339
294  G V 281, N E 328
295  N E. 2, 1, 2, p III, G.,5, 100
296  N E, preface, p 46, G, 5, 45
297  Ibid

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