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**UNIT 1**
**BEING AND ESSENCE**


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**1.0. OBJECTIVES**


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In finite beings, there is an inseparable relation between Being and essence. Being is that which is in some way or something; whereas essence is the principle of determination or limitation of Being into finite (limited) being. Being in itself is unlimited, infinite. In this Unit we discuss:

- Being and its characteristics
  - Essence and its characteristics
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**1.1. INTRODUCTION**


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Human finds oneself confronted by two types of beings in the world: finite things and finite persons. They are distinguished by their unique relationship to Being. Things participate in Being according to their essence, and strive towards the fullness of Being accordingly. But the things cannot distinguish Being from its concretization in essence. Hence their actuation does not break through to Being itself and ultimately make explicit the essence. Hence things remain blank for themselves and for other things. They are of themselves silent partners for Human. In persons, the human encounters beings like himself, i.e., other fellow human beings. The humans participate in Being through their essence in such a way that in their actuation they at once distinguish Being from essence and so attain to Being itself. In other words, the human person is capable of complete reflection on oneself. By virtue of this reflection the human can reduce the outermost externals of things to the most intimate inwardness of Being itself. Hence we see an essential connection between person and Being. In things, Being is alienated from itself, while in the person it is at home or has possession of itself. Consequently, things appear as diminished beings over which human persons or experiencing agents tower as full beings. Being is most intrinsically personal, appearing in its own self as person. That is why an understanding of Being calls for an analysis of the metaphysical structure of the human person.

The experiencing agent is as structured as one's operation is. "As the operation is, so the agent is." The operation is composed of exercise and determination. Hence the experiencing agent (person) must also be composed. The experiencing agent is composed of the Being (*esse*) and essence (*essentia*). Essence is composed of substance and accidents. Substance is composed of prime matter and substantial form. The prime matter is in potency; whereas the substantial form is in act.

The finite being has to be identical with Being; for Being is immanent in this finite being, because this being *is*. This identity is not perfect because alongside *this* being there are also other finite beings. Being, insofar as it is immanent in this being through a certain identity, is not unqualified Being. For, unqualified Being transcends *this* particular Being. The immanent Being is a modified, finite, and limited Being. It is the *proper* Being of the particular being. The

limiting principle (essence) is neither Being nor being. Nevertheless, the limiting principle constitutes *this* being as this *being*, and expresses a modification of the unqualified Being into a limited *being this* and nothing else. Whatever essence has, it derives from the relative opposition to Being, to which as a modifying principle it refers by its whole nature and from which it has also its modifying capacity. Hence, Being lets itself be modified or limited, and according to the limitation the finite being participates in unqualified Being. The unqualified Being, which transcends all modes, does not fully coincide with the *proper Being* of each being which is only in a limited way. The finite being is through *participation* in unqualified Being. To explain this participation, we must admit that within the finite being there is a distinction between its *proper Being* and the principle through which Being becomes its own limited Being, i.e., its own modifying and limiting essence. The relativity of essence and Being cannot be fully reciprocal. Being as being, transcends all modes of being and therefore all modifications through essence, while the essence is fully relative to Being. However, in the finite being, Being has let itself be modified. In a sense, the essence is prior to being insofar as the mode modifies Being into *being this*. But this priority is not absolute; for the mode also arises from Being which includes in itself the possibility of being-finite, becoming 'incarnate' in the finite. Hence, Being is prior to essence; for Being makes the mode a mode of Being. Perhaps, the unqualified Being points to a ground which is transcendent not only relatively to finite beings but absolutely. Our experience of something reveals the ontological difference between Being and beings. Beings are posited in and by Being (act of existing). The beings are not Being itself. This difference implies the finiteness of beings. The finiteness of the beings is a condition of the possibility of all enquiry in which we enquire *whether* it is and *what* it is. The first question inquires about the Being's act of existing (act of Being) and the second about the Being's essence (whatness or quiddity).

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## 1.2. CHARACTERISTICS OF BEING

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### **Being (esse) as the Principle of Reality of Beings**

Should something possess no act of existing, but only an essence, then it is a mere possible and not real. The real differs from the possible because of Being. In other words, Being is that in a being which makes it real, distinguishing it from a merely possible being. Being is the inner principle or ground of that which really is and through which beings are in themselves. We cannot conceive of Being simply as a mere state into which a previously constituted essence would somehow be transferred. It is rather that which makes real whatever is real, including all determinations of a being, including its whatness. Hence, *Being is the universal ground or principle of all beings and of their determinations.*

### **Being as Objective of the Pure Desire to Know**

Being is the objective of the pure desire to know. The desire to know means the dynamic orientation manifested in question for understanding and reflection. It is the fundamental drive that carries the cognitional process from sense and imagination to understanding, from understanding to judgement, and from judgement to the complete context of correct judgements called *knowledge*. It is simply the inquiring and critical spirit of human. It moves a human to seek understanding, and then it prevents one from being merely content with one's own imperfect, subjective, personal experience. This desire is pure, as it differs radically from other desires by compelling assent to the unconditioned. Pure desire is a cool, disinterested, and detached desire.

### **Being as Unrestricted Notion**

At the root of all that can be affirmed or conceived is the pure desire to know. It is the pure desire that underlies all judgement and formulation, all questions and all desire to question. The objective of the pure desire to know is Being. It is the source not only of answers, but also of their criteria; not only of questions but also of grounds on which they are questioned. In other words, there is a cool, detached, disinterested desire to know at the root of cognitional process, and its range is unrestricted. Such an unrestricted notion is Being.

### **Being as a Spontaneous Notion**

There is a distinction between the spontaneously operative notion and theoretical accounts of its genesis and content. The spontaneously operative notion is invariant. It is common to all human beings. It functions in the same manner, irrespective of what theoretical account of it a human may come to accept. The theoretical account of the content and genesis of the notion are numerous. They vary with philosophical contexts. Spontaneously operative notion is present, invariant in all. The notion of Being is such a notion present in all, and thus extends to everything that is known and unknown. It is true that Being is known in judgment. It is in judgment that we affirm or deny. Until we are able to affirm or deny we do not yet know. Although Being is known only in judgment, the notion of Being is prior to judgment. For, judgment presupposes reflection, reflection presupposes question, and question presupposes the desire to know. The desire to know is the desire to know Being, which is immanent to self or spontaneously operative. It is all-pervasive and underpins all cognitional contents and penetrates them all, constituting them as cognitional. All cognitional contents, such as ideas and concepts, are responses to the desire to know, and all judgments are responses to the demand for the unconditioned. It is the notion of the to-be-known through that content which is prior to every content. The 'to-be-known through the content' passes without residue into the known through that content as each content emerges. The notion of Being also constitutes all contents as cognitional (can be known) levels of knowing: experience, understanding, and judgment. *Experience* is the first level of knowing. It presents the matter to be known. *Understanding* is the second level of knowing. It defines the matter to be known. *Judgment* is the third level of knowing by which the experienced is thought and the thought is affirmed or denied. Hence, Being is really known in judgment by which it is known as Being. Hence, knowing is knowing Being, yet the known is never mere Being, just as judgment is never a mere 'yes' apart from any questions that 'yes' answers.

### **Being as the Core of Meaning**

The notion of Being is the core of meaning as it underpins all contents, penetrates them, and constitutes them as cognitional as we have already seen. Meaning can be distinguished from the viewpoint of its sources, acts, terms, and the core. *A source of meaning* is any element of knowledge such as data, images, ideas, and concepts; the grasp of the unconditioned and judgment; the detached and unrestricted desire to know. *Acts of meaning* are of three kinds: formal, full, and instrumental. *The formal act* of meaning is an act of conceiving, thinking, considering, defining, supposing, and formulating. *The full act* is an act of judging. *The instrumental act* is the implementation of a formal or of a full act by way of words or symbols in a spoken, written, or merely imagined utterance. The *all-inclusive* terms of meaning is Being, since apart from Being there is nothing. In this way, the *core* of all acts of meaning is the intention of Being. A given judgment pertains to a context of judgments. It is from the context that the *meaning* of the given

judgment is determined. For, the meaning of the judgment is an element in the determination of the universal intention of Being.

### **Beings as the Appearance of Being**

The objectivity of Being is conditioned by the pre-apprehension. Human knows about Being in general, in one's active dealings with the world. One knows about it insofar as such knowledge is the condition or horizon of objective conceptual knowledge of material beings. These material beings are the initial starting points and hence also the permanent basis of all cognitions. Thus, human ever remains dependent on these starting points, even in transcendental reflection on Being in general. During the course of such reflection, the object of knowledge may be changed. But the structure and the way in which these objects have to be grasped, remains unchanged. When Being is conceived, it is to be conceived in the manner of an 'object' in the world, in the manner of an appearance. Being in general, and all that is immaterial, is conceived in the manner of material beings. That is to say, it is considered as a being which 'has' Being. One cannot conceive a thing existing in itself, in any other way. Hence the origin of all human concepts is through the senses. Even non-material beings cannot be comprehended by humans, apart from reference to an appearance through which this non-material being becomes a datum. Hence Being, both in direct knowledge and in metaphysical reflection, can be grasped only through Being that appears. Even transcendental reflection on Being is effected necessarily through objects. Therefore, Being in general is disclosed to humans in the appearance of beings, insofar as these most general definitions of Being in general are known through beings. Human becomes aware of this 'ontological difference' between Being and being in the act and fact of questioning.

Question is something final and irreducible. Every attempt to place the question in question (i.e., to question the question) is itself again raising a question. So Human is bound to question. Hence it is the absolute fact which refuses to be replaced by another fact. This question is a metaphysical question. The metaphysical question is the reflexive articulation of the question about Being which pervades the ground of human existence itself. It turns upon itself as such and thereby turns upon the presuppositions of the question. The transcendental question does not merely place something asked about in question, but also the one questioning and the question itself. Hence, absolutely everything is placed in question. This is the pervasive question about Being itself, raised to conceptual form. Therefore, in raising the metaphysical question, human becomes aware of what one is in the ground of one's essence.

The necessity of this question is based on the fact that human has access to Being only as something questionable. The ground of this necessity is not any question. For, human can avoid asking a particular question. But one cannot avoid the question about Being in its totality. One has to ask this question about Being in its totality if one is to be at all. Hence human exists as the question about Being. In this question, Being presents and offers itself as that which is questioned and withdraws itself as that which necessarily remains in question. Hence, human is the Being of the question. In this Being of the question, Being reveals itself and conceals itself in its own questionableness.

When we ask questions, we not only know how things are in relation to us but also how they are absolutely, in themselves - what it is in itself. In this way, the unconditioned, absolute Being puts an end to human question. The very act of questioning reveals that even if we only explicitly inquire

about a relative validity for our own personal need, this relative validity itself is posited as Absolute. Behind the relative horizon there is always an absolute horizon. 'Validity for me' can be spoken of only because we contrast it with 'validity in itself'. The horizon of our questioning is the Unconditioned. The unconditioned is expressed in the word *IS* (Being). Here Being is the unconditioned condition of all questioning. It is the absolutely necessary. It is always and necessarily presupposed as the condition of every question. It is co-affirmed in the very act of questioning. Otherwise, we cannot even ask a question.

### **Being as the Unlimited**

If the horizon of our knowing is limited, then our knowledge cannot be absolute. In a limited horizon, we cannot ask about the ultimate, absolute, unconditioned point of view. Hence, the horizon must be unlimited. To penetrate into the *intensively* deepest core of Being, we must reach the *extensively* widest range of Being. That which constitutes the ultimate, unconditioned reality of things is *Being*, and that which affects absolutely everything, without any limitation, is also Being. Therefore, Being is the ultimate reality both intensively and extensively. The horizon of Being within which we ask the question as question is unlimited.

### **Being as Knowing and Not-Knowing**

Every question implies that we know about Being. For, we cannot question about something of which we do not know anything at all. However, the question also presupposes that we do not know about Being. In this way question manifests both the identity of Being and knowing, and the distinction between them. In other words, our knowledge about Being consists in the identity of Being and knowing, and our not-knowing about Being consists in the non-identity of Being and knowing.

### **Being as the Cause of the Contingent Beings**

Every being is necessary and not necessary. It is not necessary insofar as it is a finite being. But if it is necessary, it is as necessary as Being. Then, insofar as it is, it can no longer not be. It necessarily is, insofar as it is. This is possible only if every being possesses something which determines it to the necessity of Being. Otherwise, it would by itself be both necessary and not necessary which is contradictory. Therefore, every contingent being requires a positive element by which it is determined to the necessity of Being. It requires a ground, a sufficient reason of its being.

Contingent beings do not have their ground in themselves. Their ground lies outside of themselves. They are posited into being by something else. To bring forth some reality which goes beyond one's own being and essence is to act. The contingent being is the product of the activity of some other being. Its exterior cause is an efficient cause which brings it about. Consequently, every contingent being which is, is necessarily posited into being by an efficient cause, by Being itself.

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## **1.3. CHARACTERISTICS OF ESSENCE**

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Essence is the principle of determination which makes a thing what it fundamentally is. The concept originates with Aristotle (384-322 BCE), who used the Greek expression *to ti en einai*, literally 'the what it is to be', or sometimes the shorter phrase *to ti esti*, literally 'the what it is'. This phrase presented such difficulties for his Latin translators that they coined the word *essentia* to represent the whole expression. For Aristotle and his scholastic followers, the notion of

essence is closely linked to that of definition (*horismos*). The English word 'essence' comes from the Latin *essentia*, which was coined (from *esse*, 'to be') by ancient Roman scholars in order to translate the Greek phrase *to ti ēn einai*.

Like his teacher Plato (428-348 BCE), Aristotle's philosophy aims at the universal. Aristotle, however, found the universal in particular things, which he called the essence of things, while Plato finds that the universal exists apart from particular things, and is related to them as their prototype or exemplar (Plato, more mystical, a higher power; Aristotle, more essentialist, the form of things within). For Aristotle, therefore, the philosophic method implies the ascent from the study of particular phenomena to the knowledge of essences, while for Plato the philosophic method means the descent from a knowledge of universal Forms (or ideas) to a contemplation of particular imitations of them. For Aristotle, 'form' still refers to the unconditional basis of phenomena but is 'instantiated' in a particular substance.

According to Thomas Aquinas (1225-74), essence or quiddity is that through which a thing is constituted in its proper genus or species. Essence is also called form, for the certitude of a thing is signified through its form. The same thing is also called nature. Nature is what we call everything that can in any way be captured by the intellect, for a thing is not intelligible except through its definition and essence. Every substance is a nature. But the term nature used in this way seems to signify the essence of a thing as it is ordered to the proper operation of the thing.

For Edmund Husserl (1859-1938), essence is *ideal*. However, *ideal* means that essence is the intentional object of the consciousness. Essence must be distinguished from actual existence, just as the pure Ego must be distinguished from the psychological or empirical Ego. Essences are non-real, while facts are real. The realm of transcendently reduced phenomena is non-real, while the realm of actual experience is real.

Existentialism received existence from Jean Paul Sartre's (1905-80) statement that for human beings "existence precedes essence". Inasmuch as 'essence' is a cornerstone of all metaphysical philosophy and the grounding of rationalism, Sartre's statement was a refutation of the philosophical system that had come before him. Instead of 'is-ness' generating 'actuality,' he argued that existence and actuality come first, and the essence is derived afterward.

In Indian metaphysical perspectives, a distinction is made between one's *swadharma* (essence) and *svabhava* (mental habits and conditionings of ego personality). *Svabhava* is the nature of a person, which is the result of his or her *samskaras* (impressions created in the mind due to one's interaction with the external world). These *samskaras* create habits and mental models, and those become our nature. While there is another kind of *svabhava* that is a pure internal quality - *smaran* - we are here focusing only on the *svabhava* that was created due to *samskaras* (because to discover the pure, internal *svabhava* and *smaran*, one should become aware of one's *samskaras* and have control over them). *Dharma* is derived from the root *dhr* - to hold. It is that which holds an entity together. That is, *dharma* is that which gives integrity to an entity and holds the core quality and identity (essence), and form and function of that entity. *Dharma* is also defined as righteousness as well as duty. To do one's *dharma* is to be righteous, to do one's *dharma* is to do one's duty (express one's essence).

Indeed, the concept of Buddhist emptiness is the strong assertion that all phenomena are empty of any essence, demonstrating that anti-essentialism lies at the very root of Buddhist praxis. Therefore, within this school, it is the innate belief in essence that is considered to be an afflictive obscuration which serves as the root of all suffering. However, the school also rejects the tenets of idealism and materialism; instead, the ideas of *truth* or *existence*, along with any assertions that depend upon them, are limited to their function within the contexts and conventions that assert them, somewhat akin to relativism or pragmatism.

### **Essence as Nature**

Sensible things are individuals as they exist in themselves in the real world. These sensible things are known by the intellect in abstraction from their designation in a particular matter. So abstracted, they are still composed of matter and form. They are conceptualised with a content of matter and form in general, but not in particular. In so abstracting from the particular they abstract from place and time, and exhibit their natures under an aspect that is found in all individuals. The abstracted, the nature considered as a potency to Being, is called the thing's essence which is abstracted with precision, though what is abstracted does not fully coincide with the thing. The essence abstracted rescinds from or excludes the individuality. It represents only a part of the thing. The essence and the individuality go together to compose the thing. Hence, essence abstracted with precision cannot be predicated of the thing. For instance, one cannot say man is humanity, any more than one can say that one is one's arm. Rather, one has one's humanity. In this sense, a thing is not its own essence, but has its essence.

### **Essence as Thing**

Essence can also be abstracted without precision. Such an abstraction excludes nothing in the thing, but contains the individual designation implicitly and indeterminately. It can be predicated of the thing in complete identity. For instance, a human is one's own essence when the essence is abstracted without precision. Essence and thing are identical. It is correct to say that the essence exists or that the thing exists, when the abstraction of essence does not proceed from individuation.

### **Essence as Common**

The essence can exist both in reality and in the human intellect. In reality it exists in individuals, as in the case of humanity that exists in millions of human beings. The same essence is found separately in every one of these many individuals. It is common to them all. The same essence can exist in one's own intellect or in the intellect of anyone else who thinks of it. As a universal, it represents all individual human beings in the one concept. It has a unity of its own as universal, just as it has a unity that is individual in every particular human person. Of itself, the essence can have no unity. If it had the unity of an individual of itself, it would always be that individual. In the same way, if the essence had of itself the all-embracing unity of a universal, it could never be found in several individuals. "But the same essence is found in many individuals and in the universal concept. It is common to all. It is a common nature".

### **Essence as the Ground of Particular Instances**

The individual of a species presupposes the common nature of the species as its ground. Human cognition presupposes the real individuals from which it abstracts the universal. Every individual rose is a particularization of a certain plant nature and every individual human is a particularization

of human nature. In other words, the essences as they exist in the First Cause are the ground of the individual nature. Hence, Being is absolutely prior to essence.

### **Essence as Formal Causality**

Even though an essence in itself is devoid of Being, its potentiality distinguishes it from utter nothingness. It is a potency to real existence; while nothingness has no potency to real existence. Negations like nothingness, contradictions like a square circle, and privations like blindness, are not essences. They can receive cognitional being, but not real being. They cannot exist in the real world, but only in the contradictions of human reason. But an essence has to have a positive formal aspect of its own which (essence) determines the existential, and thus it exercises formal causality. Form is always seen to determine act. Form is the act of matter which determines matter. But in regard to existential act, form determines only as potency. It is the potency that limits the existential act which determines it to the existence of a tree, a stone, or whatever the essence happens to be. As it determines only as potency, the essence does not have to have any actuality prior to the receiving of its existential act. It is able to determine and limit without requiring any actuality in priority to Being. "As the subject of existence it calls for no prior being of its own, and as the determining principle of existence it demands no actuality. It receives its actuality from the existential act it determines".

In the order of formal causality, essence determines Being and the form of the thing is the cause of the thing's being. The efficient cause of the thing is extrinsic to it; whereas the formal cause is intrinsic. As formally caused by the essence, its being may be said to flow from the essence. "In this way every nature is essentially a being, because an essence is of its very notion a potency to being and formally demands being". This formal requirement is not enough to make anything be. An efficient cause has to make that formal causality actual. But in any production of being (even in creation), the agent has to function through the formal causality of the essence. That is the only way it can produce a finite being. "Although an essence does not include real being, it nevertheless does not exclude it. Nothingness, on the contrary, excludes real being".

### **Essence as Entitative Principle**

Essence is one of the two entitative principles of a being: *Being and essence*. These constitute finite beings. Neither of the two is an in-itself. The origin of human knowledge lies in sensible things. All other knowable beings have to be represented by the mind in their light. Sensible things are known simultaneously in their essence by simple apprehension and in their being by judgment. Every other knowable object has to be represented as something that is. The two entitative principles admit no exception. Being exists as a nature in the first efficient cause of things, and as an act that is not nature in all other finite things. As an existential act it has to involve its own limitation, i.e., as an essence that is other than itself. In this way Being confers being upon a man, a mountain, or a star. What exists is not the existential act itself, but the limiting essence that has being in virtue of the existential act. The limitation is not a reduction to 'nothing' or a negative cutting off of being, but a positive thing like the man or the star. A limitation of Being is a particular being that exists.

### **Essence as the Principle of Limitation**

When we ask about something 'what it is', we suppose that we know already that it is a certain *what*. In this way it differs from the whatness of all other beings. If it differs in this way from that which it is not, then beings possess Being not to its fullest extent, but only within determined limits

that through which a being is that which it is, is its essence. Hence, essence is that through which a being is posited in a determined, limited manner of being. Essence implies a negation of Being. It is not a negation which suppresses the Being of a being and reduces it to nothing. But it is a negation which limits its Being and reduces it to a finite being. It is not total or absolute, but a partial and relative negation which refers to certain determinations and denies their presence in this Being. Such a relative negation is also a negative relation as it refers one being to all others and distinguishes it from them. A relative negation is a determined negation, determined by that which it refers. Hence, the finiteness is always and necessarily determined finiteness. We must conceive of essence as the principle of limitation and determination of a being. [Determination is precise specification or making a thing what it is.]

### Kinds of Essence: Common and Individual

*Common essence* is the principle of limitation and determination of all the members of the same species, e.g., the essence of Man. *Individual essence* is the principle of unique determination of an individual, e.g., what makes John uniquely John.

### Check Your Progress

**Note:** Use the space provided for your answers.

1) What are the characteristics of Being?

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2) What are the characteristics of Essence?

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### 1.4. LET US SUM UP

In finite beings, there is an inseparable relation between Being and essence. Being is that which is in some way or something; whereas, essence is the principle of determination or limitation of Being into finite (limited) being. Being in itself is unlimited, infinite. The finite being has to be identical with Being; for Being is immanent in this finite being because this being *is*. This identity is not perfect because alongside *this* being, there are also other finite beings. Being lets itself be modified or limited, and according to the limitation the finite being participates in Being. Being, which transcends all modes, does not fully coincide with the *proper Being* of each being which is only in a limited way. The finite being is through *participation* in unqualified Being. To explain this participation, we must admit that within the finite being there is a distinction between its *proper Being* and the principle through which Being becomes its own limited Being, i.e., its own modifying and limiting essence. Being is the inner principle or ground of that which really is and through which beings are in themselves. Essence is the principle of

determination which makes a thing what it fundamentally is. Essence, as the principle of determination, is also the principle of limitation; for a principle that determines limits. Limitation also implies negation. It is not a negation which suppresses the Being of a being and reduces it to nothing. But it is a negation which limits its Being and reduces it to a finite being.

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## UNIT 2 SUBSTANCE AND ACCIDENTS

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### 2.0. OBJECTIVES

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We know that we have the experience of two principles in our lives: the principle of permanence (substance) and the principle of change (accident). We go out of home to our college and come back to the same home after classes. We know that we are the same persons and that others call us by the same name. But we also undergo regular and constant changes with regard to weight, complexion, etc. These are facts that we experience, and all the metaphysical principles (especially substance and accident) are derived from and based on these factual experiences. Hence, in this Unit we shall study:

- Substance and its characteristics
  - Accident and its characteristics
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### 2.1. INTRODUCTION

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Finite beings are composed of a relatively permanent principle which remains primarily the same throughout secondary changes, and secondary principles which may come and go without producing a change in the primary mode of being. The relatively permanent principle is called 'substance' and secondary principles are called 'accidents'. The notions of 'substance' and 'accident' may be acquired from the analysis of an external experience. For instance, our external senses reveal to us an unripe orange as a concrete whole which is extended in space, green coloured, sour etc. The intellect conceives the qualities which may come and go, as determinations which affect something underneath these changes and are modified by them. The difference between the determinations and their subject is expressed by the notions 'accidents' and 'substance' which correspond to a reality existing in the extramental world. Taking these considerations into account we can define *substance as the being-in-itself of a finite essence which is the basic inner principle of permanence or continuity of that being which becomes*. A being is originally constituted by its act of existing and essence. It is posited as a limited but a real being which exists in itself autonomously as a substance. Being-in-itself and not in another

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## 2.2. ETYMOLOGICAL MEANING

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The term 'substance' is derived from the Latin '*substantia*' which means 'standing under.' '*Substantia*' is the equivalent rendering of the Greek '*ousia*' of Aristotle (384-322 BCE). Substance, the first of Aristotle's categories, signifies being as existing in and by itself, and serving as a basis for accidents. Nothing is more evident than that things change. A piece of wood may be hot or cold, lying flat or upright, yet it is still wood; but when it is completely burnt so as to be transformed into ashes and gases, it is no longer wood. The specific, radical characteristics by which we describe wood have totally disappeared. Thus, there are two kinds of changes: one affects the radical characteristics of things and the other in no way destroys these characteristics, and so does not affect it fundamentally. Therefore it is necessary to recognize in each thing, certain temporary principles and also a permanent principle which continues to exist. Its fundamental characteristic is to be in itself and by itself. In the history of metaphysics, the metaphysicians have variously interpreted this experience of change and permanence developing their own perspectives on substance.

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## 2.3. DEVELOPMENT OF THE DOCTRINE

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**In the West:** Aristotle employs the term, substance, in criticizing Plato's theory of forms. In his early work on 'Categories,' substance is given as the principal category. Substances are concrete individuals, like an individual man or an individual horse. Aristotle had also called this category 'what it is'. The kinds, man, horse, etc., were called substance in a secondary sense. Later on, he dropped this view. Substance stands in contrast to other categories such as quality, place, and action, which tell us something about substance. In the *Metaphysics*, Aristotle further analyses concrete individuals as composites of matter and form. In Books Z and H, he argued substance as the individual form which was called substantial form in the middle ages. However, the ideas of substance as concrete individual, and as the ultimate substratum of attributes and of change, are never completely set aside. His cosmology postulated immaterial substance moving the celestial spheres, and an Unmoved Mover as the cause of all celestial motion. These immaterial substances were later smoothly integrated into medieval theology as angels and God respectively. Aquinas (1225-74) reconciled the teaching on consecrated bread and wine with the notion of substance, which are substantially changed into Christ's body and blood through a supernatural action while continuing to look and taste like bread and wine, and thus their perceptible accidents remaining unchanged. It is the theory of 'trans-substantiation'. In the same way, the humans (being of one species) are individuated by matter during life, but they lack this matter after death. However, they retain their identity and individuality, thanks to the distinguishing qualities of their earthly history.

Modern philosophers retained the idea of substance as that which exists independently. For **Descartes** (1596-1650), there are only three substances: self, world, and God. Substance is that which needs nothing else to exist. In the strict sense, there is only one substance which is totally independent, i.e., God. However, Descartes avoids pantheism by adding that we could also be called created substances that exist by the help of God. Extension is the attribute of the corporeal substance. It is one of the clear and distinct ideas.

**Self:** The self is the momentary act of thinking. Descartes did not intend to prove the existence of a substantial soul until he had introduced the idea of substance while speaking of God. One could not be deceived while believing that one thinks in the moment in which one thinks, but one could be

deceived while believing that one's momentary act of thinking comes from a permanent subject or substantial soul. The substantial principle is not included in the clear and distinct idea of the thinking self. On the other hand, one tends to believe that all one's momentary instances of existing are connected in such a way, that if one is deceived in this matter then one is deceived by the author of nature, God Himself. Once one proves the existence of an infinitely good and wise God who can neither deceive nor be deceived, one can safely assert the existence of a substantial soul.

*World:* Descartes faced the problem of how to perceive material beings. The first difficulty: the mind is spiritual and that body and soul are not one consubstantial principle in human. Consequently, we do not immediately become conscious of our bodily reactions or of any other material thing. The second difficulty: the only way of arriving at a direct intuition is through consciousness, which presupposes identity between the subject and the object of knowledge. However, we live under the strong impression of a material world around us. The existence of the material world is beyond rational doubt, but not beyond hyperbolic doubt. It does not become totally certain until we know of the existence of God, who will not deceive us.

*God:* Proving God's existence is basic in Descartes' search for certainty. Descartes gives three arguments for the existence of God. *Argument from the Idea of the Perfect Infinite:* I conceive of God as "an infinite, independent, all-knowing, all-powerful substance, by which I myself and all other things, if they actually exist, have been created;" I, therefore, have the idea of the infinite. But the idea of infinity could not have been produced in my mind by the other ideas (of self and world too) which are finite. It is not by removing the limits that I form the idea of infinity, but it is by limiting the positive idea of infinity that I form the idea of the finite. Consequently, before I form any other idea I have the idea of infinity, which is a clear and distinct idea. It is as obvious as the idea of the thinking self, because I cannot conceive of anything finite unless I have an idea of the infinite. Therefore, since clear and distinct ideas must have objective value, there is actually something infinite which is perfect. Now this perfect being must exist, how else would I explain the origin of this idea in me? In other words, neither the external world nor I am perfect. The external world is not perfect because it is corporeal and changeable. I am not perfect because I doubt. Therefore, there must exist a perfect being who has put in me this idea of himself. *Argument from Contingency of the Thinking Self:* I must conceive of the thinking self as contingent, i.e., as non-necessary; otherwise it would not be a doubting self. But I could not have the idea of a contingent being unless I had a previous idea of the necessary, because contingency is the negation of necessity. This previous idea of the necessary is not formed through the idea of the contingent self, but is presupposed by the idea of the self. Here again the idea of the necessary is clear and distinct, and implies that there is something necessary. *Ontological Argument:* God is such a being that all perfections must be included in his essence. In other words, he must necessarily have all perfections. Since it is better to exist than not to exist, existence is a perfection which must be attributed to God. He, therefore, necessarily exists; in him essence and existence are the same. Descartes did not add anything new to the ontological argument of Anselm, except that he called the idea of the greatest conceivable being, an innate one. And he added the simile of the valley and the mountain. "I cannot conceive a God unless as existing, any more than I can a mountain without a valley." For mountain and valley, whether exist or not, are inseparable. In the same way we cannot conceive God unless as existing.

**Spinoza** (1632-77) accepted Descartes' definition of substance, but he was more consistent than Descartes in his conception of substance. "By substance, I mean that which is in itself and conceived through itself; in other words, that of which a conception can be formed independently of any other conception." (*Ethics*, I, Def. II). Only God is such a substance. This substance is infinite and not finite. If it were finite, then it would have to be conceived along with something else which would limit it. Then it would cease to be a substance. An object which is not its own cause is dependent on another cause. That which is not dependent on another cause is a substance. No substance can depend on another substance. Hence, there is only one infinite substance.

For **Leibniz** (1646-1716) an object with proper parts depends on these parts to exist. The true substances are monads, which must be without parts or spatial extension. Therefore, the changes in monads are like mental events, and Leibniz viewed the world as a plurality of monads. These are simple substances which are not made up of parts. These monads are "the true elements of Nature, in fact, the elements of things." They have the following characteristics: 1. Monads are Real: They are real things, and not ideas. 2. Monads are simple: They cannot come to be except by creation, nor cease to be except by annihilation, while compound substances are produced by aggregation and separation of monads (generation and corruption). 3. Monads are Independent: There are a plurality of monads which are independent of one another and dependent on God alone. One monad cannot influence another. 4. Monads Enjoy Perception: All monads, which are simple substances, enjoy some measure of perception, though in different degrees. 5. Monads are dynamic: The monad is not inert. For, each simple substance has its own activity. 6. Monads are Representatives: Each monad is a "perpetual living mirror of the universe." Every individual substance expresses the whole universe in its own way. Though each monad mirrors the whole, it does it in its own unique way. Leibniz ranked all substances according to the degree of their knowing capacity: 1. *Inorganic substances* that have perception and appetition, but no apperception. 2. *Living substances below the level of human*, that have souls and therefore a certain degree of consciousness or apperception. 3. *Human*: Human is capable of apperception of both truths of fact and truths of reason. 4. *God*: God has the apperception of only truths of reason. God knows the last reason why all things come to be in his pre-established harmonious plan for the world. In God there is no appetition in the sense of desire for more perfection.

**Locke** (1632-1704) held that substance is an unknowable substratum, a 'something we know not what' supporting the qualities we perceive. He regarded persons not as immaterial souls, but as 'forensic' entities whose persistence is secured simply by the continuity of consciousness. **Berkeley** (1685-1753) attacked Locke's substratum in the case of material substances as absurd. Bodies are simply bundles of qualities, but he retained immaterial substances or souls. **Hume** (1711-76) dissolved the soul into a bundle of its perceptions. He ostensibly destroyed the last remnants of traditional substance, and shifted the role of substance to perceptions which are the independently existing components of the universe. **Kant** (1724-1804) bound substance to the logical role of being a subject of predication. He argued for an eternally persisting substrate which is not an autonomous thing, but merely a necessary condition for the appearance of change.

**In India:** Substance is the substratum where actions and qualities inhere, and which is the co-existent material cause of the composite things produced from it. It is the substratum of all things. A substance is destroyed only by the destruction of its substratum. It is not destroyed

either by its own effect or by its own cause. It means that the relation of the destroyer and the destroyed does not exist between two substances which have entered into the relation of effect and cause. Thus the Sutra states: "Substance is not annihilated either by effect or by cause" (VS I, 12). For Prasastapada, 'substance is the main category, and all categories depend on it for their existence. So it is first named.' Being the substratum of qualities, it is different from qualities. For instance, in the case of a white cloth, the white colour is experienced as a property residing in the substratum, cloth. Therefore, white colour and cloth are different in their essence. The word 'property' does not mean only qualities, but it is used in a wider sense and includes all the five kinds of properties (i.e., substance, quality, movement, the universal, and *visesha*), which subsist in their substrate by inherent relation. A substance does not possess qualities at the first moment of its production. If the qualities arise simultaneously with substances there cannot be any distinction between them, and if the qualities do not arise then substances would be free from qualities. Then the definition of substance, as that which possesses qualities, would be violated. To meet this difficulty, it is said that substance is the substrate of qualities either in the relation of intimate union (*samvaya sambandha*) or antecedent negation (*pragabhava*). Qualities inhere in a substance from the second moment of its production until its destruction. A substance is also the material cause of its composite product. For example, threads are the material cause of cloth made by their combination. Only substance is capable of producing an effect out of its stuff. These substances are nine: earth, fire, air, water, ether, time, space, spirit, and mind. The *Vaisesika* philosophy is pluralistic and realistic, but not materialistic since it admits spiritual substances. Out of the nine substances, the first five (i.e., earth, water, fire, air, and ether) are called physical, since each of them possesses a unique quality sensed by the external sense. Smell is the unique property of earth, and other substances have smell only if mixed up with some quantity of earth. There is smell in muddy water, but not in pure water. In the same way, taste is the property of water, colour of light, touch of air, and sound of ether. The substances – of earth, fire, water, and air – are both eternal and non-eternal. The atoms of earth, water, fire, and air are eternal as an atom is indivisible and can neither be produced nor destroyed. All others are non-eternal as they are produced by the combination of atoms and are subject to destruction. There are four kinds of atoms: earth, water, fire, and air, each having its own special quality. Ether is the fifth physical substance, the substratum of the quality of sound. The sound is perceived, but not ether. It is one and eternal as it is indivisible and does not depend on any other substance for its existence. It is all pervading as it has an unlimited dimension whose effect is perceived everywhere. Time and space are also eternal, all-pervading, imperceptible, infinite, partless, and indivisible. Time causes our cognitions of past, present, and future, and of 'younger' and 'older.' Space (*dik*) causes our cognitions of east and west, here and there, and near and far. There are innumerable souls that are independent, individual, eternal, and all-pervading spiritual substance, the substratum of the quality of consciousness. The souls are divided into two: the individual and the Supreme. The Supreme is only one, the Creator of the world. The individual is internally perceived as possessing some quality when one says, 'I am happy', 'I am sorry', and so on. The individual is not one but many, being different in different bodies. Mind is an internal sense which is atomic, many, eternal, and imperceptible. Each self has a mind through which the self comes into contact with the objects. Its existence is inferred from the fact that the self must perceive internal states through an internal sense, just as it perceives external objects through external senses. Moreover, the mind is selective in the perception of external objects. We perceive colour, touch, taste, smell, and sound subsequently,

even though all the external senses may be in contact with objects simultaneously, coming into contact with only one sense at a time.

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## 2.4. KINDS OF SUBSTANCE

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*Primary and secondary substance:* *Primary Substance* is every individual substance, e.g., a single inanimate body such as a bit of gold or a piece of paper; a single plant such as every rose, plantain, or tapioca; every single animal such as every cow, buffalo, goat, or elephant; a single human like Mother Theresa, Mahatma Gandhi, or Muhammad. *Secondary substance* is the substance expressed by the universal idea representing a class, e.g., human, animal, organism, body, substance, plant, fish, bird, etc. *Complete and incomplete substance:* *Complete substance* is that which possesses everything that its constitution and essence requires for its existence and for the proper functioning of its activities. Its nature demands no further union with a substantial co-principle. For instance, every human, consisting of body and soul, is a complete substance, capable of existing and of performing its natural functions of vegetancy, sentiency, and rational life; in the same way, every brute, plant, and inorganic body are complete substances. *Incomplete substance* requires to be conjoined with some other substantial co-principle so as to constitute a complete substance. Each substantial principle, taken alone, is insufficient to exist, or at least, is insufficient for all the functions of an individual of that particular species. For instance, the human soul alone without the body cannot perform the functions of vegetancy and sentiency. Human needs a material body for these functions. *Simple and composite substance:* *Simple substance* does not consist of entitatively distinct substantial parts. Such simple substances are also called pure spirits, such as angels or God. Complete substances of this kind are absolutely simple. However, one can also speak of certain substances as 'naturally simple' which consist of parts which are material and entitatively distinct, but naturally indivisible and inseparable. The ultimate physical components of the universe (like protons and electrons) would be 'naturally simple' in this sense. *Composite substance* is complete substance consisting of incomplete substantial principles, entitatively distinct among themselves in such a manner that their union results in a single, unified nature. The principles complement each other making a single being of natural functions through their union. Human, for instance, is a composite substance of body and soul. The soul does not inhere in the body as an accident inheres in its subject, nor does the body inhere in the soul, nor do they co-exist side by side as if each were independent of the other.

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## 2.5. CHARACTERISTICS OF SUBSTANCE

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We do not have a single coherent concept of substance. Hence, it is to be identified and separated into the following characteristic strands for a better understanding.

a). *Independence:* The ontological primacy of substance arises chiefly from their independence, in their ability to subsist. Independence of substance excludes only dependence on a substratum, and not dependence on a cause (such as the ultimate cause). Hence there can be substances which are caused, i.e., created substances. Independence may be either absolute or relative. *Absolute independence* means that something exists not only *in* itself but also *of* itself. Such a being does not depend on anything else in any way whatsoever. Only God can be such a substance. *Relative independence* means that something exists *in* itself, but not *of* itself. It is in this sense that we speak of the independence of substance here. Strictly speaking, substance denotes only the substantial whole. Yet, essential parts which go to constitute this whole (e.g., body and soul) are also spoken of as substances. Although substance usually stands out independently as what is relatively persistent

in contradistinction to its changing appearances, anything that exists in itself – even if it lasts only for an instant – is truly substance. b). *Survivability and permanence*: For something to change, it must exist before, during, and after the change. That is, it must survive it. Substance survives its accidents. There can be no substance without accidents. A substance is either material or spiritual. If material, it must have the accident of quantity. If spiritual, it must have the accidents of intellect and will. The subject of change (substance) thus ‘outlives’ its accidents, whatever ceased to be at the change. Experience provides us with numerous examples of this permanence and survival.

**Substance and Nature:** Nature is derived from the Latin participle *natus* ‘born’, a form of the verb *nasci*, ‘to be born’. The nature of a thing suggests what the thing is born for; what it is originated to do; what it exists to accomplish. The nature of a thing is its reality considered as equipment for action or operation. *It is the first or radical intrinsic principle of its rest and movement.* It is the basic, the radical, the fundamental principle of rest and movement in the body. A body is equipped with powers or faculties by means of which it operates or acts and is acted upon. These powers or faculties are the *proximate* principles of operation. We call nature the first or radical principle, to distinguish it from these proximate principles. Nature has powers and operates by means of powers. It is the first principle of the activity which proceeds from the powers which are the proximate principles of action. The relation between substance and nature can be explained in this way: As we have just seen, nature is the radical or the ultimate principle of all operations in a particular being. Different beings have specifically different activities. For instance, neither does iron act like gold, nor gold like iron, nor iron like radium, nor radium like argon, nor argon like hydrogen. As long as a thing is what it is, its activities remain specifically the same. The activities are determined by some principle within the thing itself. This ultimate intrinsic principle of activity is nature. Nature is Being-in-itself and not in another. Hence, substance is nature insofar as the former is also the ultimate principle of Being- in-itself.

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## 2.6. ACCIDENTS

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The original Aristotelian term (*symbebekos*) for predicamental accident meant ‘going along with’ or ‘occurring with’ something else. Size and colour, for example, go with or presuppose the bodies of which they are merely the modifications. They can change while the body’s nature remains the same. Sapling and tree do not differ in substance, in spite of change in size, shape, and colour. The same individual human passes through the different stages of embryo, foetus, childhood, youth, maturity, and old age, changing in many ways in size, shape, colour, activities, place, and time but remaining identical in substance. These accidental characteristics are really distinct from the substance, regardless of any consideration by the human mind. They are distinct realities that occur to, or belong to, a substance. The etymology of the Latin term *accidens*, ‘falling upon’ or ‘happening’ expresses it quite vividly.

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## 2.7. CHARACTERISTICS OF THE ACCIDENT

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**Dependence:** Change, like that in colour or size, reveals the accidental character of such a thing, though it is not the essential trait of an accident. For, an accident may remain the same during the whole course of its subject’s existence, as do the intellectual faculties in a human. What

necessarily distinguishes an accident from substance is the former's dependent characteristic. Whatever being it has, it has through the being of something more basic, the substance. It is a nature too weak to have being just through itself. Whiteness cannot exist in reality except through a body that is white. It is called a nature, because it is conceptually intelligible. It is essence, because it is a potency to the being that corresponds to it. But it does not have its being in an independent unlike substance; it requires also a finite nature other than itself through which to receive and have its being. This dependence in the order of essence is the distinguishing trait of an accident. It is an essence that depends upon another essence in its very role of essence - as a potency to being. Because of this dependence, it is not at all on the same level as substance. It is an essence, not just through itself, but through a substantial essence. Redness is an essence only because a primary instance of essence, a body, can be red. It may be called an accidental essence, or an accidental nature; distinguishing it from essence meant absolutely, that is, from substance.

**Inherence:** The very nature of every accident is such that it is meant for being in something other than itself, that is, in a substance. It is an actuation of a potency. It is the accidental act of a subject. It actuates a substance in a secondary way. Redness, for instance, makes actually red a face that in itself was just able to blush. Accordingly, it actuates a potency to redness. The potency here is the substance. Redness is one of its accidental forms or acts. Every accident, then, is in a subject that is a substance, and every accident actuates a substance. Is every accident therefore an inherent form?

The more basic accidents, like quantity and qualities, are undoubtedly forms intrinsic to the thing they actuate. A colour inheres in a body, adding a new form to the thing's intrinsic constitution. But do accidents such as where and when a thing is, add any inherent form? Although there seems to be no intrinsic addition to the reality of a pie when it is brought from the pantry into the dining room, still there is a real accidental difference accruing to it from the new and really different place. Each category of accident is a supreme genus of being, an original mould into which the existential act is cast. One kind of accident, therefore, is not to be conceived as modelled on another. Accidents such as where and when, need not be expected to conform to the type found in quality. There is the possibility that some accidents may actuate a thing extrinsically, that is, without effecting any intrinsic change in its constitution, as in the case of the pie being in different places. If the non-inherent accidents presuppose the inherent ones, then accidents may be said in general to inhere, as substance is said to subsist. Yet, while every accident is dependent on and in this sense is in a substance, some accidents need not be inherent.

In the case of inherent accidents, the substance through which they have their being is the substance in which they inhere. By actuating their substance these accidents have their being through it. By making a body white, whiteness has its being as a modification of the body. In the case of participated existence, as has been seen, the situation is different. The existential act inheres in or actuates the essence it makes be. It belongs to that essence, it is an accident of that essence. But what it depends on primarily is an agent other than that essence. It is through another substance, the extrinsic efficient cause. The essence it actuates depends upon it for distinction from mere nothing. The existential act is accordingly prior to the corresponding

essence. The predicamental accident, on the other hand, is subsequent to what it actuates, and so has its being through the nature in which it inheres. It requires also an efficient cause, for it involves new being. Its efficient cause may be the substance in which it inheres, as in the case of an act of intellection; or an agent other than that substance, as in the case of the electric plate heating the water. Unlike dependence, inherence is not necessarily required for an accident. Where and when a thing is, for instance, are really accidental to it, yet not inherent forms. They are in the thing in the sense of dependence on it in being; but they do not, like size or whiteness, add to the intrinsic constitution of the thing.

**Being of a Being:** Just as an accident may be termed a nature or an essence or a form, so it may be called a thing, or a quiddity, or a being in a secondary sense. These terms denote what exists primarily – namely, a substance. A tree or a stone is unhesitatingly called a thing, but the term is applied only with misgivings to a colour, or a sound, or a size. Yet each of these is something. In some diluted sense, therefore, a colour or a sound is a thing. But any such accident is always a quiddity that belongs to another quiddity, the substance. In this sense it is a quiddity of a quiddity. In a corresponding secondary way, every accident may be termed a being, insofar as it is in some way. Since it has existence only through a substance, and belongs to a substance, it is rather a being of a being (*ens entis*).

**Distinction of Accidental Being:** Accidental existence is really distinct from substantial existence. Accidental existence is being in. In regard to real accidents this is a real distinction. The substantial being of a human really continues, while the accidental being of one's height and weight increase with years. The substantial being endures in reality without that accidental being. An accident really exists as a modification of a really existent substance. Only in real dependence upon substantial existence can the accidental existence be had. An identical existence cannot be really dependent and really independent in the same respect. The one has to be really distinct from the other.

In other words, accident is that which is not in itself but in another. It is a mode of being, but not autonomous. It does not exist in itself, but in another. Hence an accident is *whatever is added in anyway to another already primarily determined in its being*. Accidents are mainly of two kinds: Physical and Non-physical. *Physical Accident* is the real inner principle of a being which further perfects the being in which it inheres, e.g., the operations, habits, and faculties of an experiencing agent. *Faculties* are the agent's proximate principle of action, e.g., intellect, will, memory. *Habits* are the lasting dispositions which by their innate or acquired presence make easier the work of the active powers, e.g., faculties. *Non-physical accident* is predicate which does not belong to the definition but says something more about a being, e.g., property and logical accident. *Property* is any positive predicate which is not a part of the definition but which necessarily flows from the definition, e.g., human's laughing. *Logical accident* is any predicate which is neither a part of the definition nor necessarily flows from the definition, e.g., human's singing.

### Check Your Progress

**Note:** Use the space provided for your answers.

1) What do you understand by substance? What are its characteristics?

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2) What do you understand by accident? What are its characteristics?

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## 2.8. LET US SUM UP

Finite beings are composed of a permanent principle which remains the same throughout all changes. This permanent principle is called 'substance' and secondary principles are called 'accidents.' An accident is that which is not in itself but in another. It is a mode of being, but not autonomous. The Indian thinkers interpret substance as the substratum where actions and qualities inhere. For them, substance is the main category, and all categories depend on it for their existence. Qualities inhere in a substance from the moment of its production until its destruction. The main characteristics of substance are independence, survivability, and permanence. It is also distinct from nature which is the basic principle of action.

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## UNIT 3    MATTER AND FORM

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- 3.0. Objectives
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### 3.0. OBJECTIVES

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Materiality underlies all material things. Formality underlies all finite beings with material forms. The principle of materiality is prime matter and the principle of formality is substantial form. In this Unit an attempt is made to:

- Understand the classical views on prime matter and substantial form
  - Explain the classical views in its relation to the contemporary scientific theories on matter: quantum mechanics and theory of relativity
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### 3.1. INTRODUCTION

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*Hylomorphism*, the classical theory of matter and form, is derived from the Greek words ‘*hyle*’ (matter) and ‘*morphe*’ (form). This theory of Aristotle seeks to explain the essential constitution of a corporeal substance in terms of a twofold principle: prime matter and substantial form. Prime matter is material and indeterminate, and substantial form is formal and determining.

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### 3.2. CLASSICAL VIEWS

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Plato distinguished between matter and form, but Aristotle is the author of hylomorphism. St. Augustine held a theory of matter and form, but the importance of hylomorphism was not realized before the Middle Ages. Scholastic philosophers adopted Aristotle’s theory although they differed in their interpretation of it. The pure potentiality of matter was denied by *Duns Scotus*, but defended by Aquinas and his followers. Suarez calls matter pure potency, but attributes a kind of actual existence to it. Albert the Great, the nominalists, and Suarez denied the necessity of an intrinsic principle of limitation. Regarding the principle of individuation, Duns Scotus sought the solution in adding to the specific nature the form of ‘thisness,’ which is formally distinct from the specific nature but actual on the part of the thing. The nominalists denied that there is any basis for a problem of individuation. Suarez held that an essence is individual by its very entity. Plato and Aristotle appealed to matter. St. Thomas developed Aristotle’s theory by adding to matter the qualification ‘marked by quantity’. While the entire Thomistic school admits this formula, there is a difference of opinion about its interpretation, and even about the sense which St. Thomas ultimately intended to give to it. Sylvester of Ferrara (1474-1528), followed by Boyer and Renard, explain this quantity as the actual quantity of a body; whereas Cajetan (1469-1534) and more recently Remer, Gredt, and Phillips explain it as

the transcendental relation of matter to quantity. Rosmini (1797-1855) and some others have tried to explain individuation by means of existence

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### 3.3. SCIENTIFIC VIEWS

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Our normal tendency is to depict matter and the material world as we observe it, but the theories of quantum mechanics and relativity critically challenge our way of looking at matter.

**Quantum Mechanics:** Mechanics, a branch of physics, deals with the movement of bodies. Quantum mechanics deals with the movement of quantum particles. It was developed in the 1920s by an international group of physicists, including Niels Bohr (1922-2009) from Denmark, Louis de Broglie (1892-1987) from France, Erwin Schroedinger and Wolfgang Pauli from Austria, Werner Heisenberg from Germany, and Paul Dirac from England. The subject-matter of quantum physics includes the movement of particles, creation of particles, destruction of particles, interaction between particles, the way atoms are tied to the nucleus, the nuclear forces, the properties of particles, the conception of the beginning of the universe as a great quantum leap, etc.

The theory begins with Max Planck, a physicist, who brought forth the first crucial idea of the quantum theory in 1900. This theory states that energy absorption and emission take place in discrete quantas. In his view, our continuous view of the world must be replaced by a discrete one. The different forms of energy in the universe are discrete and imperceptible. To know Quantum mechanics is to know the subatomic world, which is a world of puzzles, paradoxes and perplexities ruled by chaos, randomness, and probabilities. The subatomic units of matter have dual aspects. They appear sometimes as particles and other times as waves. This is a very strange property of matter understood in terms of probabilities. Probability means we can never predict an atomic event with certainty. Mechanical stability of particles is yet another puzzle whereby atoms colliding millions of times every second will return to the original form after a collision. Again, the subject-object distinction of the macroscopic world does not exist clearly in the microscopic world.

The principles of classical physics collided with the new concepts of indeterminacy, randomness, and unpredictability. The development of quantum physics marked the beginning of the age of the 'new physics,' radically altering the physicist's conceptions of reality. The new vision of matter in quantum physics is generally termed as the philosophy of quantum mechanics. The two fundamental principles of quantum physics are the principle of complementarity and the principle of uncertainty. The principle of complementarity proposed by Niels Bohr was meant to explain the wave-particle duality of light. According to this principle, wave and particle are mutually exclusive but complementary aspects of light. They are mutually exclusive in the sense that when one is manifest the other is not manifest. According to the principle of indeterminacy or the uncertainty principle of Heisenberg, it is impossible to determine exactly both the position and momentum of a particle at the same time.

**Relativity:** The theory of Relativity, proposed by Albert Einstein (1879-1955), is one of the most significant scientific advances of our time. The central problem in physics in the nineteenth century was concerned with resolving the problem of Newton's 'action at a distance' and the wave propagation of light. It was necessary to postulate a medium, first to transmit force between two bodies and then as a medium for light to travel as a trans-wave.

Einstein's inventive theory as a solution to this problem gave rise to the theory of relativity, which holds that concepts like mass, motion, length, time, simultaneity, etc., are not absolute but relative. They are relative to the frame of reference. There are two kinds of relativity theories: the Special Theory of Relativity and the General Theory of Relativity. Special Relativity discusses situations when bodies move with uniform velocity. There are two postulates that are central to the special theory of relativity. The first states that there is no privileged frame of reference. All frames of reference which are moving with uniform velocity with regard to each other are equivalent, and therefore the laws of physics are equally applicable in all frames of reference. The second postulate holds constancy of the velocity of light, which is an absolute universal constant as the maximum interaction speed between two bodies is the speed of light and this is independent of the motion of the source of the observer.

According to the first postulate, all natural events are unaffected by uniform motion. Motion makes sense only when referred to a frame of reference. There is no absolute length, time, and mass. These have different values in different frames of references. The Special Theory of Relativity also holds that those events which are simultaneous in one frame of reference need not be simultaneous elsewhere. It also limits the maximum speed of interaction to the velocity of light. Nothing can move faster than light, and if anything moves faster than light it would contract to nothing.

Relativity of length and relativity of time are two important consequences of the special theory of relativity. Length is not something absolute in the sense that it has the same value for all persons at all places. Length is relative depending on the frame of reference. For instance, the length of a rod is four feet when measured by a stationary observer; the same rod will have a length less than four feet when it is placed in a fast moving frame of reference like a super space-shuttle for the same the stationary observer.

Time also is relative. A moving clock slows down with respect to a stationary observer. This means that if two exactly identical clocks are synchronized, but one is kept in a stationary frame of reference and the other in a moving one, the second one will show a lower reading than the first. Not only clocks, all other time-related phenomena too slow down in a moving frame of reference.

According to this theory, there is no absolute past, present, or future applicable to the cosmos as a whole. Similarly, two events that are simultaneous in one frame of reference need not be so in another frame of reference. Relativity of mass and the equivalence of mass and energy, are another amazing twin consequence of the special theory of relativity. Einstein also showed that mass too varied being relative to the frame of reference. A moving body has a greater mass than a stationary one. Perhaps the most far-reaching consequence was the mass-energy equivalence, according to which mass and energy are inter-convertible. Mass can be converted into energy:  $E = mc^2$ . Energy depends on its inertial mass and the velocity, and therefore energy can increase either with the increase of mass or velocity.

The General Theory of Relativity is the theory of gravitation which deals with bodies with accelerated motion (non-uniform motion). The concept of accelerated motion consists of change in speed or change in direction. The two postulates for the general theory of relativity is the principle of equivalence and gravity, which is defined as the curvature of space-time continuum.

The first postulate signifies the equivalence of accelerated motion and gravity. The second postulate of the General Theory of Relativity defines gravity as a geometrical property by which the presence of a huge mass can curve the space-time continuum. This aspect of relativity sees gravity not as a force (as held by Newton) between bodies but as a geometrical property.

A significant result of the theory of relativity is the happy blending of classical metaphysics and modern physics. Classical metaphysics views matter (prime matter) as the principle of indetermination, and form as the principle of determination. Matter in itself is capable of receiving any form. Matter remains relative to a form. This fundamental nature of relativity and indeterminacy of matter is the ultimate metaphysical foundation of the physical theories of quantum mechanics and relativity. Thus, the classical conception of prime matter as the principle of indetermination continues to be relevant in the context of the new findings of physics.

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### 3.4. PRIME MATTER

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All material beings possess a principle of materiality. It is not a being at all but a principle of material beings as such. Hence it cannot be known scientifically (empirically), but metaphysically. This principle of materiality is traditionally known as prime matter. It is the common substantial principle found in all material bodies. It is wholly without determinateness in itself. It cannot exist itself. It is substantial, but an incomplete substantial principle. It requires another substantial principle to exist, or rather to give it existence in a determinate body. The other substantial principle (with the exception of human soul) is also an incomplete substantial principle. The prime matter is the determinable element and the substantial form is the determining element. It is also pure potentiality as it is a pure capacity for existence in a material body. It is a capacity which must be filled up, determined, and made into the only existible body by a substantial principle other than itself. Since the result of the union of this determining principle with prime matter is a single bodily substance, the union itself must be a substantial union, the substantial fusing of two substantial principles into an actuality which is a third thing. This third thing is neither prime matter alone nor substantial form alone, but an existing body of a specific kind. It is that which makes any body a body, not actively but passively receiving the impress and union of the substantial form. For the whole character of prime matter is its passivity, its inertness, and its indifference to become this particular kind of body rather than another – in a word, its indeterminateness, its *potentiality*. In this way we can affirm the classical Aristotelian assertion: *Prime matter is that constitutive principle of corporal substance which of itself is quite indeterminate and hence can be determined to form corporeal substance*. The following are the main characteristics of prime matter:

#### **Prime Matter as the Principle of Imperfect Individuation**

Individuation is the adequate distinction of one being from another. *Imperfect individuation* is the adequate distinction of beings which fall within the same species, e.g., the distinction between different individuals of the human species. *Individuality* or individuation is the unity of a being which is *one in itself and non-multipliable*. An individual is an existing unit of being incapable of being multiplied. An individual is one in such a manner that it cannot be divided. 'Individual' is in opposition to 'universal'. The universal is a nature common to-one-and-many. It is capable of being realized in any number of individuals of the same class. As a class-nature it is conceived as a unit. Since it is communicable to many, it is multipliable. On the other hand, the individual

nature is one for itself alone so that it is incommunicable to others. The individual nature, as an existing individual incommunicable to many, is non-multipliable.

What is the principle of individuation which makes a being to be an individual? We can distinguish between an extrinsic and an intrinsic principle of individuation. The extrinsic principle is the efficient cause which gives an individual being its existence. The intrinsic principle is the ground or reason in the being itself which gives individuality to the being, so that it is one in itself and non-multipliable into many. In other words, what is it in the being itself that makes it to be 'this' individual. Since this question refers to the single individual, taken absolutely and without any relation to others, this intrinsic principle is called the *principle of absolute individuation*. It is the intrinsic principle which gives the unity of individuality to a being. In order to understand the problem rightly, we must compare the individual nature of a being with its specific nature.

### **Individual Nature and Specific Nature**

The specific nature of a being is the result of the union of its proximate genus and specific difference. For instance, the specific nature of human consists of the proximate genus 'animal' and the specific difference 'rational'. The union of the two constitutes the specific nature of human who is a 'rational animal'. The specific nature is alike in all humans; for all humans possess the nature of a rational animal. From this standpoint alone there would be no difference in the concept of one human and another. In an existing human this general 'specific human nature' becomes an 'individual human nature'. This is done through the union of the 'specific nature' with 'individuality'. For instance, Napoleon, through his individuality, is not merely a man, *but this man Napoleon*.

Still the question is: What is the principle of absolute individuation which makes an individual to be individual? Is individuality a reality really distinct from the reality of the specific nature? In this case, the principle of absolute individuation would be the entity of the individuality as such, and not the nature at all. Or, are the specific nature and individuality in an existing individual entitatively identical, with merely a distinction in thought between them, so that they form a *metaphysical union*? In that case the formal principle of absolute individuation would be the entity of the individual nature or essence itself, and there would be only a virtual distinction between individuality and specific nature in an individual being. The latter view is preferred and it can be demonstrated in this way: The specific nature in itself must either be a universal or an individual nature. If it is universal, then a universal nature would exist as a universal. However, a universal nature cannot exist in the physical order of things as a universal. Therefore, the specific nature must exist as an individual nature. But if it comes into existence as an individual nature the entity of individuality is entirely superfluous and can no longer make it individual as it is already an individual nature in itself when it comes into existence. Hence the individuality of an existing nature is not really distinct (but only mentally) from the existing nature itself, and the principle of absolute individuation of an individual is the nature or essence itself. In other words, every specific nature becomes an individuated nature. Therefore, individuality is solely a manner of existence for nature. Then, the distinction between the specific nature and the individuality of an existing individual is a mental or logical distinction. They are distinct in concept because we define them differently. The question is: Is there a ground or reason or foundation in the individuals for making this distinction in concepts? It can be answered in this way: Individuality is the same for all beings. It is that which makes a specific nature to become individuated in this particular individual. But there is a great

variety of specific natures among existing beings, each of which is individuated in a large number of existing individuals. Here we have the ground or foundation in the things themselves, for our making a mental or logical distinction between the nature and the individuality in them. Now when there is such a foundation for making this distinction, the distinction is neither real nor purely mental, but virtual. Therefore, there is a virtual distinction between the nature and its individuality.

The next question is: What is the principle which individuates a specific nature into a number of individuals or individual natures? This is the *principle of relative individuation*. The principle of relative individuation is *matter affected or signated by dimensive quantity*. It can be explained in this way: Since it is a question of the plurality of individuals in the same species, the principle of individuation must be a principle of plurality. Plurality implies division and divisibility. The ground of divisibility will also be the ground or principle of plurality. Consequently, the ground or principle of relative individuation must be that ground of divisibility which enables a specific nature to be multiplied into a plurality of individual natures. Now, in physical order the principle of divisibility is matter affected by dimensive quantity. When a portion of matter is separated from another, a plurality is effected in it which gives rise to a plurality of individuals of the same species.

### **Prime Matter as the Principle of Quantity**

Quantity is that which is one, yet divisible. There are two types of quantity: multitude and magnitude. *Multitude* is the composition of the discontinuous parts which are the subjects of the same species, e.g., multitude of humans. *Magnitude* is the composition of the continuous parts of a corporal being, e.g., a huge tree.

### **Prime matter as the Principle of Mutability and Passivity**

*Mutability* is the ability to change. There are two kinds of mutability: substantial mutability and accidental mutability. *Substantial mutability* is the ability to become an individual of another species, e.g., food becoming part of the one who eats it. *Accidental mutability* is the ability to undergo a change of accidents, e.g., a change in the weight of body or a change of opinion. *Passivity* is the ability to receive some perfection from another.

### **Prime matter as the Principle of Being -present-to-another**

Every being necessarily acts. The activity of the spirit is spiritual, which implies luminous self-awareness or knowledge. Hence, the pure spirit is primarily present to itself and only then is it present to the other. Human knows about the other first. One knows about oneself only afterwards. Hence, human is not pure spirit. There is in human a non-spiritual principle, namely, prime matter which is the principle of being-present-to-another.

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## **3.5. SUBSTANTIAL FORM**

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To illustrate the various senses in which the term *form* is used, we shall consider a few instances of its use: Form is frequently used as a synonym for outline or shape. We speak of the oval form of a race-course, of the symmetrical form of a drawing. It also means a plan or program, a record, or a form-sheet to be filled. It is often used for *good condition*, and a golfer is said to be 'in form' or 'at the top of his form'. The adjective of form (i.e., formal) is often employed to indicate a certain dignity, or a certain decorum invoking precise details of dress or conduct. Thus we speak of 'formal dresses, a 'formal occasion', a 'formal introduction' etc. To a philosopher,

form may mean that which *determines* a thing, sets it in its being, in its essence, in its substance, in its accidents, in its actuality. Any determining element is a being in form. When it is spoken of corporeal substance the term refers to *substantial form* which makes a bodily substance an existing reality (actuality). It is the substantial form of human which makes the one bodily being a human being. *That which sets and determines a substance in its actual being, and makes it a substance of this precise kind or essential nature, is its substantial form.*

Of course, human, dog, tree, coal, hydrogen, computers, etc. have *accidental forms* too. The human being will be of a certain age, sex, size, nationality, condition of health, temperature, location and so on. These many and variable forms do not constitute human's substance as this kind of *actual body*. They are *accidental forms*, not *substantial forms*. Each individual body has only one substantial form, but a plurality of accidental forms. 'Each individual body' means a *continuous body*. Now, any living body is continuous throughout its living structure. A lifeless body is strictly continuous at least in its minimum particles. In other words, the individual body, which is a single continuous quantity, is actuated only by one substantial form, but it *may be divided* into a plurality of individual bodies of the same species. Each of the bodies so resulting has its own substantial form. For instance, a rosebush may be cut and divided into several rosebushes. The undivided bush has only one substantial form *actually*. But in the plant in question, the bodily substance is capable of division in such a way that life may be preserved in each of the parts. Thus, the plant has a potentiality or capacity for such division, and its substantial form is said to have a parallel potentiality or capacity by reason of its dependence upon the matter of the plant. Hence we can say that the rose-bush is actually one, but potentially many. Similarly, we can also say that the *substantial form of the rose-bush* is actually one, potentially many. Substantial forms of the human souls, and that of most animals, are never multiple either actually or potentially. Each of such forms is necessarily *one* substantial form having no capacity for division according to division of the body-structure (matter) on which, intrinsically or extrinsically, it depends.

In a living body, the life-principle (soul, entelechy) is the substantial form. When this form is driven out by death, the remaining structure is substantially different from the living body. The corpse of a human is not a human. It is a package of various inorganic (non-living) substances and naturally tends to break up, or decomposes. Hence, a corpse is not a single substance but a mixture of many substances; whereas the living human, actualized by the spiritual substantial form (soul) is a single human substance.

Substantial change involves the acquisition or incoming of a new substantial form and the simultaneous loss or outgoing of the old substantial form while the prime matter remains. When a living body is changed to a dead body, there occurs a substantial change. Again, when hydrogen and oxygen are brought together in due proportion, the gases are changed into water. The properties of water are not the same as those of the gases. Here, we know that the change is a change of substance. The two substances have become a single compound substance called water. Therefore, substances manifest their character by their properties. When the properties are wholly changed we know that the substance is changed. Inasmuch as the change results in the production of a new substance (substances) it is *generation*. The same change, inasmuch as it results in the loss of the previous substantial form, it is *corruption*. The generation of one substance(s) is the corruption of another, and vice versa.

When a compound substance (such as water) is generated by the fusion or union of other substances, we have a *compound*. A compound is a substantial unity. The substantial forms of the elements joined together in a compound, endure in the compound in a *virtual manner*, and not *actually*. For example, the substantial form of water is a true substantial form, distinct from the form of hydrogen and the form of oxygen which are the constitutive elements of water. The forms of these elements can be generated again from water. In other words, these elements are latently or *potentially* present in the water, and not *actually*. And this potential or latent presence of the elements in the water is not a purely passive thing since the water is capable of being reduced to the gases. The potential presence of the elements is a kind of *active* potentiality which is called *virtual*. Thus, we can say that the elements in a compound are present in the compound, not *actually* but *virtually*. To be more precise, the *substantial forms* of the elements are virtually present in the substantial chemical compound.

To have new bodily substance we must have old bodily substance, since bodies come from other bodies by generation and corruption. However, the process of generation cannot proceed in an infinite series of bodies from other bodies, and there from other bodies, and so on for ever. For an actual infinity in anything limited or finite is a contradiction. Hence, the *first* bodily beings cannot have come into existence by way of generation, i.e., by way of substantial change. The *first* finite being must have come into existence by an *absolute* production by the Infinite Power without any material prerequisites. Such a production is called *creation*. It is the *production of a being in its entirety out of nothing*. It is “*productio totius rei ex nihilo sui et subjecti*”. It means “the production of a thing is entirety out of nothingness either of self or of subject”. *Nothingness* refers to the absence of all pre-existing materials. The calling of being out of nothingness is the exercise of *absolute or unconditioned and unlimited power*. And such power is exercised only by the Absolute and Infinite Being.

*Substantial form* is an inner principle of primary actualization or determination of a being. It is the inner principle of specific perfection. It is active, and it is determining. It makes a body actual in a definite specific kind of actual bodiliness. The result of the substantial union of substantial form with prime matter is called *second matter or materia secunda*. *Materia secunda* is an existing bodily substance. Substantial form is the root and source of bodily actuality, of substantial determinateness, of activity; whereas prime matter is wholly potential, indeterminate, inactive, or inert. *Kinds of substantial form*: *Pure substantial form* is the inner principle of primary determination which constitutes the whole being, e.g., angels. *Component substantial form* is the inner principle of primary determination which is only a constitutive principle of being, e.g., substantial forms of all material beings. *Subsistent component substantial form* is the inner principle of primary determination which of itself has its act of existing, e.g., the human Soul. *Non-subsisting component substantial form* is the inner principle of primary determination which exists and can exist only insofar as it is in union with matter, e.g., animal forms, vegetative forms, and inanimate forms.

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| <p><b>Check Your Progress</b></p> |
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**Note:** Use the space provided for your Answers.

1) How do you explain matter and form from classical perspectives?

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2) How do you relate matter to modern theories of quantum mechanics and theory of relativity?

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### 3.6. LET US SUM UP

Prime matter is the principle of indetermination, and substantial form is the principle of determination. The theories of quantum mechanics and relativity critically challenge our way of looking at matter. The new vision of matter in quantum physics is generally termed the philosophy of quantum mechanics with its two fundamental principles: principle of complementarity and the principle of uncertainty. The principle of complementarity explains the wave-particle duality of light; the principle of indeterminacy or the uncertainty principle states that it is impossible to exactly determine both the position and momentum of a particle at the same time. A significant result of the theory of relativity is the happy blending of classical metaphysics and modern physics. Classical metaphysics views prime matter as the principle of indetermination, and form as the principle of determination. Matter in itself is capable of receiving any form. Matter remains relative to a form. This fundamental nature of relativity and indeterminacy of matter is the ultimate metaphysical foundation of the physical theories of quantum mechanics and relativity. Thus, the classical conception of prime matter as the principle of indetermination continues to be relevant in the context of the new findings of physics too.

All material beings possess a principle of materiality. It is not a being at all but a principle of material beings as such. This principle of materiality is traditionally known as prime matter. The other substantial principle (with the exception of the human soul) is also an incomplete substantial principle. The prime matter is the determinable element and the substantial form is the determining element. It is the principle of imperfect individuation, quantity, mutability, and of being-present-to-another. Substantial form is the principle of determination, which determines a substance in its actual being, and makes it a substance of this precise kind. It is an inner principle of primary determination of a being. It is the inner principle of specific perfection. It is active and determining. There are four kinds of substantial forms: pure substantial form, component substantial form, subsistent component substantial form, and non-subsisting component substantial form.

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## UNIT 4 ACT AND POTENCY

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  - 4.2. Act
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### 4.0. OBJECTIVES

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Is everything changing? If everything changes, then change is the unchanging reality. Along with change, we also experience stability. Change seems to be guaranteeing stability. For instance, planets are kept in stable orbits because of their motion. In this Unit we explore the metaphysical meaning of:

- Act
  - Potency
  - Act and potency
  - Potency and possibility
  - Potency and evolution
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### 4.1. INTRODUCTION

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The concepts of act and potency have historically delineated the dramatic antinomy felt by Greek thought with Heraclitus and Parmenides. Heraclitus held that everything is fleeting, transient, ephemeral, becoming; whereas Parmenides was of the opinion that the sensible, mutable, contingent, and phenomenal world is pure illusion, which requires of critical intelligence a judgment in favour of the unique, absolutely immutable Being, absolute perfection and fullness. The efforts of Plato succeeded only in fragmenting the Being of Parmenides, multiplying it as many times as there are Ideas in his World of Ideas. The multiple and becoming were reduced to mere appearance, to a shadow of the true and single Being of the Ideas. The Aristotelian proposal of *act and potency* finally offered a solution, taking a middle position between the Parmenidean rigid immobilism and the fluent becoming of Heraclitus. The proposal has saved the *permanence* of reality and its uninterrupted *flux and becoming, giving and receiving*. Later on, Christian philosophers accepted the same proposal on account of its conformity to biblical realism which is both static and dynamic.

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### 4.2. ACT

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The term 'Act' comes from the Latin root 'Actus' which means *an entity of whatever kind which perfects and determines a thing in its being or perfection itself*. It includes the power or faculty, operations of the faculty, accidents, essence, substance, form, and act of existing. Whatever a being *has* or *is* in a positive manner is an act. It is perfection itself. There are as many kinds of acts as

there are kinds of 'being'; for every being as such is a perfection. The acts are distinguished as the following: *Act of essence*: The act of essence is the act which perfects and determines a being in its species. It is that constitutive principle of a being which makes a being just this particular kind of being and nothing else. *Act of existing* is the act of Being. It is unlimited perfection. *Act of property* is the act of perfecting and determining an essence in which the entity of property flows necessarily from its essence. *Act of accident* is the act of perfection and determination of a being in which the entity of the accident does not flow necessarily from the essence of the being, e.g., dark hair, dark skin, one's weight, height, etc. *Pure act* is subsisting perfection without any limit. It lacks no entity, nor can it receive an increase of entity as it possesses all possible actuality. There are pure acts both in the *order of existence* and *essence*. *The order of existence* implies the act of existing of all beings and the exercise or occurrence or happening of all operations. *The order of essence* implies all the determinations of beings, which make them be such or such. The *pure act* in the order of existence is God; the pure acts in the order of essence are angels, whose substantial forms are not restricted. *Mixed act* is a composition of perfection and potentiality, e.g., all corporal beings. *Mixed act in the order of existence proper*: It includes every finite being insofar it is composed of the *act of existing* and *complete essence*. *Mixed act in the order of complete essence*: Complete essence is a composition of substance and accidents. *Mixed act in the order of substance*: Every corporal substance is composed of prime matter and substantial form. *Mixed act in the order of operation*: Every operation of a finite being is composed of exercise and determination.

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### 4.3. POTENCY

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Potency comes from the Latin root '*potentia*' which means power. *Potency is the capacity for act*. It is the capacity or aptitude in reference to something which a being is not or has not, but which it can be or can receive. For example, hydrogen has the 'act' of hydrogen; Oxygen has the 'act' of oxygen; but both have the 'potency' of water. They are actually hydrogen and oxygen but 'potentially' water. Water on the other hand is actually water; but it is potentially hydrogen and oxygen, since the water has the aptitude to be resolved into them.

There are two main kinds of potency: Active Potency and Passive Potency. *Active Potency* is the capacity to communicate act or perfection to another. It is a power of action, such as the power of hearing. Since such a power in itself already confers certain perfection upon its subject, it is an act with respect to its subject. Hence it may also be called first act. *Passive Potency* is the capacity to receive act or perfection from another, e.g., a child has the capacity for acquiring knowledge from parents and teachers. There are two kinds of Passive Potency: Determinate Passive Potency and Indeterminate Passive Potency. *Determinate passive potency* is that which contains an act and is in potency to some further act. e.g., substance for accidents; the complete essence for the act of existing. *Indeterminate passive potency* is the principle of an act, but which itself contains no act. It is pure potency, e.g., prime matter.

**Act is Limited only by Potency**: The notion of act does not include any limitation. For, act is perfection and potency is limitation and hence imperfection. But if act as act is limitation, a pure act would be a contradiction in terms. For, pure act excludes the possibility of any limitation and imperfection. Hence a pure act limited of itself would be a contradiction in terms. However, it does not mean that any act which exists in reality is without any limitation. It is true that it does not include limitation; nevertheless, it does not *exclude* it either. Hence if an act is found to be limited, it is not limited by itself but by the limiting principle in which it is received, i.e., by potency.

**Potency is Limited of Itself:** By its very nature, potency is a limited receptive principle of perfection. It is a capacity for perfection. All the same, in a certain sense, potency may be said to be limited by the act to which it is ordered and which it receives. For instance, the potency of water to be heated is a potency to be heated, and therefore limited by the act of heat. It is not a potency to be a human person. For this reason potencies are distinguished and diversified according to the act to which they refer. The following conclusions can be drawn from the fact that act is limited only by potency: a) If there is an act not limited by potency, it is *infinite*. For whatever is not limited is unlimited or infinite. b) If there is an act not limited by potency, it is *unique*. For two or more infinite acts in the same order are impossible, since such acts would either be different or not. If they are not different, then they are not two but one and the same. If they are different, one would have to have a perfection which is lacking in the other. Hence, this other would not be infinite but finite. Hence, of necessity, an infinite act is to be unique.

**Potency and Act are Really Distinct:** Potency and act are really distinct; for that which perfects cannot be really the same as the perfectible. Otherwise the perfectible would give itself an act which it does not have, so that Being would come from non-Being. Besides, if potency and act were not really distinct, that which limits and that which is limited would be really the same so that act would limit itself. From the real distinction of potency and act, it follows that nothing can be potency and act in the same respect; for this would imply that that which perfects is really the same as that which is perfected or perfectible.

**Act and Potency Enter into a Real Composition:** Act and potency are merely principles which by their union form a complete whole. Hence, the real distinction between an act and its potency is not a distinction between two separate entities or beings, but a distinction between two principles of one and the same reality, namely, a *metaphysical* distinction.

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#### 4.4. POTENCY AND POSSIBILITY

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*Possibility* is objective potency. It is the capacity or aptitude of a being for receiving existence. A 'possible' passes from a state of relative non-existence to existence. "*What is not yet, but can be.*" There are two kinds of possibility: subjective possibility (logical possibility) and objective possibility. *Subjective possibility* is the conceivability in which we do not see any contradiction. A being of subjective possibility is a being which was not, is not, and will not be, but conceivable. It has existence only in the mind. e.g., a human with a hundred eyes. *Objective possibility* (ontological possibility) is the real possibility of an object which in fact is not contradictory. For example, when we derive the concepts of 'gold' and 'mountain', our intellect perceives that these concepts are compatible, and can be united into one concept whose component parts do not contradict each other. Hence, we can base the possible 'golden mountain' upon the contingent realities from which we have abstracted the concepts of 'mountain' and 'gold.' Possibility also differs from potency. For, every possibility implies a certain act (actuality), hence it is always an objective potency; whereas potency need not always contain an act, as in the case of pure potency (prime matter). *Possibility and Impossibility:* A thing is *possible* inasmuch as it is *existible*, inasmuch as it *can be*. A thing is possible *in itself* (intrinsically) when the concept of it involves no contradiction. For, that which involves contradiction in its very concept is not a thing, but the absence of being. It is self-cancelling and amounts to zero. A 'square circle' is a contradiction in itself. It is simply *no-thing*. Such a thing lacks intrinsic

possibility. It is called a *thing* merely by figure, analogy, and by reason of the want of words for the expression of sheer negation. It is *intrinsically (absolutely or metaphysically)* impossible. What is intrinsically impossible simply cannot be even by a miracle of God. This does not mean that God's power is limited. God cannot produce what is intrinsically impossible, because this is not a thing at all. It is *no-thing or nothing*. What is producible is always some particular thing.

The first point to establish, when there is the question of the possibility of anything, is the fact of its intrinsic possibility. When a thing is intrinsically possible it is existible. It is *absolutely* or *metaphysically* possible by the power of God, though it may not be possible by the power of creatures. It may be intrinsically possible, and yet lack the *extrinsic* and *relative* possibility of creature-causes to produce it. Thus a mountain of gold or a human with a hundred eyes is intrinsically possible. It involves no contradiction in itself.

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#### 4.5. POTENCY AND CHANGE (MOTION)

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Change is the transition or passage from potency to act or from act to potency. There are three conditions required for change: *Starting-point (Terminus a quo* = term from which); it should have a definite starting point. *Ending-point (Terminus ad quem* = term towards which); it should have a definite point to end up. *A Real transition* from one point or state to another. *Kinds of change: Positive change and negative change. Positive change* is the transition or passage from potency to act. There are four kinds of positive change: creation, generation, accidental change, and local change. *Creation* is a passage from mere possibility to actuality, that is, from non-existence to existence, e.g., creation of the cosmos. *Generation* is a passage or transition from one substantial form to another in which a new substantial form is acquired, e.g., generation of a plant. *Accidental change* is the passage from one accident to another, e.g., water vaporizes to steam at 212 F (Fahrenheit = 100 C). *Local change* is the passage from one place to another. *Negative change* is the passage from actuality to potentiality. There are three kinds of negative change: corruption, privation, and annihilation. *Corruption* is passage from one substantial form to another in which there is a loss of the previous substantial form, e.g., the life and death of plants and animals. *Privation* is the loss of the previous accidental form, e.g., becoming blind. *Annihilation* is the passage from existence to non-existence, e.g., soul of animal in death.

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#### 4.6. POTENCY AND EVOLUTION

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**Evolution of the Cosmos through The Big Bang:** Albert Einstein in 1905 proposed the special theory of relativity in which he conveyed the effects of a body accelerating with a velocity almost equivalent to that of light. Based on the relativity field equations, many scientists described the beginning and the possible end of the universe. It was Alexander Friedmann, who tried to solve the field equations and suggested the possible beginning and end of the universe mathematically. The greatness of Friedmann was that he made his prediction when there was no observational evidence for a Universe that would expand and evolve with time. Expansion of the universe became a widely accepted concept towards the middle of the twentieth century and the forerunners of this theory were the Belgian priest George Lemaître and Edwin Powell Hubble. Lemaître was one of the pioneers who applied Albert Einstein's theory of General Relativity to cosmology and proposed that the cosmos was confined to a tiny atom, and that an explosion expanded this universe. He envisioned all the heavenly bodies squeezed into a super, compact, primordial matter called the 'primeval atom.' Then all at once there was this moment of the Big Bang. The theoretical musings of Lemaître and Friedmann were brought to the forefront by the

investigations of Edwin Powell Hubble, an American astronomer, who established on his observational evidences that the galaxies are not at rest in space. He developed the theory of the Big Bang to its full stature; he is also noted for the discovery of the Andromeda galaxy, the Hubble Constant, Hubble's Law, and for his numerous other observations from his famous Mount Wilson Observatory. He also observed the red-shift of a number of galaxies and found that the farther the distance of the galaxy, the greater is the red-shift. This showed that the farthest galaxies are moving at a greater speed than the closer ones.

**Evolution of Life Through Cells:** The bodies of animals and plants are made up of separate units called cells. The human body, for example, consists approximately of 100 trillion cells but most are too small to see unless highly magnified. All cells consist of a very complex living material called *protoplasm*, and are made up of three basic parts. They have a thin skin called the *cell membrane*; this membrane encloses a jelly-like substance called *cytoplasm* and a small object called a *nucleus* (Most cells have a single nucleus bounded by a nuclear envelope, or membrane, with pores. Pores provide continuity between the nucleus and the cytoplasm. The nucleus contains one or more discrete structures, known as nucleoli, which are sites of ribosomal ribonucleic acid (RNA) synthesis. Hereditary information is in the DNA contained within the chromosomes in the nucleus. This information is transcribed into RNA in the nucleus, which then serves as a messenger. The messenger moves outside the nucleus to the ribosomes, where it guides the synthesis of proteins. Thus, the nucleus directs the activity of the cell. There are many tiny living objects in the cytoplasm called *organelles*. All cells contain round or sausage-shaped organelles known as *mitochondria*. These are the power plants of a cell. Mitochondria contain enzymes which release energy from food. This process is called respiration. Tiny organelles, *ribosomes*, float in the cytoplasm. Ribosomes contain a chemical known as *ribonucleic acid* (RNA). They take part in the manufacture of proteins. Organelles called *lysosomes* contain enzymes which are released when cells are injured. Cytoplasm also contains a number of flattened spaces known as *Golgi Body*. This stores useful substances before they are secreted from the cell. All cells contain a nucleus which contains one or more discrete structures known as nucleoli, which are sites of ribosomal RNA synthesis. The nucleus has a membrane with holes through which chemicals move to and from the cytoplasm, and it is rich in a chemical called *deoxyribonucleic acid* (DNA). This chemical is a part of the *chromosomes*, which only become visible in a nucleus when a cell divides. DNA is concerned with protein manufacture, and plays an essential part in cell division. It is a long, thread-like molecule, similar in shape to a rope ladder twisted into a spiral. The upright sides of the ladder are made of alternate sugar and phosphate molecules joined into a chain. The rungs of the ladder are made of chemical bases, of which there are four types: *adenine*, *guanine*, *cytosine*, and *thymine*. They are often referred to by their initial letters A, G, C, and T. The genetic code is formed by the sequence in which these four chemical bases are arranged along the length of a DNA molecule. Most of a cell's DNA is contained in the chromosomes in its nucleus, but proteins are made in the cytoplasm of a cell. Somehow the coded instructions for protein manufacture must pass from the nucleus to the cytoplasm and then be transcribed. This task is carried out by two types of substance, such as ribonucleic acid (RNA) which works in conjunction with microscopic granules in the cytoplasm, *ribosomes*. The two types are called messenger RNA and transfer RNA. In the nucleus, a part of the DNA molecule opens up, exposing the gene for a particular protein. The messenger RNA copies the sequence of bases which make up the gene. The transfer RNA picks up amino acid molecules and carries them to the ribosome where the amino acids are linked together, forming a

protein molecule. The sequence of amino acids in the protein molecule depends upon the way the transfer RNA molecules fit into the messenger RNA, and this depends upon the sequence of bases in the gene.

It has now been revealed that in terms of the number of genes in our cells, we humans are only a little better than the lowly roundworm which has just over 19,000 genes and the fruit fly that has some 13,600. Results published by two teams of scientists, in February, 2001, put the number of genes in the human genome at around 30,000, that is, less than a third of what was estimated earlier (c.100,000). However, humans being very thrifty with their genes are able to do more with their genes than other species. For instance, instead of producing only one protein per gene, as believed earlier, the average human gene has been found to produce three different proteins. Moreover, each gene directly interacts with four or five on an average, and thus functions in a collective manner. It is also surprising to know that in the 75 % of repetitive DNA sequences, which are known as junk DNA and were considered to be useless, there are sequences that are still active and may be coding for proteins. The genome sequence also shows that every person on Earth shares 99.99 % of the same genetic code with all other people, a fact that should help settle the question of racial or ethnic superiority.

**History of Human Evolution:** Scientists agree that life did not always exist on earth. They estimate that it began about four billion years ago. About four billion years ago, *Aries*, the first prokaryotic cells, appeared on earth. On account of the balance of Earth's own internal dynamics and its position in the structure of the solar system, matter existed as solid, liquid, and gas, and flowed from one form into another to provide an incessantly creative chemical womb from which arose *Aries*, the first prokaryotic living cell. The primal prokaryotic cells had the power to organize themselves, as did the stars and galaxies. The cells could also remember significant information, even the patterns necessary to knit together another living cell. The cells also possessed a new order of creativity to catch the pockets of energy hurled by the Sun at the speed of light, and to use these quanta as food. *Aries* and the prokaryotes hydrogen from the ocean had released oxygen into Earth's system, which saturated the land and the seas. However, the prokaryotes unknowingly pushed Earth's system into an extremely unstable condition by altering earth's chemistry with this element of explosive power. Consequently, the prokaryote communities perished as their interiors were set ablaze by the oxygen. But out of this crisis arose *Vikengla*, a new and radically advanced being. *Vikengla* was the first eukaryotic cell which was capable of shaping oxygen's dangerous energy for its own purposes. The eukaryotes invented meiotic sex by which the universe's diversity expanded a hundredfold, through sexual union. Finally, the eukaryotes took that daring step of submerging themselves into a larger mind as a trillion of them gathered together and evoked Argos, the first multicellular animal. About 600 million years ago, there arose the multicellular organisms. They included the corals, worms, insects, clams, starfish, sponges, spiders, vertebrates, leeches, and other forms of life. The animals followed the plants onto land, heaved with amphibians, reptiles, insects, and dinosaurs. About 67 million years ago there was an astronomical collision that changed Earth's atmosphere and climate, which nearly destroyed all forms of animal life on Earth, including the dinosaurs. But such destructions opened up new possibilities seized upon by the birds and the mammals. The mammals entered Earth's life about 200 million years ago. They developed emotional sensitivity, a new capacity within their nervous systems for feeling the universe. This mammalian emotional sensitivity was deepened with the human nerval capability, the self-consciousness. Four million years ago in Africa, humans stood up on just two limbs; and by two

million years ago they began to use tools. Beginning around thirty-five thousand years ago, they began a new form of celebration that displayed itself in cave paintings deep within Earth. About 12 thousand years ago, the first Neolithic villages were formed in Jericho, Catal Hiiyiik and Hassuna. It was the most radical social transformation ever to occur in the human venture. In this period, the decisive developments in language, religion, cosmology, arts, music, and dance took their primordial form. The urban civilization began to shape itself about five thousand years ago, giving rise to new power centres: Babylon, Paris, Persopolis, Banaras, Rome, Jerusalem Constantinople, Sion, Athens, Baghdad, Tikal of the Maya, Cairo, Mecca, Delhi, Tenochtitlan of the Aztec, London, Cuzeo, the Inca City of the Sun. Europeans initiated the third of humanity's great wandering about five hundred years ago. The first had brought *Homo erectus* out of Africa to spread throughout Eurasia. The second was that of the *Homo Sapiens* who wandered until they reached the Americas and Australia. The principal difference of the third wandering was that now the Europeans encountered humans wherever they went and they colonized them.

From the above-mentioned it is true that today all scientists admit that there has been some evolution at least within the confines of a definite species, resulting in the production of new races and varieties. This is a fact of observation. The most extreme fundamentalists admit that all present human races are descended from one original couple, and this supposes a certain amount of evolution. But there are fewer facts and more hypotheses as we pass from species to genus, to family, to order, to class, and to phylum. A considerable number of observations point towards an evolution of very wide extent; many facts can be easily explained on the basis of those hypotheses which are difficult to interpret 'scientifically' in any other way. Yet, universal evolution (from amoeba to ape) cannot be considered to be an established fact, and will most probably always remain a hypothesis, although the great majority of scientists favour that view.

As for the way of explaining the evolutionary process, there has been, until rather recently, considerable disagreement between the proponents of evolution. The five most important explanations are: (1) Lamarck's explanation through adaptation and the inherited transmission of acquired characteristics; (2) Darwin's explanation through natural selection; (3) De Vries' explanation through mutations; (4) Teilhard de Chardin's inclusive or integrative evolution; and (5) Stephen Hawking's view on increase in complexity.

**Lamarck** (1744-1829), a French naturalist, posited the two following laws: (a) In every animal which has not passed the limit of its development, the frequent use of any organ gradually strengthens and develops that organ, while constant disuse gradually weakens it until it disappears; (b) when such modifications have been acquired by both sexes in a species, they are transmitted to their offspring.

**Darwin** (1809-1882), the great British naturalist, postulated three facts to explain evolution: (a) *The accidental variations occurring continually in nature*: In every litter some of the offspring are stronger, faster, etc., than the others; (b) *The struggle for life*: The food supply is limited, and each animal has to fight to get its share of it; (c) *Natural selection*: In this struggle the stronger and faster individuals will survive, while the weaker and slower are eliminated. The fittest survive, and since they tend to mate with the fittest, the generations of offspring gradually improve.

**De Vries** (1848-1925), a Dutch botanist, discovered the phenomenon called ‘mutation’, which consists in a sudden change in one or several of the genes of a new born individual, producing more or less considerable changes in the animal’s specific features. Such mutations have been studied extensively – and even produced artificially – in laboratory-bred organisms, especially in the fruit-fly. They also occur spontaneously in nature, where they are known as ‘sports’.

**Teilhard de Chardin** (1881-1955): When Teilhard started his career, evolution was held in suspicion if not in condemnation. However, he accepted evolution as an undeniable fact. The basic, generalized, idea of evolution is that the universe and the material realities within it did not come into existence as finished products. Rather, they appeared in the course of a gradual, continuous, and progressive process. He holds that the early earth had latent germinal powers. Everything that was to appear, even humans, was already there in the initial ‘stuff of the universe’ in some extremely attenuated form. The evolutionary movement starting from the primordial atoms, proceeds until the universe arrives at the centre of centres which he calls the Omega Point. At a certain point of the evolutionary movement, life shows up; at another, the power of self-reflection. From the cell to the thinking animal, as from the atom to the cell, a single process (a psychical kindling or concentration) goes on without interruption and always in the same direction. Evolution is Orthogenetic; Evolution is the Development of the Spiritual; Evolution is Continuous; Evolution is Creative Transformation; it is Theistic. Teilhard explained that the motive force needed for evolutionary process comes from the upward striving consciousness, the ‘within’ of cosmic matter. Other elements like struggle for survival, natural selection, mutation, and sudden changes of hereditary factors also play a part. But the development of life, which clearly strives after increasingly complex forms, can only be explained by this inner movement of the ‘within.’ The ‘within’ includes, integrates, and guides all the other factors. We may verbalize this Teilhardian vision of evolution as ‘Inclusive or Integrative Evolution’.

**Stephen Hawking** (1942- ), a Lucasian Professor of Mathematics at Cambridge University, holds the view that in the process of evolution, the most important change has been the change in the level of information contained in DNA. An increase in the level of information relates directly to the increase in the level of complexity. As complexity increases, at certain stages, better forms with more intelligence appear. This is how we have evolved from apes. In future too, there will be a steady increase in the level of complexity in the DNA. This rate could be increased to a great extent if we could design DNAs. Thus we will have designer DNAs and scientists will design plants, animals, and may be, even human beings. In the next 100 years we will be able to grow babies outside the womb. Presently, human intelligence is restricted by the size of the brain that can pass through the birth canal. If the babies are grown outside the womb, there will be no such restrictions. These babies will have designed DNA structure and hence, would be close to being the advanced forms of human beings. The present millennium will be dominated by two advanced forms: One form will result from the increase in level of the complexity of our DNA molecule, the advanced human forms; and the other advanced form will result from the increase in the level of the complexity of the electronic circuits, namely, computers. We are today more complex than the computers, but then, the rate of increase in complexity of computers is considerably faster than the rate of increase in complexity of our brain. If both forms do not indulge in wars, they would be able to have better control over natural factors and hence could gain control over the universe. The future will bring about major

changes in the human race and lead to the formation of advanced forms, which probably would not look like the present-day humans.

It can be concluded that neither the adaptations emphasized by Lamarck, nor the natural selection of Darwin, nor the mutations of De Vries, nor the increase in complexity of Stephen Hawking can *of themselves alone* explain evolution. These factors have been most certainly at work in evolution, yet the over-all progress of evolution is not explained by the blind influence of these mechanical factors. Some kind of *finality* seems to be required if we want to present a complete explanation of evolution. Finalism holds that evolution does not result from the blind interaction of the forces of nature, but is informed by a purpose; it strives towards an end under the guidance of a directing mind as illustrated by Teilhard de Chardin.

### Check Your Progress

**Note:** use the space provided for your Answers

1) Explain the relation between act and potency.

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2) How is potency related to evolution?

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### 4.7. LET US SUM UP

The concepts of act and potency have historically delineated the dramatic antinomy felt by Greek thought with Being (Parmenides) and becoming (Heraclitus). The term 'Act' means *perfection itself*. Whatever a being *has* or *is* in a positive manner is an act. Potency means power. It is the capacity for act. The notion of act does not include any limitation. For, act is perfection and potency is limitation and hence imperfection. *Possibility* is objective potency. It is the capacity of a being for receiving existence. Change is the transition or passage from potency to act or from act to potency. Evolution implies and manifests potency. It is the change, over time, in one or more inherited traits passed on from one generation to the next, including anatomical, biochemical, or behavioural characteristics. Generally, scientists speak of two kinds of evolution: evolution of the cosmos and evolution of life. The concept of the evolution of the cosmos has its basis in the theory of the Big Bang. The evolution of life began with the origin and development cells, the basic unit of life and life-processes. The scientists agree that life did not always exist on earth. They estimate that it began about four billion years ago. About four billion years ago, *Aries*, the first prokaryotic cells appeared on earth. On account of the balance of Earth's own internal dynamics and its position in the structure of the solar system, matter existed as solid, liquid, and gas and flowed from one form into another to provide an incessantly creative chemical womb from which arose *Aries*, the first prokaryotic living cell.

As for the way of explaining the evolutionary process, there has been, until rather recently, considerable disagreement between the proponents of evolution. It can be concluded that neither Lamarck, nor Darwin, nor De Vries, nor Stephen Hawking can satisfactorily explain evolution, since *finality* is lacking in their conjectures. The over-all progress of evolution is not explained by the blind influence of mechanical factors. Some kind of *finality* seems to be required if we want to present a convincing explanation of evolution. Evolution, in fact, does not result from the blind interaction of the forces of nature but is informed by a purpose; it strives towards an end under the guidance of a directing mind as illustrated by Teilhard de Chardin.

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