DIRECTORATE OF DISTANCE EDUCATION

UNIVERSITY OF NORTH BENGAL

MASTER OF ARTS- PHILOSOPHY

SEMESTER -IV

NAVYA NYĀYA

SOFT CORE 402

BLOCK-1

UNIVERSITY OF NORTH BENGAL

Postal Address:

The Registrar,

University of North Bengal,

Raja Rammohunpur,

P.O.-N.B.U., Dist-Darjeeling,

West Bengal, Pin-734013,

India.

Phone: (O) +91 0353-2776331/2699008

Fax: (0353) 2776313, 2699001

Email: regnbu@sancharnet.in ; regnbu@nbu.ac.in

Wesbsite: www.nbu.ac.in

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FOREWORD

The Self Learning Material (SLM) is written with the aim of providing simple and organized study content to all the learners. The SLMs are prepared on the framework of being mutually cohesive, internally consistent and structured as per the university's syllabi. It is a humble attempt to give glimpses of the various approaches and dimensions to the topic of study and to kindle the learner's interest to the subject

We have tried to put together information from various sources into this book that has been written in an engaging style with interesting and relevant examples. It introduces you to the insights of subject concepts and theories and presents them in a way that is easy to understand and comprehend.

We always believe in continuous improvement and would periodically update the content in the very interest of the learners. It may be added that despite enormous efforts and coordination, there is every possibility for some omission or inadequacy in few areas or topics, which would definitely be rectified in future.

We hope you enjoy learning from this book and the experience truly enrich your learning and help you to advance in your career and future endeavours.

NAVYA NYĀYA

BLOCK-1

BLOCK -2

BLOCK 1: NAVYA NYĀYA

Introduction to the Block

Unit 1 deals with Navya-Nyāya- Introduction. In this unit, you will learn the Nyāyika's doctrine of valid sources of knowledge and their arguments on self and liberation.

Unit 2 deals with Nature of Navya-Nyāya. Gotama, Gautama or Aksapada was the founder of the Nyaya philosophy. It is primarily concerned with epistemology and logic, and secondarily with ontology.

Unit 3 deals with Scope of Navya-Nyāya. Nyāya (literally "rule or method of reasoning") is a leading school of philosophy within the "Hindu umbrella"—those communities which saw themselves as the inheritors of the ancient Vedic civilization and allied cultural traditions.

Unit 4 deals with Logic in Classical Indian Philosophy. The exercise of reasoning and the practice of argument are recorded in the early texts of India.

Unit 5 deals with Gaṅgeśa's Analysis of Inferential Warrant (vyāpti). Two older Indian philosophical traditions, the early Nyāya (grounded in Gautama Akṣapāda's Nyāya-sūtra, c. 100 C.E., and dealing mainly with logic, epistemology.

Unit 6 deals with The Vaiśeṣika Concepts of Universal, Inherence, and Basic Differentium. Theory of knowledge, pramāṇa-śāstra, is a rich genre of Sanskrit literature, spanning almost twenty centuries, carried out in texts belonging to distinct schools of philosophy.

Unit 7 deals with The Ontology of Nonexistence (abhāva). The theory of the reality of abhāva is related to the Nyāya-Vaiśeṣika theory of causation which is known as asatkāryavāda.

UNIT 1: NAVYA-NYĀYA-INTRODUCTION

STRUCTURE

1.0   OBJECTIVES

In this unit, you will learn the Nyāyika's doctrine of valid sources of knowledge and their arguments on self and liberation. Further, you will also learn the Nayāyika's views on God.

After working through this unit, you should be able to:

• explain different kinds of perception

• discuss nature and characteristics of inference

• elucidate Nyāya concept of self

• illustrate Nyāyika's views on liberation

• examine Nyāyika's arguments on testimony as a valid source of knowledge.

1.1   INTRODUCTION

The Navya-Nyāya or Neo-Logical darśana (view, system, or school) of Indian logic and Indian philosophy was founded in the 13th century CE by the philosopher Gangeśa Upādhyāya of Mithila and continued by Raghunatha Siromani. It was a development of the classical Nyāya darśana. Other influences on Navya-Nyāya were the work of earlier philosophers Vācaspati Miśra (900–980 CE) and Udayana (late 10th century). It remained active in India through to the 18th century.

Gangeśa's book Tattvacintāmaṇi ("Thought-Jewel of Reality") was written partly in response to Śrīharśa's Khandanakhandakhādya, a defence of Advaita Vedānta, which had offered a set of thorough criticisms of Nyāya theories of thought and language. In his book, Gangeśa both addressed some of those criticisms and – more important – critically examined the Nyāya darśana itself. He held that, while Śrīharśa had failed to successfully challenge the Nyāya realist ontology, his and Gangeśa's own criticisms brought out a need to improve and refine the logical and linguistic tools of Nyāya thought, to make them more rigorous and precise.

Tattvacintāmani dealt with all the important aspects of Indian philosophy, logic, set theory, and especially epistemology, which Gangeśa examined rigorously, developing and improving the Nyāya scheme, and offering examples. The results, especially his analysis of cognition, were taken up and used by other darśanas.

Nyāya (Sanskrit: न्याय, nyā-yá), literally means "rules", "method" or "judgment". It is also the name of one of the six orthodox (astika) schools of Hinduism.This school's most significant contributions to Indian philosophy was systematic development of the theory of logic, methodology, and its treatises on epistemology.

Nyaya school's epistemology accepts four out of six Pramanas as reliable means of gaining knowledge – Pratyakṣa (perception), Anumāṇa (inference), Upamāṇa (comparison and analogy) and Śabda (word, testimony of past or present reliable experts). In its metaphysics, Nyaya school is closer to Vaisheshika school of Hinduism than others. It holds that human suffering results from mistakes/defects produced by activity under wrong knowledge (notions and ignorance). Moksha (liberation), it states, is gained through right knowledge. This premise led Nyaya to

concern itself with epistemology, that is the reliable means to gain correct knowledge and to remove wrong notions. False knowledge is not merely ignorance to Naiyyayikas, it includes delusion. Correct knowledge is discovering and overcoming one's delusions, and understanding true nature of soul, self and reality.

Naiyyayika scholars approached philosophy as a form of direct realism, stating that anything that really exists is in principle humanly knowable. To them, correct knowledge and understanding is different from simple, reflexive cognition; it requires Anuvyavasaya (अनुव्यवसाय, cross-examination of cognition, reflective cognition of what one thinks one knows). An influential collection of texts on logic and reason is the Nyayasutras, attributed to Aksapada Gautama, variously estimated to have been composed between 6th-century BCE and 2nd-century CE.

Nyaya school shares some of its methodology and human suffering foundations with Buddhism; however, a key difference between the two is that Buddhism believes that there is neither a soul nor self; Nyaya school like other schools of Hinduism believes that there is a soul and self, with liberation (moksha) as a state of removal of ignorance, wrong knowledge, the gain of correct knowledge and unimpeded continuation of self.

The Nyāya School is founded by the sage Gotama, who is not confused as Gautama Buddha. He is familiarized as 'Aksapāda'. Nyāya means correct thinking with proper arguments and valid reasoning. Thus, Nyāya philosophy is known as tarkashāstra (the science of reasoning); pramānashāstra (the science of logic and epistemology); hetuvidyā (the science of causes); vādavidyā (the science of debate); and anviksiki (the science of critical study). The Nyāya philosophy as a practitioner and believer of realism seeks for acquiring knowledge of reality.

1.2 A FRAMEWORK FOR NATURALIST ANALYSIS

The Nyāya school of thought is adhered to atomistic pluralism and logical realism. It is atomistic pluralism on the account that atom is the constituent of matter and there are not one but many entities, both material and spiritual, as ultimate constituents of the universe. By

holding pluralism standpoint it refutes materialistic and spiritualistic monism. It is a system of logical realism by 2 dint of its adaptation the doctrine that the world exists independently from our perceptions and knowledge. Further, the independent existence of the world can be defended not by our faith or intuition but by the logical arguments and critical reflection on the nature of experience. The Nyāya philosophy recognizes sixteen categories and the first category is known as 'pramāna' which focuses the logical and epistemological character of the Nyāya system. It professes that there are four independent pramānas (sources of valid knowledge). These are; perception, inference, comparison, and verbal testimony or sabda. Interpreting the term 'knowledge' Nyāyikas says that it may be treated as cognition, apprehension, consciousness, or manifestation of objects. Knowledge is of subjective and objective. Subjective knowledge differs from objective knowledge. If different people give the different opinion on a particular object or a fact then the knowledge about that object will be treated as subjective knowledge. For example, on a road accident if we ask different people who were present there, we will find different opinions from them. Hence, the view on the accident is treated as subjective knowledge. On the other hand, if most of the people express their views on an object similar to others then the knowledge of that object would be treated as objective knowledge. For example, all people agreed that apple is a fruit and eatable. Thus, any sort of knowledge is a revelation or manifestation of objects. Just as a tube light manifests physical things of a room, likewise, knowledge reveals all objects surrounded it. The Nyāya Philosophy is being the upholder of realism expresses that knowledge is always dealt with object. Knowledge may be valid or invalid. Valid knowledge is called pramā and invalid knowledge is called apramā. The Nyāya School advocates that valid knowledge is the true and right apprehension of an object. It is the manifestation of an object as it is. The characterization of valid knowledge is a consequence of the correspondence theory of truth which states that truth is the correspondence between a proposition and reality. Thus, valid knowledge is treated as presentative knowledge. Presentative knowledge arises when the object of knowledge is directly present to the knower.

For example, Dr. Biplab perceives a pen in his shirt pocket is an instance of presentative knowledge. Valid knowledge is produced by the four valid sources of knowledgeperception, inference comparison, and sabda. Invalid knowledge is defined as the wrong apprehension of object. It includes memory (smṛuti), doubt (samsaya), error (viparyāya), and hypothetical reasoning (tarka). Memory is not presentative but representative knowledge. Memory can also consider as a source of valid knowledge provided what is recalled or remembered were experienced in the past as a presentative cognition. Doubt is lack of certainty on cognition. Error is misapprehension of what is cognized. For example, a snake is mistakenly cognized as rope. Tarka is considered as invalid knowledge because it does not produce any new knowledge. It only confirms what one already knows earlier. Thus, it is representative in nature. We shall now consider the four valid sources of knowledge (pramānas) that is upheld by the Nyāyikas.

Perception According to Nyāyikas, perception is the direct and immediate cognition produced by the interaction between the object and sense-organs. For a perceptual cognition, four elements are 3 necessary. These are; the self, mind, sense organs and objects. The self is in contact with the mind (manas), the mind is in contact with the sense organs and lastly, the sense organs are in contact with the objects, as a result, we perceive objects. There are two types of perception; ordinary perception (laukika) and extraordinary perception (alukika). Ordinary perception is further divided in two sorts; external (bāhya) and internal (mānas). External Perception has five distinctions because it is connected with five sense organs - auditory, visual, tactual, gustatory, and olfactory. In case of internal perception, the contacts occur between mind and the object. As a result, knowledge produces. Examples of internal perceptions are; feeling, desiring, wishing, etc. Again, perceptions are divided in three sorts. These are, indeterminate perception (nirvikalpa), determinate perception (savikalpa), and recognition (prativijnãna). These distinctions are made only in thought but not in experience. Now let us discuss indeterminate perception.

Indeterminate Perception A perception is considered as indeterminate when we can't determine its features like colour, shape, size, etc. In this

case, the sense organs contact with the object and a particular knowledge immediately emerges. Nyāyikas named this knowledge is 'avyakta' which means it can't explain through our vocabulary. In other words, we cann't express about the object accurately and clearly. This sort of knowledge arises when self has merely an awareness of the object without having any concrete knowledge of its name, form, qualities, etc. It is basically an underdeveloped form of perception. It's existence is only proved through inference, not by perception.

Determinate Perception Determinate perception unlike indeterminate perception arises when the knowledge of an object consists of characters, such as; name, colour, shape etc. It gives knowledge of the object, as a result, we cognize 'It is a tree', 'He is a man' etc. In this case, an individual can identify and cognize the object as it is.

Recognition The senses contact with the object and recalled that whether the same object had been encountered earlier or not. If it had encountered in the past and positively recapitulating the situation and the features of the object then it would be considered as recognition. For example, Mr. Ranjeet saw Dr. Biplab after a long time and recognized him. Here, Mr. Ranjeet would able to do so because he encountered Dr. Biplab in an academic conference five years back. In that time they had spent a very lighter and beautiful moment together. All these events are remembered by Mr. Ranjeet. So once he saw Dr. Biplab he said hey! Are you Dr. Biplab? I am Ranjeet my self. Do you remember we met five years back in a conference? By listening from Ranjeet Dr. Biplab said oh! Yes. I remember you, even I remember the moment that we had spent together. This sense of knowledge is called recognition. In this knowledge there is always an element of immediate experience, e.g., Mr. Ranjeet met Dr. Biplab after a long time in a particular place.

Scholars differ among themselves regarding the classical period in Indian Philosophy, but here we will assume the classical period to reach from the end of the Vedic era to the beginning of the early modern age in the fifteenth century CE. Classical Indian philosophy is by no means a monolith but accommodates within it different systems which either admitted or denied the infallibility of the Vedas (the hallowed Revealed Scripture of the Hindus). The systems upholding the authority of the

Vedas are Vedānta, Mīmāṃsā, Sāṃkhya, Yoga, Nyāya and Vaiśeṣika, while the systems that challenged its scriptural authority include Cārvāka materialism and various schools of Buddhism and Jainism. Naturalistic traits are available in these systems, but first it is necessary to determine the sense of naturalism relevant for the purpose at hand.

Peter Strawson in his Woodbridge Lectures (Strawson 1987) points out that the term 'naturalism' is elastic in its use. He distinguishes two main varieties: hard or reductive and soft or liberal naturalism. Hard naturalists view human beings with their different endowments as mere 'objects'— parts of nature—to be described, analysed and causally explained. The claim is that it is possible to have an absolute and pure objective view of human beings and their behaviour. Soft naturalists, on the other hand, are ready to accommodate subjective dispositions and personal attitudes within a general naturalistic framework. Another way of discriminating naturalists in recent literature (Kornblith 1985, Papineau 2007) is to distinguish between methodological and substantive naturalism; where the former has as its sub-varieties (a) Replacement Theory and (b) Expansionist/ Normative Theory, while the latter may be subdivided into Ontological and Semantic varieties. According to Methodological Naturalism, philosophical theorizing should be continuous with empirical enquiry in the sciences. Some Methodological Naturalists want to do away with normative justification theories and to replace them with empirical and descriptive explanatory accounts. Other Methodological Naturalists are more liberal and retain the normative level with the proviso that the theorist must not forget that 'it is an empirical question what normative advice is actually usable and effective for creatures like us'. Ontological Substantive Naturalism is the reductive view that there exists only natural and physical things and Semantic Substantive Naturalists emphasize that philosophical analysis of any theoretical concept must show it to be amenable to empirical enquiry.

A rejection of the supernatural is the point of minimal agreement amongst naturalists of all types, but there is no consensus regarding the boundary between natural and supernatural. Most schools of Indian philosophy identify nature with the empirical world or the world of experience. Two extreme views about the empirical world are available

to Indian theory. The Advaita Vedāntins declare the world of experience unreal, an apparent transformation of the eternal and unchanging ultimate conscious principle. To the materialist Cārvākas, on the other hand, this world is real and it is composed of physical matter, consciousness is an emergent property of matter and self is nothing but conscious material body. They were also known as svabhāvavādins (a term translatable as "naturalists") because to discard everything supernatural from their world-view they subscribe to a doctrine which holds that the occurrence of an effect is not determined by its cause but by its essential nature, thus making causation entirely redundant. This is indeed a unique move in the history of naturalism, for all types of naturalism in the West are intimately connected with the provision of a causal account of the world or of nature. In terms of our earlier taxonomy, the Advaita Vedāntins might be branded as non-naturalist and the Cārvākas as hard naturalist. In between these two lie the Buddhists, the Jainas, the Nyāya-Vaiśeṣikas and the Sāṃkhya-Yoga philosophers, whose accounts of the empirical world need to be analysed carefully if we are accurately to place them. Two questions, the answers to which will help to discern naturalist traits in these systems, are: what are the ultimate constituents of the empirical world, and what is the accepted model of causation for a particular school? For the bounds of nature are to be determined by the nature of real entities as admitted in a system and the nature of causal connection amongst these entities. If only physical things governed by the rules of mechanical causation are taken to be natural, then attempts would be made either to reduce psychological, biological, social, moral and mathematical entities to the physical or to establish somehow their causal relevance to the physical world.

Only Cārvāka hints at the causal closure of the physical world, and the four models of causation entertained in Indian philosophy allows interactions between matter and consciousness, material particles and mathematical entities, non-living and living beings, accumulated merits and demerits of past actions and present events, and so on. This, however, should not lead one to think that Indian thinkers admit transgression of the barrier between the natural and the supernatural. On the contrary, they establish their own criteria of demarcation and in doing

so legitimize the admission of various kinds of entities in the 'natural world'.

Check Your Progress 1

Notes: a) Space is given below for your answers.

b) Compare your answer with the one given at the end of this unit.

1. Write a brief about ordinary perception.

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1.3 INDIAN CONCEPTS OF NATURE

There are two contending theories of the natural world in India. According to the first, the empirical world arises out of combinations of atoms. Proponents of atomism (paramāṇuvāda) are found among Nyāya, Vaiśeṣika, Buddhist and Jaina thinkers. Sāṃkhya philosophers hold instead that the world is a transformation of an ever-dynamic Ur-Nature (mūla-prakṛti). Variations of this second conception are also available in some branches of Vedānta.

1.3.1 Atomism : Nyāya-Vaiśeṣika

Like Greek atomism, Indian atomism was speculative and local. The roots of Indian atomism can be traced back to the Upaniṣadic doctrine of five elements (pañca-mahābhūtas), viz., earth, water, fire, air, and vyom or ākāśa. According to the Nyāya-Vaiśeṣika philosophers, the first four elements are of two types—eternal and non-eternal. Atoms are eternal, while composite 'wholes' are non-eternal, since every product is eventually destroyed. Atoms, it is claimed, possess the smallest magnitude (aṇu-parimāṇa), are spherical (parimaṇḍala), indivisible, and eternal. Though quantitatively identical, each type of atom has specific attribute. An earth atom has odour, a water atom taste, a fire atom colour and an air atom has touch as specific attribute. What motivates an

atomistic conception of nature? Nyāya-Vaiśeṣika thinkers offer a two-step argument to establish the existence of atoms. The first step is:

Every visible substance is composed of parts. Therefore, the smallest visible composite thing—say, the smallest mote seen in a sunbeam—is also composed of parts, as it is visible, like a piece of cloth.

There are two presuppositions of this argument: (1) A part of a whole is always smaller in size than a whole—a thesis of which no counter-instance is available in our world; and (2) the parts of the smallest visible composite thing are imperceptible. The second step of the argument runs as follows:

- The imperceptible part of the smallest visible thing must possess parts, if it is a composite thing.
- However, this division of composite things into its parts must come to an end; otherwise there will be a vicious infinite regress (anavasthā).
- So, there must be partless, indivisible, imperceptible things, things which are defined as atoms.

But why is a process of infinite division inadmissible? Because, reason the Nyāya-Vaiśeṣikas, a mountain and a mustard seed will then be equal in size: both being infinitely divisible, they will have countless parts. One might object that the said division will stop only when there is nothing left to be divided, but that this would imply that the whole world can be created out of nothing; and the idea of creation ex nihilo is not viable. But division is possible only when there is a thing to be divided, something which forms the base (ādhāra) of division. A process of division annulling its base is as absurd a notion as digging a hole in empty space. To avoid these inconsistencies, therefore, indivisible atoms must be admitted.

A theory is provided of atomic composition. There is a distinct order of combination of atoms. Two atoms of the same type combine to form a dyad (dyaṇuka) and three dyads of the same type combine to form a triad (tryaṇuka), which is held to be the smallest perceptible object. Triads combine in varying numbers to give rise to large composite wholes of different shapes and sizes. Dyads are also thought as the 'ārambhaka'—

that from which the process of creation starts, the atoms being eternal are uncreated and continue to exist when a creation comes to an end.

There are two main puzzles about the Nyāya-Vaiśeṣika theory of composition. First, why can't two atoms of different types form a dyad? An answer is, if an earth atom and a water atom combine to produce a dyad, to which type will the resultant belong? It cannot belong to both types possessing two exclusive class-characters, nor can the resultant be of a mixed type, for then we shall never have any natural kind of perceptible dimension. The second issue here is why three atoms or two dyads cannot directly produce a composite object. According to the Nyāya-Vaiśeṣikas, sticking to the order of conjunction of atoms is important to explain how perceptible magnitude arises at the stage of triad from the combination of its imperceptible components. If an atom is of imperceptible magnitude, so will be the magnitude of a dyad, for a quality of a part produces in the whole the same quality in greater degree. Now if the dyads are imperceptible, then by the same logic a triad will also be imperceptible. If this process continues, then there will never be any composite object of perceptible dimension. So the Nyāya-Vaiśeṣikas need to give a rational justification for the perceptibility of a triad. They uphold that, unlike other qualities, the magnitude of a compound is not caused by the magnitude of its components. The gross magnitude of a composite whole is a resultant either of the grossness of its component or the looseness of their conjunction or of the plurality of their numbers. The first alternative has already been rejected. The second alternative also is not acceptable to the Nyāya-Vaiśeṣikas because they do not admit any interstice between two atoms. So they endorse the last alternative that the perceptible magnitude of a triad is caused by its number. Some think that triads of different elements can combine to form tetrads, and so on. Since the atoms of different elements have specific qualities, there would be different structural arrangements (vyūha) in triads constituted by different types of atoms. Different qualities observed in large composite substances are due to such different structural arrangements of their components.

Let us quickly review some other features of Nyāya-Vaiśeṣika atomism. First, like the four material elements, mind (manas) is also said to be of

corporeal nature and atomic in magnitude though lacking in sensible quality. Material atoms have specific sensible qualities and so are called 'bhūta'; both matter and mind are capable of movement and so designated 'mūrta'. The four elements come closest to a scientific conception of matter. Second, all atoms are said to be quantitatively identical and qualitatively different. Two atoms belonging to different types can be easily differentiated by their specific attributes, but the problem arises while differentiating two atoms of the same type, say, two earth atoms. The Nyāya-Vaiśeṣikas therefore introduce in their ontology a unique objective principle called 'viśeṣa' (ultimate differentiator) for individuating atoms. Third, the wholes constituted by atoms are not mere conjunctions of atoms, but are new entities inhering in their own parts. Fourth, the atomic theory is intimately connected with their theory of causation. A cause has been defined in this system as an invariable, unconditional antecedent of an effect; an effect, on the other hand, is said to be the counter-correlative of a prior absence. A counter-correlative of any absence removes that absence. A pot is a counter-correlative of its prior absence because this absence of pot disappears as soon as the pot is produced. Every effect is preceded by its prior absence, so each effect is a new production. Such theory of causation is known as ārambhavāda, the theory that an effect always comes into existence out of a prior state of non-existence (as opposed to the theory of existent effect (satkāryavāda) advocated by the Sāṃkhya school). Causes are of two types: (a) common (sādhāraṇa) and (b) uncommon (asādhāraṇa). A common cause is uniformly present before the occurrence of any effect whatsoever and is necessary for effectuation as such; an uncommon cause is that which invariably and unconditionally precedes a particular effect. Common causes are space, time, accumulated merits and demerits of individual agents (adṛṣṭa), God, knowledge, desire and will (prayatna) of God, and prior absence (prāgabhāva). Uncommon causes are divided into three classes: (a) inherent (samavāyi), (b) non-inherent (asamavāyi) and (c) efficient (nimitta). Without entering into their technical definitions, let us understand them with the help of an example. Atoms are the inherent causes of the world, conjunctions of atoms are its non-inherent causes, and God and adṛṣṭa are its efficient causes. Fifth,

admitting numbers as the cause of grossness of a triad shows that they have a capacious world-view where numbers can have causal effect on the physical world.

1.3.2 Atomism: The Buddhist and the Jaina Views

Two realist schools of Buddhism, the Vaibhāṣika and the Sautrāntika, also present an atomistic conception of nature. According to the former, matter is a collocation of the substratum of colour, taste, odour and touch. Atoms are the minutest units of the rūpa-skandha (collocation of material elements). As it is mentioned in the Abhidharmakośa (I. 44), 'Atoms of the visual organ are arranged in the pupil of the eye in the shape of an ajājī flower; those of the auditory organ are arranged in the earhole in the shape of a bhūrja leaf, atoms of the olfactory organ are arranged in the form of a long pin (śalākā) inside the nostrils, those of the gustatory organ inside the mouth in the shape of the half-moon, and those of the cutaneous organ in the shape of the body.' Atoms are thus indirectly related to observational entities. Atoms, according to them, are indivisible, imperceptible and momentary. They continually undergo phase-changes. Some Sautrāntikas hold that atoms are not particles of matter but a dynamic force or energy. According to Vasubandhu, atoms are always in an aggregate and never alone. For it has been mentioned by some that the rūpa-skandha is that which can cause obstruction and is also subject to transformation. A single atom cannot possess these properties; hence atoms are always in a cluster.

The Buddhists then speculate about the nature of the smallest aggregate. Sautrāntikas hold that seven atoms form the smallest aggregate. They also maintain that atoms do not touch one another. So the aggregate of atoms is not a solid whole but rather there is space among atoms. Others, however, concede the possibility of dense combination of atoms. The combination of seven atoms takes place in the form of a cluster with one atom at the centre and others around it. The Sarvāstivādins talk about eight types of atom. The four fundamental types are of earth (solid), water (fluid), fire (hot) and air (moving). The secondary atom types are of colour, odour, taste and touch. Thus, according to this view, specific qualities are atomic too. Each secondary atom requires for its support

four fundamental atoms. So, by simple calculation, a non-sounding aggregate (aśabda) consists of 20 atoms, while a sounding aggregate (saśabda) is composed of 25 atoms.

The Jainas also propound atomism. All the entities admitted in their ontology, except souls and space, are constituted by material elements (pudgalas). Atoms are eternal as regards their substance and each exists by occupying one space-point (pradeśa). These atoms are qualitatively similar, each possessing one kind of taste, smell and colour and two kinds of touch, viz. hot or cold and rough or smooth. Other kinds of touch, viz. heavy, light, soft and hard, and varied colour, taste and smell are found only in compounds formed by atoms. The Jainas maintain that atoms are usually in motion but not always. Depending upon the spatio-temporal conditions, atomic motion is either regular (niyamita) or irregular. In one unit of time atoms regularly move in a straight line. However, while in interaction with another atom or a group of atoms, atomic motion becomes curvilinear. The Jainas also speculate about the speed of a moving atom under different conditions.

The main difference between these atomisms and Nyāya-Vaiśeṣika atomism lies in their account of combination of atoms. The latter had to resort to God's will and an unseen force (apparently non-natural) to explain this process of combination. The Jainas and the Buddhists, on the other hand, gave a satisfactory account of the combination of atoms in terms of natural forces. The Jainas, for example, explain the bonding of atoms on the basis of an empirical observation (Tattvārthādhigamasūtra, 5. 32). It is seen that when drops of water fall on particles of barley, one single lump is formed. By generalization, the claim is that a viscid / smooth (snigdha) atom tends to combine with a dry / rough (rukṣa) atom. Viscidity and dryness, smoothness and roughness, are no doubt natural properties of atoms. The following rules of combination are formulated:

1. To combine, atoms must be opposite in nature. According to some modern interpreters, to interact one particle of matter must be negative and the other positive. It has been speculated that the Jainas arrived at this rule on the basis of observed electrification of smooth and rough surfaces on rubbing.

2. The opposing properties of the atoms to be combined must be sufficiently strong.

3. Atoms endowed with similar properties must differ in 'intensity' to combine. The intensity of one must be at least twice strong than the other, i.e., atoms possessing viscidity of two degrees will combine only with atoms possessing viscidity of four degrees.

4. While combining, higher degrees transform the lower one. Viscidity of four degrees will transform viscidity of two degrees and the resultant will be one unit having viscidity of four degrees. Otherwise, in combination two will remain separate just like a cloth woven with black and white yarn.

Śubhagupta (Bāhyārthasiddhikārikā, 56–58), a later Vaibhāṣika, offers an alternative account of the combination of atoms. According to him, two atoms come close to each other because of their inherent potency (dravyaśakti), though they are not actually conjoined. Like a mantra drawing out a snake and keeping it immobile by its inherent potency, two atoms are drawn towards each other and form an aggregate by their natural inherent potency. The accumulated atoms combine again to give rise to varied composite objects of the world. However not all atoms are equally potent, and some never become a part of an aggregate because of their insufficient bonding power. Atoms when bonded together undergo a transformation because of mutual influence and novel properties emerge in the aggregate which were not present in the single atoms. For example, carbon compounds when transformed into diamonds become too hard to be disintegrated.

Through theoretical speculation alone, Indian atomists tried to throw light on the nature of the ultimate particles. Some Buddhists, we have seen, even described atoms as packets of energy. The chemical laws that the ancient Indians derived on the basis of their speculations about the process of composition of atoms led to the advancement of applied chemistry and applied medicine. These theories may not have much relevance in the context of modern science or cosmology but the associated debates about the nature of causation have contributed to an understanding of the philosophical foundations of scientific enquiry.

1.3.3 An Extreme Naturalism (Svabhāvavāda)

Svabhāvavāda, which is the strongest form of ontological naturalism in Indian scenario, literally means 'the view of individual nature/essences' (Bhattacharya, R. 2002). The hard-core naturalists, Cārvākas, admit four types of basic material elements—earth, water, fire and air. They reject atomism, however, since they refuse to admit any imperceptible thing in their ontology, including God, Soul, ākāśa and all kinds of non-natural forces. The material elements are said to possess some qualities naturally. Multifarious objects of this world including living and conscious beings are produced out of the combination of material elements. It is generally held that the nature of any effect is determined by the nature of its cause.The reductionist Cārvākas and the nihilist Ājīvika-s, however, deny any causal connection between the material elements and the compounds arising out of them. The Cārvākas, however, deny any causal connection between the material elements and the compounds arising out of them. Just as fire is naturally hot and water is naturally cold, similarly, they hold, sugarcane is naturally sweet, margosa leaves are naturally bitter and thorns are naturally sharp. They think that further componential or causal analysis is completely redundant. The distinguishing feature of this kind of extreme naturalism is a belief in a fortuitous generation of events (ākasmikatāvāda). Causal relations are supposed to involve necessity, but necessity is not perceptible and whatever is not perceptible cannot be inferred or established by any other means. Udayana argues, in an elaborate critique of this view (Nyāyakusumāñjali I, 4–5), that every event must have a cause because every event without exception has 'conditional' (sāpekṣa) existence, this in turn because it has 'occasional' (kādācitka) existence, i.e., it occurs at a certain time. An eternal entity is always existent and a fictitious entity does not exist at any time: as these are not characterized by occasional existence, these are not caused. The only counter-instance to this rule is prior absence, which has occasional existence but being beginningless has no cause. Cārvākas affirm, however, that an event need not originate from a cause; it may come into being fortuitously. Even the occasional origination of an event is due to the nature of the event and has got nothing to do with its cause.

The thesis of fortuitous generation may be given five alternative formulations on the basis of the etymological analysis of the word 'akasmāt' (without cause):

a. An effect does not originate from a cause.

b. An effect does not arise at all.

c. An effect is self-caused; it is not determined by any external condition.

d. An effect is generated by an unreal cause.

e. The occurrence of an effect is not determined by its cause but by its own nature (svabhāva).

Udayana objects to all these formulations. If an effect were not dependent on its cause for its existence, then it could have occurred at any time, in fact at all times, and thus would lose its occasional nature. In fact, every effect has a temporal limit fixed by its cause, prior to which it cannot exist. The second formulation runs contrary to our perception of the occurrence of an event at a particular spatio-temporal location. The third formulation is unacceptable because the same thing cannot be both a cause and an effect at the same time in respect of the same set of conditions, and because it is not possible for anything to exist before its origination. The fourth formulation is rejected outright for no unreal thing can ever enter into a causal process. The fifth formulation leaves us totally mystified because the proponents of the fortuitous generation thesis have nowhere specified what this nature is by virtue of which an effect can occur without its cause. So we wonder, is this nature different from or the same as the effect? On the first alternative the principle of causality is re-established while the second alternative is unintelligible. If the nature of an effect is the same as the effect and a thing can never be separated from its nature, then it would follow that an existent entity would go on causing its own existence over and over again. This is surely absurd. Philosophically these arguments appear to be pretty convincing, but Cārvāka naturalists may find an ally in quantum physical talk about spontaneous decay of a radioactive element, quantum jumps, and so forth.

1.3.4 Prakṛti-pariṇāma-vāda: An Alternative View of Nature

That a whole arises out of smaller parts and that atoms are the material causes of the world—these mainstays of atomism have been contested by other schools of Indian philosophy. There are two important cosmological theories in the anti-atomic camp—Prakṛti-pariṇāma-vāda and Brahma-kāraṇa-vāda. Of these two, the first, a Sāṃkhya view that the world evolves from Ur-Nature or prakṛti, is more relevant in the discussion of naturalism. Ur-Nature is an ever-dynamic whole of all-pervasive magnitude having three constituent principles or guṇas, viz. sattva, rajas and tamas. Sattva has the power to illuminate, rajas to activate and tamas to restraint. B.N. Seal (1958), therefore, thinks that these principles are three aspects of matter, viz., form, energy and mass. K.C. Bhattacharya (1956), on the other hand, has offered a psychological interpretation which appears to have a closer fit with the text. Bhattacharya maintains that the Sāṃkhya considers things of nature as contents of affective experience. Mohanty (1992) also concurs that 'the guṇas are the substantial, but dynamic, being of the elementary feelings that constitute, in their interconnections, all experience.' The guṇas as affective absolutes constitute the object. In the process of evolution, the Sāṃkhya gives the central role to rajas, which is said to be an ever-active principle of pain. Mohanty explains, following Bhattacharya, that 'since pain implies the active wish to be free from pain, pain is a freeing activity: it is restless willing to be free. Pleasure is restful freedom from pain; indifference is not only want of freedom but is also not actively willing freedom.' So these three constituents of Ur-nature are present in all objects of the world in different proportions and are responsible for our varied experience. This theory of nature is complemented by a theory of causation, viz. satkāryavāda, which states that an effect exists in its cause prior to its production in a latent or non-manifest form.

The Sāṃkhya philosophers advance the following arguments in favour of their theory of causation. (a) What is non-existent cannot ever be produced. Whatever is non-existent remains non-existent for ever and whatever is existent always exists. Nothing can be sometimes existent and sometimes non-existent. Self, for example, is always existent,

whereas the fictitious sky-flower is eternally non-existent. No agency can turn non-existent into existent. So if the effect were non-existent in the material cause before the causal operation, then it would never be produced. (b) If a particular cause is to be a prior determinant of a particular effect, then there must be an appropriate relation between cause and effect. That means, a cause produces an effect only being related to it. But no such relation can obtain, if the effect were non-existent. For, a relation to obtain requires at least two relata. Hence an effect must pre-exist in its cause. Moreover, on the Sāṃkhya view the relation between cause and effect is one of identity (tādātmya), and it is obvious that an existent cause cannot be identical to a non-existent effect. (c) One may still wonder, why should not the effect be produced by an unrelated cause? The reason is that if the effect could arise without being related to the cause, then any cause could give rise to any effect. If there were no definite relation between threads and cloth, then why does a pot not arise from threads? (d) The opponent might say that the effect need not pre-exist in the material cause because when the cause is potent even a non-existent effect can be made to exist by the causal operation. When, on the other hand, the cause lacks the potency the desired effect cannot be produced. Since oil-seeds possess the adequate potency, oil can be produced out of these seeds but not out of sand. Sāṃkhya philosophers concede this point and maintain that causal operation enables a potent cause to manifest the latent effect. However, they point out that positing potency or efficiency will not satisfy their opponents. For then the question will be: where does this potency exist? The opponent must agree that this potency exists in the material cause. Does this potency have any relation with the effect or not? The answer has to be affirmative, otherwise we would not have said that oilseeds possess the capacity of producing oil and not pots. So once again we are back to the same question: how can the potency residing in the material cause be related with a non-existent effect? The Sāṃkhyas, therefore, affirm that this causal efficiency is nothing other than the existence of the effect in the material cause in a latent form. (e) The final argument in favour of the Sāṃkhya position reveals the whole issue very pointedly. The effect, they say, exists in the material cause because cause and effect are

essentially the same but only different in form. Since the cause is existent, the effect also must exist. The Sāṃkhya has a special stake in this point because the whole debate is geared to proving the existence of prakṛti as the ultimate material cause of the universe. In the process they also attempt to establish, contra Vedānta, that the evolution of the universe is genuine and not merely illusory.

The process of evolution of the world from Ur-Nature is briefly as follows. The first evolute of prakṛti is the mahat-tattva (the Great Principle, the Cosmic Intelligence or buddhi). From this emerges I-consciousness (ahaṃkāra). From the sattva aspect of I-consciousness evolve five organs of knowledge (eye, ear, nose, tongue and skin), five motor organs (speech, hands, feet, reproductive and excretory organs) and manas (sometimes translated as mind); from the tamas aspect of I-consciousness emerge five subtle elements (pañca-tanmātra), viz., sound, touch, colour, taste and smell. The five subtle elements give rise to five gross elements, viz., ākāśa, air, fire, water and earth.

It has already been mentioned that the three constituents of Ur-Nature are always in transformation. Before the beginning of creation or empirical manifestation of Ur-Nature, there is a homogeneous transformation (sadṛśa-pariṇāma) of the principles, sattva transforms into sattva, rajas into rajas and tamas into tamas. At the time of world-manifestation the active principle, rajas, becomes predominant and activates the other two principles. The stability of Ur-Nature is disturbed due to its close proximity with the Self (puruṣa), an independent co-eternal reality, like a piece of iron in proximity of a magnet, and the process of heterogeneous transformation begins. The constituent principles of Ur-Nature combine with one another in different proportions and the manifold world comes into existence.

The Sāṃkhya theory of evolution has been described as teleological because on this view the entire process of evolution takes place for the sake of the enjoyment and liberation of puruṣa, the pure Self. As such, puruṣa stands outside the process of evolution. When puruṣa is reflected in the first evolute of Ur-Nature, cosmic intelligence, it conflates its own identity with the first evolute and appears to have enjoyment and suffering. When it once again comes to realise its own nature by attaining

discriminatory knowledge, it is liberated. Certainly there are problems in the Sāṃkhya admission of a conscious but inactive principle, puruṣa. Puruṣa is eternal and ubiquitous like prakṛti, but if these two are always in contact the start of the creation process remains inexplicable. Again, it is not easy to understand why Ur-Nature should ensnare the pure self into bondage and then liberate it through discriminatory knowledge. Sāṃkhya philosophers say that the enjoyment of the pure self is a sham enjoyment, and so is the liberation because the pure self is eternally free. Then, however, the teleology loses its force, something that is perhaps inevitable because the Sāṃkhya teleology had always been proto-naturalistic, as is evident from two examples used in the literature. Just as non-sentient cow-milk flows merely from its own nature for the nourishment of the young calf and non-sentient rain clouds naturally yield rain for the sustenance of life on earth, so Ur-Nature ensnares the pure self for the latter's enjoyment and liberation. The Sāṃkhya theory has never upheld a conscious teleology, rather it has spoken of the natural directedness of Ur-Nature and its evolutes towards satisfaction of another's need.

Though the later Sāṃkhya narration embraces a clear-cut dualism of Ur-Nature and pure self, Dasgupta (1987) mentioned a version of early Sāṃkhya philosophy where the self is regarded as a non-manifest part of prakṛti. In this system consciousness exists in the material Ur-Nature in a latent form. This monistic theory is undoubtedly much more consistent; so why did the later Sāṃkhya change its position to dualism? Dasgupta writes succinctly, 'Man's body so far as it is a physical object is like any other object of nature passing through the process of evolution. But the introduction of soul from the organic state marks the epoch of a new kind of progress. This epoch attains it as the highest achievement when it comes to the moral being. So far as the physical world is concerned there is the same law of evolution from the relatively less differentiated, more determinate, more coherent whole and looked at from this point of view man's life and body are but a part of the universe suffering the same process of growth and decay. But looked at from another point of view all living beings and man pre-eminently by virtue of his soul, is a person and this addition of personality is a decisive addition. Thus so far as the

physical parts and the biological sides of life are concerned he is an object of nature, but so far as his soul is concerned he is a person and it is this personality which constitutes his spirituality.' The inexplicability of the normative, especially of the moral and the spiritual, a perennial bane of naturalism, thus led the proto-naturalist Sāṃkhya philosophers to admit pure self passively witnessing the process of evolution and standing outside the bounds of Ur-Nature. But that does not make empirical consciousness in any way naturalistically unexplainable. In the world process, buddhi plays a conscious role, reflecting the pure consciousness, just as the moon lightens up the world by borrowing the reflected light of the sun.

1.4 METHODOLOGICAL NATURALISM

Methodological naturalism is the view that regards science and philosophy as continuous. 'Methodological naturalists', writes Papineau (2007), 'see philosophy and science as engaged in essentially the same enterprise, pursuing similar ends and using similar methods.' In classical Indian philosophical systems, we find instances of method continuity as well as result continuity. In this context, we shall discuss mainly the Nyāya view, for the Nyāya methodology of scientific and epistemic investigation was adopted by other philosophical schools too.

In the West, the relation between science and philosophy has been almost symbiotic. Sciences separated from philosophy only after attaining maturity, developed to their full capacity, proliferated into different branches and, when the circle was complete, all the off-springs started coming closer to the parent disciplines to form an inter-disciplinary consortium. But even when sciences went their own way, a special branch of philosophy, traditional epistemology, continued to guard their foundation and police their frontiers with the help of its unique method. Thus, in a second moment of fission, science and philosophy were found to differ in contents as well as in methods. In India, however, the fission did not occur so emphatically and the borders of different disciplines were never hermetically sealed. Consequently, there is science in philosophy and also trans-empirical philosophy in empirical sciences. Different philosophical systems combine the metaphysics of the

transcendent with the logic of the mundane and the rules of individual and social morality. We find these systems supplying us with ratiocinative principles that form the core of a scientific methodology while simultaneously facilitating the process of self-realisation culminating in liberation or mokṣa through discourses on the nature of reality. Thus with a view to unraveling the real nature of existents (tattvadarśana), philosophical systems indulge in quasi-scientific discussions of cosmology, physics, chemistry, psychology, biology, and so on. That is why B.N. Seal (1958) has called these philosophical systems 'positive sciences'. Thus in both method and content philosophy and theoretical sciences coincided to a large extent. Applied (phalita) sciences like alchemy and medicine did diverge from philosophy, but there too the influence of fundamental philosophical concepts like accredited means of knowledge, causality, adṛṣṭa, etc., was conspicuous on patterns of observation and experimental design.

The Naiyāyikas are a part of this tradition. One of their most significant contributions is formulation of a method which forms the core of inquiry in general and so also of scientific inquiry. The method has four main steps. The first step is to provide an enumeration (uddeśa) of the divisions of the subject matter. The second step is to supply a definition (lakṣaṇa) of the subject under consideration, in the form of a distinguishing mark of it. The third step is an examination (parīkṣā) of the definition, and the fourth verification (nirṇaya). Enumeration sometimes includes classification (vibhāga); however, in general, classification comes after definition. Any truth reached by this procedure is raised to the status of an established theory (siddhānta). 'Pramāṇas [methods of knowledge-acquisition] are operations subsidiary to the ascertainment of truth. The methods of special sciences are ancillary to these pramāṇas' (P. C. Ray, 1956). It is evident that methodologically there is no difference between science and philosophy, particularly epistemology. In Nyāya epistemology, common sense, science, logic and scriptures are all considered to be continuous with one another.

1.4.1 Naturalism in Nyāya Epistemology

Naturalized epistemology defines itself in contrast with analytic epistemology, which is also often described as 'traditional' or 'mainstream' epistemology. Analytic epistemology is justification-centric. The epistemologists' preoccupation with the formulation of principles of epistemic appraisal are geared to meet sceptical challenges. They adopt three main strategies. (1) They grant autonomy to epistemology, which is meant to provide the basis for all human scientific endeavours. Epistemology supposedly possesses an Archimedean standpoint or a view from nowhere, something that warrants the objectivity of the sciences. This presupposition led to the dissociation between epistemology and psychology. (2) They declare that all epistemic norms of justification are a priori in nature. They further maintain that providing causal explanation is no part of epistemology (Chisholm, 1992). Causal questions and matter of justification are to be kept strictly separate. So, according to traditional epistemologists, to judge whether a person's belief that *p* counts as knowledge that *p*, it is sufficient to find out if *p* is connected in the right way to other propositions, the rightness of the connection to be determined by logic (Kitcher, 1983). That is, the evidential story and the causal story should be kept strictly separate because the former is necessarily normative, while the latter is descriptive; in providing an epistemic justification of a piece of knowledge, it is not necessary to probe the question of its origins. (3) As a follow-up of the Cartesian programme, analytic epistemologists try to ground knowledge of the external world on the subject's knowledge of inner experience. Justification thus becomes internalist and knowing that *p* entails knowing that knowing that *p*. If this condition is not satisfied, no one can be a responsible knower. (4) Most traditional epistemologists also subscribe to the realist conception of truth and one determinate theory of reality. (5) They are also committed to the No Accident Thesis, which says that beliefs expressed by true sentences are better guides to action than those expressed by false sentences; it is no accident that well-confirmed sentences tend to be true. Naturalised epistemologists form a heterogeneous group and not all of them contest all the above features. However, in general epistemological naturalists question the first three traits. (a) They give up the privileged

autonomous position of epistemology and uphold that epistemology must be continuous with science. (b) Causal questions must form part of epistemology, epistemologists should take stock of psychological conditions of cognition. (c) The traditional internalist model of justification being unacceptable, either epistemology should give up the task of justification altogether or look for alternative means of justification. Radical naturalists like the early Quine want to replace epistemology by psychology and give up the justification task entirely. Later Quine and more moderate naturalists, on the other hand, re-instate justification but of a different kind: some consider justification offered in terms of causally reliable process of belief generation to be adequate, some others admit epistemic justification but retain naturalism by making it supervenient on natural facts.

The most general arguments in favour of the claim that Indian epistemic systems are naturalistic are as follows. Each develops its respective theory of veridical cognition and/or knowledge (the term pramā is ambiguous) in response to sceptical threats. In spite of having different metaphysics, most attempt to explain cognition with reference to psycho-causal chain. As far as knowledge of the empirical world is concerned, all admit the primacy of perception and thus provide the systems of epistemology with a strong empirical foundation. Indian traditions, in general, as we have seen, sustain a methodological continuity between science and philosophy. Indian philosophers did not feel any need for the a priori/ a posteriori distinction, nor does their theory depend on necessity/possibility or analytic/synthetic distinctions. As a result, they could easily commute between the realm of the normative and that of the descriptive. All these are considerations in favour of a moderate methodological naturalism; however, in the absence of any special scientific domain, they do not lend support to the conjecture that Indian theory sustains a radical replacement naturalism.

The Nyāya response to sceptical objections occurs at two levels, at the first level enumerating a set of virtuous processes by which true beliefs are acquired, and the second level dealing with the ratification of those reliable or virtuous processes of belief-acquisition. Naiyāyikas admit four kinds of cognition—perceptual (pratyakṣa) inferential (anumiti), that

which arises from comparison (upamiti) and verbal (śābda), and four accredited means of acquiring veridical cognition (pramāṇa), viz., perception (pratyakṣa), inference (anumāna), comparison (upamāna) and authority (śabda). They decide the number of the accredited means by empirically observing the effectiveness and reliability of the respective means in generating true beliefs. According to them, these processes generate true beliefs only when accompanied by genuine excellence or epistemic virtue (guṇa). The virtue that makes a generating process meritorious differs in each type of true belief. In case of perception the relation of the sense organ with the object characterised by the property which figures as the qualifier in the perceptual cognition is said to be the virtue. For example, when one perceives a white shell as white, our sense organ stands in appropriate relation with the object of perception, a shell in this case, and apprehends the property whiteness which characterizes the shell in question and thus gives rise to a veridical perception. In a veridical inferential cognition the mark, which is invariably concomitant with the thing to be inferred, must be known to be present in the locus of the inference. For instance, when someone correctly infers fire on a distant hill, it is known to him that smoke, which is invariably concomitant with fire, is present on the hill. In case of knowledge by comparison, knowledge of similarity is the excellence, e.g., someone rightly identifies an unknown animal as a bison on seeing its similarity with a cow which he came to know from an expert's utterance to the effect that a bison is similar to a cow. Finally, in case of verbal knowledge, the speaker's veridical cognition of the state of affairs described by the sentence uttered is the excellence, e.g., when an umpire declares a batsman out in a cricket match on the basis of his expertise and veridical cognition of the state of affairs. A false belief results from the presence of some defect (doṣa), and not merely from absence of the required virtue. Someone may perceive a white shell as yellow because he is suffering from jaundice or because of the yellow tinted light in the room or due to some other defective condition. These defects differ in each instance of false belief. The Naiyāyikas therefore maintain that a false belief is caused by a defect and a true belief is caused by a virtue.

This principle holds in all cases and all types of belief—be it commonsensical, scientific, or philosophical.

The topic of epistemic luck is an important one in this theory. For, although a defective process usually generates a false belief and a meritorious process generates a true belief, yet some beliefs may be true by fluke, in spite of being produced by a defective process. Suppose someone wrongly perceives mist as smoke and argues, 'The hill has fire, as it has smoke on it'. Unbeknownst to him, the hill actually possesses fire. So this argument yields a veridical conclusion though the ground is defective. Or consider the following example (Chakrabarti, 1994): 'Suppose that on a Tuesday a cheat mistakenly believing it to be Monday says, "Today is Tuesday". If the listener does not suspect him to be a cheat, he would "understand" that today is a Tuesday. What he would understand surely would agree with facts.' Here also the resultant cognition is veridical even though it is produced by a defective process. That is why the Naiyāyikas hold the following principle: if there is a false belief then there must be a defect in the generating process, but not its converse, i.e., if there is a defect in the generating process, then it produces a false belief (defects are necessary but not sufficient for error). The problem of epistemic luck has led scholars like Sibajiban Bhattacharyya to declare that the Naiyāyikas did not mean by veridical cognition (pramā) a justified true belief. Others, including J.N. Mohanty (Mohanty 1992, 2001) contest this view. They rather reconstruct the notion of pramā as a justified true belief and include the two examples mentioned above in the list of the Gettier-type counter-examples, thereby attempting to accommodate pramāṇa theories within the framework of traditional epistemology.

The Naiyāyikas beginning with Vācaspati Miśra succinctly uphold that since a belief cannot reveal its own truth, nor can it be grasped in after-perception, it must be apprehended by a subsequent inference following from volition leading to successful activity. An example from the Nyāya literature will make the point clear. Suppose a thirsty traveller perceives a lake at a distance. Suppose further that all the propitious conditions for a veridical perception are present in this case, e.g., the traveller's vision is not defective, there is adequate light, and so on. Yet, if he were ever

eluded by a mirage, he might doubt his vision. The only way to allay his doubts is, says the Naiyāyika, to approach the lake, take a dip in it and drink the water. If he feels cool and his thirst is quenched, he can be sure about the truth of his perceptual belief. It is significant that the Naiyāyika calls the volition leading to successful behaviour 'samvādi pravṛtti', literally meaning coherent volition. One's volition is realised into action and he gets his desired object. Thus there is coherence between the object of volition and the object of perception. One's perceptual belief that there is a lake at a distance is true, if and only if, there is a lake at a distance. However, to establish it, he needs further corroboration. His perceptual belief about the lake must cohere with his other beliefs about water, e.g., it quenches thirst, wets a thing, and douses fire, etc., which motivates him to act positively or negatively in a particular situation. I think the model of ratification here is similar to that of the crossword puzzle, which combines moderate foundationalism with coherentism. A belief to be true must have a content-to-world fit. Yet, until such a belief, produced by an accredited means, matches other beliefs in the existing network, the belief cannot be known / believed to be true nor the means of generation can be warranted. The same theory applies to scientific knowledge. They specifically mention the case of Āyurveda or the science of medicine. Āyurveda is considered a science because Ayurvedic prescriptions lead to successful action. When a sick man is cured by following the prescription of his doctor, he infers the truth of the utterance of his doctor and gradually gains confidence in Āyurveda as a science.

The Naiyāyikas address the question of ratification in the context of scriptural injunctions. No knowledge is, according to them, self-justified, and scriptural prescriptions are no exception, but they are also not empirically testable. Vācaspati Miśra suggests that scriptural injunctions can be verified by trading on their similarity with medicinal prescriptions: like medicinal prescriptions, scriptural prescriptions are also acceptable, since both are uttered by an infallible speaker. It is interesting to note in this context that one of the premises of the argument that God is infallible ultimately rests on another accredited belief-generating process, viz., reliable testimony or authority. And

again, when the authority as a means of valid cognition is questioned, there is a fall back on inference. Many a times we see the Naiyāyikas paying scant attention to obviously circular reasoning. This cannot be due to their inadvertence or ignorance. Rather, like true naturalists, they favour repairing their boat while still floating. And significantly, at no stage in their rebuttal of scepticism do they resort to an internalist mode of justification.

The naturalism of the Naiyāyikas can be thrown into relief by their dispute with Mādhyamika Buddhists. The Mādhyamikas play the role of sceptic against the metaphysical realism of Nyāya. Nāgārjuna points out that a Naiyāyika cannot establish the pramāṇa-hood of a pramāṇa by means of another pramāṇa for that will lead to an infinite regress. Nor can the Naiyāyika establish it by pointing out its reliable character because that will lead to circularity (a piece of cognition is said to be pramā when it is produced by a reliable pramāṇa; to establish the reliability of a pramāṇa by referring to the fact that it has always been sufficient for generating a pramā is obviously circular). This objection would have been irrefutable if the Naiyāyikas had only one kind of pramā and one kind of pramāṇa in their epistemic repertoire. But as the Naiyāyikas admit four different pramāṇas for four different types of pramā, they can always fall back on other pramāṇas when the reliability of one is questioned: to justify perception, one might take recourse to inference, and again to justify inference one can rely on verbal cognition. As to establishing the reliability of the verbal cognition, they appeal to inference. As Quine once said, 'Such scruples against circularity have little points once we have stopped dreaming of deducing sciences from observation. If we are simply to understand the link between observation and science, we are well advised to use any available information, including that provided by the very science whose link with observation we are seeking to understand.' A naturalist need not be afraid of circularity.

1.5 MORAL NATURALISM: KARMA AND ADṚṢṬA

Moral naturalism has two characteristic features: first, moral facts are considered to be natural facts; second, moral facts can causally influence the physical world as well as human experience. Both these features are present in the moral theories of many of the classical systems of Indian philosophy.

The doctrine of karma is a foundational thesis of Indian moral philosophy. According to the doctrine of karma, every action gives rise to some consequence; a good act leads to good consequence and a bad act to bad consequence: every human agent has to reap the consequences of his/ her actions. One is sure to be rewarded or punished for one's good or wrong deeds. A just moral scheme requires that one should never suffer or enjoy the consequences of another's action. The burden of moral responsibility for one's deeds is thus to be borne by the individual. In spite of this, most Indians believed and still believe that even if our present actions are causally necessitated by our past actions, our present actions can be free.

The validity of the doctrine, however, has often been doubted on empirical grounds. For, it is a common sight that saintly people suffer in their life, while habitual wrongdoers enjoy happiness. To account for such anomalies, a theory of rebirth is tagged to the karma-doctrine. The logic is somewhat like this: since nothing comes from nothing, one must have done something good in the past, in this life or some other life, if one is happy; and, on the other hand, if one suffers then one must have done something wicked, if not in this life then in some other previous life. Although, with the exception of a few parapsychologists, nobody claims to have any scientific evidence for rebirth, yet this is a rational justification of the belief in rebirth on the assumption that the universe is law-governed. The overarching law that the philosophers in India believed in was called ṛta—the principle of cosmic order or harmony that 'makes science possible, the world beautiful and the humans moral'. Ṛta is the principle underlying the 'finely-tuned universe', the transgression of which leads to sin. It represents the totality of physical and moral laws, which even the gods are bound to obey. The law of karma follows from ṛta as the causal basis of the phenomenal world. God is constrained

so to act as to keep in view the accumulated karma of individuals, yet to bear fruit.

Karma is standardly divided into three types in Indian thought: (1) that which has started to bear fruit (prārabdha) and cannot be diverted or stopped in the middle of its course; (2) that which is being performed now the consequence of which is being credited for future fruition (sañcīyamāna); and (3) that which has been accumulated but yet to start yielding results (sañcita). A very apt illustration available in the literature is that of an archer with his quiver full of arrows. The arrow which has been shot by the archer is like the first type, the arrow that the archer holds in his hand in a state of readiness is like the second type, and the arrows in the quiver, yet unused, are like the third type. It is evident that the explanation of human acts being provided by the law of karma is a causal explanation. Perrett 1998, p. 73 comments that 'just as causal principle exhorts us to keep seeking explanations for physical occurrences, so the karmic principle exhorts us to keep looking for explanations for "moral" events.'

The Mīmāṃsaka-s admit the doctrine of karma but supports non-naturalism in moral context. They believe in two causal realms — ritual and natural and according to them the ritual order is independent of the natural order. In fact the causal connection that obtains between a ritual enjoined by the scripture and its result cannot be explained naturally, e.g., how the correct performance of putreṣṭi sacrifice fulfills one's desire for a son is beyond natural and scientific explanation (Chatterjee 2016).

Nyāya thinkers seek to relate the principle of karma with the atomistic conception of nature described above, but in doing so might appear to compromise their commitment of metaphysical naturalism. Individuals can enjoy or suffer the consequences of their actions only during their embodied existence in the world. Atoms, therefore, combine to form such a world as individuals deserve because of their past deeds. When accumulated merits and demerits become ready for fruition, they can impart motion to atoms. To admit an unseen force as a cause of atomic motion, identified with the accumulated merits and demerits of individual beings, might seem to run against a commitment to naturalism. Yet the idea that there is unbroken chain of causal connection

within the empirical world spanning across different lives situates the postulated 'unseen force' itself within the boundaries of the natural world. Mohanty (1992, p. 222) observes that 'if actions of the self and the moral forces (adṛṣṭa) generated by actions account for empirical nature's manifestation or creation, then ultimately nature is both natural and moral: the two order coincides.'

Check Your Progress 1

Note: Use the space provided for your answer

1. Discuss the Indian Concepts of Nature as per Navya Nayaya.

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2. Write about the Methodological Naturalism in Indian Philosophy.

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3. Discuss the Moral Naturalism: karma and adṛṣṭa.

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1.6   LET US SUM UP

Navya-Nyāya developed a sophisticated language and conceptual scheme that allowed it to raise, analyse, and solve problems in logic and epistemology. It systematised all the Nyāya concepts into four main categories (sense-)perception (pratyakṣa), inference (anumāna), comparison or similarity (upamāna), and testimony (sound or word; śabda). Prof John Vattanky has contributed significantly to the modern understanding of Navya-Nyāya.

1.7   KEY WORDS

Navya-Nyāya: The Navya-Nyāya or Neo-Logical darśana (view, system, or school) of Indian logic and Indian philosophy was founded in the 13th century CE by the philosopher Gangeśa Upādhyāya of Mithila and continued by Raghunatha Siromani.

1.8   QUESTIONS FOR REVIEW

1. Discuss the understanding of Navya Nyaya.

1.9   SUGGESTED READINGS AND REFERENCES

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1.10 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

1. See Section 1.3
2. See Section 1.4
3. See Section 1.5

UNIT 2: NATURE OF NAVYA-NYĀYA

STRUCTURE

2.0   OBJECTIVES

In this unit, you will learn the Nyāyika's doctrine of valid sources of knowledge and their arguments on self and liberation. Further, you will also learn the Nayāyika's views on God.

After working through this unit, you should be able to:

• explain different kinds of perception

• discuss nature and characteristics of inference

• elucidate Nyāya concept of self

• illustrate Nyāyika's views on liberation

• examine Nyāyika's arguments on testimony as a valid source of knowledge

2.1   INTRODUCTION

The Nyāya School is founded by the sage Gotama, who is not confused as Gautama Buddha. He is familiarized as 'Aksapāda'. Nyāya means correct thinking with proper arguments and valid reasoning. Thus, Nyāya philosophy is known as tarkashāstra (the science of reasoning); pramānashāstra (the science of logic and epistemology); hetuvidyā (the science of causes); vādavidyā (the science of debate); and anviksiki (the science of critical study). The Nyāya philosophy as a practitioner and believer of realism seeks for acquiring knowledge of reality.

2.2   CONCEPT OF NYAYA PHILOSOPHY

Gotama, Gautama or Aksapada was the founder of the Nyaya philosophy. It is primarily concerned with epistemology and logic, and secondarily with ontology. It deals with the sources of knowledge, viz., perception, inference, compari-son and testimony, and conditions of their validity, and the nature of the world, souls and God.

Gautama (200 B.C.) was the author of the Nyaya sutra. Vatsyayana (400 A.D.) closely followed Gautama in interpret-ing his aphorisms. Uddyotakara (600 A.D.) wrote Nyayavar-tika on Nyayabhasya. Vacaspati (1000 A.D.) wrote an illuminating commentary named Nyayavartikatatparyatika on Nyayavartika. Udayana (1050 A.D.) wrote Nyayavartikatat-paryaparisuddhi, a learned commentary, on Nyayavartikatatparyatlka. Gangesa (1200 A.D.) was the founder of the modern Nyaya school known as Navya Nyaya.

2.3   INSTRUMENT OF VALID KNOWLEDGE (PRAMANA)

Extrinsic Validity (Paratah Pram anYa):

Tests of Truth (Pramanyagraha):

The Nyaya epistemology deals with the nature of valid knowledge, its instruments, extrinsic validity and invalidity of knowledge, and the tests of truth. The knower, the known object, the instrument of knowledge, and valid knowledge constitute the reality.

The self is the knower, which knows objects through pramanas, acts upon them, and experiences fruits of its actions. It desires to attain pleasant objects and avoid painful objects known through pramanas, acts for their attainment or rejection, and gets fruits of its efforts.

Prameya is the object that is known. Pramana is the instrument by means of which the self knows an object. Prama is the valid knowledge of an object. Pramana is the collocation of condi-tions, which is the immediate antecedent of the production of valid knowledge. There are four pramanas, viz., perception, inference, comparison and testimony, which generate different kind of valid knowledge.

The self and an object are the common causes of all cognition of objects. In there absence there is no valid knowledge, which is produced when they are present. But even when they are present, it is not produced in the absence of a pramana, which is its special cause. The self and an object are presupposed by a pramana which is an instrument of the self by which it knows an object.

It is a special cause of valid knowledge because it has not yet realized its end. An instrument depends upon an agent, but the latter does not depend upon the former. Knowledge cannot be specified by the self or an object.

The self is the common inherent cause of knowledge which inheres in it. The con-junction of the self with manas is the common non-inherent cause of it. Pramana is the complement of conditions other than the self and an object, which immediately produce valid knowledge.

Valid knowledge is the knowledge that represents the real character of its object, or apprehends what exists in it. Error is the knowledge that does not represent the real character of its object, or apprehends what does not exist in it. So the knowledge which corresponds with the real nature of its object is valid, and the knowledge which does not correspond with its real character is invalid.

Vacaspati excludes recollection from valid knowledge, and defines it as the certain knowledge of an object, which is in agreement with its real character, indepen-dent of previous perception and different from recollection. Visvariatha defines valid knowledge as the knowledge of the generic character of an object as abiding in it, or as the apprehension of a mode (prakara) corresponding to its object (visesya).

A jar is the object of the knowledge of a jar, which is its substantive. The generic character of a jar, which is manifested in consciousness is its cognized mode. The cognized mode corresponds to its object in valid knowledge. But in error the cognized mode does not correspond to the object or substantive of knowledge.

When a nacre is misperceived as Silver, silver is the cognized mode that is manifested in cons-ciousness, which does not correspond with the nacre. The misapprehension of a nacre as silver is illusory because silver does not exist in it.

The Nyaya definitions of knowledge are realistic. Truth is correspondence of an apprehension with its object. Valid knowledge implies a knowing self, an object of knowledge, apprehension of it, and its harmony with its real character. Correspondence is the content of truth.

Knowledge is the manifestation or apprehension of objects. Valid knowledge is the apprehension of the real character of an object. Invalid knowledge is the apprehension of an object as it is not in us real character. Truth is correspondence of knowledge with reality.

Error is disagreement of knowledge with reality. Correspondence is truth, and non-correspondence is error. Knowledge generated by its cause is the bare apprehension of an object, which is neither valid nor invalid in it.

Its validity is produced by some positive excellence in the generating conditions of knowledge; and its invalidity, by some positive defects in them. Validity and invalidity of knowledge are extrinsic, and depend upon extraneous condi-tions.

Validity is neither produced by the general conditions of knowledge nor by the mere absence of defects, but by some proficiency in its cause. Invalidity is neither produced by the general conditions of knowledge nor by the mere absence of proficiency, but by some deficiency in its cause.

Knowledge is not intrinsically valid or invalid, but it acquires validity or invalidity from extraneous conditions. For example, the intercourse of a sense-organ with an object is the positive excellence which generates the validity of perception. Distance or minuteness of an object, defect of a sense-organ or manas, and the like are the positive defects which generate the invali-dity of perception.

A specific effect has a specific cause. Validity and invalidity are the specific characters of appre-hensions, which are due to different specific characters of the general conditions of knowledge, which either promote or vitiate them. They are extrinsic or adventitious characters of knowledge due to extraneous conditions.

Validity and invalidity of knowledge are not known by valid knowledge itself or by invalid knowledge itself. Validity of knowledge is inferred from its capacity to produce success-ful activity, and invalidity of knowledge, from its incapacity to produce successful activity. Truth leads to successful action, and error, to unsuccessful action.

Practical efficiency and practical inefficiency are the tests of truth and error by which they are known. Correspondence is the content of truth, but workability is its criterion. Non-correspondence is the content of error, but unworkability is its criterion.

What is successful activity which determines the validity of knowledge? Vatsyayana explains it as the fulfillment of activity prompted by the knowledge of an object. The validity of the knowledge of an object, which was not frequently known before, is known by a fruitful action. But the validity of an object, which was frequently known before, is known from a similar mark even before it produces a successful action.

Action depends upon the knowledge of an object, but not upon the knowledge of its validity. Even doubt about an object gives rise to action. Valid knowledge is in harmony with the real character of its object, and capable of producing a success-ful action. Invalid knowledge is in disharmony with the real nature of its object and incapable of prompting a successful action.

2.4 PERCEPTION: ERROR OR ILLUSION

Gautama defines perception as the knowledge which is produced by the intercourse of an object with a sense-organ, un-definable, determinate, and in harmony with its object. It is produced by the intercourse of a present object with the external sense-organs, their conjunction with manas, and its conjunction with the self.

The sense-organs are directed by manas, which are directed by the self. Conjunction of the sense-organs with manas and conjunction of manas with the self are the general causes of perception. The intercourse of a sense-organ with an object is a special cause of perception.

Perception is generated by it, and not revealed. It is the immediate knowledge of a present object through a sense-organ. Valid perception apprehends the real character of an object. Illusion does not apprehend the real nature of its object.

Perception is different from inference, comparison and testimony, which are not produced by the sense-object-intercourse. Visual perception of a jar is produced by its conjunction with the visual organ, which is in the nature of light.

Auditory perception of sound is produced by its inherence in the auditory organ or ether enclosed in the ear-hole. Visual perception of the colour of a jar is produced by the conjunction of the visual organ with the jar in which colour inheres. It is due to united-inherence. The manas is an internal organ. Perception of pleasure, pain, desire, aver-sion, volition and cognition is produced by the manas in con-junction with the self.

There are two kinds of perception, viz., indeterminate and determinate. The former is un-definable and nameless. The latter is determinate and associated with a name. The ancient Nyaya regards the former as the apprehension of an object as qualified by a substance, quality, action and genus, but devoid of a name, and the latter as the apprehension of it as qualified by these qualifications but associated with a name.

But the modern Nyaya regards the former as immediate, simple, non-relational apprehension of an object and its generic nature as unrelated to each other, and the latter as mediate, relational, synthetic apprehension of an object and its generic nature as related to each other.

Indeterminate perception is the imme-diate apprehension of an object and its qualifications unrelated to each other. It is devoid of subject-

predicate-relation. It is not a perceptual judgment. The Nyaya regards it as a logical stage of perception. It is inferred from determinate perception as its prior stage.

Gautama's definition of perception does not apply to yogic perception which is non-sensuous. So Visvanatha defines perception as immediate knowledge which is not derived through the medium of any other knowledge.

This definition embraces all kinds of human perception and excludes inference, comparison and testimony. Inference is produced by the knowledge of vyapti; comparison, by the knowledge of similarity; and testimony, by the knowledge of words.

Recognition is a kind of perception qualified by past per-ception. 'This is that Devadatta'. Perception is produced by the intercourse of an object with a sense-organ. Memory is produced by a subconscious impression. Recognition is pro-duced by both together.

It is a single unitary cognition, and not a synthesis of perception and recollection as the Buddhists maintain. It is perception because the sense-object-intercourse is its principal cause while a subconscious impression is its auxiliary cause.

Gangesa recognizes three kinds of extraordinary intercourse viz., samanyalaksana, jnanalaksana and yogaja. We perceive a smoke, through ordinary intercourse. But when we perceive a smoke, we perceive all smokes through the perception of its generic character due to samanyalaksana-sannikarsa. All in-dividual smokes are not perceived through the sense-organs, but they are indirectly perceived through the knowledge of their generic character.

Gangesa admits this kind of percep-tion to ensure the knowledge of invariable concomitance between all smokes and all fires. Jnanalaksana-sannikarsa is the extraordinary intercourse through the knowledge of an object revived from a past perception of it.

Visual perception of a fragrant sandal is due to the intercourse of the visual organ with the sandal and the recollection of its fragrance perceived in the past through the olfactory organ owing to association.

The idea of fragrance revived in memory brings about the acquired visual perception of fragrant sandal. Yogic perception is produced by an extraordinary intercourse brought about by meditation. Intense meditation produces a peculiar merit in the self, by virtue of which it can perceive past, future, remote, hidden and subtle objects. This is intuition born of meditation.

There are two kinds of yogic perception: yukta and yunjana. The former is the intuition of a yogin whose self has attained union with God, which is constant and effortless. The latter is the intuition of a yogin, who is endeavoring to attain union with God, and puts forth effort of will to perceive all objects.

The perception of a generic character, cognition, and a supernatural power born of meditation are the media of extraordinary intercourse.

The ancient Nyaya regards indeterminate perception and determinate perception both as valid, when they are in harmony with the real nature of their objects. Determinate perception is valid, because it apprehends an object as it really is with its qualifications which are real. Indeterminate percep-tion is valid, because it is a means of valid determinate per-ception.

But the modern Nyaya regards it as neither valid nor invalid, since it does not apprehend the relation between its object and its qualifications. Validity or invalidity of knowledge consists in relating the terms apprehended rightly and wrongly. Truth or falsehood is a predicate of the relational structure of knowledge, and not of non-relational immediate experience.

The Nyaya advocates the Anyathakhyati theory of error and regards it as the apprehension of an object as a different object or misperception of an object (e.g., a nacre) as another object (e.g., silver). This theory of error is also called Viparitakhyati. When we perceive the qualities of silver in a nacre, we have an illusion, which is a single cognition of a perceptual character.

'This' is, in reality, a nacre endued with brightness which recalls the memory-image of 'silver' endued with its distinctive characters. A nacre in intercourse with the visual organ vitiated by a defect and aided by the recollection of silver is actually perceived as silver. The recollection of

silver is due to the revival of its subconscious impression by the Perception of similarity e. g., brightness.

The modern nyaya explains it by jnanalaksanasannikarsa. There is an extraordi-nary intercourse here through the medium of the idea of silver revived in memory. It is an acquired visual perception of silver through association. An illusion has an objective basis. It is not purely subjective. It is right so far as it apprehends the subject 'this', but it is wrong so far as it apprehends the predicate 'silver'.

2.5 INFERENCE: KINDS OF INFERENCE: VYAPTI: FALLACIES

Inference is mediate knowledge of an object (e. g., a fire) derived through the medium of the knowledge of a mark (e.g., a smoke) by virtue of the relation of invariable concomitance between them. It depends upon the perception of a mark and the recollection of invariable concomitance.

First, there is the perception of a mark (linga), reason (hetu), or probans (sadhana) (e.g., a smoke) in a subject (e.g., a hill).

Secondly, there is the recollection of invariable concomitance of the reason with a predicate, probandum (sadhya) or inferable object (e.g., a fire).

Thirdly, there is the inference of the existence of an unperceived object or predicate (e.g., a fire) in the subject (paksa, e.g., the hill). This is inference for oneself. This is the analysis of the psychological process of inference.

Inference is mediate knowledge, while perception is immediate knowledge. Perception apprehends present and near objects, while inference apprehends past,' future and remote objects as well as present and near objects.

Perception does not depend upon the knowledge of vyapti. But inference is based upon it without which it is not possible. There is no scope for inference where we can have perception. Inference is called anumana because it is a kind of knowledge (mana) which we get after (anu) some other knowledge or perception.

Inference is of two kinds:

(i) Inference for oneself and

(ii) Inference for others.

The first kind of inference is a psychological process which does not require the formal statement of its different members.' A person knows the invariable concomitance of smoke with fire by repeated observation. He perceives smoke in a hill, and doubts that a fire may exist there.

Then he remembers the invariable concomitance of smoke with fire: 'whatever is smoky is fiery'. From this he infers that 'the hill has a fire'. This is the psychological analysis of inference for oneself. The second kind of inference is intended for convincing others.

It is a demonstrative inference which consists of the following five members (avayava):

i. The hill is fiery (pratijna);

ii. Because it is smoky (hetu);

iii. Whatever is smoky is fiery, for example, a kitchen (udaharana);

iv. The hill has smoke which is invariably accompanied by fire (upanaya);

v. The hill is fiery (nigamana).

The proposition is the thesis to be established, which makes a statement. The reason states the reason for the statement. The exemplification is the universal proposition which shows the invariable concomitance between the reason and the inferable predicate supported by an example. The upanaya is the application of the universal proposition to a particular instance. The nigamana is the conclusion drawn from the preceding members.

There are three terms in the demonstrative inference. The paksa is the subject in which the predicate or inferable object is doubted. The predicate is the object that is inferred in the subject. The hetu is the mark or feign which indicates the presence of the inferable object or predicate.

The paksa, the sadhya and the hetu correspond to the minor term, the major term and the middle term of the Aristotelian syllogism. In the example given above 'the hill' is the subject or minor term (paksa), 'fire' is the major term (sadhya) and 'smoke' is the middle term (hetu) or the reason for establishing a relation between the subject and the predicate.

They do not stand for terms but for real objects. The Nyaya is realist Logic as distinguished from nominalist and conceptualist Logic. The

predicate is also called the pervader (vyapaka) because it pervades the reason. The reason is also called the pervaded (vyapya) because it is pervaded by the predicate.

The middle term is pervaded by the major term. For example, smoke is pervaded by fire: wherever there is smoke, there is fire, but fire is not pervaded by smoke: wherever there is fire, there is no smoke. The reason is called the sign (linga) because it indicates the presence of the predicate. It is also called probans (sadhana) because it is the means of proving the existence of the predicate in the subject.

There are five characteristics of the reason or mark:

(i) Existence in the subject,

(ii) Existence in similar instances in which the predicate exists;

(iii) Non-existence in dissimilar instances in which the predicate does not exist;

(iv) Uncontradictedness; and

(v) Un-counter-balanced-ness. It must be present in the subject; e.g., smoke must be present in the hill.

It must be present in all homogeneous instances in which the predicate exists; e.g., smoke must be present in a kitchen in which fire exists. It must be absent from all heterogeneous instances in which the predicate does not exist; e.g., smoke must be absent from a lake in which fire does not exist.

It must not be incompatible with the subject; e.g., it must not aim at proving the coolness of fire. It must not be counterbalanced by the absence of counteracting reasons leading to a contradictory conclusion. These are the five characteristics of a valid reason. A reason with these characteristics is. Probative of the predicate.

The paksa is the subject in which the existence of a character or predicate is sought to be proved. A similar instance is one in which an inferable character or predicate is certainly known to exist. A dissimilar instance is one from which a predicate is certainly known to be absent.

There are five members (avayava) of a demonstrative inference:

The first member is the proposition which is the statement of the thesis to be proved. It is a judgment due to synthesis of a subject with a predicate.

It is affirmation or denial of a predicate of a subject e.g., 'sound is non-eternal.'

What is inferred is of two kinds:

(i) A predicate (P) as related to a subject (S); (2) a subject (S) as qualified by a predicate (P). A predicate is 'non-eternity of sound' or 'sound is non-eternal.' The proposition is different from the conclusion which states the existence of the predicate qualified by its distinctive character and known as such in the subject qualified by its distinctive character. The former is a statement to be proved while the latter is a statement proved by the inference.

(ii) The reason is the statement of the reason which is favourable to the inference of the predicate. It states similarity between the subject and an example in respect of a common character which is connected with the predicate, e.g., 'because of producedness'.

Or, it states dissimilarity between the subject and an example in respect of a character which is connected with the absence of the predicate. It is either affirmative or negative. The former is called sadharmyahetuvakhya while the latter is called vaidharmyahetuvakya. 'Sound is non-eternal, because it is produced, like a jar.' 'Sound is not eternal, because it is not unproduced, like a soul'.

(iii) The exemplification is a general proposition which states the invariable concomitance of the reason with the predicate illustrated by an example in which they are perceived to exist. It is of two kinds.

Either it states the invariable concomitance of the presence of the reason with the presence of the predicate. Or it states the invariable concomitance of the absence of the predicate with the absence of the reason. 'Whatever is produced is non-eternal, like a jar'. 'Whatever is unproduced is eternal, like a soul'.

The statement of an example shows that the general proposition is the result of induction. Its material truth is guaranteed by induction. It embodies affirmative uniform relation or negative uniform relation between the reason and the predicate.

Examples are of two kinds: homogeneous example which shows invariable concomitance of the presence of the reason with the presence of the predicate and heterogeneous example which shows invariable

concomitance of the absence of the predicate with the absence of the reason.

(iv) The application states the existence of the reason in the subject, which is invariably concomitant with the predicate as stated in the exemplification. It is the application of a general principle to a particular instance.

It conveys the knowledge of the presence of the reason pervaded by the predicate in the subject (paramarsa), which leads to the conclusion. It removes all doubt as to the presence of the reason in the subject without which there can be no conclusion. The proposition, the reason, and the exemplification are not adequate to prove the conclusion.

The application is a necessary member of a demonstrative inference. It is affirmative or negative. 'What is produced is found to be non-eternal, e.g., a jar. Sound is so produced'. 'What is unproduced is found to be eternal, e.g., a soul.

Sound is not so unproduced'. There are two kinds of reason, two kinds of exemplification, and two kinds of application. The application shows that a demonstrative inference is deductive. So it is neither inductive nor deductive but inductive-deductive or formal-material.

(v) The conclusion is the restatement of the proposition as established. The proposition states what is to be proved, but the conclusion states what is proved. It synthesizes all members of a demonstrative inference, and proves the existence of the predicate in the subject. It is not a mere restatement of the proposition. It conveys the knowledge of the predicate as existing in the subject, which depends upon the prior knowledge of paramarsa.

The reason is without any basis without the proposition. It states the mark or sign or similarity with an example. The exemplification states the invariable concomitance of the mark or reason with the predicate as shown in an example.

The application removes doubt as to the existence of the reason in the subject by stating that the reason pervaded by the predicate exists in the subject. The conclusion proves the existence of the predicate in the subject after interrelating all the members of a demonstrative inference. It

cannot be called a syllogism, because it is an inductive-deductive inference. Many scholars have wrongly called it a syllogism.

The Nyaya demonstrative inference may be compared with the Aristotelian syllogism. First, the former consists of five members while the latter consists of three propositions. 'All men are mortal; Socrates is a man therefore, Socrates is mortal'. The first proposition is the major premise; the second, the minor premise; and the last, the conclusion.

The first three propositions of the Nyaya demonstrative inference correspond to the conclusion, the minor premise, and the major premise of the Aristotelian syllogism. The last three propositions of the former correspond to the major premise, the minor premise, and the conclusion of the latter.

Secondly, the Nyaya inference is inductive-deductive and concerned with material truth, while the Aristotelian syllogism is deductive and concerned with formal truth. The universal major premise of the latter is not shown to be the conclusion of induction. But the exemplification or the universal major premise of the former is the conclusion of induction from known instances.

It embodies a vyapti or universal relation of the reason with the predicate which is established by the joint method of agreement in presence and agreement in absence. Induction (vyapti) is the ground of deduction in the Nyaya inference! It applies an induction reached by generalisation from particular instances observed to a particular instance.

Thirdly, the universal major premise of the Aristotelian syllogism is not illustrated by an example.

Fourthly, the application contains the major term, the minor term, and the middle term interrelated to one another, while no premise of the Aristotelian syllogism contains the three terms. It states the existence of the reason pervaded by the predicate in the subject, which makes the conclusion possible. Hence Gautama is five-membered inference is not borrowed from Aristotle's syllogism.

Gautama mentions three kinds of inference:

(i) Purvavat;

(ii) Sesavat; and

(iii) Samanyatodrsta.

Vatsyayana gives two meanings of each of them.

(i) A purvavat inference is the inference of an unperceived effect from a perceived cause. A future rainfall is inferred from dense clouds which are perceived.

(ii) A sesavat inference is the inference of an unperceived cause from a perceived effect. A past rainfall in the source of a river is inferred from its fullness, muddiness of water, and swiftness of current, which are perceived. These two kinds of inference are based on the causal relation. In the first, an effect is inferred from a cause. In the second, a cause is inferred from an effect.

(iii) A samanyatodrsta inference is the inference of an imperceptible object from a perceived mark, which is known to be uniformly related to it. The movement of the sun is inferred from its different positions in the sky, which are perceived, even as the movement of a person is inferred from his different positions on earth. Uddyotakara observes that samanyatodrsta inference is not based on the uniformity of causation but on the non-causal uniformity.

The existence of water is inferred from a row of herons perceived in the sky. There is no causal relation between them.

Vatsyayana gives other meanings also of these kinds of inference:

(i) A purvavat inference is based on previous experience of invariable concomitance of two perceived objects. The existence of an unperceived fire is inferred from a perceived smoke on the ground of uniform relation between them perceived in the past.

(ii) A sesavat inference is inference by elimination. Sound is not a substance because it inheres in one substance, viz., either. It is not an action, since it is a cause of another sound. It is not a community, a particularity or inherence. So it is a quality.

(iii) A samanyatodrsta inference is the inference of an unperceived object from a mark which is perceived, though the relation between them in not perceived. We infer the existence of the soul from the qualities of cognition, pleasure, pain, desire, aversion and volition, which must inhere in a substance. The soul is inferred as the substance in which they inhere.

Visvanatha mentions three kinds of inference:

(i) Kevalanvayi,

(ii) Kevalavyatireki, and

(iii) Anvayavyatireki.

(i) In Kevalanvayi inference the reason has affirmative uniform relation with the presence of the predicate. It has an affirmative reason which exists in all similar instances, and has no dissimilar instances. 'The jar is nameable, because it is knowable'.

The reason 'know-ability' exists in all nameable objects. There are no knowable objects which are not nameable. The reason is not the counter-positive entity of the negation of the predicate.

Here the major premise is a universal affirmative proposition; it cannot be a universal negative proposition. The minor premise and the conclusion also are universal affirmative propositions. 'All knowable objects are nameable; the jar is a knowable object: therefore, the jar is nameable . The uniform affirmative relation between the reason 'know-ability' and the predicate 'name ability' is established by the method of agreement in presence.

(ii) In Kevalavyatireki inference the reason has negative invariable concomitance with the absence of the predicate. Its reason exists in the subject only. It is devoid of similar instances in which the reason and the predicate may coexist.

It depends upon a negative invariable concomitance or uniform relation between the absence of the reason with the absence of the predicate, which is established by the method of agreement in absence.

For example: 'earth differs from the other elements, because it has odour'. Or, 'what is not different from the other elements has no odour; earth has odour therefore earth is different from the other elements'.

In this inference the reason 'odour' is the uncommon attribute of the subject 'earth'; it is coextensive with the subject; there is no similar instance in which it may exist. In Kevalavyatireki inference the major premise is a universal negative proposition, the minor premise, a universal affirmative proposition, and the conclusion, a universal affirmative proposition.

(iii) In Anvayavyatireki inference there is a universal affirmative relation of the reason with the predicate as well as a universal negative relation

between them. The former is known by the method of agreement in presence, and the latter, by the method of agreement in absence. In this inference the reason is present in similar instances, and absent from dissimilar instances.

For example:

(i) 'All smoky objects are fiery; the hill is smoky; therefore, the hill is fiery.'

(ii) 'No non-fiery objects are smoky; the hill is smoky ; therefore, the hill is fiery.'

Smoke exists in similar instances, e.g., a kitchen, in which fire exists. It does not exist in dissimilar instances, e.g., a lake, in which £re does not exist. Inference is based upon vyapti which is the invariable con-comitance of the reason with the predicate. It depends upon two conditions.

First, the reason must be known to be present in the subject.

Secondly, it must be known to be invariably concomitant with the predicate. The universal relation of the reason With the predicate is the logical ground of inference.

Vyapti is a uniform, unconditional, or natural relation between the reason and the predicate. There are two kinds of vyapti, viz., anvayavyapti and vyatirekavyapti, The former is invariable concomitance of the presence of the reason with the presence of the predicate.

The latter is the invariable concomitance of the absence of the predicate with the absence of the reason. The vyapti is known by the joint method of agreement in presence and agreement in absence based on repeated observation aided by favourable hypothetical reasoning. When conditions are not observed to vitiate the natural relation in spite of the best efforts to find them out, it is taken to be unconditional.

According to Jayanta, first there is the perception of a mark; then there is the recollection of vyapti ; then there is the knowledge of the presence of the reason pervaded by the predicate in the subject (paramarsa) ; then there is the inference of the predicate in the subject.

The knowledge of paramarsa is directly the cause of inference, while the perception of vyapti is its cause through its recollection. The knowledge

of vyapti is the logical ground of inference, while that of paramarsa is its psychological ground.

Vyapti is the unconditional uniform relation of the reason to the predicate. It is free from conditions (upadhi). Smoke has unconditional relation to fire; it is pervaded by fire; wherever there is smoke there is fire. But fire has no unconditional relation to smoke; there is fire where there is no smoke; for example, red hot iron ball is smokeless.

The relation of fire to smoke is conditional it depends upon the presence of wet fuel as a condition. 'The hill is smoky, because it is fiery'. Wet fuel is a condition which pervades smoke, but does not pervade fire. Thus a condition pervades the predicate, but does not pervade the reason.

There are no formal fallacies in the Nyaya, which is not concerned with formal truth. The fallacies are faulty reasons (hetvabhasa). All fallacies of inference are due to the fallacies of the reason or middle term, which cannot prove the existence of the predicate in the subject.

Fallacious reasons are not- reasons which are devoid of the characteristics of a valid reason, but which appear to be reasons owing to their similarity with it. They hinder the production of a valid inference of a real object, when they are known.

The Nyeya recognizes five kinds of fallacies of the reason:

(i) Inconclusive (savyabhicara),

(ii) Contradictory (viruddha),

(iii) counterbalanced (prakaranasama),

(iv) Unproved (sadhya- sama), and

(v) Mistimed (atltakala) or contradicted (badhita).

a. Gautama defines an inconclusive reason (savyabhicara or anaikantika) as one which has variable concomitance with the predicate. A reason is conclusive, which has uniform relation to the predicate. It is inconclusive if it has concomitance with the predicate and its absence.

Variable concomitance is the existence of a reason in the subject (paksa), similar instances (sapaksa), and dissimilar instances (vipaksa). 'Sound is eternal, because it is intangible'. Intangibility is concomitant with eternity and non-eternity. Intangible souls are eternal, but intangible cognitions are non-eternal. So the reason is inconclusive or irregular (anaikantika).

Visvanatha divides inconclusive reasons into three kinds:

(i) Common;

(ii) Uncommon; and

(iii) Indefinite.

(i) A common (sadharana) inconclusive reason is one which exists in the locus of the predicate and the locus of its absence. 'Sound is eternal, because it is intangible'.

(ii) An uncommon (asadharana) inconclusive reason is one which exists in the subject only, and is excluded from similar and dissimilar instances. 'Sound is non-eternal, because it has the character of sound'. The character of sound exists in sound only; it does not exist in other non-eternal objects (sapaksa) and eternal objects (vipaksa).

(iii) An indefinite (anupasamhari) inconclusive reason is one which is not a counter-positive entity of the absence of the predicate, or which exists in all objects. 'All are eternal, because they are knowable', It hinders the knowledge of invariable concomitance of the reason-with the predicate, because there is a doubt as to the existence of the predicate in all objects.

b. Gautama defines a contradictory (viruddha) reason as one which contradicts the predicate, though it is employed to prove its existence. It contradicts an admitted truth, and is contradicted by an admitted truth. It occurs when a proposition is contradicted by a reason or a reason is contradicted by a proposition. 'Sound is eternal, because it is produced'.

Producedness of sound is known to be true by a means of valid knowledge.It contradicts the proposition 'Sound is eternal'. Producedness is pervaded by non-eternity, and so it cannot prove the existence of eternity. A contradictory reason is a counter-positive entity of the absence which pervades the predicate. It proves the nonexistence of the predicate, though it is advanced to prove its existence.

Visvanatha distinguishes a contradictory reason (viruddha) from a counterbalanced reason (satpratipaksa). A contradictory reason in an inference proves the non-existence of the predicate. But a reason in one inference is counterbalanced, by another reason in a different inference, which proves the nonexistence of the predicate.

c. The reason which is counterbalanced by another reason, and cannot resolve the controversy as to the real character of an object, is

counterbalanced (prakaranasama). Two reasons of equal strength, proving the presence and the absence of the predicate in two arguments are counterbalanced by each other.

Two inferences cannot be of equal strength, one proving the existence of the predicate, and the other proving its non- existence 'Sound is eternal, because it is audible, like the genus of sound'. 'Sound is non-eternal, because it is produced, like a jar.

Vacaspati distinguishes a counterbalanced reason (prakaranasama) from an inconclusive reason (anaikantika). In the former no common character of eternal and non-eternal things, for example, admitted by both parties is taken as a reason, whereas in the latter a common character is taken as a reason, which generates a doubt.

Jayanta distinguishes a counterbalanced reason from a contradictory reason. The former is not known to exist or not to exist in similar instances; nor is it known to exist in dissimilar instances; whereas the latter is known to exist in dissimilar instances.

d. Gautama defines an unproven reason (sadhyasama) as one that requires to be proved like the predicate. But it should not require any proof. Visvanatha calls it unproven reason (asiddha) and mentions three kinds of unproven reasons (asiddha):

(i) Svarupasiddha;

(ii) Asrayasiddha; and

(iii) Vyapyatvasiddha.

(i) Svarupasiddhi is the absence of a reason invariably concomitant with the predicate from the subject. 'A lake is a substance, because it has smoke.'

(ii) Asrayasiddhi is the absence of a quality that determines the special character of the subject from it. 'A golden mountain is fiery, because it has smoke'. A mountain is not golden.

(iii) Vyapyatvasiddhi is the absence of invariable coexistence of a reason and the predicate same locus. 'The hill has a fire, because it has golden smoke. Goldenness does not exist in smoke. 'The hill has golden fire, because it has smoke'. Goldenness does not exist in a fire.

e. A contradicted reason (badhita) is contradicted by perception, inference, and Vedic testimony.

(i) 'Fire is cold, because it is a substance'. It is contradicted by perception which apprehends hotness of fire.

(ii) 'Atoms are made of parts, because they are corporeal'. It is contradicted by inference, which proves partlessness of atoms which have the minutest magnitude.

(iii) 'Sacrifices are not the means of attaining heaven'. It is contradicted by Vedic testimony.

A contradicted reason (badhita) is different from a Contradictory reason (viruddha). The former is contradicted by some other pramana, perception, inference, comparison or testimony—which proves the contradictory of the predicate in the subject, while the latter proves the contradictory of the predicate in the same inference. A contradicted reason (badhita) is different from a counterbalanced reason (satpratipaksa).

The former is contradicted by some other pramana, which indubitably proves the contradictory of the predicate, while the latter is counterbalanced by another reason in another inference which seeks to prove the contradictory of the predicate, and thus produces an unsettled state of the mind as to the real character of an object.

In the former there is certain knowledge of the absence of the predicate, while in the latter there is a doubt as to the existence or the non-existence of the predicate in the subject.

Check Your Progress 1

Note: Use the space provided for your answer

1. Discuss the Concept of Nyaya Philosophy.

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2. Discuss about the Instrument of Valid Knowledge (Pramana).

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3. What is meant by Perception: Error or Illusion?

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4. Discuss the Inference: Kinds of Inference: Vyapti: Fallacies.

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2.6 COMPARISON (UPAMANA)

Comparison is the means of knowing an unknown object through its resemblance with another well-known object. A person familiar with a cow in a town learns from a reliable forester that a wild cow (gavaya) resembles a cow.

He goes to a forest, perceives a strange animal resembling a cow, remembers that a wild cow resembles a cow, and knows the animal to be a wild cow through the knowledge of its resem-blance with a well-known cow. His knowledge that the strange animal bears the name 'gavaya' is comparison.

Comparison contains the following factors:

(i) The perception of an un-familiar object which was not perceived before;

(ii) The indirect knowledge of its resemblance with a familiar object, which is acquired from testimony of a reliable person who perceived them both and knew their similarity;

(iii) The perception of resemblance of the unfamiliar object with the well-known object;

(iv) The recollection of the verbal statement of the reliable person; and

(v) The knowledge of the relation between a name and the unfamiliar object which is perceived. The knowledge of resemblance involves

testimony and perception. The knowledge acquired from the verbal statement 'a wild cow is like a cow' is testimony. The knowledge 'this animal has similarity with a cow is perception.

The perception of similarity of the strange animal with a well-known cow aided by the recollection of the verbal statement of the forester is the cause of the knowledge of the relation between it and the name 'gavaya'.

A person who does not perceive the similarity of a wild cow with a cow, does not know on the strength of the mere verbal statement of a forester that the wild cow is called a 'gavaya'. Nor does he know it through the perception of similarity without the verbal statement of the forester.

So comparison is different from testimony and perception. It is due to the knowledge of similarity aided by the recollection of the verbal statement. Recollection is due to the revival of the impression of the knowledge of the verbal statement.

The perception of similarity aided by the recollection of the forester's statement produces the knowledge of the relation between a name and an unknown object. The knowledge of similarity is comparison. The knowledge of the relation of a name to an object is its result.

Comparison is neither perception, nor inference, nor testi-mony. A wild cow and its similarity with a cow are perceived. But that it bears the name 'gavaya' is not perceived. Nor is comparison inference, since there is no knowledge of invariable concomitance between a name and an object in it.

Nor is it testimony, since the knowledge of the verbal statement of the forester is testimony which cannot yield the knowledge 'this animal bears the name 'gavaya' before it is perceived.

The perception of similarity with or without the knowledge of the verbal statement is not comparison. Nor is testimony without the perception of similarity comparison. It is an independent means of valid knowledge. It is not recollection, because it was never perceived in the past.

It is objected that if there is perfect similarity (e.g., 'a cow is like a cow'), there can be no comparison that if there is great similarity (e.g., 'a buffalo is like a cow'), no comparison is possible; and that if there is slight similarity (e.g., 'mount Meru is like a mustard seed'), there can be

no comparison. The Nyaya replies that these objections are beside the mark.

Comparison does not depend upon the quantity of similarity, perfect, great, or slight. But it depends upon perceived simi-larity of an unknown object with a well-known object, which indicates the relation of an unknown object with a particular name. It apprehends something which is not apprehended by perception, inference, or testimony.

Visvanatha regards the perception of similarity as the instrument, the recollection of the verbal statement of a reliable person as the causal operation, and the knowledge 'a wild cow is called gavaya' as the result of comparison. The knowledge 'This is called gavaya' is not result of comparison, because then any other wild cow cannot be called gavaya.

Comparison is different from analogy of Western Logic. Analogy takes the form: S and P resemble each other in many respects; S has another characteristic x; therefore P also may have x. The earth and Mars resemble each other in many respects, e.g., temperate climate, atmosphere, clouds, rain, etc. The earth has another characteristic that it is inhabited by living beings. Comparison is not analogy, though both are based on similarity. First, unlike analogy, comparison depends upon testimony.

Secondly, unlike analogy, comparison yields the knowledge of the relation between a name and an object.

Thirdly, unlike analogy, comparison sometimes depends upon dissimilarity. A person recognizes an animal as a horse, because it has, unlike cows, no cloven hoofs.

The Vaisesika regards comparison as testimony, which pro-duces the knowledge of relation between a name and an object. The testimony of a reliable person is the essential element in comparison. So comparison is testimony.

But Jayanta urges that in comparison a reliable person makes a statement 'a wild cow is like a cow', and indicates another means, i.e., the perception of an unknown object similar to a cow in a forest through which an inhabitant of a town knows that it is a wild cow.

He perceives an animal similar to a cow in a forest as instructed by a reliable forester. So his knowledge that it is a wild cow is not produced

by testimony, but by comparison. It is objected that comparison is inference, since an unperceived relation of a name (gavaya) to an object is inferred from a perceived similarity of an unfamiliar animal with a cow.

The Nyaya replies that, first, when a wild cow is perceived, it is known by comparison to bear the name 'gavaya'. It cannot be known by inference.

Secondly, comparison is intended for another person. A person who has perceived a cow and a wild cow both makes a statement 'a wild cow is like a cow' for the benefit of another person, who has perceived a cow only, but not a wild cow. He knows through comparison that a wild cow bears the name 'gavaya'.

Thirdly, comparison is based on the knowledge of similarity, while inference is based on the know-ledge of vyapti. In comparison there is the knowledge of Similarity 'a wild cow is like a cow'. But in inference there is no knowledge of similarity a fire is like a smoke'. So comparison is different from inference.

2.7 TESTIMONY

Gautama defines testimony as the instruction of a trust-worthy person, who has immediate knowledge of the Moral Law, and who is competent to guide others in the performance of their duties and abstention from sins for the attainment of good and the avoidance of evil. Trust-worthy persons are those who perceive objects as they exist in their real nature, and communicate their right knowledge to others for their benefit out of compassion for them.

They are free from attachment and aversion, and have immediate know-ledge of eternal verities that exist in all times. Sages are the seers of truths. The assertions of those who know truths but speak falsehoods are not valid.

The assertions of those who are ignorant of truths, but speak what they know are not valid. The assertions of trustworthy persons, which are not fit for guiding persons in the performance of right actions and the non-commission of sins are not testimony.

Untrustworthy persons are tainted with delusion, mendacity and fraudulence. Testimony is an instruction which is expressed in sentence or proposition. The knowledge of a proposition is testimony, and the knowledge of its meaning is the result.

Testimony is due to the knowledge of a sentence or words, while perception is due to the sense-object-inter- course, inference, to the knowledge of vyapti, and comparison, to the knowledge of similarity.

Testimony is of two kinds, viz., testimony about perceptible objects and testimony about imperceptible objects. The former objects are found in this world. The latter are found in the next world, such as heaven, hell, transmigration and the like.

The modern Naiyayikas divide testimony into two kinds, viz., secular testimony and scriptural testimony. The Vedas are not impersonal but personal compositions of God, the omniscient person, and are therefore valid. The secular testimony of trustworthy persons is valid, while that of untrustworthy persons is invalid.

Testimony is expressed in a sentence, which is a combina-tion of words conveying a meaning. Its comprehensibility depends upon certain conditions.

First, a sentence consists of words which imply one another. Mutual implication is called expectancy. A word cannot by itself convey a full meaning. It must be related to other words in order to convey a complete meaning.

The word 'bring' does not make full sense. It produces an expectancy in the mind for some other word or words. The sentence 'bring a horse' makes full sense. The words imply one another, and convey a complete meaning.

Secondly, a sentence consists of words which have fitness for one another. Mutual fitness of words is another condition of the intelligibility of a sentence. The sentence 'quench your thirst with water' conveys a meaning, because its component words have mutual fitness or compatibility. But the sentence 'quench your thirst with fire' is unintelligible, since its cons-tituent words are incompatible with one another.

Thirdly, a sentence consists of words which are in close proximity to one another. The words constituting a sentence should be uttered in close succession without a long interval between one word and another. If the words 'bring', 'a', and 'horse' are uttered at long intervals, they do not convey any meaning.

Troximity of words is a condition of the comprehension of a sentence. Sentences devoid of expectancy, compatibility, and proximity 'are not means of valid knowledge.

Fourthly, the comprehen-sion of the meaning of a sentence depends upon the knowledge of the intention of the speaker. The sentence 'saindhavam anaya' means 'bring a horse'; when the speaker gets ready for starting on a journey. It means 'bring sale when the speaker is taking his meal.

It has different meanings in different contexts according to the intentions of the speakers. Some opine that the context, which determines the intention of the speaker, is a cause of understanding the meaning of a sentence. But it is wrong, since there is no common property in the contexts of different sentences. Some opine that the knowledge of the speaker's intention is a cause when some word in a sentence is equivocal. Hence a sentence, in order to be intelligible, must consist of words, which are interdependent on, compatible with, and juxtaposed to, one another, and convey a meaning in conformity with the speaker's intention. Compatibility implies formal consistency, while the knowledge of the speaker's intention implies material consistency. This is the syntactical analysis of a sentence.

The Nyaya holds that a word denotes an individual bearing a genus and with a particular form or configuration. The word 'cow' denotes an individual cow bearing the genus of cow and with a particular configuration or arrangement of parts, e.g., a hunch, horns and a dewlap.

An individual is a per-ceptible substance endued with qualities and movements. It is a corporeal body composed of parts which are united with one another. A genus subsists in many individuals, produces a common concept of them, and brings many individuals under one class. A configuration is a definite arrangement of parts, which is the peculiar mark of a genus.

2.8   THE WORLD

The Nyaya conception of the world is the same as the Vaisesika view of it with slight variations. It is composed of the five physical elements, earth, water, fire, air and ether. There are the atoms of the first four elements.

Ether, time and space are one each, ubiquitous and eternal. They are undivided, unique wholes. Atoms, ether, time and space are coeternal with souls and God. Atoms are the material cause of the world, while God is its efficient cause.

Causation is real and objective. Effectuation is emergence of new effects from their causes, in which they did not pre-exist. Causation is Ideological and subservient to the moral Law of Karma-Atoms are combined with one another by God into gross material objects, living organisms, and the multiform world, and adapted to the enjoyments and sufferings of individual souls in accordance with their merits and demerits.

Difference of objects is real and not illusory or apparent. All things arc non-eternal and diverse. The atoms are eternal, while their composite products are non-eternal. The objects are real and not mere subjective ideas. The composite products are wholes which are not mere aggregates of parts. Substances arc not mere conglomerations of qualities. Universal are real and eternal, and subsist in individuals.

They are not unreal and imaginary. Qualities and actions are real. Particularity, in-herence and negation are real. The Nyaya advocates realistic pluralism, dualism and Deism. It admits the reality of diverse objects externally related to one another, dualism of matter and souls, and the existence of God external to the world and individual souls.

The body is the seat of voluntary actions sense-organs and objects. It is not a mere aggregate of parts, but a unique, undivided whole. The whole living organism is the vehicle of experience. The self, which is all-pervading, experiences pleasure and pain through it only. It is not the seat of vital acts only. If it were so, then plants also would have bodies.

It is the seat of voluntary actions for the attainment of good and the avoidance of evil. Conjunction of the self-endued with volition with the body is their non-inherent cause.

The living organism is the seat of the sense-organs, which are affected by its health and disease in apprehending their objects. The imperceptible atoms which produce them are their receptacles in which they reside. Earth is the principal ingredient of the body, and odour is its special quality.

The sense-organs are the instruments of direct valid know-ledge in contact with the organism only. They are direct causes of valid perception, but they produce illusions with the aid of subconscious impressions. They are composed of the physical elements. The auditory organ or ether limited by the ear-hole and manas are eternal and devoid of substrates.

The olfactory organ, the gustatory organ, the visual organ, the tactual organ, and the auditory organ are composed of earth, water, light, air, and ether respectively, endued with odour, taste, colour, touch, and sound respectively, and consequently perceive these qualities respectively. They can perceive those qualities with which they are endued in excess.

2.9 CAUSALITY

The Nyaya gives an empirical definition of a cause. Udayana defines it as an invariable antecedent of an effect. He also regards it as its unconditional or necessary antecedent. If an unconditional antecedent, which is always present when an effect is present, and which is always absent when an effect is absent, were not regarded as its cause, then the effect would be uncaused. Gangesa also defines a cause as an unconditional or necessary, invariable antecedent of an effect.

Vardhamana defines a cause as an unconditional, invariable, immediate antecedent of an effect. Laugaksi Bhaskara avers that a cause must exist in the same place at the immediately preceding moment. Gangesa defines a cause also as a necessary invariable antecedent, which is synchronous and coexistent with it. This definition applies to the inherent cause, the non-inherent cause, and the efficient cause. A cause is an antecedent in relation to its effect.

It is produced by the activity of a principal or material cause in co-operation with the auxiliary causes, and consequently exists immediately after the assemblage of the auxiliary causes. It exists at a time when it is

produced by its cause and related to it. A cause coexists with the prior non-existence of its effect, and so it must be its antecedent. Though a cause is an immediate antecedent of its effect, it is also synchronous with it.

A cause is an antecedent of an effect, since it produces the effect. It is not a variable antecedent, but an invariable antece-dent which is always followed by an effect. An ass is a variable antecedent of all jars, and consequently not their cause. But some invariable antecedents of an effect are not necessary for its production. The colour or the generic character of a staff is an invariable antecedent of a jar, but it is not its cause.

There are some invariable antecedents which are unnecessary, conditional and casual antecedents. A conditional (anyatha-siddha) antecedent depends upon other conditions in order to be followed by an effect, which is not necessary for its produc-tion. It is an unnecessary concomitant of an effect. A cause is not a remote antecedent of its effect, but its immediate antecedent. Immediacy follows from un-conditionality. A is a cause of B. B is a cause of C. A is a remote antecedent of C. A is followed by C after being followed by B. A's antecedence of C depends upon its antecedence of B. So A is a conditional antecedent of C. But B is an unconditional, immediate antecedent of C, and hence its cause. A cause is an unconditional or necessary antecedent which produces an effect.

Garigesa mentions four kinds of unnecessary antecedents.
(i) That which is antecedent to an effect by virtue of its relation to its inherent cause, is its unnecessary antecedent. The colour, of a staff depends upon its inherent cause in order to be invariably followed by a jar. So it is its unnecessary antecedent.

(ii) That which is known to be antecedent to an effect after it is known to be antecedent to some other effect as its cause, is its unnecessary antecedent. Ether is already known to be an antecedent of sound as its inherent cause.

So it is an unnecessary antecedent of a jar, though it is its invaria-ble antecedent, since it is not necessary for its production. A cause is determined by its presence and absence both—not by its presence only. Eternal and ubiquitous substances, which cannot be eliminated, are unnecessary antecedents.

(iii) That antecedent, which is other than the invariable, necessary antecedent of an effect, is its unnecessary antecedent. The prior non-existence of colour is an unnecessary antecedent of smell due to heating, since the prior non-existence of smell is its invariable, necessary antecedent or cause.

(iv) That which cannot be known to be antecedent to an effect without knowing its antecedence to its cause is its unnecessary antecedent. The cause of a cause is not the cause of an effect, but its unnecessary antecedent.

A potter is the efficient cause of a jar, and hence its invariable necessary antecedent. But the potter's father, who is a cause of the potter, is its unnecessary antecedent. A cause is not a remote antecedent, but an immediate antecedent of its effect. Vardhamana adds another kind of unnecessary antecedent.

(v) That which is antecedent to the effect, together with the cause, is its unnecessary antece-dent. A staff is an auxiliary cause of a jar, whose presence is followed by its production, and whose absence is followed by its non-production. It is its necessary antecedent.

But the generic character of' a staff is not followed by the production of a jar independently of the staff. Hence it is its unnecessary antecedent. A cause is an unconditional, invariable, immediate antecedent of an effect, which is an unconditional, invariable,, immediate consequent of a cause.

The Nyaya admits three kinds of causes, viz., the material cause, the non-inherent cause and the efficient cause. Causal activity is in the nature of physical motion, which requires the direction of a conscious agent, who exerts action upon an object. He produces an effect with the aid of an

instrumental cause for the benefit of some conscious being out of a parti-cular unconscious material cause, which is its locus.

Some-times he separates a part from a whole, e.g., when he cuts a branch from a tree. Thus an effect is produced by a colloca-tion of causes centering round a conscious energizer. The unconscious factors of a cause depend on a conscious agent without whose direction they are ineffective.

An instrumental cause is an auxiliary cause, which by its activity immediately brings about an effect. In this sense, it is called a special cause or the most effective cause.

Its activity being produced by it produces its effect. An axe is the instrumental cause of cutting. Its activity is its conjunction with a tree, which is produced by it, and produces its effect (e.g., cutting). The ancient Nyaya regards an instrument as an instrumental cause.

But the modern Nyaya regards its action as an instrumental cause. God, his knowledge, desire and volition, prior non-existence, time, space, and merits and demerits are the common causes of all effects. Hence by the causes of effects we mean their special causes or necessary, invariable, immediate antecedents.

The Nyaya regards a cause as an aggregate of necessary, invariable, immediate antecedents, which are positive causal conditions, and the absence of counteracting causes or negative conditions of an effect. A cause is the aggregate of the princi-pal or material cause and auxiliary causes which render an aid to it.

When they are present, an effect is produced; when they are absent, it is not produced. There is no causal power in addition to them.

Straw, fire and blowing together are the cause of burning, each of which singly is not its cause. But they are its positive conditions only, which can produce its effect when its negative conditions are absent. A fire-extin-guishing gem is its negative condition, which must be absent in order that burning may be produced. Just as the presence of the positive conditions is a cause, so the absence of the negative conditions is a cause. The absence of any member of the aggregate of causal conditions—the principal cause and the auxiliary causes—is the main counteracting cause. The entire collocation of positive causal conditions must be

present and the counteracting causes or negative conditions must be absent in order to produce an effect.

The Nyaya rejects plurality of causes. The causal relation is reciprocal. The same cause produces the same effect, and the same effect is produced by the same cause.

But sometimes we find that the same effect is produced by a variety of causes, e.g., burning is produced by straw, fire and blowing together, or by two pieces of fire-wood and intense friction together, or by a fire-exciting gem and concentration of the rays of the sun on it. The Navya argues that the specific causes produce specific effects which appear to be the same, because they have special attendant consequences.

If they are considered with their distinctive features, then specific effects have specific causes. If there is a specific difference in the causes, there must be a specific difference in the effects, even though they appear to be homogeneous.

If specific effects are not due to specific causes, their specific characters will be uncaused. The specific differences in the effects are due to the specific differences in the auxiliary causes which produce different peculiarities in the same homogeneous cause and diversity in it.

A specific cause has a specific effect. Diversity of effects requires diversity of causes. Where a generic effect is observed, a generic cause should be regarded as its cause. The generic character of fire is the effect of conjunction of a combustible substance with light endued with a particular degree of heat. Specific effects cannot be produced by a generic cause.

An effect is a new creation. It is non-existent in its material cause, but it is produced anew out of its material cause owing to the rearrangement of its atoms. Curd is non-existent in milk, but it is produced from milk owing to the disintegration of its parts and a fresh collocation of its atoms.

The particles of milk endued with a particular colour and a particular taste produce curd with a particular taste due to the peculiarity produced by heating.

Likewise a sprout is produced from a seed owing to the rearrangement of its atoms due to heat. They are qualified by a peculiarity due to heat, and

produce a new effect. They produce a first peculiarity in the shape of the first swollen condition, then an intermediate swelling, and then the last peculiarity in the shape of germination.

A peculiarity is an aid, excess or additament produced in the principal material cause by the auxiliary causes for the produc-tion of an effect, which is therefore not momentary. It is an intermediate aid favourable to the production of an effect. The Nyaya-Vaisesika advocates Asatkaryavada.

2.10 THE PROOFS FOR THE EXISTENCE OF THE INDIVIDUAL SELF (ATMAN)

The Nyaya arguments for the existence of the finite self are similar to the Vaisesika arguments. The Nyaya admits the perception of the self, while the Vaisesika denies it. According to the Nyaya, the self is an object of internal perception or T-consciousness, inferred from marks, and known from the testimony of the Vedas.

(i) The self is an object of 'I'-consciousness or mental perception. It is perceived by intuition owing to a particular kind of conjunction of it with manas due to meditative trance.

(ii) The self is inferred from desire, aversion, volition, pleasure, pain, and cognition. Desire for an object depends upon the recollection of a similar object which was perceived in the past, and afforded pleasure. It proves the identity of the self which perceived a similar object in the past, remembers the pleasure yielded by it, and desires to attain a similar object.

Similarly, aversion to an object depends upon the recollection of a similar object which was perceived in the past, and yielded pain. It proves the unity and permanence of the self, which perceived a similar object in the past, remem-bers the pain yielded by it, and avoids a similar object.

Volition is actuated by desire and aversion. It is striving for the attain-ment of good which is an object of desire. Or it is striving for the rejection of evil which is an object of aversion.

It proves the permanence and identity of the self, which is the agent of perception, recollection,-desire, aversion, and volition. Pleasure arises from the perception of an object, because a similar object yielded pleasure in the past. It proves the unity and identity of the self which perceived a pleasant object in the past and remembers it now.

Pain arises from the perception of an object because a similar object yielded pain in the past. It proves the permanent identity of the self, which perceived a painful object, in the past and remembers it now. Cognition the real nature of an object.

First, it has an uncertain and doubtful knowledge of it. Then it has a certain and undoubted knowledge of it. The same self has a desire for knowledge, indefinite knowledge, and definite knowledge. Thus desire, aversion, volition, pleasure, pain, and cognition prove the existence of the self. They are the qualities of the self in which they inhere. They are not qualities of the body, the sense-organs, or manas.

(iii) The self is inferred from the synthesis of the sensations of colour, taste, smell and touch of an object into a unity of perception. The visual organ gives the sensa-tion of colour only, the gustatory organ, the sensation of taste only, the olfactory organ, the sensation of smell only, and the tactual organ, the sensation of touch only. These sensations are combined into a unitary perception of an object by the self.

Perception depends upon the synthetic activity of the self. The sense-organs which apprehend their own objects, the different qualities of an object, cannot combine them into a unity. They are unconscious organs of perception, through which the conscious self perceives an object endued with different qualities.

(iv) There is recognition of an object perceived by the right eye, which was perceived by the left eye in the past. If the sense-organs were conscious, one sense-organ could not recognize an object perceived by another sense-organ. But there is such a recognition, which proves that the conscious self is distinct from the sense-organs, and is the agent of perception, recollection and recognition. If one sense-organ could

remember the objects perceived by the other sense-organs, then the different senses would not be restricted to different kinds of objects.

But one conscious self can perceive colour, taste, smell and touch through the visual organ, the gustatory organ, the olfactory organ, and the tactual organ respectively, synthesize them into a unitary percept, remember the different qualities perceived, and recognize the object through one sense-organ, which was perceived through another sense-organ.

(v) I perceive the same object (e.g., a jar) through the tactual organ which I perceived through the visual organ. I recognize the object through one sense-organ, which I perceived through another sense-organ. These two perceptions are recognized as belonging to the same self or knower.'

They are not known by the body or the sense-organs. One sense-organ cannot remember the apprehension of another object by another sense-organ, because they are restricted to their own objects. The conscious self perceives all objects and recognizes them.

(vi) Recollection is a quality of the self. It perceived an object in the past, retained a subconscious impres-sion, revives it, and remembers the object at present. Perception produces a subconscious impression, which abides in the self and produces recollection.

The recollection of the object comprises the cognition of the object, the cognition of the past cognition, and the cognition of the cognize, which are remembered. These three cognitions have only one knower; they are not without knowers, nor have they many knowers.

There is one self in each body, which perceives all kinds of objects, remembers and recognizes them and its own cognitions. Perception and recollection of the same object are qualities of the same self or knower. Devadatta cannot remember what was perceived by Yajnadatta. Recollection is an effect of a subconscious impression, which cannot be without a substrate.

The self is its substrate as its material cause. Momentary cognitions related to each other as cause and effect cannot account for recollection, since the antecedent cognition is des-troyed no sooner than it is

produced, and cannot modify the succeeding cognition with its residuum. One permanent self only can account for it.

(vii) One perceives the colour of a mango, remembers its taste, and desires to taste it. His re-collection of its taste produces saliva in his tongue. One sense- organ cannot directly produce a modification in another sense-organ.

The self has visual perception of the colour of a mango, and recollection of its taste which produces saliva. The inter-vening recollection accounts for salivation. Recollection is childhood is remembered in old age, though the old person's body is different from the child's body. The sense-organs, which are unconscious, cannot be the substrate of recollection. Hence the conscious self is its substrate.

2.11 THE NATURE AND KNOWLEDGE OF THE INDIVIDUAL SELF: PRE-EXISTENCE AND TRANSMIGRATION

The Nyaya concept of the self is the same as that of the Vaisesika. It is a substance, which has cognition, pleasure, pain, desire, aversion, volition, impression, merit and demerit. The first six qualities are transitory and the last three qualities are permanent.

They subsist in the permanent self. Pleasure and pain are feelings which are apprehended by a cognition, which is different from them. Cognition is apprehension, while feelings are apprehended.

Desire is produced by the recollec-tion of an object which produced pleasure in the past, and aversion, by the recollection of an object which produced pain in the past. Volition is produced by desire and aversion; it is an effort of the self to attain a good or pleasant object, or to reject an evil or painful object.

An impression is a perma-nent, imperceptible residuum produced by a past perception, which is a cause of recollection. Merit and demerit also are permanent, imperceptible qualities produced in the self by free right and wrong actions, and produce pleasure and pain. Merits and demerits of the previous birth determine the birth of the present body.

The self is a substance, because it is the inherent cause of cognitions. It is ubiquitous, because it is an eternal and incorporeal substance. It is incorporeal, because it is motion-less. It is motionless, because it is eternal. If it were not a substance, it would be devoid of qualities. If it were endued with movement, it would be corporeal.

If it were corporeal, it would not be the substratum of cognition, pleasure and other qualities which are perceived by us. If it were not ubiquitous, manas would not be proved to be atomic, since the succession of its actions is due to its conjunc-tion with the self, which accounts for the succession of cognitions.

The self has relative freedom of the will. Its freedom is limited by the divine will. Its free exertions bear fruits only when they are favoured by God. They become ineffective when they are not favoured by God. The self cannot command success of its free actions without the aid of God.

It earns merits by free righteous actions, and earns demerits by free unrighteous actions. But its freedom is limited by the merits and demerits acquired by free actions in the past births, though it can counteract them by free actions in future. Hence the freedom of the individual self is subject to the divine will and the Law of Karma.

The self is an object of mental perception. It is an object of intuition born of meditation. This is the view of the Nyaya. 'I know': this experience is undeniable. The self is the principal object of this experience. An object is its indirect object. The self is perceptible, because it is perceived by T'-consciousness or self-consciousness.

The self is eternal and devoid of origin and end. It has pre-existence, and undergoes transmigration until it achieves liberation. It leaves a dead body, and assumes another body- Birth is association of the -soul with a body, and death, its dissociation from a body. An organism is born and perishes, but a soul is unborn and immortal.

If it perishes with the body, it cannot reap the fruits of its free right and wrong actions and the consequent merits and demerits, and it experiences joys and sorrows which are not earned by it, and thus the Law of Karma is nullified.

A sperm and an ovum of the parents are the material cause of a body which is produced out of them. Merits and demerits is its efficient cause,

who associates it with the soul. The union of the parents only is not the cause of the birth of a body.

When the peculiar merits and demerits of a soul are present, there is birth of a body, which is a fit vehicle for the experience of their fruits in the shape of enjoyments and sufferings, and when they are absent, there is no birth of it. So they are its instrumental cause.

The different kinds of bodies are born owing to the different kinds of merits and demerits of different souls. When they are completely destroyed, there is no more birth. They are extirpated by true knowledge of the self. The same unseen agencies cannot be the cause of birth and death.

Death is due to the maturation of some karmas and their fructification and destruction. Rebirth is due to the other potencies of actions which have not yet matured and borne fruits. If a body were generated by the physical elements independently of the unseen agencies, there would be no cause of death of a body.

When delusion is completely destroyed by true knowledge of the self, a soul purged of attachment does not perform any bodily, verbal and mental actions which produce merits and demerits and conse-quent rebirth. Since there are no causes of rebirth, the soul is not associated with any other body.

A new-born baby is attracted to his mother's breast, because he feels a desire to suck her milk. Desire is due to recollection of an object that produced pleasure in the past. So the baby's desire for milk must be due to recollection of objects which were frequently perceived in the past birth to appease hunger of his previous body.

It is the same soul, which departed from its past body, assumed its present body, recollects the appeasement of hunger by certain objects repeatedly perceived in the past birth, and desires to suck the breast of his mother.

The same soul continues in the past body and the present body. The baby's desire to suck his in other's breast depends upon the recollection of its conduciveness to pleasure due to the revival of the impressions by his merits—produced by the knowledge of conduciveness of food to

pleasure acquired in his past birth. It cannot be explained without the hypothesis of the past birth.

2.12 LIBERATION AND ITS MEANS

Liberation is absolute cessation of pain and rebirth. The body, the sense-organs and manas are the causes of pain. Pleasure is invariably accompanied or followed by pain. AH these are pain in a derivative sense.

At the time of dissolu-tion the soul becomes free from pain. Its merits and demerits remain dormant during dissolution at the will of God, and are activated again at the time of creation, when it assumes a body fit for their maturation and consequent enjoyments and suffer-ings.

So during dissolution the soul has relative freedom from pain and possibility of its recurrence and rebirth. But libera-tion is the soul's absolute freedom from pain. The Nyaya view of liberation is the same as the Vaisesika view.

Liberation is the complete extinction of the special qualities of the soul, viz., cognition, pleasure, pain, desire, aversion, volition, merit, demerit, and impression. The soul is free from cognition in the state of liberation.

Cognition is produced by the intercourse of a sense-organ with an object, the conjunction of a sense-organ with manas, and the conjunction of manas with the soul. But the body, the sense-organs and manas are destroyed in liberation.

So there can be no cognition in it. Pleasure, pain, desire, aversion and volition also are experienced in connection with the body. When it is destroyed, they cannot be experi-enced. In fact, they are accidental qualities of the soul, while ubiquity is its natural condition.

Liberation consists in the soul's existence in its natural condition. It is the existence of the soul in its transcendental condition free from its empirical qualities. It has no natural consciousness, which is different from adventitious cognitions.

In liberation the soul is devoid of merits and demerits, and consequently free from pleasure and pain. There is no transcendental bliss beyond empirical pleasure and pain due to the sense-object-intercourse.

True knowledge of the self ultimately leads to liberation through the destruction of merits and demerits and the consequent cessation of rebirth. It destroys egoism or false identification of the self with the body. It dispels delusion and destroys attachment and aversion which arise from it. The soul can be known by listening to the scriptures, reflec-tion and meditation. Eightfold yoga practices facilitate the attainment of true knowledge.

Faith in the Vedas, mental tranquillity, endurance of physical pain, dispassion for worldly enjoyments, and concentration prepare the mind for the advent of true knowledge. Attachment is decreased by discerning the faults of the objects of enjoyment and removed by detachment.

False knowledge is destroyed by true know-ledge. Delusion, attachment and aversion are attenuated by meditation on the contrary excellences. When they are des-troyed, actions are not conducive to bondage and rebirth.

The performance of prudential duties for the fulfilment of desires leads to heaven. The commission of forbidden acts leads to hell. Both bring about bondage. The performance of daily obligatory duties and occasional duties saves an aspirant from sins of omission.

Liberation cannot be achieved by the performance of duties, which can lead to heaven, which is non-eternal. The practice of yoga, austerities, the perfor-mance of duties, and abstention from sins are subsidiary to the acquisition of true knowledge. Release can be achieved by intuition of the self.

It destroys false knowledge, and incapa-citates merits and demerits from producing their effects like burnt seeds in the absence of passions. Persons in all stages of life including householders can attain release through true knowledge directly, and not through merit. There is no embodied release. True knowledge is not discursive knowledge but immediate intuition of the self, which cap destroy false knowledge with its potencies and stop rebirth.

2.13 THE NATURE OF GOD AND HIS RELATION TO THE WORLD AND INDIVIDUAL SOULS: THEORIES OF CREATION

Liberation is absolute cessation of pain and rebirth. The body, the sense-organs and manas are the causes of pain. Pleasure is invariably accompanied or followed by pain. AH these are pain in a derivative sense.

At the time of dissolu-tion the soul becomes free from pain. Its merits and demerits remain dormant during dissolution at the will of God, and are activated again at the time of creation, when it assumes a body fit for their maturation and consequent enjoyments and suffer-ings.

So during dissolution the soul has relative freedom from pain and possibility of its recurrence and rebirth. But libera-tion is the soul's absolute freedom from pain. The Nyaya view of liberation is the same as the Vaisesika view.

Liberation is the complete extinction of the special qualities of the soul, viz., cognition, pleasure, pain, desire, aversion, volition, merit, demerit, and impression. The soul is free from cognition in the state of liberation.

Cognition is produced by the intercourse of a sense-organ with an object, the conjunction of a sense-organ with manas, and the conjunction of manas with the soul. But the body, the sense-organs and manas are destroyed in liberation.

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True knowledge of the self ultimately leads to liberation through the destruction of merits and demerits and the consequent cessation of rebirth. It destroys egoism or false identification of the self with the body. It dispels delusion and destroys attachment and aversion which arise from it. The soul can be known by listening to the scriptures, reflec-tion and meditation. Eightfold yoga practices facilitate the attainment of true knowledge.

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Liberation cannot be achieved by the performance of duties, which can lead to heaven, which is non-eternal. The practice of yoga, austerities, the perfor-mance of duties, and abstention from sins are subsidiary to the acquisition of true knowledge. Release can be achieved by intuition of the self.

It destroys false knowledge, and incapa-citates merits and demerits from producing their effects like burnt seeds in the absence of passions. Persons in all stages of life including householders can attain release through true knowledge directly, and not through merit. There is no embodied release. True knowledge is not discursive knowledge but immediate intuition of the self, which cap destroy false knowledge with its potencies and stop rebirth.

2.14 THE PROOFS FOR THE EXISTENCE OF GOD

Uddyotakara gives the following: arguments for the existence of god.

(i) God is the efficient cause of the world, and directs the atoms, which are its material cause, and brings about their conjunction, which is its non-inherent cause. The movements of atoms are supervised by an intelligent agent or God because they are unconscious, like an axe. This is the cosmological argument.

(ii) The physical elements, which are unconscious and perceptible, are supervised by an intelligent agent, in order to produce pleasure and pain, because they have colour and other qualities, like a shuttle. God adjusts the material world to pleasures and miseries of the individual souls. This is a blend of the cosmological argument with the moral argument.

(iii) Merits and demerits are supervised by an intelligent agent in order to produce pleasures and sufferings of the individual souls, because they are instruments, like an axe. They cannot be supervised by the individual souls, because they are unconscious of them. They have to be rewarded with happiness for their merits and punished with misery for their demerits.

So they cannot be the arbiter of their own destiny. Their bodies are due to their merits and demerits. They are unconscious before the birth of then-bodies, and so cannot guide their merits and demerits. So God who is conscious of their moral deserts conjoins them with adequate enjoyments and sufferings. This is the moral argument

(iv) The unconscious atoms and merits and demerits are supervised by an intelligent agent or God, because they are unconscious. The atoms are self-existent and eternal. The merits and demerits of the individual souls are the effects of their free righteous and unrighteous actions. God creates the world of manifold objects in accordance with their merits and demerits for their enjoyments and chastisements. This is a- blend of the cosmological argument with the moral argument.

(v) The activities of the different material elements are supervised by an intelligent agent or God, because they are unconscious, like an axe. All cause produce their effects under the guidance of God. He is the common cause of all effects. All physical causality is guided by the will-causality of God.

(vi) Jayanta gives the teleological argument. The arrangements of mountains, rivers and other material objects are produced by an

intelligent agent, like cloths produced by human agents. Whatever objects are arranged in an order are produced by an intelligent agent. Just as the arrangement, order and unity in jars, cloths and the like are not accidental, but produced by human agents endued with knowledge, desire and volition, so the arrangements of mountains, trees and other natural objects are not accidental, but produced by God who is omniscient and omnipotent.

The arrangement and order of the world are designed, willed and produced by God. It may be objected that the arrangements of parts in the natural objects differ from those of human productions.

Therefore we cannot infer the existence of God as the creator from the specific arrangements of the natural objects. Javanta replies that there is an invariable concomitance between arrangement in general and the existence of a creator, just as there is an invariable concomitance between smoke in general and fire in general.

The smoke and the fire in a kitchen differ from those in a forest and yet we disregard their specific differences, and infer the existence of fire from the existence of smoke on the strength of the invariable concomitance between smoke in general and fire in general.

Similarly, we infer the existence of God from the arrangement of the world as its creator on the strength of the invariable concomitance between arrangement in general and the existence of a creator. This is the teleological argument.

Udayana gives the following arguments:

(vii) God is the creator of motion which is the cause of Conjunction of the atoms into dyads. A dyad is produced by two atoms, the material cause, their conjunction, the non-inherent cause, and the agency of God, the efficient cause. The atoms are unconscious and inactive in themselves. They can be set in motion and conjoined with each other only when they are guided by an intelligent agent, like an axe.

The activity of unconscious entities is known to be due to the volition of an intelligent agent that supervises them. The individual souls which are unconscious of the atoms and incapable of acting upon them cannot create motion in them and conjoin them with each other into dyads. Their

merits and demerits also cannot bring about the activity and conjunction of the atoms, because they are unconscious.

God only who is omniscient and omnipotent can know the atoms, create motion in them, and combine them into dyads, triads, quartrads and gross physical objects. Though bodily action is created by the human will, motion in the atoms cannot be created by it.

A specific effect is produced by a specific cause. Bodily action is a specific effect; a human volition is a specific cause. Therefore a volition is a generic cause of activity or motion, which is a generic effect. It is determined by the method of double agreement.

(viii) The whole universe directly or indirectly depends upon the volition of God to support it in its place and prevent it from falling. God supports it by His sustaining will. He maintains all objects by His volition which directs them.

Without His directing and sustaining will they cannot be maintained in their positions. Their relation with the knowledge, desire and volition of omniscient God is the cause of their maintenance. He rules over the world by a fiat of His will, which is unobstructed.

The whole universe including the dyads is destroyed by the will of God, because they are destructible. He creates motion by His destructive will, and disjoins the atoms of dyads and the like. He is the destroyer of the world.

The atoms are unconscious, and cannot disjoin themselves from one another. The individual souls' unconscious merits and demerits also cannot bring about their disjunction. Destruction of the universe is beyond the power of the individual souls with their limited knowledge and will.

(ix) God guarantees the validity of the knowledge of the Vedas, which is produced by the proficiency of its generating conditions, because it is valid knowledge, like perception and the like. Knowledge has no intrinsic validity, but it has extrinsic validity due to the excellence of its cause. The validity of testimony is due to the reliability of its speaker.

The validity of the Vedas which are accepted as authoritative by great saints, is due to the reliability of God, who is their speaker. It is not due to the authority of non-omniscient seers who are ignorant of the super-

sensible entities mentioned therein. It is guaranteed by God, who is the omniscient creator of the moral injunctions and prohibitions.

God is the creator of the Moral Law which is not an impersonal moral imperative. It is a command which impels a person to act upon it with a view to realizing his good. It is not a. property of a person who is under moral obligation to obey it,—either his desire, or volition, or bodily action. It is the property of a reliable person who imposes the moral law upon persons. It conveys the intention of the Supreme Person of moral authority. It is a personal command of God, which impels them to perform righteous actions and abstain from unrighteous actions. This is the moral argument for the existence of God.

(x) The Vedas are created by omniscient God, because they are the Vedas. What are not created by an omniscient Being are not the Vedas, like sentences uttered by human beings. The Vedas deal with super-sensible entities of which persons are ignorant. They do not originate in human perception. They are not creations of crafty priests, tainted with error and motivated by fraudulence.

They have not their origin in tradition, because they are destroyed at the time of dissolution. They are created by God, because they cannot have any other origin. They are valid, because they are accepted as valid by great saints who act upon them and realize the super-sensible truths enshrined in them.

(xi) The sentences in the Vedas are creations of a person, because they are sentences, like sentences composed by men. Just as the Kumarasambhava was composed by Kalidasa, so the Vedas were composed by God. Just as threads cannot arrange themselves into a cloth, so the words of the Vedas are not arranged into sentences by themselves.

Just as a weaver arranges threads into a cloth, so God arranges the words of the Vedas into sentences. Just as the arrangement of a mountain differs from that of a jar, so the arrangement of the Vedas differs from that of a human composition. Just as a jar is produced by a human being, while a mountain is produced by God, so an epic is composed by a human being, while the Vedas are composed by God.

Just as the different parts of an epic are composed by one poet, so the different branches of the Vedas are composed by one God, because they

have unity of purpose. Parsimony of hypotheses demands one author of the four Vedas.

The sentences in them praising righteous actions and condemning unrighteous actions are composed by omniscient God who knows their moral values. They are composed by God independently of the sense-organs, manas, and the vocal organs.

Check Your Progress 2

Note: Use the space provided for your answer

1. What are the Proofs for the Existence of the Individual Self (Atman)?

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2. What is the Nature and Knowledge of the Individual Self: Pre-Existence and Transmigration?

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3. What is the meaning of Liberation?

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4. What are the Nature of God and His Relation to the World and Individual Souls?

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2.15 LET US SUM UP

Just as a weaver arranges threads into a cloth, so God arranges the words of the Vedas into sentences. Just as the arrangement of a mountain differs from that of a jar, so the arrangement of the Vedas differs from that of a human composition. Just as a jar is produced by a human being, while a

mountain is produced by God, so an epic is composed by a human being, while the Vedas are composed by God.

Just as the different parts of an epic are composed by one poet, so the different branches of the Vedas are composed by one God, because they have unity of purpose. Parsimony of hypotheses demands one author of the four Vedas.

The sentences in them praising righteous actions and condemning unrighteous actions are composed by omniscient God who knows their moral values. They are composed by God independently of the sense-organs, manas, and the vocal organs.

2.16 KEY WORDS

Creation: the action or process of bringing something into existence.

Existence: Existence is the ability of an entity to interact with physical or mental reality. In philosophy, it refers to the ontological property of being.

2.17 QUESTIONS FOR REVIEW

1. Discuss the Theories of Creation?
2. Discuss the Proofs for the Existence of God

2.18 SUGGESTED READINGS AND REFERENCES

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2.19 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

1. See Section 2.2
2. See Section 2.3
3. See Section 2.4
4. See Section 2.5

Check Your Progress 2

1. See Section 2.10
2. See Section 2.11
3. See Section 2.12
4. See Section 2.13

UNIT 3: SCOPE OF NAVYA-NYĀYA

STRUCTURE

3.0   OBJECTIVES

After this unit, we can able to know:

- Epistemology
- Metaphysics
- Philosophy of Religion

3.1   INTRODUCTION

Nyāya (literally "rule or method of reasoning") is a leading school of philosophy within the "Hindu umbrella"—those communities which saw themselves as the inheritors of the ancient Vedic civilization and allied cultural traditions. Epistemologically, Nyāya develops of a sophisticated precursor to contemporary reliabilism (particularly process reliabilism), centered on the notion of "knowledge-sources" (pramāṇa), and a conception of epistemic responsibility which allows for default, unreflective justification accorded to putatively veridical cognition. It also extensively studies the nature of reasoning in the attempt to map pathways which lead to veridical inferential cognition. Nyāya's methods of analysis and argument resolution influenced much of classical Indian literary criticism, philosophical debate, and jurisprudence. Metaphysically, Nyāya defends a robust realism, including universals, selves, and substances, largely in debate with Buddhist anti-realists and

flux-theorists. Nyāya thinkers were also India's most sophisticated natural theologians. For at least a millennium, Nyāya honed a variety of arguments in support of a baseline theism in constant engagement with sophisticated philosophical atheists, most notably Buddhists and Mīmāṁsakas (Hindu Ritualists).

Nyāya's prehistory is tied to ancient traditions of debate and rules of reasoning (vāda-śāstra). The oldest extant Nyāya text is the Nyāya-sūtra attributed to Gautama (c. 200 C.E.). Throughout much of Nyāya's formative period the philosophical development of the school took place through commentaries on the sūtras (with important exceptions including works of Jayanta, c. 875, Udayana, c. 975, and the somewhat heterodox Bhāsarvajña, c. 875). Leading commentators include Vātsyāyana (c. 450), Uddyotakara (c. 600) Vācaspati Miśra (c. 900) and Udayana. The school would enter its "new" phase (navya-nyāya) in the work of the eminent epistemologist Gaṅgeśa Upādhyāya (c. 1325). This article focuses on the older tradition of Nyāya, beginning with the sūtras, with occasional gestures toward developments within the new school. Given the breadth of Nyāya thought, this discussion has to exclude some important topics for the sake of economy, such as aesthetics, philosophy of language, and theory of value. The article's primary focus is on epistemology and metaphysics. There is a brief consideration of Nyāya's philosophy of religion.

3.2 EPISTEMOLOGY

The Nyāya-sūtra opens with a list of its primary topics, sixteen items which may be grouped into the following four categories: epistemology, metaphysics, procedures and elements of inquiry, and debate theory. That Nyāya's initial topic is epistemology (*pramāṇas*, "knowledge-sources") is noteworthy. Both the sūtras and the commentarial tradition argue that epistemic success is central in the search for happiness, since we must understand the world properly should we desire to achieve the goods it offers.Vātsyāyana claims that while Nyāya's metaphysical concerns overlap with other, more scripturally-based Hindu schools, what distinguishes Nyāya is a reflective concern with evidence, doubt and the objects of knowledge. He further defines Nyāya's philosophical

method as the "investigation of a subject by means of knowledge-sources" (NB 1.1.1). Importantly, the *pramāṇas* are not simply the means by which individuals attain veridical cognition. They are also the final court of appeals in philosophical dispute. Uddyotakara thus claims the best kind of demonstrative reasoning occurs when the *pramāṇas* are deployed in concert in order to establish a fact.

The four *pramāṇas* are perception, inference, analogical reasoning, and testimony. We will discuss them in order. Then, we will consider Nyāya's theory of knowledge in general.

a. Perception (*pratyakṣa*)

i. The Characteristics of Perception

Nyāya-sūtra 1.1.4 defines perceptual cognition as follows.

A perceptual cognition arises by means of the connection between sense faculty and object, is not dependent on words, is non-deviating, and is determinate.

This sūtra provides four conditions which must be met for cognition to be perceptual. The first, that cognition arises from the connection between sense faculty and object, evinces Nyāya's direct realism. It is such connection, the central feature of the causal chain which terminates in perceptual cognition, which fixes the intentionality of a token percept. Uddyotakara enumerates six kinds of connection (*sannikarṣa*) to account for the fact that that we perceive not only substances, but properties, absences, and so on: (i) conjunction (*samyoga*), the connection between a sense faculty and an object; (ii) inherence in what is conjoined (*saṃyukta-samavāya*), the connection between a sense faculty and a property-trope which inheres in an object; (iii) inherence in what inheres in what is conjoined (*saṃyukta-samaveta-samavāya*), the connection between a sense faculty and the universal which is instantiated in a property-trope; (iv) inherence (*samavāya*), the kind of connection which makes auditory perception possible; (v) inherence in what inheres (*samaveta-samavāya*), the connection between the auditory faculty and universals which inhere within sounds; (vi) qualifier-qualified relation (*viśeṣya-viśeṣaṇa-bhāva*), the connection which allows for the perception of inherence and absence in objects. In all cases, the perceptual cognition

is born of connection between a sense faculty and an occurrent fact or object.

The second condition, that the cognition produced is not dependent on words, has a somewhat complicated interpretive history. Generally, Nyāya holds that ordinary perception involves concept deployment. Therefore, this restriction does not endorse a view held by the Buddhist Dignāga and his followers, that genuine perception is non-conceptual (*kalpanā-apodha*). Still, the meaning of *avyapadeśya* is disputed amongst Naiyāyikas. On one reading, this qualification serves the purpose of distinguishing between perceptually and testimonially generated cognitions. The latter also require information provided by the senses but further require the deployment of semantic and syntactic knowledge. An allied reading suggests that while involving the application of concepts, perception of an object is often causally prior to speech acts involving it.

The third, "non-deviating" condition blocks false cognitions, like the misperception that an oyster shell is a piece of silver, from the ranks of *pramāṇa*-born. This is tied to the Nyāya notion that *pramāṇas* are by definition inerrant, and that false cognitive presentations are not truly *pramāṇas* but pseudo-*pramāṇas* (*pramāṇa-ābhāsa*). Though we may mistakenly take a pseudo-*pramāṇa*, like the illusion of a person in the distance, to be the real thing, it is not. "Perception" and similar *pramāṇa*-terms have success grammar for Nyāya.

The fourth, "determinate" condition blocks cognitions which are merely doubtful from the ranks of the *pramāṇa*-born. Dubious cognitions, like that of a distant person at dusk, do not convey misleadingly false information, but being unclear, they do not properly apprehend the object in question. It could be a person or a post. As such, one neither correctly grasps its character nor falsely takes it to represent accurately a certain object. Later Naiyāyikas, most notably Vācaspati Miśra, read the qualifiers "notdependent on words" and "determinate" disjunctively, in order to say that perception may be non-propositional or propositional. However anachronistic this may be as an interpretation of the Nyāya-sūtra, this division is accepted by later Nyāya.

ii. Extraordinary Perceptual States

Nyāya admits of certain kinds of extraordinary perception in order to account for cognitive states that are perceptual in character, but distinct from those commonly experienced. They involve modes of sense-object connection other than the six kinds noted above. Later Nyāya (beginning at least with Jayanta) recognizes three kinds of extraordinary perception: (i) yogic perception, (ii) perception of a universal through an individual which instantiates it, and (iii) perception of an object's properties as mediated by memory.

Yogic perception includes experiential states reported by contemplatives in deep mediation. Their cognitive objects (usually the deep self or God) are taken to be experienced in a direct and unmediated way, but generally without the operation of the external senses. Given their experiential character and their putative agreement with other sources of knowledge like scripture and inference, yogic experiences are *prima facie* taken to be veridical, produced by non-normal perception.

Perception of a universal through an individual which instantiates it is Nyāya's response to the problem of induction. Nyāya holds that universals are perceptually experienced as instantiated in individuals (see the third of Uddyotakara's six kinds of connection above). But the notion that we may have apprehension of all of the individuals which instantiate a universal, *qua* their being instantiations of the universal, is further accepted by Nyāya in order to explain how we attain to knowledge of *vyāpti*, or invariable relation between universals, which undergirds causal regularities of various sorts. Unless one's experience of some particular smoke instance as conjoined with a fire instance allows him to experience all instances of smoke *qua* smoke as being conjoined with all instances of fire *qua* fire, through the natural tie between the universals *smokiness* and *fieriness*, inductive extrapolation would be impossible. Nyāya thus solves the problem of induction by appeal to extraordinary perception. This does not imply that we are always able to recognize such relations. It may take repeated experience for us to notice the ever-present connection. But when such recognition arises, it is due to perceptual experience, not an extrapolative projection of past experience.

Perception of the properties of an object mediated by memory involves the visual experience of unpresented properties of an object which is currently seen. Standard examples include seeing a piece of sandalwood as fragrant or seeing a piece of ice as cold. Here, there is a standard kind of sense object connection, but some of the phenomenal features of the experience, while veridical, are not generated by the ordinary connection. They are rather mediated by a special connection grounded in memory. What distinguishes this kind of perception from straightforward inference is that the property in question is experienced with a phenomenal character lacking in inference. This suggests that what may be considered inference for some may take the form of perception for others, depending on their familiarity with the conceptual connection between the properties in question.

iii. Introspection

Nyāya holds that while cognitions reveal or present their intentional objects, they rarely present themselves directly. When they are directly cognized, cognitions are grasped by other, apperceptive cognitions. As apperceptive awareness reveals a cognition along with its predication content or "objecthood" (that is, my cognition of a red truck is apperceptively cognized as having the predication content "red" and "truck-hood"), it is practically indefeasible. But, as Gaṅgeśa notes, this indefeasibility does transfer to the content of the original cognition (which is itself object of the apperceptive awareness). I may have mistaken a purple truck for a red truck, forgetting that my eyewear distorts certain colors. Apperception is subsumed by Nyāya into the category of perception. In this case, the operative sense faculty is the "inner organ" (*manas*) and the object is a cognition conceived of as a property of a self. Gaṅgeśa argues at length with a Prābhākara Mīmāṁsaka (a representative of another leading Hindu school), defending Nyāya's version of apperception against the Mīmāṁsā view that each cognition itself has a component of reflectively self-awareness.

A few words on *manas* (the inner organ): NS 1.1.16 argues that the absence of simultaneous cognition from all of the senses indicates the presence of a faculty which governs selective attention. The *manas* is identified as this faculty, an insentient psychological apparatus which

processes the information of the senses. A formulation of perception by the Vaiśeṣika school (Vaiśeṣika-sūtra 3.1.18), accepted by Nyāya, is that it normally consists in a chain of connection between four things: a self and its *manas*, the *manas* and a sense organ, and the sense organ and an object. *Manas* also is the faculty which governs mnemonic retrieval and, as noted above, apperceptive awareness of mental states. Selves, in the Nyāya view, are fundamentally loci of awareness, cognition, and mnemonic dispositions (*saṁskāra*). But just as they rely on the five senses to experience the world, they rely on *manas* for the functioning of memory and apperception.

To conclude, we may note that perception is commonly called the *jyeṣṭapramāṇa* (the "eldest" knowledge source) by Nyāya, since other *pramāṇas* depend on perceptual input, while perception operates directly on the objects of knowledge. Indeed, Gaṅgeśa suggests the following definition of a perceptual cognition: "a cognition that does not have cognition as its proximate instrumental cause." Inference, analogy, and testimony, on the other hand, depend on immediately prior cognitions to trigger their functioning. The normative status accorded to veridical perceptual cognition is primarily a matter of causation and intentionality (*viṣayatā*). If a cognition is caused by the appropriate causal chain, starting with the contact of a sense faculty and an external object (or, in the case of apperception, the internal organ and an immediately prior cognition), and the cognition produced has an "objecthood" or intentionality which accurately targets the object in question, the cognition is veridical and has the status *prāmāṇya* (*pramāṇā*-derived).

b. Inference (*anumāna*)

i. The Characteristics of Inference

Nyāya-sūtra 1.1.5 defines inference as follows.

[An inferential cognition] is preceded by that [perception], and is threefold: from cause to effect, from effect to cause or from that which is commonly seen.

This definition is somewhat elliptical. But it focuses on the fundamental character of inference: it is a cognition which follows from another cognition owing to their being conceptually connected in some way.

Notes

Etymologically, *anumāna* means "after-cognizing". Inference follows from an earlier cognition, "that" in the *sūtra* above. Vātsyāyana interprets "that" (*tat*) to refer to a perceptual cognition, and suggests that perceptual cognition precedes inference in two ways: (i) to engage in inference requires having perceptually established a fixed relationship between an inferential sign and the property to be inferred, and (ii) perceptual input triggers inference in that one must cognize the inferential sign as qualifying the locus of an inference. He provides a more explicit definition of inference as "a 'later cognition' of an object by means of cognition of its inferential sign" (NB 1.1.3).

Uddyotakara reasonably broadens the scope of "that" in NS 1.1.5 to refer to *pramāṇa*-produced cognitions of any kind which may trigger inference (NV 1.1.5). The meaning of reasoning from cause to effect and from effect to cause should be clear. Uddyotakara interprets reasoning from what is "commonly seen" as that which is grounded in non-causal correlations that have proven invariable. Vātsyāyana offers another reading: when the relationship between an inferential sign and the inferential target is not perceptible, the target may be inferred owing to the similarity of the unseen prover with something known. The classic example of this kind of inference is as follows: Desire, aversion, and knowledge are properties. Properties require substances which instantiate them. Therefore there is anunseen substance which instantiates desire, aversion, and knowledge: the inner self (NB 1.1.5). Though the connection between mental states like desire and the self which supports them is unseen, the similarity between mental states and other, commonly seen properties (like the color green) is enough to allow for the inference to a property-bearer.

The history of Nyāya's logical theory is extensive. Here, we will note a few salient points and focus on inference as understood in the period most important to this study (the final great creative period of what is normally known as "Old Nyāya"). First, in Nyāya, logic is subsumed within epistemology, and therefore tends to have a strong informal and cognitive flavor, mapping paths of reasoning that generate veridical cognitions and noting the common ways that reasoning goes wrong. Fundamentally, one makes inferences for oneself. Formal proofs are

meant to mirror the kind of reasoning that takes place internally, for didactic or polemical purposes. The first explicit recognition of this dual nature of inference is commonly attributed to the Buddhist Dignāga, who coined the terms *svārthānumāna* (inference for oneself) and *parārthānumāna* (inference for another). Such a division is implicit, however, in the Nyāya-sūtra's distinction between inference as an individual's source of knowledge (NS 1.1.5) and as a systematic method of proof meant to convince another (NS 1.1.32-39).

Second, inference is triggered by the recognition of a sign or mark, whose relationship with some other object (property or fact) has been firmly established. The primary cause of an inferential cognition is an immediately prior "subsumptive judgment" (*parāmarśa*) which grasps an inferential sign as qualifying an inferential subject (the locus of the inference), while recollecting the sign's invariable concomitance with some other fact or object. The two fundamental requirements for inference are, therefore, awareness of *pakṣadharmatā*, the inferential mark's qualifying the locus of the inference, and *vyāpti*, the sign's invariable concomitance with the target property or probandum. A paradigmatic act of inference to oneself is: "There is fire on that mountain, since there is smoke on it," which is supported by the awareness that fire is invariably concomitant with smoke. Naiyāyikas examine and standardize the conditions under which invariable concomitance (*vyāpti*) between a probans and a target fact is established.

Third, as logic's function is to generate veridical cognition, Nyāya does not stress the distinction between soundness and validity in respect to the quality of an argument. Both formal fallacies and the inclusion of false premises lead to *hetv-ābhāsa* ("pseudo provers" or logical defeaters), since they engender false cognition.

ii. The Structure of Inference

Concerning inference for polemical or didactic purposes, Nyāya employs a formal five-step argument illustrated by the following stock example.

1. There is fire on the hill (the *pratijñā*, thesis).
2. Because there is smoke on the hill (the *hetu*, reason or probans).
3. Wherever there is smoke, there is fire; like a kitchen hearth and unlike a lake (the *udāharaṇa*, illustration of concomitance).

4.   This hill is likewise smoky (the *upanaya*, application of the rule).

5.   Thus, there is fire on the hill (the *nigamana*, conclusion).

In practice, the five-membered "syllogism" is often truncated into three steps as follows.

A is qualified by S, because it is qualified by T (whatever is qualified by T is qualified by S) like (Tb&Sb). Again, the stock example: The hill is qualified by fieriness because it is qualified by smokiness (whatever is qualified by smokiness is qualified by fieriness) like a kitchen hearth and unlike a lake.

The basic components of the argument are:

*   the inferential subject (*pakṣa*), the locus of the inferential sign; *the hill* in our example. The general conditions for something to be taken up as a subject for inference, are that it be under dispute or currently unknown, with no reports from other knowledge sources available to definitively settle the issue.

*   the "prover" or inferential sign (*hetu*); *smoke* (more precisely, *smokiness*)

*   the probandum (*sādhya*), the property to be proved by the inference; *fire* (more precisely, *fieriness*)

*   the "pervasion" or concomitance (*vyāpti*) that grounds the inference, which is implicit in the step: "*wherever there is smoke, there is fire*"

*   a corroborative instance (*sapakṣa*); a locus known to be qualified by both the prover (*hetu*) and the probandum (*sādhya*); this is a token of inductive support for the *vyāpti*; *a kitchen hearth.* There are also known negative examples, (*vipakṣa*) of something that lacks both the prover property and the probandum; *where there is no fire, there is no smoke*, *like a lake.* Obviously, an instantiation of the prover property in the *vipakṣa* class vitiates the argument.

This stock inference asserts that there is fire on the mountain (the mountain is qualified by the property of fieriness, Fm). Why? Because the mountain is qualified by the property of smokiness, Sm. There is an implied concomitance which grounds the inference: "Whatever is qualified by smokiness is qualified by fieriness," $\forall x(Sx \rightarrow Fx)$. In the language of Nyāya, fire "pervades" smoke. This is an epistemic

pervasion: we never find smoke instances without fire instances. As such, smoke is a *prover* property that allows us to infer the presence of fire. Finally, an example must be included in the syllogism to illustrate the inductive grounding which undergirds the invariable concomitance. In kitchen hearth k, fire is known to be concomitant with smoke, (Sk&Fk). In some instances, negative examples are used to indicate the *vyāpti* through contraposition. Wherever there is no fire there is no smoke, as illustrated in a lake, (~Fl& ~Sl).

Nyāya-sūtra 1.1.25 defines an example (*dṛṣṭānta*) as "something about which experts and laypersons have the same opinion (*buddhi-sāmyam*)." Vātsyāyana (NB Intro.; translation in Gangopadhyaya 1982: 5) elaborates:

Corroborative instance is an object of perception—an object about which the notions (*buddhi*) of the layman as well as the expert are not in conflict. . . It is also the basis of the application of *nyāya* (reasoning). By (showing) the contradiction of the *dṛṣṭānta* the position of the opponent can be declared as refuted. By the substantiation of the *dṛṣṭānta*, one's own position is well-established. If the skeptic (*nāstika*) admits a corroborative instance, he has to surrender his skepticism. If he does not admit any, how can he silence his opponent?

Regarding agreement between laypersons and experts, the basic idea, of course, is that supporting examples should be non-controversial. A good illustration of this is found in Uddyotakara's *Nyāya-vārttika* (2.1.16). Debating with a Buddhist interlocutor over the existence of property-bearing substances, he claims "there is no example whatever (*na hi kaściddṛṣṭāntaḥ*) . . . about which both parties agree (ubhaya-pakṣa-sampratipannaḥ)."

In another interpretation of the three kinds of inference in the *sūtra*, Uddyotakara introduces three kinds of argument: wholly-positive, wholly-negative, and positive-negative. Wholly-positive inference occurs when there are attested cases of *sapakṣa* but no *vipakṣa* known. From a Buddhist perspective, the inference "whatever exists is momentary, like a cloud" would require this kind of inference, since there would be no available *vipakṣa* to illustrate the non-presence of the prover. In cases where the property to be proven is entirely subsumed within the *pakṣa*, a

wholly-negative form is employed. The *vyāpti* is contraposed, as in the following inference: "A living body has a self because it breathes. Whatever does not have a self does not breathe, like a pot." Most inferences are in principle amenable to the positive-negative form, like "There is fire on that hill, since there is billowing smoke over it. Wherever there is smoke, there is fire, like a kitchen hearth, and unlike a lake."

iii. Inferential Defeaters or Fallacies

Naiyāyikas provide various typologies of inferential fallacies and defeaters (*hetv-ābāsa*, "pseudo provers"). We may note five common kinds: (i) fallacies of *deviation* occur when the prover or inferential sign is not reliably correlated with the inferential target. To argue that "my mother must be visiting, since there is a Mazda parked outside" would involve the fallacy of deviation, since "Owning a Mazda" is a property that tracks not only my mother but many other drivers. It cannot, therefore, reliably indicate her presence. (ii) fallacies of *contradiction* occur when the prover in fact establishes a conclusion opposed to the thesis that someone defends. This would occur should someone argue that "Jones was not a kind man, since he gave his life for others," as giving one's life for others is an indicator of kindness or compassion. (iii) fallacies of *unestablishment* occur when a supposed prover is not actually the property of the inferential subject. Should someone argue "I know that your mother is in town, since I saw a Prius parked outside your home," the prover is *unestablished*, since my mother does not in fact own a Prius. (iv) argumentsare *rebutted*, when their conclusions are undermined by information gleaned by more secure knowledge sources. Someone may argue that my friend must be out of town, since he hasn't answered his phone all week. But if I just saw the friend in question at the local coffee shop, my perceptual knowledge *rebuts* his prover, invalidating it. Similarly, (v) arguments are *counterbalanced* when counterarguments of equal or greater force are put forth in support of an opposing conclusion. Disputant *a* argues that the inherent teleology of biological processes proves the existence of God. Disputant *b* argues that the existence of gratuitous evil proves that

there is no God. Pending further philosophical work, argument *b* neutralizes the conclusion of argument *a*.

iv. Suppositional Reasoning

Tarka, suppositional or dialectical reasoning, is crucial to Nyāya's philosophical program. Still, according to Vātsyāyana, it is not a full-fledged independent *pramāṇa*. Rather it is an "assistant to the *pramāṇas*" (*pramāṇa-anugrahaka*) (NB Introduction). *Tarka* is commonly employed as a form of *reductio* argument for the sake of judging competing claims or arguments, a *reductio* which depends not only on logical inconsistency, but on incoherence with deeply-held beliefs or norms. In the face of competing claims *x* and *y* about subject *s*, *tarka* is employed to show that *x* violates such norms, thereby shifting the presumptive weight to alternative *y*. Vātsyāyana (NB1.1.40) offers the example of competing claims about the nature of the self. Some say that the self is a product which comes to exist within time while others claim that it is unproduced and eternal. The Naiyāyika deploys *tarka* by arguing that a consequence of the former view is that one's initial life circumstances would not be determined by his karmic inheritance from previous lives, a severe violation of fundamental metaphysical positions held by almost every Indian school. As such, strong presumptive weight should be given to the latter view. This example illustrates the way in which considerations of negative coherence govern *tarka's* deployment.

Vātsyāyana notes that the reason *tarka* is not an independent *pramāṇa* is that it does not independently establish the nature of the thing in question (*anavadhāranāt*). It provides consent (*anujānāti*) for one of two alternatives independently supported by apparent *pramāṇas*, by illustrating problems with the competing view. Uddyotakara (NV 1.1.1) adds that it is excluded from the ranks of *pramāṇa* because it does not provide definitive cognition (*pramāṇamparicchedakaṁnatarkaḥ*).

Later Naiyāyikas extol *tarka* as a means to test dubious inferential concomitances (*vyāpti*) by testing them against more fundamental holdings of various sorts. *Tarka* also has a crucial role in the management of philosophical doubt. Against the skeptic, Nyāya argues that doubt is not always reasonable. *Tarka* helps to distinguish legitimate

doubt from mere contentiousness by illustrating which claims are better motivated and hence deserving of presumptive weight.

c. Analogical Reasoning (*upamāna*)

Nyāya-sūtra1.1.6 defines analogyas follows.

Analogy makes an object known by similarity with something already known.

Naiyāyikas commonly frame analogy as a means of vocabulary acquisition, and it has a severely restricted scope compared with the other *pramāṇas*. The standard example involves a person who is told that a water buffalo looks something like a cow and that such buffalo are present in a certain place in the countryside. Later, when out in the countryside, he recognizes that the thing he is seeing is similar to a cow, and therefore is a water buffalo. The cognition "That thing is a water buffalo," born of the recollection of testimony regarding its similarity with a cow and the perception of such common features, is paradigmatically analogical. Though most of the other schools either reduce analogy to a more fundamental *pramāṇa*or conceive of it in very different terms (Mīmāṁsā conceives of it as the capacity by which we apprehend similarity itself), Nyāya contends that the cognition in question is *sui generis* analogical, though it incorporates information from other *pramāṇas*.

d. Testimony (*śabda*)

NS1.1.5 defines testimony as follows.

Testimony is the assertion of a qualified speaker.

The semantic range of *āpta* ("authority," "credible person") includes expertise, trustworthiness, and reliability. Vātsyāyana claims that an *āpta* possesses direct knowledge of something, and a willingness to convey such knowledge without distortion (NB 1.1.7). It is clear, though, that Nyāya does not require any kind of special expertise from such a speaker in normal situations. Nor does a hearer need positive evidence of trustworthiness. Mere absence of doubt in the asserter's ability to speak authoritatively about the issue at hand is enough. Testimony is thus thought of as a transmission of information or content. A person attains an accurate cognition through some *pramāṇa*token. In a properly functioning testimonial exchange, she bestows the information

apprehended by the initial cognition to an epistemically responsible hearer. On such grounds, Uddyotakara notes that testimonial utterances may be divided into those whose contents are originally generated by perception or by inference. Jayanta likewise claims that the veridicality or non-veridicality of a testimonial cognition is dependent on the speaker's knowledge of the content of her statement and her honesty in relating it.Vātsyāyana (NB 2.1.69) illustrates a levelheaded frankness about testimony's importance, noting that "in accord with knowledge gained by testimony, people undertake their common affairs." Uddyotakarasimilarlyrecognizes that testimony has the widest range of any source of knowledge, far outstripping what one may know from personal perception, inference or analogy.

e. Non-pramāṇa Epistemic Capacities

From the sūtra period, Nyāya recognizes a number of epistemic capacities which are nevertheless considered non-*pramāṇa* (NS 2.2.1-12). They are not considered independent *pramāṇas* for one of two reasons: (i) they are reducible to subspecies of other *pramāṇas*, or (ii) they do not produce the specific kind of cognitions which a *pramāṇa* must deliver. A core locus of debate amongst classical Indian thinkers is the nature and number of *pramāṇas*. Nyāya contends that the above four are the only irreducible sources of knowledge, which subsume all other kinds.

f. General Theory of Knowledge

i. A Causal Theory of Knowledge

Naiyāyikas speak of cognitive success in causal terms. "*Pramāṇa"* normally refers to a means or process by which veridical awareness-episodes (*pramā*) are generated, as seen above. Vātsyāyana glosses the meaning of *pramāṇa*as "that by which something is properly cognized (*pramītyateanena*)" (NB1.1.3). Uddyotakara concurs: "what is spoken of as a *pramāṇa*? A *pramāṇa*is the cause of a [veridical] cognition" (*upalabdhi-hetupramāṇam*) (NV1.1.1). Moreover, despite its focus on reflective consideration of belief and valid cognition, Nyāya argues that the simple,unreflective functioning of a *pramāṇa* like perception or testimony is enough to generate knowledge in the absence of countervailing evidence.

ii. Internalist Constraints

Nyāya does maintain an internalist constraint: Once doubt arises—by adversarial challenge, peer disagreement, inconsistency between differentcognitions, and so forth —a cognition must be validated in order to maintain the status of being "*pramāṇa*-produced." Doubt triggers a second-order concern with reflective inquiry and certification. The sūtras state that "Where there is doubt, there must be ongoing examination" (NS 2.1.7). Uddyotakara therefore claims that doubt is an essential component of investigation (*vicāra-aṅga*) (NV 1.1.23). Validation involves consciously reflecting on the etiology of a cognition to ensure that it is the product of a properly-functioning *pramāṇa*. It may also involve the deployment of other *pramāṇas*in the hopes for a convergence of knowledge-sources (*pramāṇa-saṁplava*) in support of the doubted cognition. In his opening comments on the Nyāya-sūtra, Vātsyāyana famously provides a pragmatic test (but not definition) of truth: cognitions which guide us to successful action are likely veridical.

iii. A Relational Theory of Cognition

Nyāya epistemologists speak of cognition (*jñāna*, *buddhi*, *upalabdhi, pratyaya*): generally immediate awareness states of what Nyāya understands to be a mind-independent external reality. In the case of apperception, one cognizesher own mental states. Ontologically, cognitions are considered properties (*guṇas*) of individual selves (*ātmans*). Memory dispositions, when triggered, generate cognition about the past. With a few exceptions, cognitions target things other than themselves.

For Nyāya, cognitions target their objects by means of a relation called "objecthood" (*viṣayatā*). Nyāya's theory is thus not exactly representational, but relational. "Objecthood" minimally has a threefold structure (with the possibility of iteration) corresponding to three features of the external object in question: a portion of the cognition targets an object itself, a portion of the cognition targets a property of the object, and finally, a portion of the cognition targets the relationship between the object and its property. In cases of veridical cognition (*pramā*), the portion of cognition which targets a substantive and the portion which targets its property match up. Gaṅgeśa famously defines veridical

cognition as "a cognitive state with predication content *x* about something in fact qualified by *x*" (*Tattvacintāmaṇi*, *pramā-lakṣaṇa-vāda*). Seeing a male human being as qualified by "man" would be a paradigm case of veridical cognition. Error is generally classified as a misfire of the property-scoping portion of cognition. In error, a substantive is indeed cognized, but the property which is targeted does not actually qualify the substantive in question. The cognition's intentionality is bifurcated, so to speak, simultaneously scoping a substantive and a property which is in fact alien to it.

iv. Response to Skepticism

Nyāya is a staunchly anti-skeptical tradition of epistemology. While it does give an important role to doubt, which, as seen above, triggers reflection and philosophical review, it rejects the notion that doubt should be the starting place in philosophical reflection. Doubt itself should be motivated, as trust is a better default starting place in both ordinary life and philosophy. Pragmatically, Nyāya argues that the role of epistemology is to better hone our cognitive abilities in order to succeed in our life aims. But unrestricted doubt would undermine our ability to function on a basic level, and it therefore militates against the very point of epistemological inquiry. Theoretically, Nyāya argues that error and indeed doubt itself are conceptually parasitical on true cognition. Error and doubt only make sense against a background of true belief, and therefore reflection must start by taking putatively veridical cognition at face value. Allied to this is a strain of criticism that even the simple act of giving voice to skeptical arguments belays a philosopher's dependence on knowledge sources, including the inductively-supported tie between words and their meanings, which a skeptic relies on to speak his case. Given that everyone, the skeptic included, relies on *pramāṇas*, they are to be given the lion's share of default entitlement.

3.3 METAPHYSICS

Nyāya defends a realist and pluralist metaphysics of categories (*padārthas*, lit. "things denoted by words"), largely adapted, with some modifications, from its sister school Vaiśeṣika. The categories are

substance, quality, action, universal, individuator, inherence and absence. They will be discussed individually below.

a. Substance (*dravya*), Including Self (*ātman*)

Substances are the bedrock of Nyāya/Vaiśeṣika metaphysics (hereafter, simply "Nyāya Metaphysics"), as other categories generally inhere within substances or are nested within properties that inhere within substances. Paradigmatic substances include the indestructible atoms of earth, water, air and fire; composite substances like pots and trees; inner "selves" (*ātman*) which are the eternal, reincarnating souls; and God, a unique *ātman*.

Naiyāyikas provide a number of arguments in support of a non-material self. A standard argument runs as follows: Things like desire, cognition, experiences of pleasure and pain and volition are qualities. All qualities inhere in substances. Therefore, there is a substance to which desire and the rest belong. This conclusion is then followed by an argument from elimination. None of the material elements like earth or water are the bearers of desire and the rest. Therefore, there must be a special, non-material substance, namely a self (see various commentaries on NS 1.1.10). This argument is bolstered by others meant to illustrate that the physical body, as a product of material elements cannot be the fundamental locus of conscious states.

Some of the richest debates in classical India take place between Nyāya and Buddhists over the reality of substances. The central concern of such debates is often the statusof individual selves—an important substance, to say the least. Famously, the Buddha declared that reality is "lacking a self" (*anātman*), and his followers develop a number of arguments which purport to illustrate this in two ways. (i) Diachronically: moment by moment, things are destroyed and new things arise, such that no substance (including selves) endures for longer than a moment. (ii) Synchronically: in a single moment, what we take to be wholes (including selves) are nothing more than heaps of micro-properties (illustrated by the famous chariot metaphor in *The Questions of King Milinda*.) The Buddhist position is that although there is no such thing as an enduring self, the need for moral continuity and other desiderata may

be satisfied merely by the causal connections between events in a single causal stream which we refer to as a "person."

Nyāya's response is to defend the existence of substances generally and selves in particular. In defense of substances, it argues that composite substances have capacities beyond the mere collection of their parts (NS 2.1.35). Moreover, Nyāya argues that the Buddhist reduction, if carried out consistently, would lead to an absurdity. We can see composite substances, but we cannot seeentities like atoms, which exist below our perceptual threshold. But if substances are nothing but heaps of micro objects/properties, which themselves can be reduced, and so on, then we should not be able to perceive substances at all. Thus, there must be a unified identity for individual substances which undergirds their availability for perceptual experience (NS 2.1.36).

In defense of the diachronic existence of individual selves, Nyāya argues that our experience of recollection ("that is the very man I saw a week ago") requires a locus of memory which spans the time between the initial experience and the re-experience of an object (NS 1.1.10 and allied commentaries). In this spirit, Uddyotakara, following Vātsyāyana, argues that if I am now a different self than the "me" of yesterday, I should not be able to recollect things which that "me" experienced, since one self is unable to recollect the content of another's experience. In defense of the synchronic identity of selves, Nyāya argues that cross-modal recognition ("that thing I see is the same thing I am touching") requires a single experiencer with the ability to synthesize data from various senses (NS 3.1.1-3). Early Nyāya's arguments for the self find their apex in Udayana's monograph *Determining the Truth of the Self*.

b. Quality

Qualities (*guṇa*), are property tropes which qualify substances. Unlike universals they are not repeatable. The red color of some particular fire hydrant is a quality. Like other instances of the color *red* it is inhered by the universal *redness*, but it is as particular as the hydrant which it qualifies. Qualities include color, number (which is thought to inhere in objects), spatial location, contact, disjunction, and so forth, along with qualities which are unique to selves, like desire, cognition, and karmic merit.

c. Action

Like qualities, actions (*karma*) inhere in substances and are non-repeatable tropes. But they have causal capacities which qualities lack, particularly the ability to engender conjunction and disjunction between substances.

d. Universal

Universals (*sāmānya* or *jāti*) inhere in substances (for example *pot-hood*), qualities (*redness*) or motions (*contraction-hood*). Naiyāyikas argue that universals are required to account for common experiences of a recurring character, for the functioning of language, and to undergird causal regularities in nature (which are held to be relations between universals). As its theory of universals is developed, Nyāya recognizes entities which are like universals, but which are, for theoretical reasons, excluded from their ranks (*upādhi*). Udayana would famously chart the reasons for such exclusion. These are: (i) A true universal must be capable of more than one instance. *Spacehood* would not be a true universal, as it can only have one instance. (ii) Two universals which have the same exact instances are in fact the same universal, simply under two designations. (iii) Should two apparent universals share an instance, while one is not entirely subsumed within the other, both are mere *upādhis*. This criterion, which is the most controversial of the "universal-blockers," suggests that the operative notion of universal here is something akin to natural kinds. (iv) Any supposed universal that would, if accepted, lead to an infinite regress (for example *universal-hood*), is not accepted. (v) There is no universal for individuators (see below), as their ontic function is to introduce primitive differentiation. (vi) There is no universal for inherence (see below), as this would engender a vicious infinite regress: inherence would require further inherence between it and its universal "inherencehood", and so on.

e. Inherence

Inherence is a relation which is central to Nyāya's ontology, by which qualities, actions, universals, and individuators relate to substances, by which universals relate to qualities and actions, and by which wholes relate to their parts. In the first instance, the brown color of a cow inheres in the cow. In the second, the universal brownness inheres in the quality

trope brown. In the third, my car, a substance, is a single entity, which inheres in its various parts. Thus, your touching just one part of my car is enough to justify the claim "you touched my car" *simpliciter*. Nyāya contends that inherence is a self-linking property. It does not rely on other instances of inherence in order to "glue" it to the two elements which it relates. Thus it seeks to rebut regress arguments of the type advanced by recently by F. H. Bradley and by the classical Vedāntin Śaṅkarācārya (c. 9th century C.E.) in classical India.

f. Individuator

Individuators are the finest-grained causes of ontological distinction. They are the means by which individual atoms within the basic kinds "earth", "water", and so forth, and by which individual selves are ultimately particularized. Individuators for Nyāya's ontology may be conceived as roughly analogous to haecceities within Western philosophical discourse.

g. Absence

The ontological reality of absence, however attenuated, isaccepted by Nyāya in order to account for both linguistic practice involving negation and cognitive states which correctly ascertain non-existence of some kind.Vātsyāyana argues that the positive knowledge produced by a knowledge sourcegives immediate rise to knowledge of an absence insofar as one can reflect that if something was not made manifest at the time of the initial cognition (and provided that the thing in question is ordinarily cognizable), it was absent. Uddyotakara famously argues that negation is often perceptible: looking at my desk, I see the absence of a coffee mug, and such absence is "located" on the surface my desk. In this spirit, absence is generally thought of as a qualifier (*viśeṣana*) of some object or property, which is the qualificand (*viśeṣya*). The four basic kinds of absences accepted by Nyāya in its mature period are prior absence (of something before it is created), absence-by-destruction (of an object after it is destroyed), absolute absence (of something for some locus where it could never exist), and mutual absence (between two separately existing objects).

h. Causation

Naiyāyikas speak of a cause or causal condition as something which is necessarily antecedent to aspecific kind of effect without being "causally irrelevant". Such causes are threefold. The (i) inherence cause, akin to a material cause, is the substratum out of which (or within which) an effect is made (the threads which together make up a cloth). The (ii) non-inherence cause includes properties of the inherence cause which influence the properties of the effect (the property of contact which inheres within the threads which make up a cloth). Finally, (iii), the instrumental/agential cause(s). This third category is a kind of catch-all which includes everything aside from the substratum and its properties. Central in this category are agents, their activities, and instruments used by then to produce effects. Out of the nexus of causal conditions which come together in the production of an effect, Naiyāyikas tend to speak of a most important factor as the trigger cause (for example the striking of a match against a rough surface which produces a lit match).

In order to weed out unnecessary or unimportant factors from the causal nexus which produces an effect, Nyāya includes the caveat that a proper cause must not be "causally irrelevant". Causal irrelevance occurs in various ways. For example, something x which universally precedes a certain effect y, but whose relationship with the effect is mediated by some other factor z upon which it subsists is causally irrelevant. For example, a certain artist may create a unique kind of sculpture, and she is thus identified as a causal factor in its production. She may have certain properties (hair color, eye color, height) which also, by means of their subsisting in her, invariably precede the production of her sculptures. But since their participation in the causal event is derivative, they are deemed causally irrelevant and unworthy of being specified as causes.

3.4   PHILOSOPHY OF RELIGION

Nyāya expressly conceives of itself as a rational defender of classical Hindu religious and theistic culture. *Nyāya-sūtra* begins by claiming that ascertainment of the ultimate good (*niḥśreya*) requires correct apprehension of reality, which gives rise to a sustained epistemological/metaphysical investigation of the kind the sūtras provide.Vātsyāyanaargues that as a discipline of inquiry, Nyāya is the

support of all practices of legitimate *dharma*. Jayanta claims that amongst the various research programs in the umbrella of classical Vedic culture, Nyāya is of chief importance, since it aims to defend Vedic tradition and its manifold subdivisions of study from the attacks of rival, anti-Vedic philosophers. Though the Nyāya-sūtra overwhelmingly focuses on theoretical issues and not praxis, it nonetheless recommends that students of Nyāya engage in yogic practice (4.2.42) and defends the possibility of enlightenment (4.2.44-5).

From fairly early in its history, Nyāya specifically takes it upon itself to defend the existence of God (*Īśvara*). Nyāya primarily employs versions of the design inference. Paradigmatic arguments include:

Primordial matter, atoms and *karma* function when guided by a conscious agent because they are insentient (*acetaṇatvāt*) like an axe. As axes, due to insentience, operate only when directed by a sentient agent, so too do things like primordial nature, atoms and *karma*. Therefore, they too are directed by a cause possessed of intelligence. (Uddyotakara, NV 4.1.21)

Things like the earth have a maker as their cause, because they are products (*kāryatvāt*). (Udayana *Nyāyakusumāñjali,* Fifth Chapter)

Check Your Progress 1

Note: Use the space provided for your answer

1. Discuss about Epistemology.

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2. What is meant by Metaphysics?

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3. Discuss the Philosophy of Religion.

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3.5 LET US SUM UP

With various formulations like the above, and extensive supporting arguments, Nyāya defends a version of the argument from design. Buddhist, Mīmāṁsā (and later, Jain) philosophers respond by charging Nyāya with violations of inferential boundaries: only by extrapolating far beyond the correlation between ordinary products and makers is Nyāya able to argue for a unique God-like maker of the world. A standard response, as seen in Vācaspati (NVT 4.1.21) is that even in straightforward general-to-particular inductive reasoning, we employ some degree of inference to the best explanation. This allows enough flexibility to infer new kinds of entities while appealing to correlations generated from ordinary experience.

3.6 KEY WORDS

Epistemology: Epistemology is the branch of philosophy concerned with the theory of knowledge. Epistemology is the study of the nature of knowledge, justification, and the rationality of belief.

Metaphysics: Metaphysics is the branch of philosophy that examines the fundamental nature of reality, including the relationship between mind and matter, between substance and attribute, and between potentiality and actuality.

3.7 QUESTIONS FOR REVIEW

1. Discuss the scope of Navya Nyaya.
2. What is the relevance of Epistemology?

3.8 SUGGESTED READINGS AND REFERENCES

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3.9 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

1. See Section 3.2
2. See Section 3.3
3. See Section 3.4

UNIT 4: LOGIC IN CLASSICAL INDIAN PHILOSOPHY

STRUCTURE

4.0   OBJECTIVES

After this unit, we can able to know:

- To know about the Reasoning and Logic
- To discuss the Pre Classical Period
- To know about Early Classical Period

4.1   INTRODUCTION

The exercise of reasoning and the practice of argument are recorded in the early texts of India. Preoccupation with the nature of reason and argument occurs in the earliest philosophical texts, where their treatment is intimately connected with questions of ontology, epistemology and dialectics. These questions continued to be at the center of philosophical discussion through the classical and medieval period of Indian philosophy. This article will chronicle the answers Indian philosophers gave to these questions during the pre-classical and classical period.

4.2 REASONING AND LOGIC

Human's reason: that is, taking some things to be true, they conclude therefrom that other things are also true. If this is done in thought, one performs an inference; and if this is done in speech, one makes an argument. Indeed, inference and argument are but two sides of the same coin: an argument can be thought, and hence become an inference; an inference can be expressed, and hence become an argument.

Logic, at least as traditionally conceived, seeks to distinguish good reasoning from bad. More particularly, it seeks to identify the general conditions under which what one concludes is true, having taken other things to be true. These conditions can be sought in the nature of things. One asks, then, under what conditions do certain facts require some other fact. This perspective on reasoning is an ontic perspective. Next, insofar as facts are grasped in thought, one can also ask under what conditions does knowledge of some facts permit knowledge of another fact. Such conditions, once identified, would distinguish good inferences from bad inferences. This perspective on reasoning is an epistemic one. A third perspective is a dialectic one. After all, insofar as facts have been stated, one can ask as well under what conditions does the acceptance by someone of some facts require him or her to accept some other fact. These conditions, once identified, would distinguish good arguments from bad arguments. Finally, since an argument is an expression of an inference, and to that extent, expressed in a language, it is natural to use the forms of linguistic expressions to identify forms of inferences and arguments and thereby to distinguish forms of good inferences and arguments from forms of bad inferences and arguments. This perspective is a linguistic one. The study of reasoning in India has been from the ontic, epistemic and dialectic perspective, and not from the linguistic perspective, the perspective best known to modern thinkers.

4.3 PRE CLASSICAL PERIOD

The fact that humans reason is no guarantee that those who do reflect on which reasoning is good and which is bad. Clearly, the activity of reasoning, on the one hand, and the activity of reflecting on which

reasoning is good and which is not, on the other, are distinct, though naturally they are intimately related. The exposition here, while reporting primarily on what is explicit, will also report on what is implicit. In looking at the origins of reasoning in India, it is natural to begin with the practices in which reasoning played a role and which, as a result, were likely candidates for reflection. The obvious starting points for such practices are all forms of rational inquiry.

Rational inquiry comprises the search for reasons for publicly accepted facts, subject to public and rational scrutiny. This activity involves people both severally and collectively. It involves people severally insofar as people, individually, are the locus of inference. It involves people collectively insofar as arguments, the public manifestation of inferences, are sharpened by the scrutiny of others.

Though the origins in India of public debate (pariṣad), one form of rational inquiry, are not clear, we know that public debates were common in pre-classical India, for they are frequently alluded to in various Upaniṣads and in the early Buddhist literature. A better known, but much later, example of such engagements is the Buddhist works, Milinda-pañho (Questions of King Milinda) and Kathā-vatthu (Points of controversy).

Public debate is not the only form of public deliberations in pre-classical India. Assemblies (pariṣad or sabhā) of various sorts, comprised of relevant experts, were regularly convened to deliberate on a variety of matters, including administrative, legal and religious matters. As reported by Solomon (1976: ch. 3), much of the legal vocabulary for such deliberations includes the well-known terms of debate and argument found in the philosophical literature (see also Preisendanz 2009).

By the fifth century BCE, rational inquiry into a wide range of topics was under way, including agriculture, architecture, astronomy, grammar, law, logic, mathematics, medicine, phonology and statecraft. Aside from the world's earliest extant grammar, Pāṇini's Aṣṭādhyāyī, however, no works devoted to these topics actually date from this pre-classical period. Nonetheless, scholars agree that incipient versions of the first extant texts on these topics were being formulated and early versions of them were redacted by the beginning of the Common Era. They include such texts

as Kṛṣi-śāstra (Treatise on agriculture), Śilpa-śāstra (Treatise on architecture), Jyotiṣa-śāstra (Treatise on astronomy), Dharma-śāstra (Treatise on law), Caraka-saṃhitā (Caraka's collection), a treatise on medicine, and Artha-śāstra (Treatise on wealth), a treatise on politics.

4.4 EARLY CLASSICAL PERIOD

The first five hundred years of the Common Era also saw the redaction of philosophical treatises in which proponents of diverse philosophical and religious traditions put forth systematic versions of their world view. These latter works bear witness, in a number of different ways, to the intense interest in argumentation during this period. This interest reveals itself in three different ways. First, authors made arguments which correspond to well-known forms of logical argument. Second, authors used or adduced logical principles of reasoning such as the principle of non-contradiction, the principle of excluded middle and the principle of double negation. Third, some authors isolated canonical forms of argument.

4.4.1 Reasoning Used

Many of the arguments formulated in these texts correspond to such well recognized rules of inference as modus ponens (i.e., from α and $\alpha \rightarrow \beta$, one infers β), modus tollens (i.e., from $\neg\beta$ and $\alpha \rightarrow \beta$, one infers $\neg\alpha$), disjunctive syllogism (i.e., from $\neg\alpha$ and $\alpha \vee \beta$, one infers β), constructive dilemma (i.e., from $\alpha \vee \beta$, $\alpha \rightarrow \gamma$ and $\beta \rightarrow \gamma$, one infers γ), categorical syllogism (i.e., from $\alpha \rightarrow \beta$ and $\beta \rightarrow \gamma$, one infers $\alpha \rightarrow \gamma$) and reductio ad absurdum (i.e., if something false follows from an assumption, then the assumption is false). This last form of argument, termed prasaṅga in Sanskrit, was extremely common. Indeed, so common are such arguments in the works of the Buddhist philosopher Nāgārjuna (2nd century CE) that his follower, Buddhapālita (470–540), took all of Nāgārjuna's arguments to be prasaṅga arguments. As a result, Buddhapālita and his followers were, and are, referred to as prāsaṅgikas, or absurdists.

4.4.2 Principles Used

Though no author of classical India made the principle of non-contradiction an object of study, it was almost always presupposed. Thus, for example, in the *Samyutta Nikāya* (*Collection of short discourses* 4.298, 4.299), from the Buddhist *Tri-piṭaka*, one finds someone known as Nigaṇṭha Nātaputta saying: "See how upright, honest and sincere Citta, the householder, is"; and, a little later, he also says: "See how Citta, the householder, is not upright, honest or sincere." To this, Citta replies: "if your former statement is true, your latter statement is false and if your latter statement is true, your former statement is false."

Explicit formulations of the ontic principle of non-contradiction are found very early in the philosophical literature. Thus, the Buddhist philosopher Nāgārjuna (c. 2nd century CE) often invokes an ontic principle of non-contradiction, saying such things as "when something is a single thing, it cannot be both existent and non-existent" (*Mūla-madhyamaka-kārikā* (*Basic verses on the middle way*) MMK 7.30), clearly reminiscent of Aristotle's own ontic formulation of the principle of non-contradiction, namely, "that a thing cannot at the same time be and not be" (*Metaphysics*: Bk. 3, ch. 2, 996b29–30). Nor are such formulations rare. Vātsyāyana (5th CE), in his *Nyāya-bhāṣya* (*Commentary on logic*), says:

Moreover, because of the exclusivity of being eternal and being non-eternal, eternality and non-eternality must be excluded as two properties of the very same property-possessor. (That is,) they cannot occur together. (comment to NS 5.1.36)

Bhartṛhari (6th CE), the eminent grammarian and philosopher of language, formulates an ontic version of the principle of excluded middle in his *Vākyapadīya* (*On sentences and words*), saying "A thing must be either existent or non-existent: There is no third" (VP 3.9.85).

Like Aristotle, classical Indian thinkers were aware of the possible limitation of the principle of excluded middle. Candrakīrti, for example, in his *Prasannapadā* (*Clear-worded* (*commentary*)), a commentary to Nāgārjuna's *Mūla-mādhyamaka-kārikā*, points out that incompatible properties fail equally to apply to non-existent objects.

But to some who have acquired a clear view of truth through very long practice and by whom the roots of the trees of obstruction have been unuprooted by only a little, it has been taught that it is neither true nor untrue; in order to destroy the least obstruction, both have been denied, just as one denies both whiteness and blackness of the son of a barren woman. (comment to MMK 8.18; cited by Staal 1975: 43; reprint, p. 50) Finally, in classical India, one finds ontic formulations of the principle of double negation. Vātsyāyana says: "It is well known that the absence of those things which exist is excluded" (commentary to NS 2.2.10).

4.4.3 Arguments with Form

Awareness of the fact that the form of argument is crucial to its being good is found in a Buddhist work of the third century BCE, Moggaliputta Tissa's *Kathā-vatthu*, in which is found the refutation of some two hundred propositions over which the Sthaviravādins, one of the Buddhist schools, disagreed with other Buddhist schools. The treatment of each point comprises an exchange between a proponent and an opponent. The refutations, of course, turn on demonstrating the inconsistency of a set of propositions. For example, in the passage below, the Sthaviravādin questions his opponent, here a Pudgalavādin, about whether or not the soul is known truly and ultimately.

- Sthaviravādin:Is the soul known truly and ultimately?
- Pudgalavādin:Yes.
- Sthaviravādin:Is the soul known truly and ultimately just like any ultimate fact?
- Pudgalavādin:No.
- Sthaviravādin:Acknowledge your refutation,If the soul is known truly and ultimately, then indeed, good sir, you should also say that the soul is known truly and ultimately just like any ultimate fact.What you say here is wrong: namely, that we ought to say (a) that the soul is known truly and ultimately; but we ought not to say (b) that the soul is known truly and ultimately just like any ultimate fact.If the latter statement (b) cannot be admitted, then indeed the former statement (a) should not be admitted. It is wrong to affirm the former statement (a) and to deny the latter (b).

One easily abstracts from this the following form,

- Sthaviravādin:Is *A B*?

- Pudgalavādin:Yes.

- Sthaviravādin:Is *C D*?

- Pudgalavādin:No.

- Sthaviravādin:Acknowledge your refutation,If *A* is *B*, then *C* is *D*.What you say here is wrong: namely, (a) that *A* is *B* but that *C* is not *D*.If *C* is not *D*, then *A* is not *B*.It is wrong that *A* is *B* and *C* is not *D*.

Indeed, this form is repeatedly instantiated throughout Book 1, Chapter 1.

Clearly, the author takes for granted the following: first, that the propositions assented to are inconsistent, satisfying the following inconsistent propositional schemata of αα , ¬β¬β , α→βα→β; second, that it is wrong to hold inconsistent propositions; and, third, that if α→βα→β, then ¬β→¬α¬β→¬α—that is, half of the equivalence of the principle of contraposition.

The earliest passages concerned with argument and inference are found, on the one hand, in the philosophical literature, both Brahmanical and Buddhist, and, on the other, in *Caraka-saṃhitā*, a medical text, conjectured by some to have been redacted in its current form at the beginning of first century CE. The best known Brahmanical text pertaining to inference is *Nyāya-sūtra* (*Aphorisms on logic*) by Gautama, also known as Akṣapāda (c. 2nd CE), a treatise on rational inquiry, whose actual redaction is thought by some to date to the third century CE. Two other Brahmanical works which touch on inference are *Vaiśeṣika-sūtra* (*Aphorisms on individuation*), a treatise of speculative ontology attributed to Kaṇāda (c. 1st century CE), and *Ṣaṣṭi-tantra* (*Sixty doctrines*), attributed by some to Pañcaśikha (c. 2nd century BCE) and by others to Vṛṣagaṇa (c. after the 2nd century CE), and surviving only in fragments.

The remaining texts are found in the Buddhist philosophical literature. An early Buddhist text of unknown authorship, whose original Sanskrit has been lost, but whose translations into Tibetan and Chinese have been preserved, is *Sandhi-nirmocana-sūtra* (*Aphorisms on release from*

bondage). The earliest identified Buddhist author to write on argument and inference is the idealist Asaṅga (c. 4th century CE). One passage, often referred to as *Vāda-viniścaya* (*Settling on what debate is*), occurs in his *Abhidharma-samuccaya* (*Compendium of the higher teachings*) and another, usually referred to as *Hetu-vidyā* (*Science of grounds*), occurs at the end of a chapter of his *Yogācāra-bhūmi-śāstra* (*Treatise on the stages of the practice of yoga*). In addition, modern scholars have ascribed to Asaṅga two other texts which touch on reasoning but which survive only in Chinese. One is *Xiǎn chàng shèng jiào lùn* (*Treatise which reveals and disseminates the wise teachings*), whose Sanskrit title G. Tucci gives as *Prakaraṇa-ārya-vācā-śāstra* and E. Lamotte gives as *Ārya-deśanā-śāstra*. The other is *Shùn zhōng lùn* (*Treatise on following the middle way*), which seems to be a commentary on the introductory verse of Nāgārjuna's *Mūla-madhyamaka-kārikā* (Katsura 1985: 166).

Shortly after Asaṅga, Vasubandhu (c. 5th century CE), another Buddhist idealist, thought to be the younger brother of the Asaṅga, wrote at least three works on debate: *Vāda-hṛdaya* (*Heart of debate*), *Vāda-vidhāna* (*Precepts of debate*) and *Vāda-vidhi* (*Rules of debate*). No Sanskrit original of any of these survives, though Sanskrit fragments of the last have been collected by E. Frauwallner (1957). Another work, ascribed to Vasubandhu, which survives only in Chinese, is *Rú shí lùn* (*Treatise on truth*). E. Frauwallner conjectures its Sanskrit name to be *Prayoga-sāra*, while G. Tucci (1929), when he translated it back into Sanskrit, gave it the Sanskrit title *Tarka-śāstra*, by which it is now generally known. Finally, there is another work which is only in Chinese. It is *Fāng biàn xīn lùn* (*Treatise on the heart of means*; T 1632). It is of unknown author and date. G. Tucci (1929) translated this text too into Sanskrit, giving it the Sanskrit title, *Upāya-hṛdaya*.

With the notable exceptions of *Vaiśeṣika-sūtra* and *Ṣaṣṭi-tantra*, which treat only inference, an epistemic process, the preponderance of the texts mentioned above is devoted more to argument in debate than to inference. These texts typically enumerate, define or classify public discussions, propositions as they are used in public discussions, parts of arguments, qualities which either enhance or detract from a discussant's

performance and statements or actions by a discussant which warrant his being considered defeated, including the uttering of various fallacies.

Early polemical Buddhist texts are filled with arguments, many of them analogical arguments. Particularly replete in such arguments is *Bǎi lùn* (*Śata-śāstra*; *Treatise in one hundred verses*) of Āryadeva, a student of Nāgārjuna. Though, at this point, there was no accepted, canonical form for analogical arguments, nonetheless many either have one of the two forms set out below, or can be easily and faithfully put into one of them. One form of argument is based on similarity (*sādharmya*; *sārūpya*). Such arguments have two premisses: one premiss asserts that two things share a property, the other premiss asserts that one of the two things has a second property. The conclusion asserting that the second thing also has the second property. Arguments by analogy through similarity, then, have this form. The names for the statements have been added for ease of comparison.)

Argument by Analogy Through Similarity	
conclusion:	p has S.
ground:	because p has H.
corroboration:	d has H and S.

The other form of argument is based on dissimilarity (*vaidharmya*; *vairūpya*). Such arguments also have two premisses, one asserting that two things fail to share a property and the other asserting that one of them fails to have a second property. Their conclusion asserts that the second thing fails to have the second property. Arguments by analogy through dissimilarity, then, have this form.

Argument by Analogy Through Dissimilarity	
conclusion:	p does not have S.
ground:	because p does not have H.
corroboration:	d has H and S.

Again, if the argument is not to be circular, p and d must be distinct. However, here, this follows from the law of non-contradiction.

Anticipating later discussion, let us see how these two kinds of analogical arguments might be characterized using two terms which

become crucial technical terms in Indian logic: namely, *subject-like* (*sa-pakṣa*), or *similar to the subject*, and *subject-unlike* (*vi-pakṣa*), or *dissimilar to the subject*. The Sanskrit prefixes, *sa-* and *vi-*, and their respective English adjectives, *like* and *unlike*, which are also English prepositions, express the relation of similarity and dissimilarity respectively. These words express a three place relation, namely the relation of a thing being like (similar to) or unlike (dissimilar to) a thing in some respect, but both the Sanskrit and English expressions, when they are used, permit the complement referring to the respect in which things are similar or dissimilar to be left unexpressed. It is this omissibility which accounts for the fact that the following two sentences are not contradictory: *Devadatta is like Yajñadatta* and *Devadatta is unlike Yajñadatta*. After all, two people might be like one another, say, in temperament, but unlike one another, say, in appearance. The same is true of the Sanskrit counterparts of these English sentences. When the respect of similarity or dissimilarity is not expressed in a sentence, it must be gathered from the context. In Sanskrit, when the context is the discussion of an argument and no mention is made of the respect in which the things are similar or dissimilar, it is understood that the argument's property to be established (*sādhya-dharma*) is that with respect to which there is similarity or dissimilarity.

Now, using the technical term, *subject-like* (*sa-pakṣa*), one can say that an argument by analogy through similarity is correct just in case it satisfies two conditions:

first condition:	The existence of the ground (*H*) in the subject (*p*).
second condition:	The existence of the ground (*H*) in a subject-like thing (*d*).

An important feature of words for similarity in many languages, including English, is the strong pragmatic presumption that things which are alike, or similar, are distinct. If this is true of the Sanskrit words for similarity, then the two conditions just stated presume that *p*, the subject of the argument, and *d*, the corroborating instance, are distinct, thereby excluding circular arguments.

Next, using the technical term, *subject-unlike* (*vi-pakṣa*), one can say that an argument by analogy through dissimilarity is correct just in case it satisfies two conditions:

first condition:	The existence of the ground (*H*) in the subject (*p*).
third condition:	The non-existence of the ground (*H*) in a subject-unlike thing (*d*).

The earliest text to contain an example of an analogical argument in a canonical form for debate is the *Caraka-saṃhitā*. Here is one of the two examples (CS 3.8.31) it provides:

Canonical Argument by Analogy	
proposition:	the soul is eternal
ground:	because it is un-created,
corroboration:	like space;
application:	as space is uncreated and it is eternal, so is the soul uncreated;
conclusion:	therefore, the soul is eternal

This form of the argument clearly reflects the debate situation. First, one propounds a proposition (*pratijñā*), that is, one sets forth a proposition to be proved. One then states the ground, or reason (*hetu*), for the proposition one is propounding. Next, one corroborates with an example (*dṛṣṭānta*) which illustrates the connection implicit between the property mentioned in the proposition and the property adduced as its ground. The immediately ensuing step, the application (*upanaya*), spells out the similarity between the example and the subject of the proposition. Finally, one asserts the proposition as a conclusion (*nigamana*).

That the argument is an analogical one is made clear by the use of the correlative expressions *as* (*yathā*) *so* (*tathā*); indeed, the example just given is an argument by analogy through similarity, albeit more prolix in its formulation than the analogical arguments alluded to above. Though *Caraka-saṃhitā* provides no example of an argument by analogy through dissimilarity in a canonical form, it does refer to the distinction (CS 3.8.36); and while no examples of arguments at all are found in *Nyāya-sūtra*, a pair of examples of analogical arguments, one through

similarity (NS 1.1.33) and one through dissimilarity (NS 1.1.35), is found in *Nyāya-bhāṣya*. The analogical argument in *Caraka-saṃhitā* and the argument by analogy through similarity in *Nyāya-bhāṣya* are essentially the same, though the parts are grouped together differently.

Canonical Argument By Analogy Through Similarity	
proposition:	sound is non-eternal
ground:	because it has the property of arising;
corroboration:	a substance, such as a pot, having the property of arising, is non-eternal;
application:	and likewise, sound has the property of arising;
conclusion:	therefore, sound is non-eternal because of having the property of arising,

Canonical Argument By Analogy Through Dissimilarity	
proposition:	sound is non-eternal
ground:	because it has the property of arising;
corroboration:	a substance, such as the self, not having the property of arising, is eternal;
application:	and obversely, sound does not have the property of arising;
conclusion:	therefore, sound is non-eternal because of having the property of arising,

As is obvious from such texts, their authors were eager to distinguish good arguments from bad ones. Not surprisingly, the authors catalogued bad arguments. Grounds adduced in arguments catalogued as bad are referred to as non-grounds (*a-hetu*) or as pseudo-grounds (*hetu-ābhāsa*). It is difficult to be sure what the basis for the classification was. In the case of the *Nyāya-sūtra*, the author gives neither a definition nor an example. Even in cases where definitions and examples are given, the contemporary reader is not always sure what is intended. In all likelihood, included here are both cases where the premises of the argument can be true but the conclusion false, formal fallacies, as well as cases where an argument, though formally valid, is nonetheless

unpersuasive, since, for example, its ground (*hetu*) is as controversial as its conclusion.

These very same texts, as well as *Vaiśeṣika-sūtra*, touch on inference as an epistemic act. While the examples of inference furnished all have parts corresponding to a proposition (*pratijñā*) and to a ground (*hetu*), not all the texts are equally explicit in identifying the form of inference. In particular, both *Caraka-saṃhitā* (CS 1.11.21–22) and *Nyāya-sūtra* (NS 1.1.5) define inference as knowledge of one fact on the basis of knowledge of another, leaving unmentioned any knowledge of a relation linking the two. Moreover, these texts classify inferences on the basis of characteristics completely extrinsic to logical features of the inferences adduced. Inferences appear to be classified according to the temporal order of the occurrences of the properties of the parts corresponding to a proposition (*pratijñā*) and to a ground (*hetu*).

Improved definitions, which mention not only the parts corresponding to a proposition (*pratijñā*) and to a ground (*hetu*) but also the relation between these two parts, are found in *Ṣaṣṭi-tantra* and *Vaiśeṣika-sūtra*, where knowledge of the relation is explicitly included in their definitions of inference. However, the relation is not a formal one, but several from a miscellany of material relations. *Ṣaṣṭi-tantra* enumerates seven such relations, while *Vaiśeṣika-sūtra* (VS 9.20) enumerates five: the relation of cause to effect, of effect to cause, of contact, of exclusion and of inherence. In each of these texts, the miscellany of material relations serves to classify inferences. Thus, although, in these two works, the parts of an inference are made explicit, the formal connection among these parts remains implicit.

Another author who is aware that sound inference must be based on a relation between the proposition and the ground is Vātsyāyana (5th century CE), also known as Pakṣalisvāmin, the author of the *Nyāya-bhāṣya*. Though, as noted above, the form of argument he uses has the form of an analogical argument, Vātsyāyana rejects the mere similarity (*sādharmya-mātra*) and the mere dissimilarity (*vaidharmya-mātra*), which underlie reasoning by example, as underlying a sound canonical argument. Vātsyāyana seems to think that sound canonical arguments are underpinned by the causation relation. This identification of cause with

ground leaves Vātsyāyana unclear about the difference between obversion and contraposition. (See Gillon 2010 for discussion).

Vasubandhu, a contemporary of Vātsyāyana, is the first thinker known to have made clear that the relation, knowledge of which is necessary for inference, is not just any in a miscellany of material relations, but a formal one, which he designates, in some places, as *a-vinā-bhāva* --- literally, not being without (cp. the Latin expression *sine qua non*) --- and in others, as *nāntarīyakatva* --- literally, being unmediated.

The recasting of the argument form from an analogical argument to a deductive one seems to have taken place around the time of Vasubandhu. The earliest record that such a step had been taken is found in *Fāng biàn xīn lùn* (*Upāya-hṛdaya*) (T 1632 28.1.4), where the following argument is set out, though without the names of the parts, which have been added here for the ease of comparison.

A Deductive Argument	
proposition:	the self is eternal
ground:	because it is not perceptible by the senses;
corroboration:	space, not being perceptible by the senses, is eternal; that which is not perceptible by senses is eternal;
application:	the self is not perceptible by senses;
conclusion:	how can the self be non-eternal?

Notice that the third statement consists in two statements, one a statement to the effect that an instance of something, distinct from the subject of the argument, has both the ground and the property to be established, the other to the effect that whatever has the ground has the property to be established. The former statement corresponds to the corroboration statement in the argument by analogy through similarity found in the *Nyāya-bhāṣya*. The latter statement is an innovation, which renders the argument a deductively valid one.

Strikingly, the author of *Fāng biàn xīn lùn* (*Upāya-hṛdaya*) rejects the argument as a bad argument. No other argument in the text is given a canonical form. Moreover, almost all arguments given in the text as examples are analogical ones. Yet, arguments of this deductive form are given as examples of good arguments in *Rú shí lùn* (*Tarka-śāstra*), where

the author explicitly rejects analogical arguments as bad arguments. Moreover, its author justifies this kind of argument by appealing to a criterion which holds that a proper ground (*hetu*) (*H*) satisfy three forms (*tri-rūpa*) (T 1633 30.3.18--26). The first is that the ground (*H*) occur in the subject (*p*). The second is that the ground (*H*) occur in what is similar (to the subject). The third is that the ground (*H*) is excluded from what is dissimilar (to the subject).

Though there are no texts with passages to this effect, the first and second forms of a proper ground (*tri-rūpa-hetu*) could have been used to characterize an argument by analogy through similarity, while the first and third forms could have been used to characterize an analogical argument through dissimilarity. Thus, in an argument by analogy through similarity, on the one hand, the ground (*H*) must occur in the subject of the argument (*p*) and it must occur in the example, which itself must be distinct from the subject but still similar to it insofar as it too must possess the property to be established (*S*). In an analogical argument through dissimilarity, on the other hand, the ground (*H*) must occur in the subject of the argument (*p*) and it must not occur in the example, which itself must be distinct from the subject and also dissimilar from it insofar as it does not possess the property to be established (*S*). (This paragraph elaborates on a remark made by Randle (1930: 183) in passing.)

What is clear both from the form of the good arguments and from the so-called three forms (*tri-rūpa*) is that a necessary condition for a canonical argument to be good is this: any choice of a subject of an argument (*p*), a ground (*H*) and a property to be established (*sādhya-dharma*) (*S*) satisfy the following schema.

Deductive Schema	
major premiss:	Whatever has *H* has *S*;
minor premiss:	because *p* has *H*;
conclusion:	*p* has *S*.

It is important to add that satisfaction of this schema is not a sufficient condition for an argument to be a good one, for such a schema does not exclude arguments in which the ground (*H*) and the property to be established (*sādhya-dharma*) (*S*) are the same; that is to say, it does not rule out circular arguments, for example.

Though there are no passages to this effect, the first and second forms of a proper ground (*tri-rūpa-hetu*) could have been used to characterize an argument by analogy through similarity, while the first and third forms could have been used to characterize an argument by analogy through dissimilarity. Thus, in an argument by analogy through similarity, on the one hand, the ground (*H*) must occur in the subject of the argument (*p*) and it must occur in the example, which itself must be distinct from the subject but still similar to it insofar as it too must possess the property to be established (*S*). In an argument by analogy through dissimilarity, on the other hand, the ground (*H*) must occur in the subject of the argument (*p*) and it must not occur in the example, which itself must be distinct from the subject and also dissimilar from it insofar as it does not possess the property to be established (*S*). (This paragraph elaborates on a remark made by Randle (1930: 183) in passing.)

As pointed out by H. Ui almost a century ago (Katsura 1985: 166), neither the canonical argument with a deductive core nor the three forms of a proper ground characterizing it is original with the author of *Rú shí lùn* (*Tarka-śāstra*), for these ideas were already mentioned in Asaṅga's *Shùn zhōng lùn*, though Asaṅga neither endorses the ideas in this text, nor does he even mention them in either of his two extant works on argument. If the attribution of *Rú shí lùn* (*Tarka-śāstra*) to Vasubandhu is indeed correct, then he will turn out to be the first Buddhist author known to have adopted explicitly as a canonical argument one with a deductive core and to have used the three forms of a ground (*tri-rūpa-hetu*) to justify its form.

4.5 CLASSICAL PERIOD

A clearer and more comprehensive view of inference and argument emerges in the extant works of Dignāga (c. 5th – 6th century CE) devoted to these topics. Unfortunately, in each case, the original Sanskrit text has been lost. Two, however, are extant in Tibetan translation: *Hetu-cakra-ḍamaru* (*The drum wheel of reason*) and his *magnum opus*, *Pramāṇa-samuccaya* (*Compendium on epistemic means of cognition*), four of whose six chapters are devoted to inference and argument. One is extant

in both a Chinese and a Tibetan translation: *Nyāya-mukha* (*Introduction to logic*).

One idea which is particularly clear in Dignāga's work is his explicit recognition that inference, the cognitive process whereby one increases one's knowledge, and argument, the device of persuasion, are but two sides of a single coin.

What also emerges in these works is the continued refinement of a canonical form of argument. Though the texts just mentioned are not extant in Sanskrit, some of their commentaries are and some of these texts' passages are found cited in existing Sanskrit works. Availing himself of these works, S. Katsura (2004a: 143) has identified the following as an argument instantiating what Dignāga considers the canonical form of a good argument.

Canonical Argument for Dignāga	
thesis:	sound is non-eternal
ground:	because it results from effort;
similarity corroboration:	that which is immediately connected with an effort is observed to be non-eternal, like a pot.
dissimilarity corroboration:	that which is eternal is observed not to be immediately connected with an effort, like space.

Dignāga's canonical argument differs in four respects from the sole deductively valid argument, cited above, found in *Fāng biàn xīn lùn* (*Upaya-hṛdaya*). First, Dignāga's canonical argument has neither an application statement nor a conclusion statement. Second, it has two corroboration statements, instead of one. His first corroboration statement corresponds to the corroboration statement of the schematic argument by analogy through similarity and his second corresponds to the corroboration statement of the schematic argument by analogy through dissimilarity. These statements come to be known in Sanskrit as statements of *similarity corroboration* (*sādharmya-dṛṣṭānta*) and of *dissimilarity corroboration* (*vaidharmya-dṛṣṭānta*) respectively. Third, each of his two corroboration statements comprises a single universal statement, though each also includes a phrase referring to an example which is an instance the universal statement. In other words, the

universal statement in the corroboration statement of the argument found in *Fāng biàn xīn lùn* (*Upaya-hṛdaya*) is retained and the singular statement is reduced to what, in English, amounts to a prepositional phrase. We shall call this phrase the *example phrase*. Last, Dignāga seems to have added a word to the canonical form of the corroboration statement, namely, the word *dṛṣṭa* (*observed*), the past passive participle of the verb *dṛś* (*to see*), which means not only to see but also to observe, to notice and even to know.

Perhaps most original in Dignāga's work on argument and inference is what he called *wheel of grounds* (*hetu-cakra*), an equivalent alternative to the three forms of an argument's ground. It comprises a three by three matrix, which distinguishes a proper from an improper ground. It specifies, on the one hand, the three cases of the ground (*hetu*) occurring in some, none, or all of subject-like things (*sa-pakṣa*), and, on the other, the three cases of the ground (*hetu*) occurring in some, none, or all of subject-unlike things (*vi-pakṣa*). Letting H be the ground, S the subject-like things and S⁻S⁻ the subject-unlike things, we obtain the following table.

H occurs in:	all SS all S⁻S⁻	all SS no S⁻S⁻	all SS some S⁻S⁻
H occurs in:	no SS all S⁻S⁻	no SS no S⁻S⁻	no SS some S⁻S⁻
H occurs in:	some SS all S⁻S⁻	some SS no S⁻S⁻	some SS some S⁻S⁻

Dignāga identified the arguments corresponding to the top and bottom cases of the middle column as good arguments and those corresponding to the other cases as bad.

These developments have led to a rather lively debate among scholars of the development of logic in early classical India. A very succinct, but somewhat misleading, way to put the question at the center of the debate is whether or not Dignāga's canonical argument is inductive or deductive. A more cumbersome, but more precise way, to put the question is this: is there a choice of a subject of an argument (*p*), a

ground (*H*) and a property to be established (*sādhya-dharma*) (*S*) which Dignāga would accept to constitute a good argument but which fail to satisfy the deductive schema given above. Let us now consider those aspects of Dignāga's treatment of argument which are at the center of this debate.

One reason to doubt that Dignāga would think that arguments failing to satisfy the deductive schema might nonetheless be good arguments is the inclusion of the word *dṛṣṭa* (*observed*) in the corroboration statement. In particular, one might think that Dignāga would accept as good argument one in which it is not the case that whatever is *H* is *S*, but it is the case that whatever is an observed instance of *H* is *S*: that is to say, the universal statement in the corroboration statement hold only for observed cases of *H*, and not for every case of *H*, regardless of whether or not the case of *H* has been observed. However, no such arguments are accepted by Dignāga. Moreover, the addition of the word *dṛṣṭa* (*observed*) does not permit attributing such an idea to Dignāga, for the word is added, not to the corroboration statement's subordinate, relative clause, but to its main clause. Thus, what the universal statement says is, not that every observed instance of the ground (*H*) is an instance of the property to be established (*S*), but rather that every instance of the ground (*H*) is observed to be an instance of the property to be established (*S*). Moreover, if the word *dṛṣṭa* (*observed*) has a factive sense, that is, a sense which presupposes the truth of the clause into which the word is inserted, as do several of its English translations, for example, *noticed*, *known*, then the word in the statement leaves the truth conditions of the universal statements un affected.

A further reason which has prompted scholars to doubt that the good arguments Dignāga had in mind are not ones which would satisfy the deductive schema is the fact that he has retained an example phrase in his corroboration statements, for such phrases have no bearing on the deductive validity of a canonical argument. This doubt is re-enforced by the fact that statements of similarity corroboration and of dissimilarity corroboration, stripped of their example phrases, are contrapositives of another. Thus, one being logically equivalent to the other is also logically superfluous with respect to it. Indeed, Dignāga seems to be aware of the

equivalence, for he acknowledges in his commentarial discussion of the three forms (PS 2.5) that the second and third forms are equivalent (Katsura 2000 p. 245; Katsura 2004b pp. 121--124), from which it follows that any two statements, one of which satisfies the second form and the other of which satisfies the third form are equivalent.

However, perfectly valid deductive arguments are reasonably excluded as good arguments. Consider, for example, an argument whose conclusion is identical with one of its premisses. It is a valid argument, though it is utterly unpersuasive. Dignāga, like any rational thinker, would not, and did not, accept as a good argument any argument in which the ground (H) and the property to be established (S) are the same property, even if such arguments satisfy the deductive schema. Excluding such circular arguments is fully consistent with the view that satisfaction of the deductive schema is a necessary condition on Dignāga's canonical arguments. (For extensive scholarly discussion of the role of corroborating instances in Buddhist arguments, see the collection of articles in Katsura and Steinkellner (eds) 2004.)

A good reason for Dignāga to retain an example phrase in the corroboration statements of his canonical argument would be to exclude arguments which are patently unpersuasive, even though, like circular arguments, they are deductively valid. Consider the following argument:

thesis:	sound is non-eternal
ground:	because it is audible
corroboration:	whatever is audible is non-eternal.

This argument, rejected as a bad argument by Dignāga, was put forth by a school of Brahmin thinkers who held, for doctrinal reasons, that sound is eternal. To maintain this claim in the face of observation to the contrary, these thinkers maintained instead that what is transitory is the revelation of sound, not sound itself. According to them, in other words, sound is constantly present, but we hear it only when its presence is revealed.

Their argument, though formally valid, is utterly unpersuasive. The reason is that the instances of audibility (H), are coextensive with sound (p). Thus, there is no independent empirical evidence to support the

universal statement that whatever is audible is non-eternal. Requiring that there be at least some thing different from sound which is both audible and non-eternal is an obvious and plausible way to eliminate such patently unpersuasive arguments. Dignāga, therefore, rules out the argument as a bad argument, rather than, as we would, accept it as a valid argument with a flawed premiss. (See also Tillemans 1990.)

But this cannot be the entire explanation of why Dignāga appears to insist on example phrases in statements of corroboration, for no where does he rule out as a good argument one which, though valid, is unpersuasive for want of some subject-unlike thing.

Because of the doubts just discussed, some scholars think that Dignāga was not striving work out a deductivist form of reasoning and argument. Rather, according to some, such as Hayes (1980; 1988 ch. 4.2), Dignāga was seeking to develop an inductivist form of reasoning and argument. According to others, such as Oetke (1994; 1996), Dignāga and some of his predecessors and contemporaries were striving to spell out a defeasible form of reasoning and argument. (See Taber 2004 for a critical assessment of Oetke's view.)

However much scholars may disagree about Dignāga's aim in the formulation of the canonical argument, all agree that his works set the framework within which subsequent Buddhist thinkers addressed philosophical issues pertaining to inference and debate. Thus, Śaṅkarasvāmin (c. 6th century CE) wrote a brief manual of inference for Buddhists, called the *Nyāya-praveśa* (*Beginning logic*), based directly on Dignāga's work. Not long thereafter, Dharmakīrti (c. 7th century CE), the great Buddhist metaphysician, also elaborated his views on inference and debate within the framework found in Dignāga.

The canonical argument, conceived of as an inference, is that whereby one who knows the truth of its premisses may also come to know the truth of its conclusion. The truth of the premiss corresponding to the ground, the minor premiss of the deductive schema, is known, of course, either through perception or through another inference. But how is the truth of the universal statement of the corroboration statement, the major premiss of the deductive schema, known? It cannot be known by inference, since the major premiss is a universal statement and the

conclusion of a canonical argument is a particular statement. However, to know the truth of the major premiss by perception would seem to require that one know of each thing which has H, whether or not it also has S. Yet if one knew that, one would already know by perception the canonical argument's conclusion. As a result, inference would be a superfluous means of knowledge.

The earliest classical Indian philosopher thought to have recognized the problem of how one comes to know the major premiss of the Indian canonical argument seems to have been Dignāga's student, Īśvarasena (Steinkellner 1997: 638). He appears to have thought that knowledge of the canonical argument's major premiss is grounded in non-perception (*anupalabdhi*). That is, according to Īśvarasena, knowledge that whatever has H has S comes from the simple failure to perceive something which has H but which does not have S. (See Steinkellner 1993, where he draws on Steinkellner 1966).

However, this suggestion does not solve the problem, for reasons laid out in detail by Īśvarasena's student, Dharmakīrti (c. 7th century CE). His extensive writing on epistemology in general and on reason and argument in particular formed a watershed in classical India philosophy. Besides his *magnum opus*, *Pramāṇa-vārttika* (*Gloss on the means of epistemic cognition*), one of whose four chapters is devoted to inference (*svārtha-anumāna*), comprising 340 verses and a commentary by him to it, and another devoted to argument (*para-anumāna*), which comprises 285 verses, he wrote several smaller works, including *Pramāṇa-viniścaya* (*Settling on what the epistemic means of cognition are*), *Nyāya-bindu* (*Drop of logic*), *Hetu-bindu* (*Drop of reason*) and *Vāda-nyāya* (*Logic of debate*). As he makes abundantly clear in verses 13–25 and his commentary thereto of the chapter on inference (*svārtha-anumāna*) of his *Pramāṇa-vārttika*, the simple failure to perceive something which has H but which does not have S is no guarantee that whatever has H has S; after all, while one has never encountered something which has H and does not have S, what guarantee is there that something which has H and does not have S is not among the things which one has yet to encounter? Dharmakīrti's answer was that the truth of the first premiss is guaranteed by either of two relations

obtaining between properties: causation relation (*tadutpatti*) and the identity relation (*tādātmya*). Unfortunately, as one might suspect, Dharmakīrti's solution does not work. (See Gillon 1991 for details.)

During the time between Dignāga and Dharmakīrti, thinkers started to add the particle *eva* to their statement of the three forms (*tri-rūpa*) with a view to making it more precise. (See Katsura 1985.) By the time we reach Dharmakīrti, we see a formulation of his in which it appears in each of the three conditions (NB 2.5).

Three Forms of a Ground (*tri-rūpa-hetu*)	
first form:	the ground's (*H*) definite (*eva*) existence in the subject (*p*);
second form:	the ground's (*H*) existence in subject-like things only (*eva*);
third form:	the ground's (*H*) utter (*eva*) non-existence in subject-unlike things.

Alas, the hoped for precision is undermined by the ambiguity in the meaning of the particle (*eva*) and of the noun *sa-pakṣa* (*subject-like*). This change came in for criticism at the hands of the Nyāya thinker, Uddyotakara (c. late 6th century CE), and has led to much controvery among contemporary scholars. Let me explain the problem.

The particle *eva* has two principal uses, one emphatic, the other restrictive. What it emphasizes or restricts depends on the word after which it is placed. The particle in the statement of the first form applies to the abstract noun *existence* and, in its emphatic use, is well translated by *definite* or *actual*. The particle in the statement of the third form applies to the negative abstract noun *non-existence* and, in its emphatic use with negation, is best translated by *utter* or *at all*. (Some scholars translate the particle in these statements as *necessary*. There is, however, no philological justification for such a translation.) The particle in the second form particle applies to a concrete noun. Though here the particle could have either an emphatic or a restrictive use, only the restrictive use fits the context. A problem arises from the expression *sa-pakṣa*) (*subject-likea*). As explained earlier, i can be construed in two ways: either as including or as excluding the subject. If it is construed as inclusive, then the second and third forms are logically equivalent and the statement of

the three forms has the rhetorical blemish of containing a logically superfluous form. If it is taken as exclusive, then the three forms are inconsistent, for in that case the second form entails the contradictory of the first form. (For full details, see Gillon 1999.)

Ideas on the nature of argument and inference very similar to those of Dignāga's are found in works of several of his contemporaries. For example, in the *Padārtha-dharma-saṃgraha* (*Summary of categories and properties*), better known as *Praśastapāda-bhāṣya* (*Praśastapāda's commentary*, understood as being a commentary on the *Vaiśeṣika-sūtra*), its author, Praśastapāda (c. 6th century CE), an adherent of the Vaiśeṣika school and a near contemporary of Dignāga, also clearly viewed the Indian canonical argument as a formal, valid argument. He made this clear by using the Sanskrit quantificational adjective *sarva* (*all*) to formulate the second and third conditions of three forms of a ground.(See Randle 1930, ch. 3.1, for discussion.)

Whether or not the view of the canonical argument as a formally valid one spread from Dignāga to his contemporaries, or from one of his contemporaries to him, or from some other person predating all of them has yet to be decided. Whatever the answer is to this question, it is clear that the canonical argument came to be adopted virtually by every classical Indian thinker and this same conception, through the spread of Buddhism, spread to China, Korea and Japan.

It was not long before the ideas on inference and argument became generally accepted not only by other non-Brahmanical thinkers, such as the Jains, but also by Brahmanical thinkers. For example, the Jain thinker, Jinabhadra (6th CE), a junior contemporary of Dignāga, wrote a commentary on the Jain thinker, Bhadrabāhu, where he took claims in the latter's work and recast them in the form of the canonical argument as found in Dignāga's work (Uno 2009.) In addition, one finds that the Mīmāṃsā thinker, Kumārila Bhaṭṭa (c. early 7th century CE), adopted, without special comment, the deductive perspective. His logical ideas are developed at length in the one hundred eighty-eight verses of his *Śloka-vārttika*'s (*Gloss in verses*) *Anumāna-pariccheda* (*Section on inference*). On the other hand, one also finds that, though the Nāya thinker, Uddyotakara, argued vigorously against many of Dignāga's views, he

nonetheless advocated a view which presupposed the same deductive schema as that presupposed by Dignāga's works. Thus, Uddyotakara classified grounds (*hetu*) as: concomitant (*anvaya*), where nothing distinct from particular substratum *p* (in the inferential schema) fails to have the property *S*; exclusive (*vyatireka*), where nothing distinct from *p* (in the inferential schema) has the property *S*; and both concomitant and exclusive, where some things distinct from *p* have the property *S* and some fail to have the property *S*. This classification becomes the standard classification for the adherents of Nyāya during the scholastic period.

While Brahmanical thinkers accepted the insight of the Buddhists that the canonical inference is underpinned by indispensability, they refrained from modifying the form of the canonical argument they used. Rather, the Brahmanical thinkers retained the form of inference found in Vātsyāyana's *Nyāya-bhāṣya*. However, they understood the steps of corroboration and application to convey the indispensability relation.

In addition, in spite of the metaphysical differences which distinguished the various schools of thought, both Buddhist and Brahmanical, all thinkers came to use a naive realist's ontology to specify the states of affairs used to study the canonical argument. According to this view, the world consists of individual substances, or things (*dravya*), universals (*sāmānya*) and relations between them. The fundamental relation is the one of occurrence (*vṛtti*). The relata of this relation are known as substratum (*dharmin*) and superstratum (*dharma*) respectively. The relation has two forms: contact (*saṃyoga*) and inherence (*samavāya*). So, for example, one individual substance, a pot, may occur on another, say the ground, by the relation of contact. In this case, the pot is the superstratum and the ground is the substratum. Or, a universal, say treeness, may occur in an individual substance, say an individual tree, by the relation of inherence. Here, treeness, the superstratum, inheres in the individual tree, the substratum. The converse of the relation of occurrence is the relation of possession.

Check Your Progress 1

Note: Use the space provided for your answer

1. What do you know about the Reasoning and Logic?

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2. Discuss the Pre Classical Period.

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3. What do you know about Early Classical Period?

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4.6 LET US SUM UP

Another important relation is the relation which one superstratum bears to another. This relation, mentioned above as indispensability (*a-vinā-bhāṣva*), and later known as pervasion (*vyāpti*), can be defined in terms of the occurrence relation. One superstratum pervades another just in case wherever the second occurs the first occurs. The converse of the pervasion relation is the concomitance relation.

As a result of these relations, the world embodies a structure: if one superstratum, designated as *H*, is concomitant with another superstratum, designated as *S*, and if a particular substratum, say p, possesses the former superstratum, then it possesses the second. This structure is the one which underlies the classical Indian canonical argument.

4.7 KEY WORDS

Philosophy: Philosophy is the study of general and fundamental questions about existence, knowledge, values, reason, mind, and language. Such questions are often posed as problems to be studied or resolved. The term was probably coined by Pythagoras.

Vyāpti: Vyapti, a Sanskrit expression, in Hindu philosophy refers to the state of pervasion. It is considered as the logical ground of inference

which is one of the means to knowledge. No conclusion can be inferred without the knowledge of vyapti. Vyapti guarantees the truth of conclusion.

4.8 QUESTIONS FOR REVIEW

1. Discuss the logic in Indian Classical philosophy.
2. How Indian classical philosophy is relevant today?

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4.10 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

1. See Section 4.2
2. See Section 4.3
3. See Section 4.4

UNIT 5: GAṄGEŚA'S ANALYSIS OF INFERENTIAL WARRANT (VYĀPTI)

STRUCTURE

5.0 OBJECTIVES

After this unit 5, we can able to know:

- To know The Vaiśeṣika System of Categories
- To discuss the Physical Substance
- To discuss the Logical Theory and Gaṅgeśa's Analysis of Inferential Warrant (vyāpti)

5.1 INTRODUCTION

Two older Indian philosophical traditions, the early Nyāya (grounded in Gautama Akṣapāda's Nyāya-sūtra, c. 100 C.E., and dealing mainly with logic, epistemology, and the theory of debate) and the Vaiśeṣika (grounded in Kaṇāda's Vaiśeṣika-sūtra, c. 100 B.C.E., dealing mainly with ontology), developed in parallel until, at some point in the 11th or 12th century, they merged to form a new school, called "Navya-Nyāya", the new Nyāya or "new reason" school (Ganeri 2011). Despite its name, Navya-Nyāya incorporates and develops classical Vaiśeṣika metaphysics as well as classical Nyāya epistemology. The Navya-Nyāya authors also develop a precise technical language through the employment of which many traditional philosophical problems could be clarified and resolved. Navya-Nyāya techniques proved to be so versatile that they were employed, not just by philosophers, but also in poetics, linguistics, legal theory, and other domains of medieval Indian thought. The foundational text of this school was Gaṅgeśa's brilliant and innovative Jewel of Reflection on the Truth (Tattvacintāmaṇi). The school continued to develop for about four centuries, reaching its heights with the works of Raghunātha, Jagadīśa and Gadādhara (Ganeri 2014). The sophisticated use this school made of its technical vocabulary made it increasingly inaccessible, and so, in the 17th and 18th centuries, several manuals or compendia were written to explain in simplified language the basic tenets of the school. I will describe the philosophical principles of Navya-Nyāya based on a synopsis of the most successful of these, Annambhaṭṭa's The Manual of Reason (Tarkasaṃgraha; henceforth TS), together with its auto-commentary, the Dīpikā (henceforth TSD), This text was nicknamed Bāla-gādādharī, a sort of 'Beginners Guide to Gadādhara'. As well as presenting the Vaiśeṣika theory of categories (a mixture of physical theory, metaphysics and philosophy of psychology), and the epistemological, methodological, and logical techniques of the new Nyāya system, The Manual of Reason interjects fascinating discussions on a wide variety of topics of philosophical interest, making the text an enjoyable and informative introduction to later Indian analytical philosophy (trans. G. Bhattacharya 1983; for discussion of the

text, see also Athalye 1930, Atreya 1948, C. Bhattacharya 1966, Foucher 1949, Shastri 1961).

5.2 THE VAIŚEṢIKA SYSTEM OF CATEGORIES

5.2.1 Methodology and Theory of Definition

Most Nyāya-Vaiśeṣika texts are structured in one of two ways. They either follow a traditional Vaiśeṣika pattern, in which the categories and their various sub-groups are discussed in order, or else they follow a pattern employed by the Buddhist logician Diṅnāga, and copied by Gaṅgeśa, in which each of the sources of knowledge is treated in turn. The Manual of Reason, however, adopts a style of analysis due to Vātsyāyana (the first commentator on the Nyāya-sūtra). Vātsyāyana stated that:

This [Nyāya] system will follow a three-fold procedure, viz. enumeration (uddeśa), definition (lakṣaṇa) and examination (parīkṣā). Of these, 'enumeration' means the act of referring to each object [to be analysed] by name; 'definition' means [citing] a characteristic of the named object which distinguishes it from all other objects; 'examination' means ascertaining, with the help of the pramāṇas, the appropriateness of the distinguishing characteristic for the object defined (Bhāṣya before NS 1.1.3).

The heart of this method lies in the use it makes of definitions, conceived of as differentiating marks of the thing defined. The Manual of Reason (TSD 3d) refines the idea: it defines a 'definition' of a class of things as any characteristic which is co-extensive with that class. A defining characteristic of the class 'cow' is the property 'having dewlap'. Note that this does not tell us what the essence of the class is—it merely supplies us with a syndrome or trait by means of which we can identify the thing in question. The Naiyāyikas, we might say, have a 'diagnostic', rather than an 'essentialist', conception of definition. The purpose of the 'examination' now becomes clear: it is to see whether the alleged defining trait really is co-extensive with the class to be defined, or whether it is faulty, either by 'over-covering' (cf. ativyāpti; applying to

things outside the definiendum) or by 'under-covering' (cf. avyāpti; not applying to everything within the definiendum), or both. A properly defining characteristic has to be, to use modern terms, both a necessary and a sufficient property of the thing to be defined. We see the pattern of enumeration, definition, and examination repeated again and again in Navya-Nyāya texts like The Manual of Reason.

5.2.2 What is the Vaiśeṣika System of Categories?

The Vaiśeṣika system of 'categories' (*padārtha*) is an attempt to classify in a systematic way all the different types of existent. Navya-Nyāya lists seven 'categories' of object: substance (*dravya*), quality (*guṇa*), motion or action (*karma*), universal (*sāmānya*), particularity or differentiator (*viśeṣa*), inherence (*samavāya*), and absence (*abhāva*). Of these, the first six comprise the classical list of categories, found even in the *Vaiśeṣika-sūtra*, while the seventh (absence) is a distinctive addition by the later school. Most of these types are themselves subject to sub-division: thus, there are nine types of substance, twenty four types of quality, etc.

One main question concerning this list of categories is whether we can discern any underlying structure or organising principle. This is related with another important question: just what is a category? *The Manual of Reason* answers this second question by giving the etymological analysis of the term '*padārtha*' (category): '*padārtha*' is the *artha* or meaning of a *pada* or word. The claim is that the Vaiśeṣika categories are in some way the metaphysical correlates of linguistic structures. One way to make this claim more precise would be to note the existence of striking similarities between the Vaiśeṣika system and Sanskrit grammar (cf. esp. Faddegon 1918). Another way is to observe a distinctive pattern of argument employed, in which the hypothesis that a certain type of substance, quality, etc. exists is supported on the ground that it explains some feature of our linguistic practice (for example, the argument that space exists as it explains our use of directional terms.)

An alternative approach would be to seek some purely *apriori* rationale behind the list. Athalye (1930: 75) offers one such:

A notion is either positive or negative, and so the external object of a notion might be 'existent' (*bhāva*) or 'non-existent' (*abhāva*). 'Existent'

things again are of two kinds, properties and a common substratum in which they reside. The latter is 'substance' (*dravya*). Of the properties, again, some reside in many objects conjointly, others in individual things singly. The first is 'universal' (*sāmānya*), while the latter class is again divisible into properties that are stationary and those that are evanescent, i.e. 'quality' (*guṇa*) and 'motion' (*karma*). The remaining two categories, 'inherence' (*samavāya*) and 'particularity' (*viśeṣa*) are assumed to explain the special theories of the Vaiśeṣikas.

This reconstruction of the Vaiśeṣika system is not quite satisfactory, for it relies on an unexplained and perhaps question-begging distinction between stationary and evanescent properties, and leaves two of the categories completely unaccounted for. Another reconstruction (also deficient) is offered by Potter (1977). When we look at *The Manual of Reason*'s own definitions of the individual categories, it seems to be following this approach. *The Manual of Reason*'s definitions are as follows:

Substance	(i) that which possesses the universal substance-hood; (ii) that which possesses qualities (TSD 3)
Quality	(i) that which possesses universals, and isn't a substance or motion; (ii) that which possesses the universal quality-hood (TSD 4)
Motion	(i) that which causes conjunctions (between substances); (ii) that which possesses the universal motion-hood (TSD 5)
Universal	that which is eternal, unitary, and inherent in many things (TS 82)
Differentium	that which exists in eternal substances and functions as their differentiator (TS 83)
Inherence	that thing which is eternal and a relation (TS 84)
Absence	[No general definition given]

There are certain problems with this series of definitions, read as an *apriori* reconstruction of the categories. In particular, the definitions of 'substance' and 'quality' seem to be jointly circular, unless we take as

already given universals such as substance-hood, which make the definitions somewhat vacuous. I will give another reconstruction, one which roughly follows the great Nyāya-Vaiśeṣika author Udayana (cf. Tachikawa 1981).

5.2.3 The Underlying Structure of the List

First divide things up into the existents and the non-existents, the latter corresponding to the category 'absence'. Now take inherence to be a primitive, fundamental relation. Given such a relation, the following three-fold division is exhaustive:

    a. things which do not inhere in others, but are inhered in,

    b. things which both inhere in others, and are themselves inhered in,

    c. things which inhere in others, but are not inhered in by anything.

We want group (a) to correspond to the category 'substance'. Unfortunately, the Vaiśeṣikas claim that wholes are distinct from, and inhere in, their parts. The only substances which do not inhere in anything are the atomic substances (which for the Vaiśeṣikas correspond with the eternal substances). Group (c) corresponds to the category 'universal', for universals are said to inhere in things (substances, qualities and motions) but do not have anything inhering in them. Group (b) comprises, the non-atomic substances, the qualities and the motions. Let us now divide this group into two: those which are inhered in only by universals, and those which are inhered in by other things as well. The former corresponds to the categories 'quality' and 'motion', for substances are inhered in, not only by universals, but also by qualities, motions, as well as by other substances. Finally, we must find a way to sub-divide the former group into qualities and motions. More traditional Naiyāyikas preserve the distinction by saying that motions, but not qualities, cause the substances in which they inhere to come into contact with (or break away from) each other. This, however, appeals to the idea of 'contact', which cannot itself be defined in terms of our primitive relation inherence. Some radical Naiyāyikas (especially Bhāsaravajña) claim that motions are just a kind of quality, as their properties are so similar. The only remaining category is 'differentium' (*viśeṣa*), whose members reside in and individuate the eternal substances i.e. the atoms.

The point, perhaps, is that all other things are individuated by the universals and wholes that inhere in them, but two atoms of the same substance are in all respects identical. But if objects are individuated by means of what inheres in them, then there must be something inhering in each atom which distinguishes it from the others—a 'differentium' (see §10.2).

This is a rough sketch, omitting many technicalities, of how the Vaiśeṣika philosophers tried to build their system of categories on logical principles (for an example of such technicalities, see TSD 3(c). *The Manual of Reason* points out that a substance cannot be defined as the substratum of qualities, because of the Vaiśeṣika doctrine that substances do not possess any qualities at the moment when they are created.)

5.3 PHYSICAL SUBSTANCE

5.3.1 The Five Primary Physical Substances

Vaiśeṣika distinguishes, among nine acknowledged types of substance, a sub-class of five—earth, water, fire, air and *ākāśa*—to which it gives the name "*bhūta*" ('physical substance'). A *bhūta* is defined as a substance which possesses a specific sensible quality—odour, taste, colour, touch and sound.

It was, perhaps, originally thought that the five physical substances and the five sensible qualities are directly correlated, each quality residing in one and only one substance, odour just in earth, taste just in water etc. (such a view is reported by Vātsyāyana under NS 3.1.65-6). This may give some insight into the origins of the 'five physical substances' theory, but it was realised very early on that it is extremely implausible to maintain that earth, for example, is invisible, or else that its colour is always due to intermixture with fire (Bhaduri 1947: 133). The set of correlations between physical substances and sensible qualities is more complex in the *Vaiśeṣika-sūtras* and later texts, and is indicated in the following chart:

	odour	taste	colour	touch	sound
earth	x	x	x	x	

water		x	x	x	
fire			x	x	
air				x	
ākāśa					x

The orthodox Vaiśeṣika view is that each physical substance is characterised by the possession of a particular type of sensible quality and the absence of certain others. Thus, earth is the substance endowed with odour, water with taste but not odour, fire with colour but not taste or odour, etc. A drawback of such definitions is that we cannot infer, from the detection of a sensible quality, which type of substance is present. Later Vaiśeṣika therefore looks for a diagnostic set of definitions, one which seeks to find, for each substance, a particular sensible quality whose presence is indicative of that substance. The *Manual of Reason* (TS 10–14):

Earth is (specifally) endowed with odour

Water is (specifally) endowed with cold touch

Fire is (specifally) endowed with hot touch

Air is (specifally) endowed with touch without colour

ākāśa is (specifally) endowed with sound.

Thus, although earth, water, and fire are all tactile, only water allegedly has cold touch. It seems that it could find no positive distinguishing trait for air, and thus reverted to the older style of definition.

It is perhaps surprising to find a 'five elements' theory defended still in the seventeenth century. Some modern writers have tried to represent these substances as metaphors for different 'states' of matter—solid (earth), liquid (water), gas (air), and temperature (fire). This is, however, improbable, for it is nowhere said that a particular substance can turn from earth to water to air. Perhaps it is a mistake to see the theory as belonging to physics at all; instead, bearing in mind the way the substances are defined in terms of their sensible qualities, we might see it as an exercise in the logical analysis of the data presented by the various sense modalities to construct a (metaphysical) theory of the world. Such a theory would, for example, explain the fact that there are correlations between what we see and what we touch by positing that there must be

types of things which can be both seen and touched. Likewise, the occurrence of tactile sensations with no correlated visual sensations leads us to postulate the existence of substances which can be felt but not seen (air), and so on for the other substances. It is, after all, the existence of such correlations between different sense modalities which grounds an objective conception of the world (phenomena accessible only by one sense are more likely to be thought of as subjective in origin).

5.3.2 Vaiśeṣika Atomism

The Manual of Reason (TS 10–14) repeats the conventional Vaiśeṣika theory that the first four substances (earth, water, air, fire) are each of two types, atomic and composite. An atom (*paramāṇu*) is indestructible (*anitya*), indivisible (i.e. non-composite), and has a special kind of dimension, called "small" (*aṇu*). The Vaiśeṣikas' standard argument for atomism is as follows. It is an empirically established truth that whatever is perceived is composite. Thus even the smallest perceptible thing, namely, a fleck of dust in a sun-beam, has parts, which are therefore invisible. The Vaiśeṣikas call the smallest perceptible thing a "triad" (*tryaṇuka*) and claim that it has three parts, each of which is called a "dyad" (*dyaṇuka*). Does each of these parts itself have parts? Yes—for it is another empirically established truth that the parts of a visible thing themselves have parts (e.g. a piece of cloth, whose parts, the threads, are themselves composite). The Vaiśeṣikas say that a dyad has two parts, each of which is an atom.

This argument establishes that there are objects too small to be seen, but it does not demonstate that some of them are non-composite. Why cannot the process of sub-division be continued ad infinitum? *The Manual of Reason*'s intriguing answer is that if such were the case then Mount Meru and a mustard seed would have the same size, as each would have the same (infinite) number of constituent parts! An implicit premise here (articulated by other Vaiśeṣikas) is that the size of a whole is a function of the size, number and spatial arrangement of its parts.

The argument seems to be question-begging, for the implicit premise is only true if atomism is already accepted. A non-atomist will say that the

size of an object is determined, not by its constituents, but by the spatial boundaries of the 'stuff' it is made of.

5.3.3 The Metaphysics of Number (saṃkhyā)

The Navya-Nyāya account of number has been likened in content and sophistication to that of Frege, and is indeed fascinating. *The Manual of Reason* says only that numbers are qualities (*guṇa*-s), that they are the ground for numerical judgements, and that they range from 1 to a very high number called *parārdha* (1014. Note here again discomfort with the idea of infinity). The view that numbers are qualities is in fact associated with old Vaiśeṣika, and turned out to be irreconcilable with the structure of the Vaiśeṣika ontological system. We may speak of there being three horses in the field, but also of there being 24 qualities in the Vaiśeṣika system. Yet a quality cannot by definition reside in another quality— hence numbers cannot be qualities. This problem led the Navya-Naiyāyikas to develop a new account of numbers, based on a new type of relation called the *paryāpti* or 'completing' relation.

Here is a summary of their theory. Consider the following pair of sentences:

  1. The table has wooden legs

  2. The table has four legs.

The similarity between (1) and (2) suggests that we think of number-words as akin to other adjectives, i.e. as attributing some property to the object/s they qualify. The Nyāya say that, in (1), the property of being wooden resides in the legs of the table by the relation of inherence. Can we analyse (2) the same way, as stating that a universal property four-hood inheres in the legs? The new Nyāya (esp. Raghunātha and Jagadīśa) answer in the negative. For note that (1) entails

   3. Each leg is wooden.

However, (2) does not entail,

   4. Each leg is four.

The solution offered is to postulate a new relation, 'completion', which relates the property fourhood to the four legs *jointly*, but not to each leg individually. Raghunātha remarks that "the 'completion' relation, whose existence is indicated by constructions such as "This is one pot" and

"These are two", is a special kind of self-linking relation." His commentator Jagadīśa adds:

It might be thought that the 'completion' relation is nothing but inherence…So Raghunātha states that 'completion' is a another relation….In a sentence like "These are two pots", 'completion' relates the property two-hood by delimiting it as a property which resides in both pots. Otherwise, it would follow that there is no difference between saying "These are two" and "Each one possesses two-hood".

The proposal is that number properties are related jointly to objects by the many-one relation 'completion'. I think we can simplify this proposal a little without losing its essential structure. Rather than saying, in a sentence like "Mars is a planet", that the property planethood resides in Mars by the inherence relation, we would now say that the predicate "…is a planet" is true of Mars, so to speak building the inherence relation (or copula) into the predicate. In an entirely analogous way, we can build the completion relation into the number-predicate, which then becomes, if the number is n, an n-place relation. Thus the sentence "Venus and Mars are two" asserts of Venus and Mars that they stand in a certain 2-place relation, the relation which is the number 2. The Nyāya idea, then, is that number-adjectives are n-place relational predicates, and that numbers are n-place relations holding jointly between n distinct objects. It in no way follows from the statement that the relation 2 holds between Venus and Mars, that it holds just with Venus, any more than it follows from the statement that X is to the left of Y, that X is to the left, full stop. On the Nyāya proposal, then, it looks as though the troublesome inference is blocked because its conclusion is not even well-formed, since the phrase "Venus is two", like the phrase "X is to the left", is an incomplete or unsaturated expression.

The Nyāya, we have seen, distinguish two relations, the inherence and completion relations. Their motive is, as we might now say, to account for the distinction between collective and distributive properties. For the recognition that the inference from "These are two pots" to "Each pot is two" is invalid is just the recognition that the predicate two does not distribute over plural subjects. The Nyāya idea is to analyse collective predicates like '…are two', not as one-place predicates of aggregates or

sets, but as n-place relational predicates, true of n objects jointly. But since such relational predicates still take objects as subjects, this indeed shows that recognising the distinction between distributive and collective predicates does not force us to abandon the adjectival view. The Nyāya, indeed, have a term for collective properties: they call them *vyāsajya-vṛtti-dharma* or 'properties which occur jointly'.

5.4 LOGICAL THEORY AND GAṄGEŚA'S ANALYSIS OF INFERENTIAL WARRANT (VYĀPTI)

5.4.1 Overview of Logical Theory

Gaṅgeśa's *Tattvacintāmaṇi* is divided into four parts, one for each of the four knowledge-sources or *pramāṇa*s recognised by the Nyāya school. The post-Gaṅgeśa scholars focused more and more exclusively on the second part, concerning inference, and wrote increasingly detailed commentaries on a comparatively small portion of the book, namely the part where Gaṅgeśa examines the relation between inferential sign and property-to-be-inferred, which is called the *vyāpti*, 'pervasion' or 'inference-warranting' relation (Ingalls 1951, Goekoop 1977, Wada 2007). Even today, in a traditional Indian education, study of these sub-commentaries on various subsections of the *vyāpti* section of Gaṅgeśa forms an essential part of the curriculum.

The general structure of a properly formulated Nyāya inference has three components: thesis, reason (*hetu*) and example (*dṛṣṭānta*). The thesis, again, has two components: the 'locus' (*pakṣa*) or place of the inference, and a property (*sādhya*) whose presence in the locus is to be inferred. Thus every Nyāya argument exhibits the same pattern: *p* has *S*, because it has *H*; e.g. *d*. For example, "The mountain (= *p*) has fire (= *S*), because it has smoke (= *H*); e.g. the kitchen (= *d*). A sound argument must fulfil at least three criteria: (i) the reason property must be uncontroversially present in the locus; (ii) the reason property and the inferred property must be appropriately related, roughly such that wherever the reason is present, so is the inferred property; (iii) the example must be an

uncontroversial place where both the reason property and the inferred property are present.

Certain topics concerning this account are addressed in *The Manual of Reason* and other Navya-Nyāya texts. Among them are: the conditions under which inference can take place, and the conditions under which the result is a knowledge-episode (TS 49, 54); the correct account of the inference-warranting relation, between the inferential sign and the property-to-be-inferred, called the 'pervasion' or '*vyāpti*' relation (TS 50); the distinction between inference and demonstration (*svārtha*- and *parārtha*- inference) (TS 52, 53); the three-fold classification of inference types, those which are 'universally positive' (*kevalānvayin*), those which are 'universally negative' (*kevala-vyatirekin*), and those which are combined positive and negative (*anvaya-vyatirekin*) (TS 55); the types of inferential fallacy (*hetvābhāsa*) (TS 57-64).

I will discuss mainly the definition of the 'pervasion' relation. First, however, a brief note on how the causal model of knowledge is applied to inference. The 'special' instrumental cause (*karaṇa*) of an inferential cognition is said to be the inferrer's knowledge of the relevant pervasion relation. The 'operative condition' (*vyāpāra*) is said to be an awareness that the locus of inference (p) possesses such an inferential sign (h) as is pervaded by the property inferred (s). This is, in effect, an awareness which combines the two premises of the argument together immediately prior to the conclusion being derived, and is called the '*parāmarśa*' or 'consideration'. The '*guṇa*' or 'causal factor responsible for the truth' of the inferential cognition is the condition that this 'consideration' be true, i.e. that the locus does in fact possess such a sign as is pervaded by the inferred property. Another auxiliary causal factor is that the inferrer must either not yet already know the conclusion or else must have a particular desire to infer (i.e. given, knowledge of the premises, the inference would normally take place mechanically, but if the conclusion is already known e.g. perceptually, then the inferrer has to have a special wish to re-establish it inferentially). This condition is known as '*pakṣatā*', and should not to be confused with '*pakṣadharmatā*', which is the name of condition (i) above.

5.4.2 Definitions of the Pervasion (vyāpti) Relation

Vyāpti or pervasion, is that relation between the inferential sign (*hetu*) and the inferred property (*sādhya*), which legitimises the inference. It would typically be expressed by a sentence such as "wherever there is smoke there is fire", or "whatever exists is transitory". Knowledge of this relation, according to the Nyāya, is the instrumental cause in the inferential process—it is that relation knowledge of which, when combined with observation of the inferential sign, will permit us to make a sound or knowledge-yielding inference. Gaṅgeśa therefore attaches great importance to the precise definition of this relation. He notes as many as twenty-one definitions all of which he rejects for some reason or other, and then he goes on to give seven further formulations, each of which he considers acceptable. Of the definitions he rejects, the first five came to be known as the '*vyāpti-pañcaka*', and inspired a huge literature both among the Sanskrit commentators and their modern interpreters. These definitions are traceable to the earlier Buddhist and Nyāya literature. Two more rejected definitions, known as the 'Lion and Tiger' definitions, are apparently due to Gaṅgeśa's Navya-Nyāya predecessors (Wada 2007, ch. 5). The definition Gaṅgeśa finally accepts is called his '*siddhānta-lakṣaṇa*'.

5.4.3 The 'No Counter-Example' Definition

The five definitions which make up Gaṅgeśa's '*vyāpti-pañcaka*' are all varieties of what we might dub the 'no counter-example' definition of the pervasion relation. This states that the inferred property S pervades the reason property H just in case there is no place/entity where H is located but S is absent. Formally:

V_1 Pervades (S, H) iff $\neg(\exists x)(Hx \ \& \ S'x)$.

where S' is used to denote the complement of S. This definition is traceable both to the early Nyāya notion of a 'deviating' pseudo-reason (i.e. one which occurs somewhere where the inferable property S is absent), and to Diṅnāga's 'triple-condition' theory of the inferential sign, his third condition being that H must not be located in any "disagreeing case" (cf. '*vipakṣa*'), i.e. a place where S is absent. In either case, the

intuition is that a relation expressed by "where there is smoke there is fire" obtains just in case there is no place where fire is absent but smoke is present, i.e. no counter-example. The first definition which Gaṅgeśa considers is of just this form. It is that S pervades H iff H has "non-occurrence in the loci of absence of S" (*sādhyābhāvavad-avṛttitvam*), i.e. V_1.

Why is this plausible-seeming interpretation of the notion of pervasion rejected in Navya-Nyāya? There are two reasons:

The Problem of Partially Locatable Properties. The first problem with the 'no counter-example' definition depends on the Navya-nyāya notion of partial location (*avyāpya-vṛtti*). A property is said to occur wholly or completely in an object if it occurs in every part of that object. For example, the property of being golden occurs completely in a piece of (pure) gold; the object is 'saturated' (*abhivyāpya)* by the property, just as sesame oil saturates a sesame seed. Some properties, however, occur in some parts of the object but not others—these are called "partially locatable". For example, the property of being molten occurs at the centre of the Earth but not at the periphery. Note that the same property can be wholly located in some loci and partially located in others—e.g. redness occurs wholly in a ruby but partially in a red snooker ball. The distinction concerns two modes of property-possession, not two types of property. An important point is that, if a property is partially located in an object, then so is its negation. The Naiyāyikas' standard example of a partially locatable property, viz. "…is in contact with a monkey" (*kapi-samyoga*), illustrates the point. If the monkey is sitting on a branch of a tree, then the following statements may be true:

1. The tree is in-contact-with-the-monkey at time t, and
2. The tree is not-in-contact-with-the-monkey at time t,

(2) being true because there are parts of the tree with which the monkey is not in contact. Nyāya avoids the threatened violation of the law of non-contradiction by relativising the notion of occurrence. (1) is thus analysed as "the occurrence, of the property being-in-contact-with-the-monkey in the tree, *is delimited by (avacchinna)* the branch". Since a different delimitor appears in (2), there is no inconsistency between the two statements.

The main effect of admitting partially located properties into the system is that it is no longer the case that a property, P, and its complement, P', are disjoint: they may now intersect. If the inferred property is partially located, then the class of "agreeing cases" (*sapakṣas* - places where the inferred property is present) and the class of "disagreeing cases" (*vipakṣas*—places where the inferred property is absent) overlap rather than being distinct classes. To put it another way, a property P should be thought of as having both a "presence range" ($P+$) and an "absence range" ($P-$), and the two may overlap. Consider now the standard inference "The mountain has fire, because it has smoke". Suppose we find a place where smoke is present, and fire is both absent and also present, e.g. the kitchen. Does this show the inference to be faulty? According to definition V_1, it does, because the kitchen will be a counter-example, a place where smoke is present and fire absent. But this is wrong: since fire is also present there, it is not a real counter-example to the rule "where there is smoke there is fire". The upshot is that we must examine the "presence ranges" of the reason property and inferred properties, not their "absence ranges". A real counter-example to rule is a case which is in the presence-range of the reason property but not in the presence range of the inferred property.

Gaṅgeśa's second definition is designed to solve this problem: H's "non-occurrence in the loci of absence of S which are different from locus of S". In other words, a locus of absence of S which is also not a locus of S should not be a locus of H:

V_2 Pervades (S, H) iff $\neg(\exists x)(Hx \,\&\, S'x \,\&\, \neg Sx)$.

The effect of the new clause is precisely to rule out the problem of partially locatable properties, by specifying more restrictively what constitutes a counter-example.

The Problem of Universally Positive Inference. There are, claim the Nyāya, patterns of legitimate inference in which the property inferred has as its extension the entire domain. Such inference are called '*kevalānvayin*' or 'universally positive' (cf. TS 55). The stock Nyāya example is the inference "This is nameable, because it is knowable", nameability being regarded as a property of everything. Another example would be "This exists because it is produced". If such an inference is

sound, then its reason property and inferred property must exemplify the pervasion relation. According to the above definition, to say that nameability pervades knowability is to say that any locus of the property absence-of-nameability is not a locus of knowability. The problem is that, since nameability is a universal property, absence-of-nameability is an uninstantiated (*aprasiddha*) property, and the Nyāya claim that such properties are ontologically suspect. To put it another way, the statement "any locus of the property absence-of-nameability is not a locus of knowability" includes a non-referring expression, "locus-of-absence-of-nameability" or "unnameable thing", and hence is not truth-evaluable. The problem does not arise for all uninstantiated properties, for some, e.g. being a sky-lotus, or being a square circle, can be shown to be constructs made out of simpler instantiated properties. Thus, the statement "The square circle is circular" can be taken not as containing a non-referring expression, but as meaning "The circle is square and circular". However, 'unnameable (thing)' is not decomposable into two distinct properties this way.

None of the interpretations of the 'no counter-example' definition considered by Gaṅgeśa can solve the problem of universally positive inferences, and Gaṅgeśa accordingly rejects them all. His own definition uses a trick to get round the problem.

5.4.4 Gaṅgeśa's Definition: the 'siddhānta-lakṣaṇa'

The Manual of Reason reproduces with slight simplification Gaṅgeśa's new definition. It says that *S* and *H* are related by the pervasion relation just in case there is collocation of *H* with *S* and *S* is not a property the absence of which is collocated

with H (hetusamānādhikaraṇātyantābhāvāpratiyogi

sādhyasāmānādhikaraṇyam vyāptiḥ; TS 50). Almost the same

formulation is found in other Navya-Nyāya texts, such as the *Siddhānta-*

muktāvali. This definition is supposed to be applicable even if the

inferred property *S* is 'universally positive'. The idea, roughly, is that

if *S* pervades *H* then no property whose absence is collocated with *H* can

be identical to *S*. If we can find an instance of a locus of smoke which is

also a locus of the absence of some property, coldness say, then coldness cannot be identical with fieriness. That is:

Pervades (S, H) only if $(\exists x)(Hx \ \& \ P'x) \rightarrow (P \neq S)$.

(There is an implicit quantification over P here). What this says is that there is no place where H is collocated with the absence of S, but it does so without actually using the potentially non-referring phrase "absence of S", and it thereby avoids the problem of universally positive properties. However, although this condition is necessary for pervasion, it is not sufficient, for it is consistent with H (or S) being uninstantiated. So Gaṅgeśa insists too that H and S must be collocated:

Pervades (S, H) iff

   i. $\exists x \ (Hx \ \& \ P'x) \rightarrow (P \neq S)$, and

  ii. $\exists x \ (Hx \ \& \ Sx)$.

Gaṅgeśa's trick implicitly trades on the theorem "$A \rightarrow B \equiv \neg \ (A \ \& \ \neg B)$". Thus clause (i) is virtually equivalent to V_1. This shows too that we do not yet have a definition which can deal with the partially locatable properties, for which we need something more like V_2. Hence Gaṅgeśa's final definition is:

  V_3 Pervades (S, H) iff

i.	$\exists x \ (Hx \ \& \ P'x \ \& \ \neg Px) \rightarrow (P \neq S)$, and
ii.	$\exists x \ (Hx \ \& \ Sx)$.

This definition of pervasion is able to handle both universally positive properties and partially located properties appearing as inferred property. One may wonder why it is that, since a pervasion relation is of the form "all Hs are S", the Naiyāyikas did not simply use the notion of universal quantification in their definitions. The answer, perhaps, is that they were in fact trying to define this notion, and to do so only in terms of certain other notions which they took to be primitive, especially the notion of co-location and absence. If this is correct, however, then we must show how to reconstruct the definition without its implicit quantification over a property P (cf. Goekoop 1967).

Check Your Progress 1

Note: Use the space provided for your answer

1. What do you know The Vaiśeṣika System of Categories?

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2. Discuss the Physical Substance.

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3. Discuss the Logical Theory and Gaṅgeśa's Analysis of Inferential Warrant (vyāpti).

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5.5 LET US SUM UP

Vyapti, a Sanskrit expression, in Hindu philosophy refers to the state of pervasion. It is considered as the logical ground of inference which is one of the means to knowledge. No conclusion can be inferred without the knowledge of vyapti. Vyapti guarantees the truth of conclusion. It signifies the relation of invariable concomitance between "hetu" and "sadhya" and is of two kinds. Vyapti between terms of unequal extension is called "asamavyavyapti" or "visamavyapti", and vyapti between equal extensions is called "samavyapti".

Vyapti is a universal statement that expresses the "niyata sahacharya" or relation of constant concomitance between hetu or the middle term and sadhya or the major term and implies the "sahacara" i.e. the knowledge of invariable relation of causality or co-existence between sadhya and hetu in all the three instances of time, which is possible when the "anupadhik sambandha" i.e. relation of unconditionality between the two is known. It is defined as the unconditional and constant concomitant relation between "vyapya", the pervaded, and "vyapaka", the pervader.

The Charvaka school of Hindu philosophy while admitting the existence of the world and denying pre-existence rejects inference and testimony; they recognize perception as the only means to knowledge. They hold the view that the universal concomitance of the middle term with the major

term can never be known since their agreement in presence and agreement in absence can never be known as also their invariable concomitance because there are no class-characters and universals. Vyapti can never be known because it does not exist. If inductive inference is proved by vyapti then these two cannot be mutually dependent.

The Nyaya school of Gautama speaks of five-membered inference or "pararthanumana". Knowledge of vyapti is considered by this school to be the cause of successful inference because inference depends upon the unconditional universal concomitance between the middle term and the major term, the middle term indicating the existence of the major term, and is to be found in the minor term or "paksa", the subject of inference. It is not possible to perceive all instances of the middle term and the major term nor can vyapti be known by internal perception. In order for the inference to be sound the major and the minor premises have to be true, the former should be secure because the latter's truth is given by perception. They hold the view that vyapti is the unconditional uniform relation of the reason to the predicate and that a condition pervades the predicate. Faulty reasons such as inconclusive ("savyabhicara"), contradictory ("viruddha"), counterbalanced ("prakaranasama"), unproved ("sadhyasama"), and mistimed ("atitkala") or contradicted ("badhita') hinder the production of a valid inference when they are known. Vyapti is known by the joint method of agreement in presence and agreement in absence based on repeated observation aided by favourable hypothetical reasoning. Doubt about vyapti and certainty of the absence of vyapti act as hindrances to inferential knowledge; the certainty about vyapti is the cause of inferential knowledge.

Jain philosophy recognizes inference ("anumana") as a valid means of knowledge. They consider induction ("tarka") to be the knowledge of the invariable concomitance (vyapti) of the middle term with the major term in the three periods of time, arising from the observation of their co-presence and co-absence, and vyapti to be of two kinds, "anvayavyapti" and "vyatirekavyapti". Wherever there is smoke, there is fire; this is anvayavyapti. Wherever there is no fire, there is no smoke; this is

vyatirekavyapti. They hold the view that inference is based on vyapti which is derived from induction.

The followers of the Advaita Vedanta do not regard the knowledge of the existence of the probans, pervaded by the probandum, in the subject of inference as the cause of inference or the instrumental cause of inference. Vyapti is the co-existence of the probans and the probandum in all the strata of the probans and does not depend upon the agreement in absence between the probans and the probandum. Inference is "anvayi" and depends upon the agreement in presence between the probans and the probandum and is founded on their positive concomitance. They reject anvaya-vyatireki inference recognized by the Navya Nayaya.

Even though most schools of Indian thought have proposed their own method of ascertaining vyapti, because they base the knowledge of universal propositions on the principle of causality and essential identity in order to know how cause and effect are universally related, the Buddhists adopt the method of "pancakarani". To the Vedantins vyapti is the result of an induction by simple enumeration. The Naiyayikas firstly look for the relation of agreement in presence between two things, and thereafter look for the uniform agreement in absence between them, then they look for contrary instances and finally eliminate all upadhi or conditions. They supplement the uncontradicted experience of the relation between two facts by tarka or indirect proof and by "samanylakshana"

With regard to the "Ashta Siddhis" that already exist in nature, the followers of Aurobindo agree that consciousness in itself is free to communicate between one mind and another without physical means consciously and voluntarily, and it does so through two siddhis, namely, "Vyapti" and "Prakamya". Vyapti is when feelings of others from outside are felt, and also when one sends own thoughts to others. Prakamya is when one looks mentally or physically at something and perceives what is in that thing or super-perceives via the senses

5.6 KEY WORDS

Vyapti: Vyapti, a Sanskrit expression, in Hindu philosophy refers to the state of pervasion. It is considered as the logical ground of inference

which is one of the means to knowledge. No conclusion can be inferred without the knowledge of vyapti. Vyapti guarantees the truth of conclusion.

Siddhis: Siddhi are spiritual, paranormal, supernatural, or otherwise magical powers, abilities, and attainments that are the products of spiritual advancement through sādhanās such as meditation and yoga. The term ṛddhi is often used interchangeably in Buddhism.

5.7   QUESTIONS FOR REVIEW

1. Discuss the importance of Logical Theory and Gaṅgeśa's Analysis of Inferential Warrant (vyāpti).
2. How Indian philosophical understanding is related with the Vyapti?

5.8   SUGGESTED READINGS AND REFERENCES

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5.9 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

1. See Section 5.2
2. See Section 5.3
3. See Section 5.4

UNIT 6: THE VAIŚEṢIKA CONCEPTS OF UNIVERSAL, INHERENCE, AND BASIC DIFFERENTIUM

STRUCTURE

6.0 OBJECTIVES

After this unit, we can able to know:

- To discuss the Vaiśeṣika Concepts of Universal
- To know about the Inherence
- To know Basic Differentium
- To discuss Analogy and Other Candidate Sources

6.1 INTRODUCTION

Theory of knowledge, pramāṇa-śāstra, is a rich genre of Sanskrit literature, spanning almost twenty centuries, carried out in texts belonging to distinct schools of philosophy. Debate across school occurs especially on epistemological issues, but no author writes on knowledge

independently of the sort of metaphysical commitment that defines the various classical systems (darśana), realist and idealist, dualist and monist, theist and atheist, and so on. And every one of the dozen or so major schools from early in its history takes a position on knowledge and justification, if only, as with the Buddhist skeptic (Prasaṅgika), to attack the theories of others. There are nevertheless many common epistemological assumptions or attitudes, the most striking of which is a focus on a belief's source in questions of justification. Mainstream classical Indian epistemology is dominated by theories about pedigree, i.e., views about knowledge-generating processes, called pramāṇa, "knowledge sources." The principal candidates are perception, inference, and testimony. Other processes seem not truth-conducive or reducible to one or more of the widely accepted sources such as perception and inference. However, surprising candidates such as non-perception (for knowledge of absences) and presumption (defended as distinct from inference) provoke complex arguments especially in the later texts— from about 1000 when the number of Sanskrit philosophical works of some of the schools begins to proliferate almost exponentially. The later texts present more intricate views and arguments than the earlier from which the later authors learned. Classical Indian philosophy is an unbroken tradition of reflection expressed in the pan-Subcontinent intellectual language of Sanskrit. Or, we should say it is comprised of interlocking traditions since there are the distinct schools, all nevertheless using Sanskrit and engaging with other schools. Later authors expand and carry forward positions and arguments of their predecessors.

Skepticism and the issue of whether knowledge that p entails that you know that you know that p are addressed as well as the question of the usefulness of knowledge not only for the purposes of everyday life but also the religious goal of world-transcendence, about which most schools take positions. The authority of testimony, among candidate sources, is considered by some to have special religious importance. Others view yogic perception and/or meditative experience as crucial for religious knowledge, which is usually distinguished from the everyday knowledge analyzed in the textbooks of epistemology.

6.2 THE VAIŚEṢIKA CONCEPTS OF UNIVERSAL

Gautama defines the universal as, "Genus is that whose nature is to produce the same conception" (tsamānaprasavātmikā jātiḥ). According to Kaṇāda, universals have ontological existence, and they are not mere conceptual constructs. According to him, the notions, genus and species, are relative to the understanding (sāmānyam viśeṣa iti buddhyapakṣam). Praśastapāda also describes the universals as the cause of assimilation of different particulars (sāmānyam aṇuvṛttipratyayakāraṇam). It is the objective basis of the notion of common characters possessed by many individuals. The universal, according to Praśastapāda, is the unity for which different individuals are identically conceived, and which subsists identically and wholly in each of its subjects. Śridhara describes universals as the cause of the knowledge of common character possessed by many individuals, which are quite different from one another (atyantavyāvṛttānāṁ piṇḍānāṁ yataḥ kāraṇād anyonyasvarūpānugamaḥ pratīyate tat sāmānyam). Further, Udayana describes it as the essential and common character of many individuals. Hence, it is natural and not accidental (samānānāṁ bhāvaḥ svābhāviko'nāgantuko bahūnāṁ dharmaḥ sāmānyam). However, many of these definitions are not up to the mark because these definitions are to be accepted as the definition of the universal in so far as it serves to distinguish it from the particular and the configuration. Hence, Neo-Naiyāyikas redefine it. For example, Annaṁbhaṭṭa defines it as, "The universal is something that is eternal (nitya), unitary (eka) and 'related to more than one thing' (anekānugata)". This definition has three essential characteristics: i. Eternality, ii. Commonness, and iii. Inherence. In the absence of these qualifications the definition of the universal will be too broad. The first qualification is necessary to prevent conjunction (saṁyoga) from being included in the definition because the definition of conjunction includes the second and third aspects of the definition. However, it is not eternal. The second qualification is needed to exclude the dimension (parimāṇa) of ākāśa which is both eternal and inherent, but not common. And the third qualification is indispensable to avoid the inclusion of absolute non-existence (atyantābhāva) under the definition of the universal. The

absolute non-existence is eternal and common, but not inherent in anything. Hence, the all three qualifications according to Naiyāyikas are must for a precise definition of the universal. Naiyāyikas hold that the universal is absolutely different from the particular and it is not found separately because it is inseparably related with the latter by the relation of samavāya or inherence. Samavāya is defined by the Naiyāyikas as a relation generating the idea of constitutive locus with regard to inseparable things (Ayutasiddhanam ihapratyaya hetuh).

One of the most common and difficult topic of philosophy is the problem of universals. According to Raja Ram Dravid, broadly we have two kinds of knowledge about things: sensuous and conceptual. Sensuous knowledge is the knowledge of sensation which presents a concrete and particular aspect, whereas conceptual knowledge is the knowledge of ideas, which is dependent upon knowing through the use of reason.1 In other words, the objects outside the mind as presented by sensuous knowledge are particulars, whereas our concepts of them are general or universal. So the question is, are these general concepts true? Does this universal concept in the mind stand for something that is objectively real? There are mainly three views, namely, realism, nominalism and conceptualism. The Nyāya-Vaiśeṣika and Mīmāṁsā schools advocate realism, they believe that both the particulars and the universals are objectively real. The Buddhist's view is known as nominalism or apohavāda. According to it, the universals are only names and not reals. The conceptualist view is defended by Vedāntins and Jainas. They say that the universal exists apart from our mind in the particulars, but not over and above them. In point of existence it is identical with the particulars.2 The doctrine of sāmānya or jāti in Nyāya-Vaiśeṣika philosophy is the starting point of the controversy over universals in Indian Philosophy. Though a few scholars ascribe it to the early grammatical tradition (especially to Patañjali) in the Mahābhāṣya. Sāmānya or jāti is one of the seven categories of the Nyāya-Vaiśeṣika. The Nyāya-Vaiśeṣika takes realistic stand in its extreme form in formulating sāmānya or jāti. It is also pluralistic since it holds that the ultimate reality is constituted of irreducible particulars. Besides, as it is realistic, it regards the world as constituted of real things which exist

independently of the knowing mind, and we can have the knowledge of these things through our experiences. Thus, it accepts the empiricist account that there are no innate ideas. According to the Nyāya-Vaiśeṣika, the external world reveals both diversity and unity. It holds that if there is no bond of unity among the things, then their comprehension would be beyond the reach of human intellect. Hence, the Nyāya-Vaiśeṣika gives the name sāmānya or jāti to these common features.

6.3 INHERENCE

Logic is developed in classical India within the traditions of epistemology. Inference is a second knowledge source, a means whereby we can know things not immediately evident through perception. Oetke (2004) finds three roots to the earliest concerns with logic in India: (1) common-sense inference, (2) establishment of doctrines in the frame of scientific treatises (*śāstra*), and (3) justification of tenets in a debate. The three of these come together (though the latter two are predominant) within the epistemological traditions in an almost universal regard of inference as a knowledge source.

Seeing classical Indian logic as part of epistemology, as explaining how we know facts through the mediation of our knowledge of other facts, makes it easy to understand why both the Buddhist and Vedic schools count a valid but unsound argument as fallacious: knowledge is not generated. Classical Indian philosophers are not focused on logic per se, but rather on a psychological process whereby we come to know things indirectly, by way of a sign, *hetu* or *liṅga*, an indication of something currently beyond the range of the senses, whether at a distance spatially or temporally or of a sort (such as atoms or God or the Buddha mind) that by nature cannot be directly perceived.

The two greatest names for classical Indian logic belong to logicians of the Buddhist Yogācāra School, Dignāga (sixth century) and Dharmakīrti (early seventh century). Dignāga laid out all the possible relationships of inclusion and exclusion for the extensions of two terms called the prover or "sign," *hetu*, and the probandum, *sādhya*, the property "to be proved." Thereby he revealed the underpinnings of the *pramāṇa* of inference in terms of sets of particulars, which, according to Yogācāra ontology, are

the only reals. Dharmakīrti classified inferences based on the ontological nature of the class-inclusion relationship that underpins all inference as a knowledge source. Earlier philosophers, both Buddhist and non-Buddhist, provide examples of everyday reasoning, several of which are abductive in character, informal reasoning to the best explanation, from sight of a swollen river, for example, says Vātsyāyana in his commentary on the inference sūtra (1.1.5) of the *Nyāya-sūtra*, to the conclusion that it has rained upstream. But there are also instances of inferences comprised of deductive, extrapolative, and sometimes properly inductive reasoning on topics of everyday life as well as philosophy in numerous pre-Dignāga texts of several schools. It is not true, as is sometimes claimed, that no one before Dignāga had the notion of an inference-underpinning "pervasion," *vyāpti*, of a prover property by a property to be proved. Dignāga does however get the credit for the earliest systematization, which employs three terms, a site or subject of a proposed inference (*pakṣa*, the mountain in the stock example of an inference from sight of smoke on a mountain to knowledge of fire on the mountain), the prover or prover property (*hetu*, smokiness), and the probandum (*sādhya*, fieriness).

Dignāga, it should be stressed, as a nominalist sees inference as proceeding from knowledge of particulars to other knowledge of particulars (avoiding the universals of the realists, as nicely explained by Hayes 1988 with reference to the Buddhist *apoha*, "exclusion," theory of concepts). Dignāga formulates a threefold test for a good prover, *trairūpya-hetu*:

A. the prover's occurrence on the inferential subject of a proposed inference must be known to the subject S

B. the prover's occurrence at least once together with the probandum must be known to S

C. no counter-case of a prover occurring without the probandum must be known to S.

Uddyotakara in his *Nyāya-sūtra* commentary incorporates Dignāga's ideas to formalize many of Vātsyāyana's informal inferences. The Nyāya

philosopher owes almost everything to his Buddhist adversaries, as opposed to his Nyāya predecessors, but he does criticize and alter what he sees as the certification conditions of inference as a knowledge source, combining Dignāga's second and third tests into a single requirement, knowledge of pervasion. He also adds a third condition, the subject's having to "reflect" and put the information together, so to say:

1. *pakṣa-dharmatā*: the prover has to be known to S as qualifying the inferential subject
2. *vyāpti-smaraṇa*: the prover's being pervaded by the probandum has to be remembered by S
3. *liṅga-parāmarśa*: S must connect by reflection the pervasion with the inferential subject.

The upshot of the addition may be interpreted as the recognition that knowledge is not closed under deduction considered in abstraction from the psychological process of "reflection." But through that process, epistemic warrant—or "certainty," *niścaya*—passes from premises to conclusion, and we act unhesitatingly, for example, to put a fire on yonder mountain out.

Things are yet more complicated. Inferential knowledge is defeasible, or, more precisely stated, what a subject takes to be inferential knowledge may turn out to be pseudo, non-genuine, a false cognition imitating a true one, or even in Gettier-style cases an accidentally true cognition masquerading as one genuinely inference-born. Knowledge has a social dimension. Not only would awareness of a counterexample be a defeater, but also if someone were to present a counterinference to a conclusion opposed to ours, no longer would we have inferential knowledge. Awareness of any of several kinds of "blocker" of "reflection" can undermine the generalization on which such reflection depends. There are potential preventers of inferential awareness, "defeaters," *bādhaka*, leading to belief relinquishment by someone who has hitherto not noticed a counterexample or the like and who has thus drawn a conclusion erroneously.

Notes

However, one should not think that the epistemologists' inference is non-monotonic, as established by Taber (2004) against Oetke (1996) in particular. The paradigm logical form embedded in a good inference is monotonic. New information is irrelevant to the validity of the pattern itself, although it may well be relevant to a subject's justification for acceptance of the premises. Examples of inferences in classical texts often seem non-monotonic because fallibility attaches to the premises. Such fallibility of course passes to the conclusion, too. (Cf. Israel 1980 who similarly voices an epistemological complaint against the very idea of non-monotonic *logic*, according to Koons 2013.)

Targeting the relationship of pervasion in Uddyotakara's second condition, *vyāpti-smaraṇa*, which appears to be the ontological underpinning of Dignāga's conditions (2) and (3), Dharmakīrti divides inferences into three kinds:

- sva-bhāva (self-nature: "It's a tree because it's a śiṃśapā oak")
- tad-utpatti (causality: "Fire is there because smoke is there")
- anupalabdhi (non-perception: "There is no pot here because none is perceived").

Yogācāra holds that with the first type of inference the underpinning pervasion is "internal" (*antar-vyāpti*). We may think of this as an internal relation between concepts and thus as similar to the *a priori* of Western philosophy. But it is actually a technical point about whether the term that picks out the inferential subject or subjects—think of the *pakṣa* as a set—closes it off from being included in the inductive base of the generalization (or extrapolation, according to Ganeri 2001b) that gives us knowledge of a pervasion relationship. Mīmāṃsā and Nyāya rule out this kind of inference as begging the question: we want to know whether the inferential subject possesses the probandum property and so to cite that subject itself, even a part of it, runs counter to the very purpose of inference.

Later Nyāya divides inferences not according to the ontology of pervasion (which is mapped onto the Nyāya-Vaiśeṣika ontology and

causal theory, sometimes not very successfully) but rather by the way a pervasion is known:

- *anvaya-vyatireka* ("positive and negative"): inferences based on positive and negative correlations where both are available, i.e., cases where, for example, smokiness and fieriness have been known to occur together, kitchen hearths, campfires, etc., like (it is claimed) yonder smoky mountain where being-fiery is to be proved, taken along with negative examples where the prover as well as the probandum is known not to occur

- *kevala-anvaya* ("positive only"): inferences based on positive correlations only, where there are no known examples of an absence of the probandum property, such as would have to be the case with the universally present property, knowability (there is nothing that is not knowable)

- *kevala-vyatireka* ("negative only"): inferences based on negative correlations only where outside of the inferential subject there are no known cases of the probandum.

Many of the inferences that Buddhists identify as hinging on an "internal pervasion" (antar-vyāpti) Nyāya philosophers see as "negative only" (kevala-vyatireka). Taking a particular śiṃśapā oak as the pakṣa, we have the negative correlation proving it is a tree: whatever is not a tree, is not a śiṃśapā oak, for example, a lotus.

Western interpretations and representations of inference as classically conceived have often missed its unity as a knowledge source. Ganeri (2001b: 20) claims that it is better to understand both the Buddhist and early Nyāya patterns as "not enthymematic," not skipping a step of generalization and then implicitly using universal instantiation (UI) and modus ponens (MP) in applying the rule to a case at hand. Case-based reasoning need not be interpreted as relying on universal quantifiers, and the representation of Schayer (1933) and others which uses them is misleading. Theirs is indeed misleading, and Ganeri appears to be right with regard to the early theories. But with late Nyāya Schayer's argument form of UI and MP misleads for yet another reason, namely, failing to be sufficiently sensitive to the logic of occurrence and non-

occurrence of properties at a location, or qualifying a property-bearer, as Staal (1973) and others have brought out. Furthermore, Ganeri is right that in analyzing the pattern one tends to miss the unity of the causal theory that has one mental state brought about by another. In the Nyāya theory, everything is integrated in the notion of "reflection," *parāmarśa*, as an inference's proximate instrumental cause or "trigger," *karaṇa*. While not the only necessary condition, this one is the last in place, securing the occurrence of inferential knowledge.

Following Matilal (1998), we can reconstruct such "reflection" as a singular inference:

$$(K)(S^pHa) \rightarrow (K)Sa$$

This says that on the condition that a subject knows that H-as-qualified-by-being-pervaded-by-S qualifies a, then the subject knows that Sa. The arrow should be interpreted as depicting causal sufficiency, in line with Uddyotakara and the later tradition. "Reflection" is a complex mental state that is nevertheless a unity, both as a particular cognition that can be a causal factor for the rise of another cognition and as having intentionality, or "objecthood," expressible in a single sentence. Attempts to find a single rule are in consonance with both of these dimensions of the theory. But a lot of inductive depth is packed into the idea of a pervasion being known, and a lot about it is said that shows that there is generalization, at least in the later Nyāya theory. Knowing a general rule is considered crucial, not just extrapolation to a next case. From Uddyotakara on, Nyāya philosophers treat pervasion as the equivalent of a rule stating that—to use the language of sets and terms—the extension of the probandum term includes that of the prover term, includes it entirely such that there is nothing that locates the pervaded property (the prover) that does not also locate the pervader (the probandum), as argued by Kisor Chakrabarti (1995) among others.

The centralmost issue with inference, to consider the effort of late Nyāya philosophers, is to make plain the logic of pervasion as well as how we know the universalized items, or entire extensions, of the terms figuring in our knowledge of such rules, the items that underpin our knowledge of

such inclusions, such naturally necessary pervasions of a prover by a probandum property. Lots of work from the earliest focuses on fallacies and inference in the context of formal debate. And there are many philosophical inferences advanced in the literatures of the various schools, such as proofs of momentariness, the existence of God, the possibility of liberation from birth and rebirth, and dozens more.

TYPES OF UNIVERSALS

Praśastapāda distinguishes two types of universals: the higher (para) and the lower (apara). The universal having the widest extension is called para and the rest having lesser extension are called apara. The higher universal is that of 'existence' because it extends over the largest number of things; as well as, it is a generality which is pure and simple, always serving as the basis of comprehensive cognitions. The supreme function of a universal is synthesis and existence being the ground of synthesis alone is the universal par excellence. The universals, viz., those of substance, quality, action, etc., which extend over a limited number of things are lower universals. They are universals, because they discriminate their proper individuals from other kinds of individuals. They synthesize the members of their own class and also serve to differentiate them from the members of other classes. Hence, they are both universals and particulars. They are particular only in a derivative sense, for they serve to distinguish things belonging to different classes. Śivāditya adds to them another universal, those having intermediate extension (parapara). For example, 'substancehood' is less extensive than 'existence' and more extensive than 'earthhood'. Hence, it belongs to the intermediate type. Existence (sattā) is the highest universal. Substance, qualities and actions exist through relation to existence. Existence is common to them as well as existence is different from them. Substances, qualities, and actions are different from one another, but existence is identical with them. So it is different from its substrates. It inheres in them.

UNIVERSAL AND CAUSALITY

Later followers of Nyāya-Vaiśeṣika describe universals as indispensable conditions for the regulation of causal linkages (karaṇatavacchedaka and kāryatavacchedaka). Udayana argues for the very existence of universal on the basis of the principle of causality. His chief argument is that causal relation being necessary and uniform, it cannot be said to exist on particulars as such, but between particulars having a class nature (jāti). A denial of this will be contrary to the nature of things as discovered by us. If causal relation is supposed to be held between bare particulars, then we cannot explain the notion of the potential (svarūpayogya) cause. We search for the specific material which has the potentiality for the desired effect. This potentiality or causal efficiency (karaṇatva) is possessed by a thing by virtue of its class nature (jāti). Visvanatha, the author of Nyāya Siddhānta Muktāvalī, proves the very existence of the universal substanceness (dravyatva) on the basis that it is inevitable as a causal delimiter (karaṇatavacchedaka) of the inherent causality of an effect (kārya) or of conjunction (saṁyoga) and distinction (vibhāga), (kāryasamavāyikāraṇatāvacchedakatayā, samyogasya, vibhāgasya, vā samavāyikāraṇatāvacchedakatayā dravyajātisiddhiriti). 16 Thus it is clear that the idea of causality as a consistent and essential relation between things necessarily implies the existence of universal.

SĀMĀNYA AND UPĀDHI

To understand the proper nature of universal or jāti it is important to understand what upādhi or non-jāti is. Upādhis or jāibādhakas are the counter examples of universals. It is a case to which the definition does not apply. A jātibādhaka is an argument which is put forward to defend the definition of universal or jāti against a counter example. The universal according to NyāyaVaiśeṣika is the natural and eternal class-essence, such as redness, cowness, potness, etc., and this is the permanent feature of particular things. Other general characteristics such as cookness, blindness, tallness, etc., are adventitious features, and are recognized not as universals but as upādhis. As far as from what we have understood of the universal, things belonging to the categories of substance, quality and action can alone be legitimately regarded as possessing genuine universal. The other categories, viz., universal,

particularity, inherence and non-existence, although we might have general conceptions of them, cannot be said to have real universal inhering in them. So how do we distinguish sāmānya and upādhi? Udayana elucidates six impediments called jātibādhakas, in the following sūtra (vyakterabhedastulyatvaṁ saṅkaro'thānavasthitiḥ rupāhānirasambandho jātibādhakasaṅgrahaḥ), and the very presence of it disqualifies a characteristic from being recognized as a universal. The six impediments are as follows: i. Vyakterabheda: The character belonging to a single thing, for example, ākāśatva cannot stand for jāti. Because it is unique to ākāśa, and a proper universal must have more than one individual as instances. ii. Tulyatva: Two general names having the same meaning do not stand for different universals. For example, ghatatva and kalasatva cannot be considered a pair of universals. It is because the words ghata and kalasa denote the same particular. The same individuals cannot be the substrate of two distinct universal properties. iii. Sāṁkarya: If one of the two properties does not fall completely within the other, then neither is a proper universal property. However, one of them must be imposed properties. This fault is known as cross-connection (sāṁkarya). The cross-connection characters that which co-exist yet exclude one another example bhutatva (being an element) and murtatva (having limited dimension) are present in the four elements earth, water, fire, air and bhutatva is present in ākāśa but not murtatva. iv. Anavasthā: The universality cannot be visualized to be as inhering in further universality as this would lead us to an infinite regress. If the incorporation of any property leads to an infinite regress (anavasthā) then it should not be regarded as a proper universal, but an imposed property. v. Rūpahāni: No universality can subsist in particularities, since that would destroy the very nature of the particularity. The particularity of objects cannot have further principle of unity as it would contradict their essential nature and their mutual difference would be annihilated. vi. Asambandha: The absence of the relation of inherence excludes samavāyatva and abhāvatva from being reckoned as universal. The universal in the Nyāya-Vaiśeṣika view is, by definition, inherent in its subjects. This implies that the thing in which nothing can inhere cannot be the substrate of a universal. The universality cannot subsist in

inherence, since there is no relation of inherence between that universality and inherence. So there is no universality of inherence. Every common quality does not constitute universality. Hence, universality is distinguished from upādhi.

BUDDHIST CRITICISM

The Nyāya theory of universals is criticized by many other schools of Indian philosophy. However, we shall consider here only a few criticisms from the Buddhists perspective. According to the Buddhists, the objects of knowledge (prameya) are divided into two: the unique self-characteristic (svalaksaṇa) and the generic class-characteristics (sāmānyalaksaṇa), and with reference to these two kinds of prameyas two means of valid knowledge, perception and inference are requisitioned, by the former we apprehend the svalaksaṇa aspect of things which alone is perceptible and by the latter the sāmānyalaksaṇa which is imperceptible. As there cannot be more than two kinds of prameyas, there cannot be more than two pramāṇas perception and inference. Buddhism states that in perception, we perceive only particular events or sensation. Apart from sense data, no diverse and eternal truths exist in the world. Dignāga would say that all words, all names and all concepts are necessarily relative and therefore unreal. Hence, according to Buddhists there are no universals in the outside world and thus they are conceptual constructs or apoha. It is maintained by them that the universals are only words, and they are made universals by being used by a number of different particulars. For them realities are momentary particulars, and they are absolutely discrete self-characteristics or the svalaksaṇas. These svalaksaṇas are given to us as pure sensation where as the universals or sāmānyalaksaṇas are given to us by the understanding as an innate constructive tendency or anadividyavasna. The reality viewed as paramārtha and samvṛti conceptual knowledge is not absolutely deprived of value though ultimately illusory. The Buddhists say that a universal should be either, all-pervading or limited to certain individuals, belonging to the same class and neither is possible. If the universal is found in all objects, then cowness must be found in horses, stones, etc., in which case we shall have an intermixture of

genera (sāṃkarya). Or if universal exists only in a select group of individuals, then how do the Naiyāyikas account for the appearance of a universal in a new born particular? And how do Naiyāyikas account for its disappearance, when it ceases to be? When a new pot is made, does the eternal potness come suddenly into being in the newly made pot, or, when the pot is broken, does the eternal potness cease to be? Further, we cannot say that the universal has moved from the place where it already existed to the place where the cow is born, because a universal is not a substance; and according to the Nyāya, only substances are capable of motion. So also we cannot say that cowness already existed at the place where the cow was born, because then it should have been perceived there even before the cow was born. However, the Naiyāyikas say that this is due to improper understanding of Buddhist philosophers about the nature of universals. For Naiyāyikas a particular cannot exist at more than one place at the same time; but a universal, by hypothesis, is capable of residing at many places at the same time. So the natural thing to say is that a universal resides in all objects belonging to the class (svaviṣayasarvagata). So also the universal also resides in a new member that happens to be added to the class by being produced and there is nothing problematic or mysterious about it. When an object is produced, the sum total of causal conditions (kāraṇasāmagrī) determine its nature and thus to which class it should belong. Further, when the universal inheres in a particular instance of it, does it inhere in it in its entirety, or does only a part of it inheres in the particular instance? However, both the alternative is not acceptable to them. If, the universal is present in its entirety in one particular, then it could not be present in other particulars for example, if there be one individual cow there will be no other cows. Likewise, we cannot say that it exists particularly only in a part, if, so then we are landed in the absurdity that an individual cow is only partly a cow and partly some other animal such as a buffalo.24 For Naiyāyikas, the universals for example, 'cowness' it is neither a substantial whole, nor an aggregate (avayavī); the word 'part' applies to members of an aggregate or to elements of a substantial whole; the word 'entire' applies to such members of elements when all of them are taken together without a remainder. Cowness is neither an aggregate nor a substantial whole;

hence the words 'entire' and 'partial' is not applicable to it.25 Moreover, if the universal as Naiyāyikas say, be admitted on the basis of the notion of belonging to the same class, then it is inconclusive, because there are cases where we do have the notion of belonging to same class but no common simple character may be found to be possessed by all members of the class. For example, the class of cooks, what is common in them is the act of cooking and by this common character, if we bring them under a class, why could we not do so with respect to other classes like man, horse, etc.? Further, when we apply a general word, such as cow, to an individual cow we do not mean that it is of the same kind as other cows. What we mean is that it is different from everything that is other than a cow. By applying the word cow, we differentiate the object from every non-cow such as horse, man, etc. Hence, a genera word primarily as a negative meaning signifying differentiation from others (anyāpoha) and not a positive meaning as a Naiyāyika holds. The Naiyāyikas like Vācaspati Misra and Jayanta would say that, If the meaning of cow is to be ascertained through the negation of non-cow, circularity is inevitable. 'Cow' is to be ascertained through negation of non-cow, but negation of non-cow is possible only through an ascertainment of what cow is. However, Naiyāyikas held that the admission of universals for man, cow, etc., is acceptable on the basis of experience. For example, at the time of perceiving two individual men, we directly observe that both share the common property of humanity and this kind of direct experience cannot be nullified by an appeal to cases like the class of cooks. The Naiyāyikas, however, accepted the point that there are cases where in spite of the notion of belonging to the same class, no universals could be admitted. In fact the Naiyāyikas held that before a universal is admitted on the basis of the knowledge of identity, one must ascertain that no violation has been made of any of the restrictive conditions for universals (jātibādhaka). The universal is an object of perception as the individual, and not a mere fancy of imagination, and we feel the difference between the cognition of the universal and that of the particular. Simply because we perceive in the same object and at the same time both the universal and the particular, we cannot confuse the two. The cognition of

universals is inclusive in nature, while that of particulars is exclusive in character.

6.4 BASIC DIFFERENTIUM

To conclude, we can say that the theory of the universal as an objective reality is the basic tenet of the Nyāya-Vaiśeṣika realism. For them universals are eternal and independent common characters that inhere in all members of a class. Nyāya claims that without universals no proper accounting can be given to natural classes. For example, lions and tigers are two different species of animals. No lions are tigers and no tigers are lions. But what makes all lions (past, present and future) different from all tigers (past, present and future)? One reasonable answer is that all lions share a common feature that is missing in all tigers. Again, without universals no proper account can be given, for laws of nature such as that heat expands bodies. Unless all heat share some objective common feature, how can it be that all heat expand bodies? This common feature is nothing but universal. The Nyāya-Vaiśeṣika explains the theory of universals from its pluralistic and realistic standpoint. They do not accept the universals at the cost of the particulars. The particulars are there, and they are united under the roof of the highest universal existence.

6.5 ANALOGY AND OTHER CANDIDATE SOURCES

6.5.1 Analogy and Similarity

Briefly we may consider the more exotic candidate sources proposed in the classical literature mainly within Mīmāṃsā (often elaborated by Vedāntins), beginning with analogy, which is viewed as the pramāṇa for knowledge of similarity in Mīmāṃsā and Vedānta but is rejected by the other schools, Vedic and non-Vedic alike, except for Nyāya which however provides a radical reinterpretation. To provide a hermeneutics of Vedic injunctions to make them suitable for practice in actual performances, the Mīmāṃsā exegetes need to be able to designate substitutes, of one type of grain for another, for example, or one animal

for another, depending upon availability in the first place but upon similarity in the second place. In Vedānta, analogy is useful for understanding the Upanishads which make comparisons between spiritual or yogic experience and the experiences of ordinary humans, as pointed out by Kumar (1980: 110). Yogācāra, Jaina, and Nyāya logicians find similarity—or relevant similarity—to figure in inference as a knowledge-generating process. It is through cognizing similarity and dissimilarity that we arrive at knowledge of pervasion as required for inferential knowledge. A kitchen hearth counts as an "example" in the stock inference because of its relevant similarity to the mountain which is the center of inquiry. It is part of what is called the sapakṣa, the set of positive correlations, that make us know an inference-underpinning pervasion. Knowledge of similarity is not viewed in Nyāya (or Yogācāra, etc.) as the result of analogy as a knowledge source—for Nyāya, analogy is restricted to a subject's learning the meaning of a word (and Yogācāra does not countenance it as a separate pramāṇa). But pervasion is known typically through generalization from cases (although in some cases a single observation, some say, will suffice), presupposing knowledge of relevant similarity which can be a matter of perception.

Vedānta and Mīmāṃsā philosophers, who take similarity to be a special object known through this special source, give examples different from the stock scenario provided by Gautama and elaborated by Vātsyāyana (under Nyāya-sūtra 1.1.8) who limit the scope of analogy to learning the meaning of a word. But for brevity's sake, let us take up only the Nyāya theory. A subject S inquires of a forester about a gavaya, which is a kind of buffalo, having heard the word 'gavaya' used among his schoolmates but not knowing what it means, i.e., not knowing what a gavaya is. Questioned by S, the forester replies that a gavaya is like a cow mentioning certain specifics as also some dissimilarities. To simplify, Nyāya philosophers say that the forester makes an analogical statement ("A gavaya is like a cow"), whereby our subject S now knows in general (sāmānyataḥ) what the word means, according to Gaṅgeśa and followers (Tattva-cintā-maṇi, analogy chapter). But S does not yet know how it is used, does not know its reference, which is deemed a word's primary meaning. Later encountering a gavaya buffalo, S says, "This, which is

similar to a cow, is the meaning of the word 'gavaya'," a statement which expresses S's new analogical knowledge. The knowledge has been generated by analogy, its "knowledge source," pramāṇa.

The ontology of similarity is controversial. Several different theories are proposed, one of the best of which belongs to Gaṅgeśa, who sees it as a relational property supervening on other properties and defined as something's having a lot of the same properties as something else. It is not a universal, he argues, for similarity relates a correlate (the gavaya buffalo) and a countercorrelate (the cow), whereas a universal, in contrast, rests as a unity in, for example, with cowhood, all individual cows. In this way it is like contact, samyoga, but there are also rather obvious differences. It is not reducible to any single category among the traditional seven (substance, quality, motion, universal, individualizer, inherence, and absence), for some substances are like one another as are certain qualities and actions. But similarity also is not, pace the Prābhākara, a category over and above the recognized seven. Gaṅgeśa's main argument there is that similarity is not uniform. It is to an extent a property that is mind-imposed in that the counterpositive (the cow) is supplied from our side. Moreover, it supervenes on other properties.

6.5.2 "Presumption" (arthāpatti)

Another candidate source championed by Mīmāṃsā and Vedānta philosophers but rejected by everyone else as an independent pramāṇa is arthāpatti, a kind of reasoning to the best explanation which Nyāya views as the same as "negative-only" inference (see above). A stock example: from the premise, "Fat Devadatta does not eat during the day" (known by perception and/or testimony), the conclusion is known (by arthāpatti), "He eats at night." For Nyāya, the inference (which is no special source) can be reconstructed where F = "is fat but does not eat during the day" and G = "eats at night": Whoso F, that person G; what is not so (F) is not so (G), like Maitra (who eats during the day and not at night). This would be a "negative-only" inference so long as not only has Devadatta not been observed to eat at night but also there is no one else known to be like him in being fat and having been observed to eat only at night. We do know that he eats at night (though this has not been observed), and

our inductive base is comprised only of negative correlations. Mīmāṃsā rejects this analysis and holds in contrast that presumption is an independent knowledge source and an important one, operative in basic language comprehension as well as in knowledge of various everyday facts. The reasoning is not inferential because no pervasion is known, it is commonly argued.

6.5.3 "Non-cognition" (anupalabdhi)

How do we know absences? I know that my glasses are not on the table but how? Dharmakīrti would answer, "By inference," inferential knowledge of an absence being one of three fundamental types identified by the Yogācārin (see above). "If an elephant were in the room, I (S) would perceive it. I (S) do not perceive an elephant. Therefore, there is no elephant in the room"—similarly for my glasses not being on the table (presuming the table is not so cluttered that they could be concealed). Gautama and Vātsyāyana, without elaborating, agree that absences are known inferentially (Nyāya-sūtra 2.2.2). But Uddyotakara and the later tradition argue that we know absences sometimes perceptually. I cognize immediately my glasses' absence when I look for them on the table.

Bhāṭṭa Mīmāṃsā says no, there is operative here a special knowledge source called "non-cognition" or "non-perception," anupalabdhi. The main arguments center on the sufficiency of perception, or inference, to make known such negative facts, which clearly we do know. The Bhāṭṭa argues, for example, that perception makes known only presences. Indeed, Nyāya has a difficult time assimilating such knowledge to its theory of perception, in particular since the difficulty widens into what is known in analytic philosophy as the generality problem. Nyāya recognizes that an absence has a peculiar relational structure, namely, to relate a locus (the table) to a counterpositive (my glasses) and that the idea of the counterpositive is furnished by the cognizer entirely from memory. If memory can have such a crucial role in a type of perception, how then to draw the limits on what is perceptible? The Nyāya project threatens to spin out of control. Not surprisingly, therefore, there is a large literature on absence and its epistemology.

6.5.4 Gesture and Rumor

We learn some things from gesture (*ceṣṭā*), such as to come when beckoned by a conventionalized movement of the hand. Gaṅgeśa says this is an aid to testimonial knowledge, not really a form of it since it depends on other semanitc items, he says, being supplied (*Tattva-cintā-maṇi*, testimony chapter, 922–926). Rumor (*aitihya*) is defined by Vātsyāyana (under *Nyāya-sūtra* 2.2.1) as a testimony chain whose originator is unknown. The Nyāya attitude is to regard even it as presumptively veridical in consonance with the school's overall theory of testimony.

6.6 "SUPPOSITIONAL REASONING" (TARKA)

Many classical Indian philosophers held that apparent certification may not be enough to warrant belief in some instances. Even if our beliefs/cognitions have indeed been generated by processes that would be counted knowledge sources did they not face counterconsiderations, in facing counterconsiderations—in being reasonably challenged—they are not trustworthy and do not guide unhesitating effort and action. There is a social dimension to knowledge, where reasoning reigns resolving controversy in ways over and above the sources. These are the ways of tarka, "hypothetical" or "suppositional reasoning." Paradigmatically, tarka is called for in order to establish a presumption of truth in favor of one thesis that has putative source support against a rival thesis that also has putative source support, a thesis and a counterthesis both backed up by, for example, apparently genuine inferences (the most common situation) or by competing perceptual or testimonial evidence. By supposing the truth of the rival thesis and (in Socratic style) showing how it leads to unacceptable consequences or breaks another intellectual norm, one repossesses a presumption of truth, provided—the classical epistemologists never tire of emphasizing—provided one's own thesis does indeed have at least the appearance of a knowledge source in its corner. The consensus across schools is that such arguments are not in

themselves knowledge-generators, but they can swing the balance concerning what it is rational to believe.

Suppositional reasoning is what a philosopher is good at, drawing out of implications of opposed views and testing them against mutually accepted positions, according to, broadly speaking, criteria of coherence but also of simplicity. Here we come to the vital center of the life of a classical philosopher, which is reflected in honorific appellations and book titles, dozens of which use 'tarka' as in "Crest Jewel of Reasoning" (tarka-śiro-maṇi).

Udayana (Nyāya, eleventh century) appears to inherit a sixfold division of tarka according to the nature of the error in an opponent's position, and expressly lists five types (a sixth, "contradiction" or "opposition," either being assumed as the most common variety, or subsumed under Udayana's fifth type, "unwanted consequence"). Philosophers from other schools present distinct but overlapping lists. The Nyāya textbook-writer, Viśvanātha, of the early seventeenth century, mentions ten, Udayana's five plus five more, many of which are used by the Advaitin Śrīharṣa (probably Udayana's younger contemporary) among other reasoners. They are: (1) self-dependence (begging the question), (2) mutual dependence (mutual presupposition), (3) circularity (reasoning in a circle), (4) infinite regress, and (5) unwanted consequence (including contradiction presumably)—Udayana's five—plus (6) being presupposed by the other, the first established (a form of "favorable" suppositional reasoning), (7) (hasty) generalization, (8) differentiation failure, (9) theoretic lightness, and (10) theoretic heaviness.

It is tarka that establishes a presumption against skepticism. Gaṅgeśa (fourteenth century): "Were a person P, who has ascertained thoroughgoing positive correlations (F wherever G) and negative correlations (wherever no G, no F), to doubt that an effect might arise without a cause, then—to take up the example of smoke and fire—why should P, as he does, resort to fire for smoke (in the case, say, of a desire to get rid of mosquitoes)? (Similarly) to food to allay hunger, and to speech to communicate to another person?" (Translation from Phillips 1995: 160–161, slightly modified.) The argument, which is found in the

Nyāya-sūtra and other works is that without the confidence that presupposes knowledge, we would not act as we do.

Check Your Progress 1

Note: Use the space provided for your answer

1. Discuss the Vaiśeṣika Concepts of Universal.

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2. What do you know about the Inherence?

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3. What do you know Basic Differentium?

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4. Discuss Analogy and Other Candidate Sources.

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6.7   LET US SUM UP

One of the most common and difficult topic of philosophy is the problem of universals. According to Raja Ram Dravid, broadly we have two kinds of knowledge about things: sensuous and conceptual. Sensuous knowledge is the knowledge of sensation which presents a concrete and particular aspect, whereas conceptual knowledge is the knowledge of ideas, which is dependent upon knowing through the use of reason. There are mainly three views, namely, realism, nominalism and conceptualism. The NyāyaVaiśeṣika and Mīmāṁsā schools advocate realism, they believe that both the particulars and the universals are objectively real. The doctrine of sāmānya or jāti in Nyāya-Vaiśeṣika philosophy is the starting point of the controversy over universals in Indian Philosophy.

The Nyāya-Vaiśeṣika takes realistic stand in its extreme form in formulating sāmānya or jāti. According to the NyāyaVaiśeṣika, the external world reveals both diversity and unity. It holds that if there is no bond of unity among the things, then their comprehension would be beyond the reach of human intellect. Hence, the Nyāya-Vaiśeṣika gives the name sāmānya or jāti to these common features. One can analyze that the theory of the universal as an objective reality is the basic tenet of the Nyāya-Vaiśeṣika realism. For them universals are eternal and independent common characters that inhere in all members of a class. Nyāya claims that without universals no proper accounting can be given to natural classes. Again, without universals no proper account can be given, for laws of nature such as that heat expands bodies. The Nyāya-Vaiśeṣika explains the theory of universals from its pluralistic and realistic standpoint. They do not accept the universals at the cost of the particulars. The particulars are there, and they are united under the roof of the highest universal existence.

6.8 KEY WORDS

Nyāya-Vaiśeṣika: Vaisheshika or Vaiśeṣika is one of the six orthodox schools of Hindu philosophy from ancient India. In its early stages, the Vaiśeṣika was an independent philosophy with its own metaphysics, epistemology, logic, ethics, and soteriology.

6.9 QUESTIONS FOR REVIEW

1. Discuss the Analogy and Similarity.
2. What is meant by "Presumption" (arthāpatti)?
3. What do you mean by "Non-cognition" (anupalabdhi)?
4. Discuss the Gesture and Rumor.

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6.11 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

1. See Section 6.2
2. See Section 6.3
3. See Section 6.4

UNIT 7: THE ONTOLOGY OF NONEXISTENCE (ABHĀVA)

STRUCTURE

7.0   OBJECTIVES

After this unit, we can able to know:

- To know about the concept of abhāva.

- The Concept of a Nonexistent Object
- The Logics of Nonexistent Objects

7.1 INTRODUCTION

The Nyāya-Vaiśeṣikas who are realists forward the view that every experience has its counterpart in the external world. This view of the NyāyaVaiśeṣikas reaches its extreme limit in this conception of abhāva or on-existence. Everybody experiences a piece of ground where there is no jar, or when a jar is destroyed, people cognize its destruction. In these cases, what is experienced is the absence (abhāva) of the jar. The Nyāya-Vaiśeṣikas here opine that this experience must have its counterpart in the external world. In other words, the absence of jar must have an objective reality. And hence, the Nyāya-Vaiśeṣikas accept abhāva (nonexistence or negaton) as a separate category. This category is a negative one is opposed to other six categories which are positive categories. The theory of the reality of abhāva is related to the Nyāya-Vaiśeṣika theory of causation which is known as asatkāryavāda. According to Nyāya-Vaiśeṣikas, abhāva has a existence. According to asatkāryavāda effect is not existent in the cause before its production. A jar is nonexistent on the ground before its production or after its destruction. Before the production and after the destruction abhāva exists. Abhāva is not like sky flower. It has a negative reality According to the Buddhists reality is always existence. This does not accept any negative or non-existent reality. Hence, abhāva is not reality. The Buddhists oppose the Nyāya-Vaiśeṣika concept of non-existence. They argue that nonexistence is always determined by its positive counterpart. Again the negatum is to be regarded as the adjective of the corresponding negation. Hence, the object negated is the adjective or the qualifier of the negation. But the Buddhists point out that this is not possible for a non-existent object to qualify another object. Bhattacharyya contends, "According to the Buddhists negation and the object negated are contradictorily opposed to each other. There is an unbridgeable gulf fixed between them. They cannot be predicated of the same thing at the same time. Thus, negation should not be qualified by the object negated. An undetermined non-existence is unreal. It can never be cognized. Negation

cannot, therefore, be a mode of reality". According to the Buddhists, non-existence is only a vikalpa (mental construction), and not an external reality.3 The Prābhākaras also do not accept the objective reality of negation. According to Śālikanātha, negation is subjective. The Prābhākaras also maintain that negation is identical with its locus. Jayanta Bhaṭṭa refers to the view of the Prābhākaras in his Nyāyamañjarī thus: when the non-existence of a jar on the ground (bhūtate ghaṭābhāvaḥ) is cognized, what actually experienced is the vacant condition (kaivalya) of the ground. No positive reality like the non-existence of the jar is experienced here. According to the Prābhākaras, in all such cases, actually the jar is not comprehended, it is not that its non-existence is comprehended.4 However, the Bhaṭṭa Mīmāṁsakas accept the objective reality of negation just like the NyāyaVaiśeṣika. According to some Jaina philosophers abhāva is cognized in time and space. If negation is bare non-existence then it cannot qualify space and time. On the other hand, if an object does not qualify space and time, it cannot be located on space and time.5 Prabhācandrasuri criticizes the view that negation has distinct reality. He holds that negation is nothing but the positive locus qualified by some unique property.6 According to Kaṇāda, all objects of knowledge come under six categories. These are: dravya, guṇa, karma, sāmānya, viśeṣa and samavāya. 7 So, he does not accept the abhāva as a separate category. Because if the knowledge of abhāva depends on bhāva padārtha. So, abhāva is not mentioned as a separate category.8 Praśastapāda, also accepts the six categories which are dravya, guṇa, etc. He states that mokṣa (liberation) depends upon the right knowledge of these six categories Mādhava opines that the knowledge of the abhāva of a jar is the abhāva of its object. It is known as abhāva. The jar or ground is not the object of the abhāva of a jar. The abhāva of the jar is the object of its knowledge. Therefore, he states that abhāva is a distinct category. Abhāva has a pratiyogī (counter entity). Abhāva of a jar depends on it which is its pratiyogī. 10 "The six categories, from substance to samavāya, which alone were accepted by the old orthodox Nyāya-Vaiśeṣika school, were held to be of a positive kind to which a seventh category 'non-existence' or 'negation' (abhāva)

was added at a later period."All the later Nyāya-Vaiśeṣika philosophers adopt the seven categories..

7.1.1 NATURE OF ABHĀVA

It has already been mentioned that according to the Nyāya-Vaiśeṣika, abhāva or no-existence is real category. Jayanta Bhaṭṭa maintains that non-existence is also capable of producing knowledge. It is not devoid of all capabilities. It is the object of knowledge in the form of 'it is not' (nāsti). The Nyāya-Vaiśeṣikas also hold that abhāva is not without any essence. It is determined by its pratiyogī (countercorrelate). In case of negation, there is an object whose non-existence is experienced and there is a locus and which this non-existence is based. The object of non-existence is called its pratiyogī and the locus is called anuyogī. For example, in case of 'there is no jar on the ground', the jar is the pratiyogī and the ground is the anuyogī. Negation is always determined by its pratiyogī. That means its knowledge depends on the knowledge of its counter-correlate. If we do not know a jar, we cannot also know its non-existence. That is why Śivāditya says that negation is that whose knowledge depends on the knowledge of its pratiyogī. 13 Jayanta Bhaṭṭa also says that there are two kinds of reals, viz., sat and asat. 14 Sat is that which is known as existent and asat is that which is known as non-existent. Vācaspati Miśra maintains that abhāva is known as 'does not exist' (nasti).15 Viśvanātha defines abhāva in his Muktāvalī thus: non-existence is that which is possessed of the mutual non-existence in respect of the six categories beginning with substance.16 But this definition is defective, because here the nonexistence is defined as possessing mutual non-existence. But without explaining mutual non-existence it is not possible to define non-existence. Again mutual nonexistence being a variety of non-existence, it depends on the knowledge of nonexistence. Thus, this definition involves the defect of anyonyāśraya (mutual dependence). The definition given by Viśvanātha ultimately leads to the conclusion that non-existence is different from existence. This is expressed by Mahadeva thus: negation is that which is different from existence.17 But this definition is also not free from defects. The Advaita Vedāntins like Citsukha, Madhusūdana Sarasvatī

etc. have criticized this definition vehemently. To defend this definition Ramarudra says that the differences of the six categories belong to negation by the relation of paryāpti. This means that in case of negation the difference of six categories collectively belong to it. The difference of six categories collectively does not belong to any one of these six categories.18 Mādhavācārya in his Sarvadarśanasaṁgraha has forwarded another definition of abhāva. In his view, non-existence is that which does not possess samavāya and at the same time which is different from samavāya (asamavāyitve styasamavāyaḥ).19 Dravya, guṇa, karma, sāmānya, and viśeṣa are related by samavāya, so they are samavāyi. Samavāya is not different from samavāya itself. In this way this definition also implies that abhāva is different from dravya etc. The Naiyāyikas themselves have pointed out some defects in the definition of abhāva in the form of 'different from bhāva'. They point that a person who has no knowledge of the six positive categories experiences negation. Hence, Raghunātha Śiromaṇi has offered a better definition of negation. He defines negation as a relation. Thus negation is the svarūpa relation which is found both in positive and negative objects which determines the cognitions in the form 'it is not here', 'it is not that' etc.20 Hence, abhāva is also defined that which is the object of knowledge generated by the words like Man etc.

7.1.2 VARIETIES OF ABHĀVA

According to Annaṁbhaṭṭa abhāva has four kinds, viz., prāgabhāva (antecedent non-existence), pradhvaṁsābhāva (destructive non-existence), atyantābhāva (absolute non-existence) and anyonyābhāva (mutual non-existence). Śivāditya also accepts four varieties of abhāva. Viśvanātha has divided abhāva into two types - saṁsargābhāva and anyonyābhāva. Saṁsargābhāva again is of three types – prāgabhāva, dhvaṁsābhāva and atyantābhāva. Keśava Miśra also accepts these varieties.

(a) Prāgabhāva: Prāgabhāva is the abhāva of a thing in its inherent cause, before its production e.g., a jar is made from its two parts. The prāgabhāva of the jar is found in its parts. When the jar is made, the

prāgabhāva of the jar is destroyed. So, prāgabhāva has no beginning but it has an end. If the prāgabhāva is not destroyed, any effect will never be produced. Annaṁbhaṭṭa defines prāgabhāva as that which has no beginning but has an end. It remains prior to the production of an effect.28 He also discusses in his Dīpikā that to avoid over-pervasion to in ākāśa, the word sānta is added in the definition. Ākāśa is anādi and ananta, i.e., has no creation and destruction. To exclude over-pervasion to ghaṭa, the word anādi is added in the definition. As jar has a beginning and also an end. Śivāditya gives the same definition of it. Viśvanātha defines prāgabhāva in his Nyāyasiddhāntamuktāvalī that prāgabhāva is destroyable. According to Keśava Miśra, that is known as prāgabhāva which iexists in the cause before the production of the effect e.g. before the production of the ghaṭa, we find abhāva of the ghaṭa in the clay; before the production of the cloth abhāva is found in the thread. These abhāvas are prāgabhāvas.

(b) Pradhvaṁsābhāva (Posterior Non-existence) Pradhvaṁsābhāva is a abhāva of a thing which is caused after its destruction e.g., a potter produces a jar but it is broken into pieces. Then we find the abhāva of the jar in the pieces. This abhāva is called pradhvaṁsābhāva. This abhāva begins with destruction but it can never be ended in any way. This abhāva would continue till eternity. So, it is ananta. The same jar cannot be produced again. This abhāva of jar is found through its destruction. Like Śivāditya Annaṁbhaṭṭa also gives the definition that pradhvaṁsābhāva has beginning but has no end. It happens after the production of an effect. He discusses in his Dīpikā that this definition will be over-pervasive to ghaṭa etc. because ghaṭa etc. also has beginning. Therefore, to avoid the over-pervasion to ghaṭa etc. the word ananta is added in the definition. Again to avoid over-pervasion of this definition to ākāśa etc. the word sādi is added. Ākāśa is both anādi and ananta. It is produced by its counter correlative and resides in the intimate cause of its own counter correlative. Pradhvaṁsa is the cause of usage of words like it is destroyed.

(c) Atyantābhāva (Absolute Non-existence) This abhāva is caused in the connection of two things for all time-past, present and future, e.g., colour is never seen in air. This abhāva of colour in air is atyantābhāva. This abhāva differs from prāgbhāva and pradhvaṁsābhāva. Prāgbhāva is found before the production of a thing. Dhvaṁsābhāva is found after the production of a thing. But this abhāva is found for all time. Hence, atyantābhāva is beginningless (anādi) and endless (ananta).

(d) Anyonyābhāva (Mutual Non-Existence) This abhāva refers to the difference of one thing from another thing. There is different between two things and they are excluded from each other. There is found the abhāva of one as the other. This abhāva is known as anyonyābhāva. For example, a table is not the chair. That means a table does not remain as a chair. The non-existence of a table in a chair and the non-existence of a chair in a table are mutual non-existence (anyonyābhāva). Mutual non-existence has the relation of identity (tādātmya) as its counter correlate. According to Keśava Miśra, that abhāva which has identity as the counter entity is anyonyābhāva 48 e.g., ghaṭa is not the paṭa, which means ghaṭa does not exist in the paṭa. The knowledge of the abhāva of the ghaṭa depends upon the knowledge of ghaṭa and paṭa. Viśvanātha states in his Nyāyasiddhāntamuktāvalī, that anyonyābhāva, is that the counterpositiveness of which is determined by the relation of identity. Śivāditya defines anyonyābhāva as refusing of identity anyonyābhāva, This abhāva is one and eternal. Annaṁbhaṭṭa also uphold similar view and defines anyonyābhāva which has a counter-entity determined by the relation of identity, e.g., jar is not cloth.

7.1.3 IMPORTANCE OF ABHĀVA IN NYĀYA-VAIŚEṢIKA SYSTEM

Abhāva or non-existence plays a vital role in the Nyāya-Vaiśeṣika philosophy in postulating their view of realistic pluralism. The Nyāya-Vaiśeṣikas accept prior non-existence as a cause. Without prior non-existence, an effect cannot be produced. The Nyāya-Vaiśeṣikas contend that if prior non-existence is not accepted as the cause of an effect, then

after the production of an effect, the same causal materials will go on producing more effects. In their view, the cause is not transformed into the effect. Rather the effect is produced in the cause and both the cause and the effect coexist in the same locus by the relation of samavāya. Hence, after the production of a cloth from threads, both threads and cloth remain in the same locus. And as the causal material of threads remains, there will be the option of producing more cloths from the same threads. The Nyāya-Vaiśeṣika's concept or prior non-existence safeguards them from this condition Hence, if these two types of non-existences are not accepted there will be no noneternal things. Further, according to them liberation is the destruction of sorrow. Hence, if posterior non-existence is not accepted then Nyāya concept of liberation will fall flat.54 There are different things in the world which causes specific nature. If mutual non-existence is not accepted, then all things will have to be accepted as identical. Postulation of absolute non-existence is also necessary in Nyāya-Vaiśeṣika system. Sinha says, "If there were no absolute non-existence all things would exist always and everywhere. The doctrine of the six categories implies absolute nonexistence of any other object of knowledge. Therefore realistic pluralism must admit the four kinds of non-existence.

7.2 THE CONCEPT OF A NONEXISTENT OBJECT

The very concept of a "nonexistent object" has an air of paradox about it, at least for those philosophers whose thinking is rooted in the Humean tradition. For Hume suggested that to think of an object is always and necessarily to think of an existent object, or to put it differently, that to think of an object and to think of the same object as existing are just one and the same thing. Immanuel Kant took up Hume's idea and claimed that existence is not a "real predicate", a claim that is often interpreted as an anticipation of Gottlob Frege's famous doctrine that existence is not a predicate of individuals. (See Hume 2000, Book 1, Part 2, Sect. 6; Kant 2003, B 627; Frege 1966, pp. 37f.) Kant's motivation for rejecting the view that existence is a "real predicate" was the so-called "ontological proof" of God's existence, which says, roughly, that God's perfection

entails God's existence, since a being that would have all of God's perfections except existence (i.e., omniscience, omnipotence, benevolence) would be less perfect than a being with the same perfections plus existence. For centuries, philosophers have felt that there is something wrong with this proof, but Kant was the first one who was able to point out a possible error: he argued that the mistake of the "ontological argument" lies in the treatment of existence as a "real predicate".

If Hume is right, then the concept of an object includes the concept of existence, and the concept of a nonexistent object would be as self-contradictory as the concept of a round square. If existence is not a predicate of individuals, then one might suppose that neither is nonexistence. Therefore, if Frege is right, to say of an object that it is nonexistent is a kind of nonsense that arises from a violation of logical grammar. (For Frege and those who follow him, a claim like "God exists/does not exist" is to be understood as a claim about the concept God, or about the property of being God. On this view, the logical form of "God exists" is not Exists (God)—where Exists is a predicate of individuals, but rather: The concept God applies to something or something possesses the property of being God.)

Thus, in order to take the idea of nonexistent objects seriously, one has to give up views held by important philosophers about the nature of existence and adopt the view that existence is some kind of predicate of individuals. This view entails, among other things, that to say, for instance, that some white elephants exist is to say that some white elephants have the property of existence (or, to put it the other way around, that not all white elephants are nonexistent)—a consequence that might strike some as strange.

Furthermore, in order to assert "there are nonexistent objects" without implying "nonexistent objects exist", one has to suppose that sentences of the form "There are Fs" mean something different from sentences of the form "Fs exist". Some philosophers reject a distinction between "there is" and "exists" (see, for instance, Lewis 1990, Priest 2005, Quine 1953), some philosophers (e.g., Meinong 1960, Parsons 1980, Zalta 1988) think that there are good reasons for making this distinction. Some

of the latter think that the distinction between "there is" and "exists" is rooted in ordinary language, but others deny this firmly (see, for instance, Geach 1971). Obviously, although there might be a tendency among competent English speakers to use "there is" and "exists" in different contexts, ordinary language use is too wavering and non-uniform in this respect to be a stable ground for a philosophical theory. Of course, this does not rule out that there are theoretical reasons for a distinction between "there is" and "exists", some of which are discussed below.

7.2.1 The Logics of Nonexistent Objects

In those logics that stand in the Frege-Quine tradition, both "there is" and "exists" are expressed by means of the "existential quantifier" ("∃"), which is, consequently, interpreted as having "ontological import". Thus, in these formal systems, there is no means to distinguish between "there is" and "exists". However, it has been shown that the distinction between the two can be coherently regimented in various ways. In the systems of Terence Parsons, Edward N. Zalta and Dale Jacquette, for instance, "there is an x such that … x…" is expressed by "∃x(…x…)", whereas "there exists an x such that … x…" is expressed by "∃x(E!x & …x…)", where "E!" is the existence predicate (Parsons 1980, Zalta 1983, Zalta 1988, Jacquette 1996). "Some things do not exist" could thus be rendered in logical notation as follows: "∃x(¬E!x)"; "Pegasus does not exist" as "¬E!p"; and so forth.

The various logics of nonexistent objects cannot be described and discussed here in detail. However, it is now clear that there is no formal obstacle to a theory of nonexistent objects. The only questions are philosophical: can the concepts that such theories aim to formalize be explained, and do we have good reason to accept a theory formulated in these terms? In the following two sections, the main motivations for believing in nonexistent objects are delineated.

7.3 HISTORICAL ROOTS: ALEXIUS MEINONG AND THE PROBLEM OF INTENTIONALITY

Philosophical writings on nonexistent objects in the 20th and 21st century usually take as their starting point the so-called "theory of objects" of the Austrian philosopher Alexius Meinong (1853–1920). Therefore, it is appropriate to give an outline of the basic principles of and motives behind this theory. (For a detailed presentation see the entry on Meinong.)

Meinong was concerned about the problem of intentional states which are not directed at anything existent. The starting point of this problem is the so-called "principle of intentionality", which says that mental phenomena are characterized by an "intentional directedness" towards an object. For instance, to love is always to love something, to imagine is always to imagine something, and so forth. In other words, every intentional act is "about" something. The problem is that sometimes people imagine, desire or fear things that do not exist. Some people fear the devil, although the devil doesn't exist. Many people hope for peace in the Middle East. But there is no peace in the Middle East. Ponce the Leon searched for the fountain of youth, even though it doesn't exist. It is easy to imagine a golden mountain, even if no such thing exists.

Cases like these seem to be clear counterexamples to the principle of intentionality. However, many philosophers found this principle too appealing to be given up completely. While some came to the conclusion that intentionality is not a real relation and therefore does not require the existence of an object (see, for instance, Brentano 1874, Prior 1971, Searle 1983, Crane 2013), Meinong offered another solution: there is indeed an object for every mental state whatsoever—if not an existent object then at least a nonexistent one.

The problem of intentionality may still count as one of the most important motivations for thinking there are nonexistent objects. But there are other motivations as well.

7.4 FURTHER MOTIVATIONS FOR BELIEF IN NONEXISTENT OBJECTS

7.4.1 The Problem of Negative Singular Existence Statements

Very briefly, the problem can be stated as follows: it seems that in order to deny the existence of a given individual, one must assume the existence of that very individual. Thus, it seems that it is impossible to deny the existence of an individual without getting involved in a contradiction.

However, this conclusion seems hard to accept. In fact, there are many negative existence statements that we take not only to be sensible but also to be true (or at least not to be necessarily false). Consider, for instance:

Pegasus does not exist.

Yugoslavia does not exist anymore.

The perpetual motion machine does not exist and never will exist.

From the common sense point of view, negative singular existence statements are ubiquitous, comprehensible and sometimes true. So why is it that many philosophers are so puzzled about them? In particular, why think one has to assume the existence of an individual in order to deny its existence?

One traditional reason that has been given is based on the following assumptions:

Only meaningful sentences can be true.

In a meaningful sentence, every constituent of the sentence must be meaningful.

If a singular term is meaningful, then it denotes something.

If a singular term "b" denotes something, then "b does not exist" is false.

Let's see how these assumptions lead to a problem in light of the negative singular existence sentence "Pegasus does not exist". If "Pegasus does not exist" is true, then it must be meaningful (by (1) above). If it is meaningful, all of its constituents must be meaningful, including the singular term "Pegasus" (by (2) above). If "Pegasus" is meaningful, then "Pegasus" denotes something (by (3) above). If "Pegasus" denotes something, then "Pegasus does not exist" is false (by (4) above). Thus, the assumption that "Pegasus does not exist" is true

leads to the conclusion that this same sentence is false. So if the above premises are correct, it is impossible that "Pegasus does not exist" is true: either "Pegasus" denotes something, in which case "Pegasus does not exist" is false; or "Pegasus" does not denote anything, in which case "Pegasus does not exist" is not even meaningful, let alone true.

There are several ways to resolve this problem, i.e., to account for meaningful and true negative singular existence sentences. One solution that became very prominent in the 20th century consists in the strategy of "analyzing away" the proper names and definite descriptions appearing in negative singular existential claims. This strategy consists of two steps:

Ordinary proper names are interpreted as disguised definite descriptions. For instance, "Pegasus" is to be analyzed as short for "the flying horse from Greek mythology". This is often called the description theory of proper names. Thus to say "Pegasus exists" is simply to say "the flying horse of Greek mythology exists".

Definite descriptions are to be analyzed along the lines of Bertrand Russell's theory of definite descriptions. On Russell's theory, to say "the flying horse of Greek mythology exists" is to say "there is exactly one x which is a flying horse of Greek mythology".

Thus, combining these two steps, it follows that:

To say "Pegasus doesn't exist" is to say "it is not the case that there is exactly one x which is a flying horse of Greek mythology".[5]

If "Vulcan" is short for "the planet between Mercury and the sun", then:

To say "Vulcan doesn't exist" is to say "it is not the case that there is exactly one x which is such that x is a planet between Mercury and the sun".

The point of these paraphrases is to show that the original sentences can be analyzed in terms of sentences in which the singular terms ("Pegasus", "Vulcan", "the flying horse of Greek mythology" and "the planet between Mercury and the sun") have all disappeared. The paraphrases involve the general terms "flying horse from Greek mythology" and "planet between Mercury and the sun", along with the existential quantifier ("there is") and a uniqueness condition ("exactly

one"). (Let's ignore the fact that the singular terms "Mercury" and "Le Verrier" appear within the general terms; of course, this means that the procedure isn't complete, but, in principle, it can be completed.) The problem of negative singular existentials is thereby resolved because sentences containing names which appear to be about nonexistent objects are paraphrased in terms of sentences involving general terms, quantifiers and uniqueness conditions. These latter sentences are meaningful independently of whether the general terms apply to anything.

However, both the description theory of proper names and Russell's theory of definite descriptions have been subject to serious criticisms. One might object that they fail to do full justice to our actual use of proper names and definite descriptions. Often we use proper names—successfully—without having any definite description in mind. Sometimes we don't need a definite description in order to refer to a particular object, because we individuate the respective object by means of perception or perceptual memories. Sometimes we simply do not know of a definite description that individuates the object we wish to refer to. Most of us know about Cicero just that he was a famous Roman orator; but the Romans had more than one famous orator. Nevertheless, we can use the name "Cicero" successfully to refer to a particular famous Roman orator. Moreover, even when we do have something like the mental correlate of a definite description in mind when we use a proper name, we do not usually treat the description as a definition of the proper name (as the Russellian picture suggests). Suppose what I have in mind when I use the name "Socrates" corresponds to the description "the ancient Greek philosopher who died from drinking hemlock". Suppose furthermore that the famous story about Socrates' death is actually a myth and that Socrates in fact died peacefully of old age. Do I then simply fail to refer to Socrates whenever I use the name "Socrates"? It does not seem so. When I eventually come to know that Socrates did not die from drinking hemlock, I will take this as a piece of information about Socrates, the person I referred to all the time by using the name "Socrates". (See Kripke 1980.)

As to the theory of definite descriptions, two kinds of problem arise. First, some philosophers simply deny that the paraphrases properly capture the meaning of sentences with definite descriptions, simply on the grounds that the meaning of a proper name like "Pegasus" is just less specific than the meaning of the definite description "the flying horse of Greek mythology". Second, some philosophers have objected that the theory of definite descriptions sometimes yields the wrong results. Consider, for instance: "The ancient Greeks worshipped Zeus." Prima facie, this sentence expresses a real relation between the ancient Greeks and Zeus; and it is surely a historical fact that the ancient Greeks worshipped Zeus. Yet on Russell's analysis, proper names like "Zeus" have to be replaced by definite descriptions, even in contexts other than existence claims. So "Zeus" would get replaced by a definite description like "the Greek god who lived on Mt. Olympus and who …". Thus, the above true sentence would get analyzed in terms of the following false one: "There exists one and only one Greek god who lived on Mt. Olympus and who … and who was such that the ancient Greeks worshipped him." There are numerous other true sentences like this, such as "Sherlock Holmes is more famous than any real detective", etc., all of which appear to involve real relations between existent objects and nonexistent ones, but whose Russellian paraphrases are false. Third, the use of the anaphoric pronoun "it" in "Teams of scientists have searched for the Loch Ness monster, but since it doesn't exist, no one will ever find it" seems problematic. The pronoun in both of its occurrences in this sentence seems to pick up its meaning/denotation from the definite description "the Loch Ness monster"—which is not easy to explain given Russell's theory of definite descriptions.

7.4.2 The Problem of Fictional Discourse

By "fictional discourse" we mean here and in what follows *discourse about fictitious objects*. Sometimes, the term "fictitious object" is used as synonymous with "nonexistent object". Here, the term is used in a different sense, namely for objects (characters, things, events etc.) which occur in fictions, i.e., in myths or fairy tales, in fictional novels, movies, operas etc. Pegasus is a fictitious object in this sense (as are Sherlock

Holmes and Hamlet) but Vulcan (the hypothetical planet sought by Le Verrier) is not.

Consider, for instance, the sentence

(1) Pegasus is a flying horse.

Like many other sentences of fictional discourse, it appears to fulfill the following three conditions:

1. It has the grammatical structure of a predication, i.e., the structure that is rendered in logical notation by "*Fb*" (where "*F*" stands for a predicate expression—here: "is a flying horse"—and "*b*" stands for a singular term—here: "Pegasus").

2. The singular term in subject position is a name for a fictitious object.

3. It is commonly, and with good reason, taken to be true.

The problem of fictional discourse is closely connected to two logical principles. The first one is well known as "the principle of existential generalization":

Existential Generalization (**EG**):

$Fb \rightarrow \exists x(Fx)$, i.e.,

If b is F, then there is something that is F.[6]

The second principle is less prominent, rather seldom explicitly stated, but often tacitly assumed. We call it "the predication principle":

Predication Principle (**PP**):

$Fb \rightarrow \exists x(x = b)$.[7]

(PP) may be read in two ways:

(PPa) If b is F, then there is something that is identical with b.

(PPb) If b is F, then b exists.

Both principles are *prima facie* extremely plausible: If it is true of some individual that the predicate "*F*" applies to *it*, then the predicate "*F*" applies to *something*. If some predicate "*F*" applies to an individual, then the individual has to exist (for if it were otherwise, how could the predicate apply to *it*?).

Yet, when applied to fictional discourse, these two principles lead to consequences that seem to contradict hard empirical facts on the one hand and trivial truths about the ontological status of fictitious objects on the other. According to (EG), the sentence

(1) Pegasus is a flying horse.

implies

(2) There are flying horses.

Yet, as we all know, there are no flying horses.

According to (PP),

(1) Pegasus is a flying horse.

implies

(3) Pegasus exists.

But Pegasus is a fictitious object; and it seems that to call an object fictitious is just to say that it does not exist.

The problem is that obviously true sentences of fictional discourse seem to lead into outright contradictions. Of course, there are several ways to avoid the contradictions. One of them consists in rejecting the principles (EG) and (PP). By this move, one blocks the inference from "Pegasus is a flying horse" to "There are flying horses" and "Pegasus exists". Indeed, some logicians, notably proponents of Free Logics, take this path. (See Crane 2013, Hintikka 1959, Lambert 1983 and 1991, Leonard 1956.)[8] Again (as with the case of negative singular existence statements) this raises the question of what the truthmakers of such sentences are. There are attempts to answer this question in a "reductionist" fashion, i.e., to claim that sentences about fictitious objects are made true not by fictitious objects but by something else, e.g., by literary works, myths, stories or facts about these, respectively.[9]

Another way to avoid the contradictions would be simply to reject the sentence "Pegasus is a flying horse" (and, in general, all alleged predications about fictitious objects) as false or untrue. This radical solution, however, fails to do justice to the widespread intuition that there is a difference in truth-value between "Pegasus is a flying horse" and, say, "Pegasus is a flying dog".

A third attempt to resolve the problem is what may be called "the story-operator strategy". According to the story-operator strategy, we have to interpret sentences of fictional discourse as incomplete. A complete rendition of, for instance,

(1) Pegasus is a flying horse.

would be as follows:

(1′) According to the story *S* (where "*S*" here and in what follows stands for the story of Greek mythology): Pegasus is a flying horse.

The expression "according to the story *S*" is the so-called "story operator",[10] which is a *sentence* operator (that is, it is the sentence as a whole that is in its scope, not just a part of the sentence, for instance the predicate). While the sentence within the scope of the story operator (here: "Pegasus is a flying horse") may be false when taken in isolation, the complete sentence may be true. (This strategy is developed in detail in Künne 1990.)

Sentence (1′) does *not* imply that there are flying horses; neither does it imply that Pegasus exists. Thus, the contradictions are avoided.[11] This looks like an elegant solution, at least as long as we confine ourselves to a particular kind of example. Unfortunately, however, it does not work equally well for all kinds of sentences of fictional discourse. Consider, for instance:

(4) Pegasus is a character from Greek mythology.

This sentence seems to be straightforwardly true; but if we put a story operator in front of it, we get a straightforward falsehood:

(4′) According to the story *S*: Pegasus is a character from Greek mythology.

It is not true that according to the relevant story, Pegasus is a character. Rather, according to this story, Pegasus is a living being of flesh and blood.

One may call sentences like "Pegasus is a flying horse" or "Hamlet hates his stepfather" "*internal* sentences of fictional discourse", in distinction from *external* sentences of fictional discourse, like "Pegasus is a character from Greek mythology" or "Hamlet has fascinated many psychoanalysts". The story operator strategy can be applied to internal sentences only and thus fails as a general solution to the problem of fictional discourse.[12]

The claim that there are nonexistent objects provides a solution that can be applied uniformly both to internal and external sentences of fictional discourse. It allows us to admit that fictitious objects do not *exist* but at the same time to acknowledge that *there are* fictitious objects. According to this position, fictitious objects are just a species of nonexistent objects.

In order to see how this assumption is supposed to avoid the contradictions spelled out above, consider:

1. Pegasus is a flying horse.[13]
2. There are flying horses. (1, EG)
3. There are no flying horses.

According to the Meinongian solution, premise 3 has to be rejected as false. The Meinongian grants that flying horses do not *exist*, but this does not imply that *there are* no flying horses. According to the Meinongian, there are flying horses, and they belong to the class of nonexistent objects, and Pegasus is one of them. Premise 3 may be replaced by

3′. Flying horses do not exist.

But this does not contradict

2. There are flying horses.

Thus, the problem is solved.[14]

Consider next:

1. Pegasus is a flying horse.
2. Pegasus exists. (1, PP)
3. Pegasus is a fictitious object.
4. Fictitious objects do not exist.
5. Pegasus doesn't exist. (3, 4)

In this case, the Meinongian solution consists in rejecting premise 2. The Meinongian cannot accept 2, since Pegasus is supposed to be a *nonexistent* object.

What, then, about the predication principle? Does the Meinongian have to reject it?—Not necessarily. Remember that (PP) can be read in (at least) two ways:

(PPa) If b is F, then there is something that is identical with b.

(PPb) If b is F, then b exists.

Within the Meinongian framework, these two readings are not equivalent. According to the Meinongian, certainly there is something that is identical with Pegasus, although Pegasus does not exist. Thus, the Meinongian must reject the reading (PPb), but she can (and does) accept the reading (PPa).[15]

Since the Meinongian accepts only the weaker version (PPa) of the predication principle, the inference from premise 1 ("Pegasus is a flying

horse") to "Pegasus exists" is blocked. All that can be derived from premise 1 is the weaker claim

2′. There is something that is identical with Pegasus.

But this is not in conflict with "Pegasus does not exist". Thus, the problem is resolved.

Alternatively, one may abstain from the Meinongian distinction between being and existence and hold that fictitious objects are existent abstract objects. According to this position, "Pegasus does not exist" has to be rejected as false, and thus, again, the contradiction is avoided. This position (it might be called "abstractionism with respect to fictitious objects") comes in two varieties. The first one might be characterized, in a somewhat simplified fashion, as follows: To every set of properties, there is/exists a corresponding abstract object. These abstract objects exist necessarily. Some of them occur in fictional stories, and these are what we call "fictitious objects". Thus, fictitious objects are necessarily existent objects that have been somehow "discovered" or "selected" by the authors of fictional stories. (For this position, see, for instance, Parsons 1975, Zalta 1983 and 1988, Jacquette 1996, Berto 2008 and Priest 2011. Actually, this is one of the applications of contemporary versions of Meinongianism. See Sections 5.4 and 5.5 below.) According to the other variety of abstractionism, fictitious objects are abstract artefacts, i.e., they are not discovered or selected but *created* by the authors of fictional stories.[16]

The latter view (today often referred to as "creationism") fits well into a general ontology of abstract artefacts (like, for instance, literary and other works of fiction as well as non-fictional cultural entities) and does justice to the intuition that fictitious objects as well as the works in which they occur are literally brought into being through human acts of creation. However, it is objected against creationism that the creation of an abstract object is something deeply mysterious.

7.4.3 The Problem of Discourse about the Past and the Future

The structure of the problem of discourse about the past and the future is very similar to the structure of the problem of fictional discourse. Consider the following sentences:

(1) Socrates was a philosopher.

(2) The first female pope will be black.

Given that the sentences (1) and (2) have the logical structure of predications, i.e., the structure "*Fb*", and given that (PP) is valid, (1) implies that Socrates exists and (2) implies that the first female pope exists.

Indeed, the sentences (1) and (2) look like predications. Grammatically speaking, they consist of a subject term ("Socrates", "the first female pope") and a predicate term ("was a philosopher", "will be black".) But while it is certainly true *now* (in the third millennium C.E.) that Socrates was a philosopher, it is also certainly true now that Socrates does not exist anymore.

Second, let's assume, for the sake of argument, that indeed there will be a female pope (and exactly one first female pope) at some time in the far future and that she will be black and that she has not even been fathered yet. Given these assumptions, it is certainly true now that the first female pope does not yet exist.

Again, there are several attempts to resolve this problem. One possible strategy is to deny that sentences like (1) and (2) really have the logical structure of predications. One might suggest the following alternative interpretations, using "*P*" (read: "It has been the case") and "*F*" (read: "It will be the case") as "tense operators":

(1′) *P*(Socrates is a philosopher).

(2′) *F*(The first female pope is black).

Note that the tense operators "*P*" and "*F*" are sentence operators, like the story operator from above. Just as the story operator blocks the inference to existence claims about fictitious objects, the tense operators block the inference from (1′) to

(3) Socrates exists.

and from (2′) to

(4) The first female pope exists. (For a tense operator strategy see Prior 1968.)

There is a lot to be said in favor of this logical interpretation of tenses. Yet, it leaves some problems unresolved. One of them is the problem of *tensed plural quantifiers*. Consider, for instance:

(5) There have been two kings named Charles.

The standard tense operator interpretation of (5) yields:

(5′) *P*(There are two kings named Charles).

However, while (5) is true, (5′) is false, since at no time in the past there have been two kings named Charles *simultaneously*. (See Lewis 2004.) Thus, the standard tense operator strategy seems to fail in cases like this one.

Another problem that the tense operator strategy leaves unresolved is the problem of *relations between present and non-present objects*. Given the principle that a real (two-place) relation can obtain only if both terms of the relation exist, and given that past and future objects do not (now) exist, relations between present and past or future objects are impossible. Yet it seems that there are plenty of relations between present and past (or future) objects. For instance, I stand in the relation of *being one of six granddaughters of* to my grandmother. Likewise, perhaps I stand in the relation of *being the grandmother of* to a future child.

7.4.4 The Problem of Alleged Analytic Truths Like "The round square is square"

Sentences like

(1) The round square is round and a square.

seem to be logically true (at least according to the intuitions of some logicians—see Lambert 1983). Furthermore, they seem to have the logical structure of predications. According to (PP) and (EG), (1) implies

(2) There is something that is identical with the round square.

and

(3) There is something that is both round and a square.

If "there is" means the same as "exist", these are, of course, unacceptable consequences.

There are two obvious ways out: (i) One could simply reject (1) as false (or truth-valueless). (ii) One could try to find an adequate paraphrase for

(1) which accounts for the intuition that (1) is "in some sense" true. Such a paraphrase might be

(1′) If there were such a thing as the round square, it would be round and a square.

But according to the Meinongian picture, (2) and (3) are acceptable consequences, since they do not entail the *existence* of something that is both round and square. Something that is both round and square is an *impossible object*, according to Meinong, which means that it cannot *exist*, but this does not entail that *there is no* such thing. Therefore, the Meinongian can accept (1) as true, without resorting to any kind of paraphrase.

We have seen that there are alternative solutions for every single one of the abovementioned problems. But, for all we know, the assertion that there are nonexistent objects is the only way to resolve all these diverse problems in a uniform way.

7.4.5 Nonexistent Objects in Practical Philosophy

There is a debate in practical philosophy as to whether nonexistent persons are morally relevant. The basic question is this: do nonexistent people have interests that we ought to take into account in our decisions? Obviously, some of our decisions affect not only existent but also future (i.e., not yet existent) persons; matters of climate change or the disposal of radioactive waste are relevant cases in point. Intuitively, we ought to act in such a way as to prevent disasters for future generations. It is a matter of controversy, though, whether, in order to take into account this moral intuition, we have to commit ourselves to an ontology of not yet existent beings. Some, however, go still a step further and argue that not only future persons are morally relevant but even persons who will never exist (and never existed). In particular, this debate concerns questions of procreative ethics and population policies.

7.5 PROBLEMS WITH BELIEF IN NONEXISTENT OBJECTS

The foregoing considerations suggested that the claim that there are nonexistent objects has considerable explanatory force. Why, then, is this

claim not generally accepted but, rather to the contrary, so controversial? Is the reason just, as Meinong has put it, "a prejudice in favor of the actual"? — Although ontological prejudices may play a role, there are also some good reasons for reservations (to put it very carefully).

Even in Meinong's own writings, there are (roughly) two versions of the theory, the original one and a later, revised one. In what follows, we will refer to the *original* Meinongian object theory by means of the abbreviation "MOT^o".

Perhaps the most basic principle of MOT^o is the so-called "*principle of independence*", which says, literally: *So-being is independent from being* (see Meinong 1959). Ignoring, for the sake of simplicity, Meinong's particular use of the term "being", we can paraphrase this principle as: *So-being is independent from existence*.

The "so-being" of an object is the totality of the object's properties apart from the object's existence or non-existence. The principle of independence says, thus, that an object may have any properties whatsoever, independently of whether the object exists or not. For instance, the (nonexistent) golden mountain literally *is* golden and a mountain; the round square literally *is* round and a square.

To every single property and to every set of properties, there is a corresponding object, either an existent or a nonexistent one. Thus, there is, for instance, an object that has the property of being round as its sole property; one might call it "the object *round*", or simply "*round*". There is also an object that has the property of being blue as its sole property (the object *blue*, or *blue*, for short). Furthermore, there is an object that has the property of being round and the property of being blue, and no other properties (the object *round and blue*); and so forth.

In the notation of classical logic extended with definite descriptions of the form $\iota x \varphi(x)$, the object that has the property of being blue as its sole property may be represented by "$\iota x \forall F(Fx \equiv F = B)$"[20] (where "$B$" stands for "is blue"), the object that has the property of being blue and the property of being round as its sole properties by "$\iota x \forall F(Fx \equiv F = B \lor F = R)$" (where "$R$" stands for "is round"), and so forth.

The object *blue* is *not* identical with the *property* of being blue; neither is it identical with the *set* that contains the property of being blue as its sole member. Neither is the object *round and blue* identical with the set of the property of being blue and the property of being round. The property of being blue is not itself blue, the property of being round is not itself round. Analogous considerations hold for sets of properties: sets have neither colors nor shapes. But the object *blue* is blue, and the object *round* is round, and so forth.

One might wish to ask: Isn't it impossible that there exists an object that has the property of being blue as its *sole* property? Isn't it necessarily the case that every colored object also has some particular shape, some particular size, is made of some particular material, and so forth?

The Meinongian answer to this question is as follows: It is indeed impossible that such an object *exists*! Therefore, the object *blue* is not only nonexistent but even *necessarily* nonexistent. Of course, the same holds for the object *round*, the object *red and round*, and infinitely many other objects as well. Every existing object has *infinitely many* properties. Every existing object is a *completely determined* (or, in short: a *complete*) object. Objects like *blue* and *round and blue* are *incompletely determined* (or, in short: *incomplete*) objects.[21]

Incomplete objects are necessarily nonexistent. They are, in this sense, *impossible* objects (even though their properties may not be contradictory). It should be noted, however, that not every complete object exists. Consider, for instance, the object that looks exactly like me except that it has green eyes instead of blue ones. Let's assume that this object (my nonexistent green-eyed counterpart) has all the properties that I have except for those that are entailed by the difference in eye color, given the actual laws of nature. My nonexistent green-eyed counterpart is completely determined and nevertheless does not exist. But, in contrast to *blue*, this counterpart *could* exist, i.e., it is a *possible* nonexistent object.

Unfortunately, however, MOT^o has a number of paradoxical consequences. Bertrand Russell, Meinong's most famous critic, put forward two objections against MOT^o. The first objection goes as follows: According to MOT^o, there is an object that is both round and

square, but such an object is "apt to infringe the law of contradiction", since it would be both round and not round (Russell 1973c, 107).

Meinong perhaps could have replied to this objection that the object called "the round square" has the properties of being round and being square, but not the property of being not round, and thus the round square does not infringe the law of contradiction (but only the geometrical law that everything that is square is not round). Such a reply, however, would have been a bit beside the point, since it is clear that, according to the principles of MOT^o, there is an object that is both round and not round (and evidently the object that Russell had in mind was of this sort). Indeed, Meinong did not deny that the round square infringes the law of contradiction. Instead, he replied to Russell's first objection that the law of contradiction holds for existent objects only. Objects that are both round and not round, however, are necessarily nonexistent.

Russell accepted this reply but forged a second objection that could not be dismissed in the same vein. Russell argues that since it is a principle of MOT^o that to *every* set of properties there is a corresponding object and since existence is treated as a property within MOT^o, there must be an object that has exactly the following three properties: being golden, being a mountain, and being existent. If "G" stands for "is golden", "M" stands for "is a mountain" and "$E!$" stands for "is existent", this object is denoted by "$\iota x \forall F(Fx \equiv F = G \lor F = M \lor F = E!)$". Thus, it follows from the principles of MOT^o that there is an *existent* object that is golden and a mountain. But it is an empirical fact that no golden mountain exists. Given the (apparently trivial) assumption that "b is existent" is equivalent with "b exists", this is a contradiction.

A further paradox seems to arise from the incompleteness of many Meinongian objects:

1. The object *blue* (i.e., $\iota x \forall F(Fx \equiv F = B)$, according to MOT^o) has the property of being blue as its sole property. (Theorem of MOT^o)

2. The object *blue* has exactly one property. (1)

3. The object *blue* has the property of having exactly one property. (2)

4. The property of being blue is not identical with the property of having exactly one property.

5. Thus, *blue* has (at least) two properties, namely the property of being blue and the property of having exactly one property. (1, 3, 4)

6. Thus, *blue* has exactly one property and *blue* has (at least) two properties. (2, 5)

Furthermore, it seems that many Meinongian objects do not only infringe laws of logic and geometry, but also intuitively plausible principles like "If something is round, it occupies some region in space" and "If something is a mountain, it is accessible to the senses". It seems that having a particular shape entails occupying a region in space and that being a mountain entails accessibility to the senses (in principle). According to MOT^o, the round square is round and the golden mountain is a mountain, but obviously neither the round square nor the golden mountain occupies any region in space and neither of them is accessible to the senses.

Another strange consequence of MOT^o is the following: If an object comes into existence, all that happens is that the object turns from a nonexistent into an existent one. Analogously, if an object goes out of existence, all that happens is that the object turns from an existent again into a nonexistent one. Apart from this, neither the object in question nor the world as a whole changes in any way. For instance, when I cease to exist, all that happens is that I will again be nonexistent (as it was from the beginning of time to 1966). In all other respects, I will stay just the same. Maybe such a thought is potentially comforting for those who love me, but it is surely at odds with our normal understanding of coming into existence and passing away.

7.6 CONTEMPORARY THEORIES OF NONEXISTENT OBJECTS: FROM NONEXISTENCE TO ABSTRACTNESS

There is a diversity of contemporary theories of nonexistent objects, where "theory of nonexistent objects" is meant to include any theory that attempts to make sense of (alleged) talk about nonexistent objects and/or (seeming) intentional directedness to nonexistent objects. Some of them, like the de-ontologization strategy and fictionalism, take a reductionist route. The de-ontologization strategy claims that there can be true

sentences about nonexistent objects, although there are no nonexistent objects. Fictionalism claims that talk about nonexistent objects is not to be taken literally but as a sort of "pretense". The other worlds strategy makes use of the assumption of merely possible (and even impossible) worlds. Other contemporary theories of nonexistent objects, however, are closer to Meinong's original theory but have amended MOT^o in such a way as to avoid at least some of the abovementioned paradoxes. Those are often called "neo-Meinongian theories". Usually, they adopt either the nuclear-extranuclear strategy or the dual copula strategy in order to free Meinongian object theory from inconsistencies and counterintuitive consequences.

7.6.1 The De-ontologization Strategy

Tim Crane (see Crane 2012 and 2013) holds that all of the following claims are true:

1. We can think and talk about nonexistent objects.
2. Nonexistent objects do not have any kind of being whatsoever.
3. The sentence "There are nonexistent objects" is true.
4. Some predications with non-referring singular terms in subject positions are true, e.g.: "Vulcan was a planet postulated by Le Verrier"; "Sherlock Holmes is more famous than any living detective"; "Pegasus is a mythical horse".
5. Contrary to what Meinongians think, nonexistent objects do not have all of the properties they are characterized as having. For instance, Pegasus is a not a horse; thus, "Pegasus is a horse" is not true (although "Pegasus is a mythical horse" is). Neither is the round square round.

Crane can hold the conjunction of 1 and 2 because he interprets *aboutness* in a non-relational way. He can hold the conjunction of 2 and 3 because he denies that "there are" and its cognates (both in natural and formal languages) are ontologically committing in any way. (For this reason, I call this the de-ontologization strategy.) He can hold the conjunction of 4 and 5 because he endorses a positive free logic, i.e., the view that there may be true as well as false sentences of the form *Fb*, where "*b*" stands for a non-referring singular term.

Notes

By denying that Pegasus is a horse and the round square is round Crane circumvents some of the above-mentioned problems of Meinongianism. However, his view raises another problem: Why is "Pegasus is a mythical horse" true, while "Pegasus is a horse" is not? In general, why is it that certain predications with non-referring singular terms are true and others are not? For, according to the de-ontologization strategy, neither "Pegasus is a mythical horse" nor "Pegasus is a horse" can be made true by the referent of "Pegasus", because there is no such thing. Crane (2013) offers what he calls a "reductionist" solution to this problem. That is, according to Crane, sentences "about" nonexistent objects are made true by something else, i.e., by something existent. For instance, the sentence "Vulcan was a planet postulated by Le Verrier in 1859 to explain the perturbations in the orbit of Mercury" is made true by certain events in 1859, namely by postulation events; the sentence "Sherlock Holmes is more famous than Sir Ian Blair" is made true by the fact that more people have heard about Sherlock Holmes than about Sir Ian Blair (where to have heard about Holmes is to have heard about the respective stories); the sentence "Pegasus is a mythical winged horse that sprung into being from the blood of Medusa" is made true by a myth which represents Pegasus as being such-and-such; the sentence "Siegfried is one of the most unappealing heroes in all dramatic works" is made true by certain facts about the last two parts of Wagner's *Ring*. As these examples already show, Crane does not give a uniform, systematic account of the truth of sentences about fictitious objects, as he himself concedes. (See Crane 2013, Section 5.5.)

For another example of a reductionist solution, Frank Jackson holds that one can assent to "Mr. Pickwick is Dickens' most famous character" without an ontological commitment to fictitious characters in general and Mr. Pickwick in particular. For, according to Jackson's de-ontologization strategy, object language sentences are ontologically neutral. Ontological commitment comes in only at the meta-language level, for instance, if we would claim that the name "Mr. Pickwick" denotes Dickens's most famous character or that the predicate "a character in Dickens" applies to something. (See Jackson 1980.)

A de-ontologization strategy with respect to fictitious characters is also to be found in Crittenden 1973 and in Azzouni 2010.

7.6.2 The Other Worlds Strategy

The other worlds strategy has been proposed by Graham Priest (2005) and Francesco Berto (2008). Priest calls his theory *noneism*; Berto names it *modal Meinongianism*. The term "noneism" has been coined by Richard Routley, and Priest not only takes over the name but also essential features of Routley's theory (among other things the assumption that basic principles of standard logics, like the principle of contradiction, do not hold without restriction—without, of course, accepting that everything is true).

Proponents of the other worlds strategy reject both the nuclear-extranuclear strategy and the dual copula strategy. Instead, they assume merely possible and even impossible worlds. All worlds (possible as well as impossible ones) share the same domain of discourse. But not all objects of the domain exist in all worlds. Thus, Pegasus does not exist in the actual world, but it exists in a variety of merely possible worlds (namely in those which are such as represented by the Greek mythology). According to the other worlds strategy, nonexistent objects literally *have* the properties through which they are "characterized"—but they have these properties not in the actual world but only in those worlds in which they exist.

The other worlds strategy provides the following solution to the paradox of contradiction: The round square exists only in impossible worlds. In impossible worlds, however, the principle of contradiction does not hold. Therefore, the round square's being both round and not round does not infringe the laws of logic which hold in those worlds in which the round square exists.

In the actual world, however, the round square is neither round nor square, since roundness and squareness are "existence-entailing properties", i.e., "b is round/square" entails "b exists". Therefore, even if in the actual world (and in all other possible worlds) the law of contradiction holds, the round square does not infringe this law, since in these worlds the round square is neither round nor not round.

In the light of this theory, it is easy to explain why nobody has ever seen the round square or a golden mountain and why the round square is obviously not located in space: since the round square is neither round nor square in the actual world, there is no reason to assume that it occupies space or is accessible to the senses. Similar considerations hold for the golden mountain.

It is worth noting that the postulation of existence-entailing properties is an implicit rejection of Meinong's principle of independence, which is one of the cornerstones of Meinongian object theory.

Proponents of the other worlds strategy reject the nuclear-extranuclear distinction because they find it "difficult to avoid the feeling that the class [of nuclear predicates] has been gerrymandered simply to avoid problems" (Priest 2005, 83).

But Priest's proposal has difficulties of its own.[24] To mention some of them: First, Priest does not give a principled characterization of which properties are existence-entailing and which are not (which looks quite similar to the problem with the nuclear-extranuclear distinction which Priest points out in the above quotation). Second, it remains unclear which properties nonexistent objects have in the actual world (apart from logical properties like being self-identical and intentional properties like being thought of by Priest).[25] Furthermore, Priest's noneism raises difficult questions about cross-world identity and the ontological status of non-actual worlds. The ontological status of non-actual worlds is far from obvious: they may be taken to be concrete objects (structured sets of physical objects) or abstract objects (sets of sentences, propositions, or states of affairs). (For an elaborate survey of various conceptions of non-actual worlds see Menzel 2014.)[26] Apart from this, it is doubtful whether Priest's theory provides an adequate account of fictitious objects. Among other things, it does not do justice to the widespread intuition that fictitious objects are *created* by the authors of the stories to which they belong.

7.6.3 Fictionalism and Indifferentism

In recent years, something close to the de-ontologization strategy—or rather a bundle of more or less similar strategies—became prominent,

known under the heading "fictionalism". The basic idea of fictionalism is, roughly put, that utterances belonging to a certain region of discourse are not to be taken literally, that speakers producing such utterances have a fictional attitude towards them and are engaged in a sort of pretense or make-believe. (For an overview of the diverse versions of fictionalism as well as a succinct presentation of its most important pros and cons see the entry on fictionalism.)

Fictionalism differs from the de-ontologization strategy since fictionalists do not claim that the relevant utterances are literally true; to the contrary, according to fictionalism, certain kinds of discourse consist of utterances that are false (if taken literally), but nevertheless it may be useful in some respects to stick to that sorts of discourse.

A general assessment of fictionalism is difficult since the positions included under this heading differ considerably from each other. Much depends on how exactly the "fictional attitude" is spelled out. Many versions of fictionalism are prone to the "phenomenological objection": external talk about fictitious objects—to mention one of the applications of the fictionalist strategy that is particularly relevant in the context of the present entry—does not feel like "make-believe"; introspection does not reveal that we are engaged in any kind of pretense when we say things like "Sherlock Holmes is one of the most famous characters of popular literature" and the like.

A position inspired by and in important respects similar to fictionalism that, however, avoids the phenomenological objection is Eklund's "indifferentism". Indifferentism is the view that speakers outside the "philosophy room" are often simply indifferent with regards of the ontological implications of their utterances and thus are not committed to the existence of those entities whose existence is implied by their utterances. As Eklund emphasizes, however, indifferentism does not say anything about which entities one should accept in one's ontology; it is, in this sense, not an ontological thesis. (See Eklund 2005.)

7.6.4 Nuclear and Extranuclear Properties

According to the nuclear-extranuclear strategy, there are two kinds of properties: nuclear and extranuclear ones. (Meinong 1972, §25)[28] An

object's nuclear properties are supposed to constitute the object's "nature", while its extranuclear properties are supposed to be external to the object's nature. Nuclear properties are, for instance: being blue, being tall, kicking Socrates, having been kicked by Socrates, kicking somebody, being golden, being a mountain (Parsons 1980, 23).

Which properties are extranuclear? Terence Parsons distinguishes four categories of "extranuclear predicates" (i.e., predicates that stand for extranuclear properties): ontological ("exists", "is mythical", "is fictional"), modal ("is possible", "is impossible"), intentional ("is thought about by Meinong", "is worshipped by someone"), technical ("is complete") (Parsons 1980, 23).[29]

Nuclear properties are either constitutive or consecutive, in Meinong's terms (Meinong 1972, 176). An object's constitutive properties are those properties that are mentioned explicitly in a description that is used to pick out the object. Thus, the constitutive properties of the golden mountain are being golden and being a mountain. An object's consecutive properties are those properties that are somehow included or implied by the object's constitutive properties. Thus, among the consecutive properties of the golden mountain are probably the properties of being a material thing and of being extended.

According to MOTo, the object called "the golden mountain" was $\iota x \forall F(Fx \equiv F = G \lor F = M)$, i.e., the object that has the property of being golden and the property of being a mountain (and no other properties). According to the revised version of object theory, the object called "the golden mountain" is the object that has all the nuclear properties that are implied by the nuclear property of being golden and the nuclear property of being a mountain, i.e., $\iota x \forall Fn(Fnx \equiv Gn \Rightarrow Fn \lor Mn \Rightarrow Fn)$.[30]

How does the nuclear-extranuclear distinction help to avoid the paradoxes mentioned in the section above? — Consider again the paradox from incompleteness: According to MOTo, there is an object that has the property of being blue as its sole property (we've called it "the object blue", for short), in logical notation: $\iota x \forall F(Fx \equiv F = B)$. It seems to be true of the object blue, by definition, that it has exactly one property. Yet, the property of having exactly one property is clearly

distinct from the property of being blue. Thus, it seems that the object blue has at least two properties.

According to the revised version of object theory with the nuclear-extranuclear distinction (MOTne, for short), this paradox is avoided in the following way: The property of being blue is a nuclear (constitutive) property, the property of having exactly one property, however, is an extranuclear property. There aren't any objects that have exactly one property. There are only objects that have exactly one constitutive (nuclear) property. Objects that have only a limited number of constitutive properties may (and necessarily do) have additional extranuclear properties—like the property of having exactly n constitutive properties or the property of being incomplete. The object called "blue" is $\iota x \forall Fn(Fnx \equiv Bn \Rightarrow Fn)$, i.e., the object that has the property of being blue as its sole constitutive property. This does not rule out that the object blue may have additional extranuclear properties. Thus, the paradox from incompleteness does not arise in MOTne.[31]

To Russell's objection that the existent golden mountain infringes the law of contradiction (since it is both existent and nonexistent), advocates of MOTne may reply as follows: Existence is an extranuclear property, but only nuclear properties can be constitutive properties of an object. Therefore, according to MOTne, there simply is no such object as $\iota x \forall F(Fx \equiv F = G \lor F = M \lor F = E!)$ (i.e., the existent golden mountain). (This route is taken by Dale Jacquette and Richard Routley. See Jacquette 1996, 81 and Routley 1980, 496.)

7.6.5 The Dual Copula Strategy

According to the dual copula strategy, there are two kinds of relations between properties and individuals.[34] Different advocates of this strategy use different terminologies for it. Here are some of them:

The golden mountain *satisfies* the property of being incompletely determined. (Mally 1912)
The golden mountain *has* the property of being golden and the property of being a mountain *assigned to it*.

The golden mountain *immanently contains* the property of being incompletely determined. (Ingarden 1931 [1973], §20, p. 122)
The golden mountain *is consociated with* the property of being golden and the property of being a mountain.
The golden mountain *is consubstantiated with* the property of being incompletely determined. (Castañeda 1972)
The property of being golden and the property of being a mountain *are ascribed to* the golden mountain.
The golden mountain *has* the property of being incompletely determined. (van Inwagen 1977)[35]
The golden mountain *is constituted by* the properties of being golden and being a mountain.
The golden mountain *exemplifies* the property of being incompletely determined. (Rapaport 1978)
The golden mountain *encodes* the property of being golden and the property of being a mountain.
The golden mountain *exemplifies* the property of being incompletely determined. (Zalta 1983)

The various versions of the dual copula strategy share the assumption that the copula "is" is ambiguous. In what follows, we will use the exemplification-encoding terminology. In addition, we will borrow from Zalta the following notational convention: "*Fb*" stands for "*b exemplifies* the property of being *F*". "*bF*" stands for "*b encodes* the property of being *F*". Furthermore, we will use MOT^{dc} as an abbreviation for "the revised version of Meinongian object theory which makes use of a dual copula distinction".

According to MOT^{dc}, the object called "the round square" is the object that encodes the property of being round and the property of being square (and all of the properties that are implied by these properties) and no other properties. Thus, according to MOT^{dc}, the object called "the round square" is $\iota x \forall F(xF \equiv R \Rightarrow F \vee S \Rightarrow F)$.

Thus, according to MOT^{dc}, the object called "the round square" encodes exactly two constitutive properties (being round and being square). However, over and above this, there are many (indeed *infinitely many*) properties that are *exemplified* by this object, for instance: the property of not being red, the property of not encoding the property of being red, the property of not being determined with respect to its side length, the property of having thought of by Bertrand Russell, the property of encoding exactly two constitutive properties, the property of being incompletely determined.

7.6.6 Nonexistence Does Not Hold the Key

MOTdc is very remote from MOTo. Recall that, according to MOTo, the object called "the golden mountain" is not an abstract object but something as concrete as every existent mountain in the world. Secondly, and related to this, the idea that some objects do not exist is one of the cornerstones of MOTo—but it is not an essential feature of MOTdc, i.e., it doesn't play an essential role within MOTdc. Within MOTdc, Meinongian objects are defined as a particular kind of abstract objects (namely abstract objects to which two kinds of predicates apply). Of course, one can decide to say that these objects are "nonexistent"; but nothing hinges upon this decision. According to MOTo, the only difference between Meinongian objects and normal objects consists in the alleged nonexistence of the former. However, in MOTdc, Meinongian objects are distinct from normal objects because only the former are abstract objects which encode properties. This suffices to distinguish Meinongian objects from normal objects. Thus, there is no need to assume that existence is a property of individuals and that there is a difference between "There are objects that are such-and-such" and "Objects that are such-and-such exist".

If MOTdc is essentially different from MOTo, the question arises to what extent MOTdc can fulfill the tasks MOTo was supposed to fulfill. It seems that MOTdc cannot do everything MOTo was supposed to do. First, consider the problem of intentionality: if somebody fears the devil, does he fear an abstract object? — This seems to be psychologically impossible, for an abstract object cannot do any harm to anybody.

Second, recall the problem of negative singular existence sentences: Astronomers claim that Vulcan does not exist. Do they thereby intend to deny the existence of an abstract object that only encodes being such-and-such a planet? — Probably not. They rather deny the existence of something that is a planet, i.e., a concrete material thing. Finally, consider the problem of discourse about the past and the future: when a teacher in a history of philosophy class talks about Socrates, does she then intend to talk about an abstract object that only encodes all of the properties that Socrates (the "real" one) once exemplified? — Presumably not. If there is an object which she is intentionally directed at, then it is probably the "real" Socrates, not its abstract counterpart.

It may be that proponents of MOTdc find ways to meet these objections such that their theories provide solutions for the problem of intentionality, the problem of singular existence sentences, and the problem of reference to past and future objects. But even if they don't, it is beyound doubt that Neo-Meinongian theories can be and indeed are fruitful in many ways. In particular, they provide the basis for a consistent realist ontology of fictitious objects. (For a variety of further applications see in particular the writings of Jacquette, Parsons, and Zalta.)

Check Your Progress 1

Note: Use the space provided for your answer

1. Discuss the Problem of Negative Singular Existence Statements.

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2. Discuss the Problem of Fictional Discourse.

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3. Discuss the Problem of Discourse about the Past and the Future.

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4. Discuss the Problem of Alleged Analytic Truths Like "The round square is square".

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5. Describe the Nonexistent Objects in Practical Philosophy.

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7.7 LET US SUM UP

Uddayana divides Padārtha (Categories) into Bhava (existence) which is real, and Abhava (non-existence) which is not real. Dravya (substance), Guṇa (quality), Karma (action), Samanya (community or generality), Visesa (particularity or partimerity) and Samavaya (inherence) are the marks of existence. Abhava has not been categorically defined by the Vaisheshika School of Hindu philosophy but is of four kinds viz – 1) Pragabhava i.e. Prior non-existence, 2) Pradhvamsabhava i.e. Posterior non-existence, 3) Atyantabhava i.e. Absolute non-existence, and 4) Anyonyabhava i.e. Mutual non-existence.

Pragabhava i.e. Prior non-existence, is the non-existence of an effect in its material cause before production; it has a beginning it has an end because it is destroyed by the production of the effect. Without prior non-existence there cannot be an effect.

Pradhvamsabhava i.e.Posterior non-existence, is the non-existence of an effect by its destruction; as such it has a beginning but no end i.e. it cannot be destroyed.

Atyantabhava i.e. Absolute non-existence or absolute negation is non-existence in all times i.e. denial of an absolutely non-existent entity in all times and in all places. It is the state of absolute abstraction.

Anyonyabhava i.e. Mutual non-existence, is denial of identity between two things, which have specific nature. Negation other than mutual negation is negation of relation.

The process with which the sound value collapses into the point value of the gap existing between the first and the next syllable of the first letter of the Rigveda, Agnim, is Pradhvamsabhava, the silent point of all possibilities within the gap is Atyantabhava, the structuring dynamics of what happens within the gap Anyonyabhava, and the mechanics by which the sound emerges from the point value of the gap i.e. emergence of the following syllable, is Pragabhava; this mechanism is inherent in both syllables.

1. Both MOT^{ne} and MOT^{dc} could perhaps benefit from a clarification of their basic distinctions, namely the nuclear-extranuclear distinction and the dual copula distinction, respectively.

2. One feature of Meinong's mature object theory not mentioned so far is the "doctrine of implexion". Implexion is a relation between incomplete and complete objects which seems to be very close to what is often called "instantiation", i.e., a relation between universals and particulars. Incomplete objects are "implected" in complete ones. (See Meinong 1972, §29.) Meinong himself eventually came to interpret incomplete objects as universals (see Meinong 1972, 739f). Meinongian object theory may thus be interpreted as a sophisticated theory of universals, in particular as a theory of *types* (as opposed to properties), which might open further fields of application.

3. Throughout this entry, we have presupposed realism with respect to properties. However, it is doubtful whether a theory of Meinongian objects is *necessarily* ontologically committed to properties. An ontologically neutral quantifier and the use of non-objectual variables for predicates (not for *names* of predicates or properties) may help to avoid this commitment and thus could make Meinongian object theory much more parsimonious.

7.8 KEY WORDS

Abhāva: Abhava means non-existence, negation, nothing or absence. It is the negative of Bhava which means being, becoming, existing or appearance.

Nonexistent: not existing or not real or present.

7.9 QUESTIONS FOR REVIEW

1. What do you know about the concept of abhāva?
2. Discuss the Concept of a Nonexistent Object.
3. Discuss Logics of Nonexistent Objects.

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7.11 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

1. See Sub Section 7.4.1
2. See Sub Section 7.4.2
3. See Sub Section 7.4.3
4. See Sub Section 7.4.4