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UNIVERSITY OF NORTH BENGAL

MASTER OF ARTS-PHILOSOPHY

SEMESTER-II

INDIAN LOGIC
CORE-202
BLOCK-1

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ENLIGHTENMENT TO PERFECTION

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.

INDIAN LOGIC

BLOCK-1

BLOCK-2

BLOCK-1 INDIAN LOGIC

In this block you will study the historical introduction of logic, its relation with epistemology and metaphysics. You will study the definition and constituents of Anumana as explained in various darsanas.

Unit one deals with introduction to Indian logic.

Unit two deals with the relation of Logic, epistemology and metaphysics

Unit Three deals in Indian Logic r an internal perspective as a component of the comprehensive area of epistemology and in particular of the theory of pramanas

Unit Four deals with logic an rooted in Metaphysics

Unit Five deals with Atma-vidya in later stage was called Anviksiki the science of inquiry.

Unit Six anuman as understood in Buddhist and Nyaya perspectives

Unit Seven talks about constituents of anuman in Nyaya, Buddhist and Jain perpectives

UNIT - 1: INTRODUCTION TO INDIAN LOGIC

STRUCTURE

1.0   OBJECTIVES

After studying this unit, you should be able to:

- learn about the nature of logic in India
- understand what is vadavidya
- learn various darshanas which contributed to logic
- understand the importance of logical method

1.1 INTRODUCTION

Humans 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.

1.2 REASONING AND LOGIC

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.

1.2.1 Pre Classical Period

The fact that human's 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

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.

1.2.2 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.

1.3 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).

1.3.1 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.

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 premisses 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.

Notes

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).

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

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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.

Check your Progress- 2

1. Write a note on historical development of Indian logic

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1.4 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

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 premises may also come to know the truth of its conclusion. The truth of the premise corresponding to the ground, the minor premise 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 premises of the Indian canonical argument seems to have been Dignāga's student, Īśvarasena . He appears to have thought that knowledge of the canonical argument's major premises 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*.

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 controversy 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

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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.

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.

2. Check your Progress

1. Awareness and form

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1.5 LET US SUM UP

Logic as the study of the form of correct arguments and inference-patterns, developed in India from the methodology of philosophical debate. The art of conducting a philosophical debate was prevalent probably as early as the time of the Buddha and the Mahavira (Jina), but it became more systematic and methodical a few hundred years later. By the second century BC, the intellectual climate in India was bristling with controversy and criticism. Nyaya and Buddhist logicians enhanced the logic immensely in later period.

1.6 KEY WORDS

Akshapada : Author of Nyaya Sutra

Vatsyayana, Cmmnetataor on Nyaya Sutras Who worte Nyaya Bhasya

Dignaga, 5th century Buddhist logician

Nyaya: one of schools of thought(Indian)

1.7 QUESTIONS FOR REVIEW

1. Key features of Nyaya Logic
2. Dignnaga's logical method

1.8 SUGGESTED READINGS

- *Abhidharma-samuccaya* (*Compendium of the higher teachings*) by Asaṅga. Edition: Tatia 1976. French translation: Rahula 1971.

- *Băi lùn* (*Treatise in one hundred verses; Śata-śāstra*) by Āryadeva. Edition: *Taishō Chinese Tripiṭaka* 1569. English translation: Tucci 1930.

- *Caraka-saṃhitā* (*Caraka's collection*) by Agniveśa. Edition: Sharma and Dash 1976. English translation: Sharma and Dash 1976. Reference: CS *sthāna.adhyāya.sūtra*

- *Fāng biàn xīn lùn* (*Treatise on the heart of means*). Edition: *Taishō Chinese Tripiṭaka* 1632. Reference: T 1632 page.horizontal-band.vertical-line

- *Hetu-bindu* (*Drop of reason*) by Dharmakīrti. Edition: Steinkellner 1967. English translation: Gokhale 1997.

- *Kathā-vatthu* (*Points of controversy*) by Moggaliputta Tissa. Edition: Kāśyapa 1961. English translation: Aung and Davids 1915.

- *Milinda-pañho* (*Questions of King Milinda*) Edition: Trenckner 1880. English translation: Davids 1890.

- *Mūla-madhyamaka-kārikā* (*Basic verses on the middle way*) by Nāgārjuna. Edition: de Jong 1977. English translation: Siderits and Katsura 2013. Reference: MMK chapter.verse

- *Nyāya-bhāṣya* (*Commentary on logic*), a commentary on the *Nyāya-sūtra*, by Vātsyāyana, who is also known as Pakṣalisvāmin. Edition: Taranatha and Amarendramohan 1936. English translation: Jha 1913. Reference: NSB *adhyāya.āhnika.sūtra*

- *Nyāya-bindu* (*Drop of logic*) by Dharmakīrti. Edition: Malvania 1955. English translation: Shcherbatskoï 1930 v. 2. Reference: NB *chapter.passage*

- *Nyāya-mukha* (*Introduction to logic*) by Dignāga Edition: Original Sanskrit text lost. Chinese translation: *Tai Shou* no. 1628 (v. 32,: 1–2). English translation: Tucci 1930. Reference: NM.

- *Nyāya-praveśa* (*Primer on logic*) by Śaṅkarasvāmin. Edition: Dhruva 1930. English translation: Gillon and Love 1980; Tachikawa 1971.

- *Nyāya-sūtra* (*Aphorisms on logic*) by Gautama, who is also known as Akṣapāda. Edition: Taranatha and Amarendramohan (eds.) 1936. English translation: Jha 1913. Reference: NS *adhyāya.āhnika.sūtra*.

- *Nyāya-vārttika* (*Glosses on logic*) by Uddyotakara, a commentary on the *Nyāya-bhāṣya*. Edition: Taranatha and Amarendramohan 1936. English translation: Jha 1913.

- *Pramāṇa-samuccaya* (*Compendium on epistemic means of cognition*) by Dignāga. Edition: Original Sanskrit text lost. English translation: first chapter, Hattori 1968; second chapter, Hayes 1988 ch. 6; fifth chapter, Hayes 1988 ch. 7. Reference: PS chapter.verse

- *Pramāṇa-vārttika* (*Gloss on epistemic means of cognition*) by Dharmakīrti. Edition: Pandeya 1989. English translation: first chapter to verse 38 with autocommentary, Hayes and Gillon 1991 and Gillon and Hayes 2008; first chapter verses 312 -- 340 with autocommentary, Eltschinger, Krasser and Taber (trans.) 2012. English translation of the Chapter on argument: Tillemans 2000.

- *Pramāṇa-viniścaya* (*Settling on what the epistemic means of cognition are*) by Dharmakīrti. Edition of the chapter on perception: Vetter 1966. Edition of the chapter on inference: Steinkellner 1973.

- *Prasanna-padā* (*Clear-worded* (*Commentary*)) by Candrakīrti, a commentary on *Mūla-madhyamaka-kārikā*. Edition: Shastri 1983. English translation: Sprung 1977.

- *Praśastapāda-bhāṣya* (*Praśastapāda's Commentary*), also known as *Padārtha-dharma-saṃgraha* (*Summary of categories and properties*), by Praśastapāda. Edition: Bronkhorst and Ramseier 1994. English translation: Jha 1916.

- *Rú shí lùn* (*Treatise on truth*; *Tarka-śāstra*). Edition: *Taishō Chinese Tripiṭaka* 1633. Reference: T 1633 page.horizontal-band.vertical-line

- *Sandhi-nirmocana-sūtra* (*Aphorisms on release from bondage*) Edition: Lamotte 1935. French Translation: Lamotte 1935.

- *Śata-śāstra*: see *Bǎi lùn*.

- *Śloka-vārttika* (*Gloss in verses*), a commentary on Śabara's commentary on Jaimini's *Mīmāṁsā Sūtra*, Bk. 1, Ch. 1, by Kumārila Bhaṭṭa. Edition: Musalgaonkar 1979. Translation: Jha 1924.

- *Tarka-śāstra*: see *Rú shí lùn*.

- *Upāya-hṛdaya*: see *Fāng biàn xīn lùn*.

- *Vāda-nyāya* (*Logic of debate*) by Dharmakīrti. Edition: Shastri 1972; Gokhale 1993. English translation: Gokhale 1993.

- *Vāda-vidhi* (*Rules of debate*) by Vasubandhu. Edition: Frauwallner 1957. English translation: Anacker 1984 ch. 3.

- *Vaiśeṣika-sūtra* (*Aphorisms on individuation*) by Kaṇāda. Edition: Jambuvijāyajī 1961. English translation: Sinha 1911. Reference: VS *adhyāya.āhnika.sūtra*

- *Vākyapadīya* (*On sentences and words*) by Bhartṛhari. Edition: Rau 1977. English translation: Subramania Iyer, K.A. 1965, 1971, 1974, 1977. Reference: VP *kāṇḍa.kārikā or kāṇḍa.samuddeśa.kārikā*

1.9 ANSWER TO CHECK YOUR PROGRESS

1. Check your Progress Answer A. 1
   - Pre Classical Period
   - Classical Period

2. Check your Progress Answer A. 1

   - 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.

UNIT-2 THE CLOSE RELATIONSHIP OF LOGIC, EPISTEMOLOGY & METAPHYSICS IN THE INDIAN TRADITION

2.0 OBJECTIVES

- To know what is pramansastra
- Understand the relation between epistemology and metaphysics

2.1 INTRODUCTION

Epistemology (pramana-sastra) available in Indian philosophical systems is not unbiased, but is vitiated through various metaphysical or ontological presuppositions, though it is claimed by Indian philosophers that through a means of knowing (pramana) a knowable entity (prameya) is substantiated. Pramana itself is not untouched by the scheme of prameya admitted by them**.**

2.2 NYAYA

The Naiyayikas have accepted means of knowing (pramana) as a first category,

depending on which the other factors involved with it become meaningful. According to Vâtsyâyana, if pramana remains in its true form, such concepts as knower (pramatå), knowable entity (prameya) and valid cognition (pramiti) become meaningful. In fact, the meaningfulness of all these depends on that of pramana. That is why pramana and pramana-sâstra receive so much importance in this system. How do we know that a pramana is a genuine one? In reply, it is said that the genuine nature of it is substantiated on the strength of its successful inclination. In fact it is itself a form of inference in which arthavattva ('capability of being meaningful') is the sadhya (probandum), pramana ('means of knowing') is pakša ('subject of inference') and pravåtti-sâmarthya ('efficacy to successful inclination') is the hetu ('probans'). The genuinity of a pramana is proved in terms of another pramana, i.e. inference, which ultimately leads to infinite regress (anavasthâ). In spite of this the Naiyâyikas are very much concerned with proving the genuinity of pramana with the help of its efficacy to successful inclination (pravåtti-sâmarthya) after keeping the theory of paratah-pramanya ('extrinsic validity of proof') in view. Whether something is a pramana or a pseudo-pramana (pramanabhasa) is dependent on its successful inclination, which leads to the supposition that the theory of pramana on which a prameya ('provable object') is substantiated is not free from the influence of prameya-related presuppositions.

2. 2.1 Epistemology And Metaphysics

Each and every system of Indian Philosophy has got some metaphysical presuppositions that are reflected in their theories of knowledge. That is the only reason which gives rise to the principle of pramanadhina prameya-siddhih ('the substantiation of the knowable entities depends on the source of knowing'). This principle is true in the sense that knowable entities or categories are different in different philosophical systems. Hence, the definitions are formulated in such a way so that their presupposed entities can be proved. One could raise the problem of

circularity in these cases. When a philosopher of a particular school is framing a definition of pramana, it is to some extent 'subjective', but not objective in the sense that he bears some presuppositions. Whatever may be the reasons the philosophical systems particularly in India are not free from this defect of biasness. The point will be clearer by some definitions of perception (pratyaksa) accepted by different systems. The definition of perception given by the older Naiyâyikas is as follows: 'The perceptual knowledge is a cognition arising out of the contact of the sense-organ with an object, which cannot be described through language, which is non-deviating (avyabhicarin) and non-erroneous (vyavasayatmaka). This definition was accepted by the older Naiyayikas because it was formulated in such a way so that their accepted theories of indeterminate perception (nirvikalpaka-pratyaksa), indicated by the inclusion of such terms as 'something inexpressible by words' (avyapadesya), 'contact' (samnikarsa) between sense-organs and the object, 'non-erroneous character' (vyavasayatmaka), 'non-deviating character' (avyabhicarin) etc. be preserved. To them an object (artha) was a kind of category accepted by them and capable of being perceived (yogya). There did not arise any question of perceiving an absurd entity, as the categorical scheme admitted by them did not permit us to do so. The Nyaya did not admit an entity which could not be included under the accepted seven categories. In this case the term artha was included so that an absurd object not belonging to the set of admitted categories did not find entry in the scheme of perception.

2.3 ADVAITA

Let us have a look towards the Advaita theory of perception. According to the Advaitins, the whole world is nothing but the manifestation of Brahman or Âtman or Consciousness (caitanya). Under this situation Dharmaraja Adhvarindra, a follower of the Advaita school, thinks that mere connection (sannikarša) between sense organ and an object may not be the cause of perceptual cognition. If the whole world is Consciousness (caitanya), object (artha) is something covered by this Consciousness. Other object, like our sense organs etc., are the consciousness limited by objects, sense organs etc. Though Consciousness (caitanya) is one, it

may have limiting adjuncts (upadhi) such as consciousness of an object (visayavacchinna-caitanya), consciousness of the mental mode (antah-karana-vritty-avacchinna-caitanya) and consciousness of the knower (antah-karanavacchinna-caitanya). These limiting adjuncts of one Consciousness are called višaya-caitanya, pramana-caitanya and pramâtå-caitanya respectively. Being one, it has limiting adjuncts just as time, though one, has limiting adjuncts (upâdhis) in the form of hours, days, week, fortnight, month, year etc. After keeping these metaphysical presuppositions in mind Dharmaraja Adhvarindra accepted two criteria of perceptuality: perceptuality of knowledge (jnana-gata) and perceptuality of object (visaya-gata). To him when there is a union between consciousness of a means of knowing (pramana-caitanya) and consciousness of an object (višaya-caitanya), then it is the case of the perceptuality of knowledge (jñana-gatapratyakšatva). It is to be borne in mind that they Advaitins have made a distinction between perception of the knowledge of a jar and perception of a jar. In the case of the perception of the knowledge of a jar there is the union between višayacaitanya ('consciousness of an object') and pramana-caitanya ('consciousness of a means of knowing') but pramatå-caitanya ('consciousness of the knower') will remain isolated in the sense that it maintains its separate existence by playing the role of an agent (karta). How is such union of these two caitanyas possible? Dharmaraja Adhvarindra left no stones unturned to make us convinced with the following reasoning. When our mind, after issuing from the body reaches to the object with the help of sense organs and assumes the shape of the object, then it is called mental mode (våtti), which is also a form of the consciousness. To them the Advaitins the mind (antah-karana), like liquid substance, has no shape of its own, but assumes the shape of the object just as water assumes the form of the container. If this were the case, the consciousness of an object (višaya-caitanya) becomes identified with its corresponding mental mode (antah-karana-våtti). The union of these two limited forms of consciousness gives rise to the perception of the knowledge of the object. The pramâtå-caitanya ('consciousness of the knower') which, being a knower, remains isolated and perceives the knowledge of an object (jnanagata-pratyaksa). In this case there is the distinction between a knower (jnata) and a known object (jneya). That is

why it is the perceptuality of knowledge of an object (jnana-gata-pratyaksatva). But there is another case of perception, which is called perceptuality of an object (visaya-gata-pratyaksatva). For having a cognition of an object the existence of a knower is a precondition, insofar as the cognition of an object without the knower is impossible. If it is said that there is the perceptuality of object, it should be treated as different from the perceptuality of knowledge of an object (jnana-gata-pratyaksa). It is not knowledge which is perceived, but the object only. Such a situation cannot give rise to knower–known relationship (jnata-jneya-bhava). Hence Dharmaraja Adhvarindra says that in such cases there is only the knower in the form of consciousness (pramata-caitanya); but other two, i.e. consciousness of the mental mode (antah-karana-vatti) and consciousness of an object, are united in the knower (pramata). This situation is described by him as pramata-sattatirikta-sattakatvabhava ('an absence of the existence of other forms of consciousness excepting the existence of the knower'). Herein lies some sort of metaphysical presupposition. In this case Dharmaraja is dealing with metaphysics in disguise of epistemology. When a person thinks himself identified with the whole world, it is the stage of liberation due to the absence of reality of more than one (advaita). In this case an object is not mere an object but a subjectified object. Though there is no difference in saying subjectified object' and 'objectified subject' as evidenced in the Bhagavad-gita sarva-bhuta-stham âtmânam sarva-bhutani câtmani, i.e. extension of self to others and bringing others under self), Dharmaraja preferred to use subjectified object', since pramata ('knower') only remains at this stage. There is the absence of the existence of other objects excepting the existence of knower (pramata). Is it not a state of liberation? Such a state is generally realised temporally at the time of aesthetic enjoyment (rasa). In KÂ, p. 92, Abhinavagupta has explained this state of 'subjectified object' as 'the melting of the state of the knower' (pramata-bhava-vigalana). Just as an object when liquidified covers many areas, in the like manner the knower can expand himself in such a way so that all objects are included in him. At this stage he is not confined within himself but expands himself to all the objects and hence objects have no other existence other than that of the knower. That is why an individual can enjoy aesthetic pleasure (rasa) as he considers the

pathos etc. belonging to characters of the novel or drama as his own due to his emotional involvement. This sharing of others' feelings is called by Abhinavagupta (KÂ, p. 84) tan-mayi-bhavana ('becoming one with other'). It may be asked to the Advaitins whether it is the case of epistemology or metaphysics. Whatever may be their reply, we have shown that a set of metaphysical presuppositions has led Dharmaraja Adhvarindra to formulate such a definition of perception.

2.4 BUDDHIST

If we turn to the Buddhists in general and Dharmakîrti in particular, they are also not free from some basic presuppositions such as theories of momentariness, dependent origination, causal efficacy (artha-kriyâ-kâritva) etc. as a characteristic feature of being (sat) etc. Keeping these in view Dharmakirti has formulated the definition of perception: 'perceptual cognition is the non-erroneous cognition of an entity free from mental ascriptions. Is it not true that such a definition is given keeping some presuppositions in mind?

Hence there is hardly anything in different systems of Indian philosophy which may be described as 'pure epistemology' or 'unbiased epistemology'. Perhaps this is the characteristic feature of all branches of philosophy. Behind the formulation of this definition Dharmakirti has two presuppositions in mind: (1) the mark of an existent entity is its causal efficacy (artha-kriya-kartitva-laksanam sat) and (2) whatever is existent is momentary (yat sat tat kšanikam). An object endowed with mental ascriptions is not momentary due to its conceptualisation and hence it loses its unique singular (sva-laksana). That is why the perceptual entity is described as free from mental ascriptions so that its unique momentary character is preserved.

While discussing the Buddhists definition of perception one could easily remember the affinities between sva-laksana-character of an object and indeterminate perception (nirvikalpaka-pratyaksa). Regarding the acceptance of a sva-laksana ('unique singular') entity there are problems. As for example, an unique singular (svalaksana) entity is existent (sat) by virtue of its causal efficacy (artha-kriya-karitva).

How can the causal efficacy of it be judged with a moment (ksana), the minutest particle of time? At the same time I would like to state that the Navya-nyaya theory of indeterminate perception (nirvikalpaka-pratyaksa) in its turn is not free from some problems either. I would suggest one or two problems that the acceptance of the theory of indeterminate perception as admitted by the Nyâya poses. These problems occur due to the inconsistency of the presuppositions of the Naiyâyikas. First, Visvanatha in his Bhasa-pariccheda (verse 51) and Siddhanta-muktavali has accepted that presentative cognition (anubhava) may be valid (yathartha) and invalid (ayathartha). The valid presentative cognition (yatharthanubhava) is of four types: perceptual cognition, inferential cognition, cognition through similarity and verbal testimonial cognition. The instruments of these are the four pramanas, i.e. perception (pratyaksa), inference (anumana), comparison (upamana) and verbal testimony (sabda). The perception is of two types: determinate (savikalpaka) and indeterminate (nirvikalpaka). Visvanatha has accepted indeterminate perception as a form of perception but subsequently he remarks: 'the cognition which is indeterminate is beyond our sense-organ.' If it is beyond the reach of our sense organ, how can it be called a form of laukika-pratyaksa (ordinary perception)? For, there is the lack of conditions of being perceptual due to not having the contact of the sense organ with the object (indriyartha-samnikarsa). Secondly, there arises the problem of determining its validity (pramanya). If it is a form of perception, it must be true. But afterwards it is said that the truth-value cannot be assigned to it. It is neither true nor false. If it is so, it can never be a case of perceptual knowledge. Thirdly, if it is accepted that it is true how can pramanya be ascertained? The Naiyâyikas believe in the extrinsic validity of truth (paratah-pramanya), which cannot be applied to the indeterminate perception. Vioevanâtha's position cannot be taken for granted due to the absence of feasibility of applying the extrinsic validity of truth which will go against the Naiyâyikas basic presuppositions. In this way we judge the justifiability of a theory through the spectacle of the ontological presuppositions, which proves that there is hardly any room for independent reasoning developed afterwards.

Check Your Progress -1

1. Metaphysics and epistemology as explained logically by Dharmakirti , the Buddhist logician.

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That the Naiyayikas are bound with the ontological presuppositions is evidenced from the acceptance of the prameyas ('knowable entities'). The Nyaya admits twelve prameyas: the self (atman), body (sarira), sense-organ (indriya), object (artha), cognition (buddhi), mind (manas), inclination (pravatti), defect (dosa), rebirth (pretya-bhâva), result (phala), suffering (duhkha) and liberation (apavarga), the real cognition of which leads us to realm of apavarga. From the false cognition an individual is entangled with this worldly affair leading to suffering and hence the real cognition of twelve pramayas leads us to the world of liberation. Among these prameyas self is fundamental. Wrong cognition of the self-arises where the self is understood as the non-self. Ordinary human beings consider the non-selves such as the body, sense organ and mind as selves and take new birth and death again and again. So long as there is no separation of the self from the body etc. an individual cannot be absolutely free from suffering. As soon as the wrong notion of the self in non-self-vanishes, an individual attains liberation in the form of absolute cessation of suffering due to the loss of the cause of suffering. Hence, the realisation of the self is the real cause of liberation and hence the self is mentioned at the outset among the prameyas.

The right cognition of the categories leads us to the attainment of mundane and transcendental well-being (drsta and adrsta nihsreyasa). The right cognition of the categories such as pramana, vada, jalpa, chala, hetv-abhasa etc. leads us to the mundane well-being, because they are beneficial for defeating others and defending our own stand point. If an individual is well conversant with the categories and their application, he can easily understand the points of defeat (nigraha-sthâna), quibble (chala) and 'pseudo-reason' (hetv-abhasa) in others argument, which can lead him to the world of victory in the field of philosophical debate. In

the same way, the right cognition of the self, one of the prameyas, can conjoin us with the transcendental well-being (adrsta-nihsreyasa), i.e. the attainment of liberation. The true cognition of the self can remove ignorance or wrong notion (mithyajnana), which again removes suffering, aversion and attachment (râga-dvesa) caused by the wrong notion. If there is non-attachment, there cannot be inclination (pravåtti) towards an object. Due to the absence of inclination the merit and demerit cannot be generated. Owing to the lack of dharma and adharma there is no possibility of rebirth, which is meant for the enjoyment of the result of karma by an individual being. The absence of birth leads to the absence of suffering, which is the state of liberation according to Nyaya.

This type of philosophical procedure of attaining liberation through self-realisation in primarily due to the Naiyayikas first belief in the authority of the Veda and Vedas. Though the Nyaya is taken to be a realistic philosophy, yet it is not free from the influence of Veda or Vedas at the grass root level of their philosophy. Like the Vedântins they also believe that the realization of the self ultimately leads to the realm of liberation. Though the Naiyayikas have mentioned pramana as the first category to prove the existence of prameya, yet it cannot be ignored that the application of pramana is to know the self truly (tattva-jnana), otherwise there is a chance of misapprehension of self. When pramana is applied, the total end-in-view of applying it, i.e. to conjoin an individual to liberation through self-realisation, is in the background. Hence pramana is not 'objective', because of an agent cannot apply it 'freely', but 'subjective' or teleological, in the sense that it cannot be unbiased. That the Naiyayikas are bound with the Upanišadic self etc. is evidenced from the example of jahad-ajahad-lakšana ('quasi-inclusive implication') taken by Annambhatta as tat tvam asi ('Thou art that'). Is it a case epistemology in the true sense of the term? Certainly not, because it is mixed with the metaphysics, which has been taken as an indeterminate perception (nirvikalpaka-pratyaksa) by the Advaitin. In this case the testimonial cognition is based on some notion of self which is metaphysical.

Let us explain the same in the following way.

The indeterminate perception or nirvikalpaka-pratyaksa is accepted in the case of the recognitive cognitions, such as 'This is that Devadatta' (so 'yam devadattah) or That art thou' (tat tvam asi), on account of the fact that it does not reveal the relation between the two, i.e. this and that Devadatta or That and thou. It has been interpreted by the Advaitins that the sentence conveys the sense that Devadatta exists in Devadatta himself or an individual self exists in himself in the form of Brahman. But they do not admit any relation between the two by the term vaisistyanavagahin ('absentee of knowledge apprehending relatedness of the qualificand and qualifier'). If the meaning of the aforesaid sentences is pondered upon, it will be revealed that these are not actually relation-free. In other words, like other components the relation is also revealed in such cases due to the following reasons. First, how do we know that Devadatta exists in himself without the assumption of the relation of identity between them? Any type of recognitive cognition presupposes the relation of identity (at least in the sense of similarity) between two existing earlier or at present time. To the Advaitins identity (tadatmya) is the vital relation in the phenomenal cognition. In fact, they admit tâdâtmya in the places where there is a part-and-whole relation (avayavavayavi-bhava-sambandha) etc. Hence tadamya has very often been accepted as a relation. To the Advaitins tadatmya ('identity') is taken in the sense of similarity as found in colour and the possessor of it. In the cases cited above there must be a relation of identity (tadatmya) in the sense of similarity between this and that Devadatta. That is why the recognitive knowledge (pratyabhijna) is possible. Secondly, though there is no absolute identity between this Devadatta and that Devadatta or an individual being and Brahman, there must be an essential identity (svarûpa-tâdâtmya) between them. Otherwise, the sentences could not provide the intended meaning. Lastly, the cognition coming through the sentences are called relational in character, as it is sentential in nature. A sentence becomes meaningful if there is a word, its meaning and their relation. It may be asked whether in the words and their meaning there is signifier–signified relationship (vacya-vacaka-bhava) or not. If the answer is in positive, relation is accepted between them. If not, the sentences cannot provide the desired meaning due to the lack of signifying character (vacakatva) of the words. In fact, Dharmarâja

Adhvarindra has accepted the meaningfulness of the sentences, which entails the existence of the relation in them. Hence the definition of nirvikalpaka perception as formulated by the Advaitins is hardly adequate. At least this type of definition apparently fails to justify nirvikalpaka cognition. The problem has been well taken by the Advaitins by giving a fresh interpretation of the above-mentioned sentence. To them the meaning of the sentences such as so 'yam devadattah or tat tvam asi etc. is indivisible (akhandartha). When the sentences produce right cognition without being related to the relation among the words, it is called indivisible meaning. Only the stem (prâtipadika), which is free from the suffixes causing relation, can give rise to indivisible meaning. In the case of the nirvikalpaka-pratyakša there is no relation between the meanings of the terms, but it gives an indivisible meaning after ignoring the individual ones. Such statement is dependent on some metaphysical presuppositions, such as the phenomenon of sabda-brahman or sphota in Vedantaparibhaša (VPar).

Two types of perception, apart from the previously mentioned one, are jîva-sakšin and isvara-saksin. It has been mentioned in the Vedanta-paribhasa that the distinction between an individual being (jiva) and witness in self (jiva-saksin) lies on the status of internal sense-organ (antah-karana). If consciousness is limited by mind or inner organ it is called jiva (antah-karanavacchinnam caitanyan jivah). If the same antah-karana remains as a limiting adjunct (upadhi) in a jiva, it is called jiva-saksin. In the same way, the consciousness qualified by maya is called isvara or God (mayavacchinnam caitanyaô paramarvarah). When the same maya remains as a limiting adjunct (upadhi) of consciousness, it is called witness in God (isvarasaksin). The property, which is related to the predicate (karyanvayin) and becomes a distinguisher (vyavarttaka), being present (vartamana) in a possessor of property, is called visesana while something, which cannot be related to the predicate (karyananvayin) and becomes a distinguisher (vyavarttaka), being present (vartamana) in the possessor of property, is called upâdhi. Though the distinction between visesana and upadhi has been shown clearly, it is very difficult to understand the exact position whether the

inner organ (antah-karana) remains in an individual being as an adjunct or limiting adjunct. In the same way the position or status of maya in consciousness (caitanya) cannot be known with the help of the reason. Without the help of intuition it is very difficult to have an idea about the status of mind in an individual being or the status of maya in a consciousness. It needs vision to know the same. If these are known transcendentally, why are they called the forms of perception? The phenomena of jiva-saksin and isvara-saksin are more metaphysical in character than epistemological. Hence the Advaitins cannot do pure epistemology' without the help of metaphysics.

In connection with the immediate awareness (aparoksa-jnana) Dharmaraja Adhvarindra has pointed out that such perceptual awareness may sometimes arise from the testimony also, which is called perceptual awareness generated through verbal testimony (sabda-janya-pratyaksa). It has been argued by the Advaitins that, when an individual comes to know of his happiness through the utterance of the sentence 'You are happy' (tvam sukhi) by somebody else, would it be considered as perceptual? The answer is in the positive, to the Advaitins. They have put forward an example of perceptual awareness through some testimonial cognition. A leader of a team is counting the members of his team to confirm that nobody is left behind. Among the ten members every time he is counting nine members but not ten, not including himself due to his absent-mindedness. Being pointed out by some body else he comes to know that he has not counted himself. Ultimately the person pointed him out as the tenth person and said: You are the tenth' (daoeamas tvam asi). This is a case of perception, no doubt, which is generated through the utterance of the sentence by somebody else. Actually this type of awareness suggests a great area of the Advaita philosophy. To the Advaitins an individual being is always free, but he does not know it. When it is pointed out that he is free from suffering through the injunction of the sastra or agama or through hearing (sravana), reflection (manana) and meditating (nididhyâsana), he suddenly sees himself free. This freedom is not new to him, but it is acquirement of what is acquired (prâptasya praptih). An individual's liberation or freedom is not at all a new achievement, but awareness of something, which is already known.

This knowing of the known is possible through the testimonial statement as found in different srutis. The function of the testimony in the form of sruti is to make someone aware of his own position and status. It provides the true picture of the human being, his freedom etc. about which he did not know. Hence, perception in the field of freedom or liberation is generated through the âgamic statement that tvam asi, which is very much significant in Indian Philosophical systems. In order to highlight this metaphysical aspect they have introduced a specific type of pratyakša called sabda-janya-pratyakša ('perceptual cognition generated through verbal testimony'). Indian theories of error called 'error theory' (khyâti-vâda) as admitted by different systems are based on purely metaphysical structure. The Vijnana-vadin and Sûnyavadin schools of Buddhism propagate consciousness-centric error theory (atma-khyativada) and non-existent error theory (asat-khyâti-vâda) respectively after keeping the theory of consciousness in the form of vijnana (consciousness) and sunyata (voidness) in view. Such is the case with the indescribable theory of error (anirvacaniyakhyati-vada). In this case the represented object or the mistakenly known object is admitted as different from existent or non-existent (sad-asad-vilaksana), because it (i.e. the snake in the case of rope) is neither existent due to its sublation by the latter cognition nor non-existent due to having its apparent awareness (prâtibhâsikasatta). The Mimamsaka who do not believe in the existence of erroneous cognition formulates the theory of no error theory (akhyati) presupposing it in view.

The Naiyayikas admit that more than one pramana can be applied to know a single object, which is called the theory of pramana-samplava. The nature of an object is not a factor for applying pramana. As for example, 'fire' can be known through perception, inference or verbal testimony. But so far as the Buddhist view is concerned, a particular nature of an object determines the particular means of knowing (pramana) through which alone it is revealed. An object having a unique characteristic (sva-laksana) is revealed by perception alone. A sva-laksana-entity ('unique singular') cannot be revealed by inference and in the same way the samanyalaksana-entity ('entity characterised by generality') can be known by inference alone, but not capable of being

known by perception. This metaphysical presupposition leads them to admit the system of a specific fixed means of knowing (pramana-vyavastha). The Buddhists may say that if more than one pramana is applied in a certain case, the object may be seen as having contradictory nature. To them if perception, inference and verbal testimony have a common object, the object should have been of similar type. But actually we find 'fire' for example, perceived in proximity is different from that existing in a remote distance. If an object is seen from a distance, it is seen as associated with some general features. When it comes near, the same object seems to have some other special features. Hence, perception, inference and verbal testimony differ from each other regarding the object grasped by them. But the Naiyâyikas stick to their decision that many modes of knowing (pramana) can be applied to the same object. They assert that a locus having diverse properties is one and the same. Jayanta in nyaya manjari has referred to the paradigm case of applying various pramanas in a particular situation. From the words of a trustworthy person an individual can know of the existence of fire in a distant place. He goes towards the locus of fire. When he goes certain distance, he sees smoke arising from a place by which he infers the existence of fire. When he goes nearest to the fire, he perceives the same with his own.

From the above-mentioned arguments it can be concluded that pramana-sastra is not free from metaphysical or ontological commitment. In fact, when a particular epistemic theory is propagated by a particular system, the philosophers belonging to the school keep the ontological presupposition in view. Being influenced by this they formulate an epistemic theory, which can ultimately prove these presuppositions. Before a particular epistemic theory is formulated, its formulation is influenced by the presuppositions. The ontological commitment guides a philosopher remaining in him in the form of proposition (pratijna). The same ontology or prameya is proved through the pramana, which is in the substantiated form as we find in the case of conclusion (nigamana). When it is said that 'prameya is established through pramana' (pramanadhina prameya-siddhih), Indian philosophers talk of the latter type of function occupying the position of nigamana. The above-mentioned point may be highlighted again following the Advaitic line. In

the beginning of the Adhyasabhasya Sanskara has given the definition of superimposition (adhyasa) as 'the appearance of the previously seen object in a different place, which has affinities with memory is called superimposition. This definition is in the description level, which has no relation with the actual realisation of the same. This is not the result of experience. When the self is realised, an individual can realise the truth of the statement describing adhyasa ('superimposition'). This description is the starting point to reach the realm of realisation. The true nature of the illusoriness of the world (adhyasa) can be realised just after self-realisation has been attained. The first introduction with the concept of adhyasa is taken as proposition (pratijna) and the realisation of the same at the end is the conclusion (nigamana). Though the proposition and conclusion seem to be the same, there is a gulf of difference between the two. The former is a mere description given by somebody else from his experience while the latter is the result of an individual's own realisation. Such is the case with other theoretical enterprises. But it should be kept in view that these probable entities (prameya) are working in the brain of the philosophers before the theoretical formation of knowledge starts. Hence, theory of knowledge can never be unbiased in the true sense of the term.

2. Check Your Progress- 1

Metaphysics and epistemology

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2.5 ANUMANA AND ANUMITI

Anumiti holds the second place in the list of the different types of vidyà. Since pratyaksa holds the first position in that list, and anumiti depends on pratyaksha, Anumàna, which is the instrumental cause of anumiti has been acknowledged in the Vaisesika system as an independent means of knowledge. The prefix 'anu' indicates succession, and the word 'miti' means cognition. Thus, the word 'anumiti' means a cognition that always follows some other cognition. The word 'langika', which is derived from

the word 'linga', means a cognition that has been obtained from 'lïnga', i.e. inferential mark. It should be noted here that in the case of an inferential cognition, one apprehends an object in a certain locus through the medium of the apprehension of some mark by virtue of a relation of invariable concomitance between the two objects. The subject or locus, where the inferable object is sought to be established is called paksha, whereas the object that is sought to be established in that subject is called sàdhya (probandum). On the other hand,

the mark which indicates the presence of the inferable object in a certain subject is called hetu or liïga (probans), and the invariable concomitance between the hetu and sàdhya is known as vyàpti. Thus, in the case of the inference of the form "The hill has fire, because the hill has smoke", the hill, fire and smoke are the pakùa, sàdhya and hetu respectively; and the invariable concomitance between the smoke and fire is the vyàpti in this case.

The term 'anumàna' can be derived from the combination of the prefix 'anu', the verbal root 'mà' and the suffix 'lyuñ'. The term 'anumàna' will mean veridical inferential cognition Now, taking the term 'anumana' in the instrumental sense, we will discuss anumitijñàna first, and thereafter, we will determine the nature of anumàna pramàõa, i.e. the uncommon condition of anumiti.

According to Kanada, cognitions of the forms 'this is the effect of that cause', 'this is the cause of that effect', 'this is the conjunct of it', 'this is the contrary of it', 'this is the inherent cause of it' etc. that result from *linga* are called *laingika* or *anumiti*.

Prasastapàda gives a definition of *laingika*, which makes this fact abundantly clear, and the said definition is— that which is produced due to the apprehension of *liïga* is called *laiïgika*. Here, it should be pointed out that the term '*darsana*' that has been employed in this definition of *laingika* generally means perceptual cognition that is visual, but in this case, all sorts of cognition have been denoted by the term '*dar÷ana*', since an inferential cognition can be produced even by that *liïga* which has been apprehended by some other type of *pramana* like inference.

2.6   LET'S SUM UP

Epistemology (pramana-sastra) offered in Indian philosophical systems is not unbiased, but is vitiated through various metaphysical or ontological presuppositions, though it is claimed by Indian philosophers that through a means of knowing (pramana) a knowable entity (prameya) is substantiated. Pramana itself is not untouched by the scheme of prameya admitted by them.

2.7   KEY WORDS

Pramana: sources of Knowledge

prameya, : Objects of Knowledge

svalakshana, : particulars

samanyalakshan,: general characteristic of a substances

2.8   QUESTIONS FOR REVIEW

1. Elaborate the relation between epistemology and metaphysics

2. Nyaya view of perception and metaphysis

3. Buddhist view of kshanika and perception

4. Advaita view of reality and epistemology

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2.10 ANSWER TO CHECK YOUR PROGRESS

1. Answer to Check your Progress -1
   1. Dharmakîrti in particular, they are also not free from some basic presuppositions such as theories of momentariness, dependent origination, causal efficacy (artha-kriyâ-kâritva) etc. as a characteristic feature of being (sat) etc.
- Keeping these in view Dharmakirti has formulated the definition of perception: 'perceptual cognition is the non-erroneous cognition of an entity free from mental ascriptions. Is it not true that such a definition is given keeping some presuppositions in mind?
- Hence there is hardly anything in different systems of Indian philosophy which may be described as 'pure epistemology' or 'unbiased epistemology'. Perhaps this is the characteristic feature of all branches of philosophy.

- Behind the formulation of this definition Dharmakirti has two presuppositions in mind: (1) the mark of an existent entity is its causal efficacy (artha-kriya-kartitva-laksanam sat) and (2) whatever is existent is momentary (yat sat tat kšanikam).

- An object endowed with mental ascriptions is not momentary due to its conceptualisation and hence it loses its unique singular (sva-laksana). That is why the perceptual entity is described as free from mental ascriptions so that its unique momentary character is preserved

2. Answer to Check your Progress   -1

- Each and every system of Indian Philosophy has got some metaphysical presuppositions that are reflected in their theories of knowledge.

- That is the only reason which gives rise to the principle of pramanadhina prameya-siddhih ('the substantiation of the knowable entities depends on the source of knowing').

- This principle is true in the sense that knowable entities or categories are different in different philosophical systems. Hence, the definitions are formulated in such a way so that their presupposed entities can be proved.

- One could raise the problem of circularity in these cases. When a philosopher of a particular school is framing a definition of pramana, it is to some extent 'subjective', but not objective in the sense that he bears some presuppositions. Whatever may be the reasons the philosophical systems particularly in India are not free from this defect of biasness.

- The point will be clearer by some definitions of perception (pratyaksa) accepted by different systems.

- The definition of perception given by the older Naiyâyikas is as follows: 'The perceptual knowledge is a cognition arising out of the contact of the sense-organ with an object, which cannot be described through

language, which is non-deviating (avyabhicarin) and non-erroneous (vyavasayatmaka).

- This definition was accepted by the older Naiyayikas because it was formulated in such a way so that their accepted theories of indeterminate perception (nirvikalpaka-pratyaksa), indicated by the inclusion of such terms as 'something inexpressible by words' (avyapadesya), 'contact' (samnikarsa) between sense-organs and the object, 'non-erroneous character' (vyavasayatmaka), 'non-deviating character' (avyabhicarin) etc. be preserved. To them an object (artha) was a kind of category accepted by them and capable of being perceived (yogya).

- There did not arise any question of perceiving an absurd entity, as the categorical scheme admitted by them did not permit us to do so.

- The Nyaya did not admit an entity which could not be included under the accepted seven categories. In this case the term artha was included so that an absurd object not belonging to the set of admitted categories did not find entry in the scheme of perception

UNIT – 3 LOGIC OR ANUMANAPRAMANA AS A PART OF EPISTEMOLOGY (PRAMANSHASTRA)

STRUCTURE

3. 0 Objectives

3.1 Introduction

3.2 Anumana as a Pramana

3.3 Anumana as a Method

3.4 Keywords

3.5 Questions for review

3.6 Suggested Readings

3.7 Answers to Check your Progress

3.0 OBJECTIVES

After studying this unit, you should be able to:

- learn about the nature of anumana
- understand what is pramana
- learn various paramans
- understand the importance of logical method

3.1 INTRODUCTION

The topic of 'Indian Logic' appears under an internal perspective as a component of the comprehensive area of epistemology and in particular of the theory of pramanas. Given the assumption that this outlook is not completely erroneous it emerges that logic in its Indian variety and belief are in fact significantly related and that this holds even true in various respects. The expression pramana is rendered by 'means of knowledge', 'means of (right) cognition'. All these expressions suggest that pramâna

is instrumental in the acquisition of knowledge and one could even surmise that 'means of acquisition of knowledge' would be a very apt rendering of this expression. But if it is true that a pramana is instrumental for the acquisition of knowledge it must equally hold good that a pramana is a means for the acquisition of belief given the above claimed entailment between knowledge and belief. Nevertheless, this fact alone cannot suffice for a vindication of the contention that one should explicitly attribute to pramanas a function with respect to belief. Inasmuch as an accelerator is an instrument for an increase of speed it is also an instrument for the change of speed, but the characterisation of an accelerator as a means to increase speed appears more significant than to characterize it as a means for changing speed. By the same token one could argue that a characterization of pramanas as a means for the acquisition of beliefs is less significant than its characterisation as a means for the acquisition of knowledge. It could therefore appear that emphasizing links between logic and belief in Indian philosophy is more misleading than revealing. This objection could be set aside if one were able to show that, even given that the equation between pramana and 'means of knowledge' is at least roughly correct, the notion of pramana is connected with the notion of belief in other ways than merely by the circumstance that anything that applies to knowledge equally applies to belief because every state of knowledge is a state of belief.

The claim that pramana is related to belief in a more significant manner than the one depicted above rests on the theses that (1) pramanas themselves, i.e. items designated by the term pramana, are related to states of belief not only by some sort of instrumental relation, (2) theories of pramana are linked with belief on account of methodological connections and (3) an objectively proper explication or definition of the term pramana would contain reference to belief as an ingredient. The first two points possess a special significance because they manifest different respects in which empirical knowledge is relevant for philosophical undertakings. Inasmuch as the contention of a significant relation between logic in its Indian variety and belief is concerned, it can be vindicated on account of three sorts of connection that are correlates of (1)–(3), namely (a) belief is a relevant object of cognitive processes

which are an object of concern in 'Indian logic', (b) acquisition of belief constitutes a phenomenon that is methodologically important for the establishment of theories of the concerned type and (c) the ideas of belief and acquisition of belief are needed for a description of the nature of pertinent logical doctrines.

3.2 ANUMANA AS A PRAMANA

In the context of doctrines of pramana belief comes into play as a relevant object in two regards. Belief is a possible object of a most significant variety of pramana and it is an important type of object of that variety. The fact that inference (anumâna) plays a central role in doctrines of pramana is beyond any reasonable doubt. It is equally plain that 'inference' in this context must be taken to represent a broad notion allowing for a subsumption of inferential activities taking place in everyday practice. If one poses the question as to what types of entities are the most common objects of inferences in common life, the following answer appears indisputable: states of beliefs are typical objects. Even against the background of a forthcoming perspective it is appropriate to assign to beliefs a distinguished status among the possible objects of inference. The tenet that states of beliefs of other people cannot be directly observed by ordinary men is, as far as one can see, universally acknowledged in the Indian philosophical and non-philosophical tradition. On the other hand, recognition of unobservable objects is at various places in the textual sources depicted as a distinguishing mark of inference.

The fact that knowledge of states of belief can be equally considered as a result of verbal communication in combination with the circumstance that some textual sources suggest such a view does not refute the contention that belief represents a most important kind of objects of central varieties of pramana. Even against the background of statements that assign to the pramana 'word' or 'linguistic communication' (sabda) a particular relevance for the recognition of unobservable entities, the assignment of a prominent status to beliefs as objects remains valid. On the one hand, with the exception of the minority group which

acknowledges only perception as a pramana, it is generally assumed that the importance of certain varieties of means of knowledge lies in their capacity to make imperceivable objects recognisable, irrespective of variations of detail as far as the question is concerned as to whether the concerned objects can be even imperceivable in principle. Accordingly, it is at most of secondary importance what the varieties of pramana performing such a function are called and how they are described. It is anyway doubtful whether the debates concerning the sub-classification of pramanas and their exact number concern a substantial issue. For without the lack of explicit criteria for the identity of types of pramana it is not sure that deliberations of this sort possess significance and even if explicit criteria were stipulated it would not follow that a number of alternatives cannot be equally legitimate. At any rate, given that the standard type of inference that is explicated in the framework of 'Indian Logic' as well as in the context of pramana-theories concerns the acknowledgement of facts which can be derived from certain data on the additional supposition that some pertinent case does not deviate from a norm (in some or the other sense of the term), an extension to the area of linguistic communication is apposite. The same considerations which have been put forward as arguments supporting the claim that acts of linguistic communication create under certain conditions a basis for the recognition of facts which are communicated can be equally used to support the claim that acts of linguistic communication are suited to convey the existence of particular beliefs on the part of communicating subjects. The basis is in all cases an assumption of compliance with regularities. In fact, the descriptions offered by the texts usually suggest that the existence of situations described by linguistic expressions can only be validly derived on the hypothesis of a corresponding belief. As a matter of fact, one can hardly dispute that if an act of communication, say an assertion of NN to the effect that P, constitutes a valid basis for the acquisition of the knowledge that P on the part of some other person, a recognition of a corresponding belief of the speaker on the part of the recipient is at least sometimes, if not even regularly, an indispensable requirement.1 Moreover, it is plain that acts of verbal communication are not the only basis for knowledge of other person's belief; the common

basis of such knowledge is behaviour in general in combination with assumptions concerning wishes, desires or preferences of other beings.

The circumstance that beliefs are not only possible but even important objects of pieces of inferential reasoning is due on the one hand to the pervasiveness of their occurrence in human beings and on the other hand to the importance of knowledge about beliefs for the acquisition of knowledge of other matters such as states-of-affairs which other people consider as true, of actual or possible behaviour of people, of human character, of the import of acts of communication etc. For such reasons belief deserves to play a central role in the humanities. Knowledge of the mechanisms of belief acquisition is particularly important for making predictions in the realm of social life. Belief as an object of knowledge possesses even epistemological relevance under the aspect of the issue as to how knowledge about belief can be attained in special cases. Concerning the question as to what is generally required for having knowledge of other persons' beliefs a natural answer would be that an essential requirement is the existence and knowledge of some piece of evidence, in particular some linguistic or non-linguistic (way of) behaviour. This is a picture which is equally suggested, although as far as one can see not explicitly stated, in Indian epistemological treatises. But is that true? The issue which is at stake is crucial because it affects the methodology of historical studies on philosophy. According to an alternative view, , the above depicted 'behavioural evidence' account of knowledge of belief is inadequate because in certain instances possession of adequate evidence is insufficient. What is acquired in addition is the possibility of providing a plausible account of why and how a considered possible belief could have been adopted. An important reason for advocating a stricter standard of knowledge concerning belief is rooted in the phenomenon of linguistic indeterminacy. It happens that even in view of contextual features different and non-equivalent hypotheses concerning interpretation are admissible and that the ascription of non-equivalent beliefs on the basis linguistic acts are equally compatible with all features of linguistic behaviour. If the pertinent interpretations and the corresponding belief-ascriptions differ regarding the possibility of providing a plausible account of their origination or the rationality of

their adoption, a decision between the alternatives would have to rely on those considerations. Or one could say, more cautiously, that if definite knowledge of beliefs is possible in such cases then considerations pertaining to behavioural evidence must be supplemented by considerations pertaining to rational intelligibility. Is thus explicability or rationality a means of knowledge on the same par with perception, inference etc.? In the context of linguistic communication one could provide additional support for such a view by referring to cases in which speakers employ linguistically indeterminate forms of expression in connection with expectations to the effect that interpreters will apply considerations of intelligibility including considerations pertaining to the explicability and rationality of beliefs for an interpretation of their utterances. It is not necessary to pursue this issue deeper here. But the point should be noted that this phenomenon manifests that considerations pertaining to empirical matters, such as the way in which linguistic communication is related to belief and knowledge about belief, are potentially relevant for the detection of problems arising in philosophical investigations.

If belief possesses so much epistemological significance merely as a possible object of knowledge one could wonder why many if not the overwhelming majority of textual sources fails to assign to belief a special significance in the above discussed respects. Why did authors writing on pramana miss the opportunity to highlight the importance of their topic by stressing the fact that their investigations pertain to the methodological equipment of acquiring knowledge about other person's beliefs? On the one hand, this omission can appear intelligible in view of the fact that in the context of the philosophical literature pramanas were naturally brought in connection with the ascertainment of theoretical propositions, in particular tenets that belong to the field of metaphysics and sometimes also to religion. Under such a perspective it is natural to think that one should ascertain in the first place how the world really is rather than what individual people believe about it. On the other hand, however, functions are attributed to pramanas which are objectively related to successful practice and this connection has been even explicitly acknowledged in the Indian philosophical tradition. Since at least in the

social sphere success of practice is intimately connected with knowledge of what people believe, the degree of lack of attention regarding belief exhibited by treatises on pramana is by no means a matter of course. The relevance of knowledge about beliefs of people exists independently of whether the concerned beliefs are true or not. The same holds true for knowledge pertaining to the mechanisms which are at work in the acquisition of beliefs. It is a well-known fact that success on the stock market crucially depends on the ability of recognising not only what other people believe but also of predicting what people will believe irrespective of the truth of their beliefs. What matters is a sufficiently firm grasp of the mechanisms which are actually at work in the acquisition of beliefs. Possibly the overwhelming emphasis on knowledge in theories of pramana has favoured a neglect of all the aspects of belief which are not immediately related to the contrast between (mere) belief and knowledge. It has to be admitted that from the circumstance that some topic is objectively important it does not follow that it deserves to occupy a prominent place in epistemological theories. Moreover, given the existence of momentous divergences between the modern world and the world which the creators of theories of pramana experienced, there is no a priori basis for being surprised if our attributions of importance to phenomena and those of past writers radically differ. Therefore, the fact is significant that the preceding considerations do not yet provide an exhaustive account of the issue. One reason is that the very nature of the undertaking of elaborating a theory of means of acquisition of knowledge bestows importance to adoptions of beliefs. Given the correctness of the previously suggested explication of pramana, the attribution of vital relevance to the phenomenon of belief-acquisition can be immanently derived from the idea of a doctrine of pramanas.

3.3 ANUMANA AS A METHOD

It is the methodological aspect that establishes a most significant relationship of relevance between a philosophical theory of pramana, taken as something involving a specification of possible means of

acquisition of knowledge or of possible justifications for knowledge claims, on the one hand and investigations of actual ways of acquiring beliefs on the other. A main reason lies in the comprehensive, and, so to speak, topic-neutral character of such a theory. A philosopher wanting to investigate the nature of knowledge will surely not be satisfied by listing everything which in his opinion is an instance of this notion. But even if he did, he would not be well advised to begin with collecting items which instantiate that term because a crucial problem lies in the fact that his personal opinions about what counts as knowledge and what does not might not be shared by everybody. Moreover, an adversary could rightly object that if an enumeration of all items satisfying a term should specify its import or nature then the question becomes vital whether our philosopher counts as knowledge his personal opinions about knowledge and whether he allocates his belief about the correctness of the outcome of his own investigations to the realm of knowledge. Thus a vicious circle threatens. On the other hand, it cannot be a satisfactory procedure to pick out certain items which are commonly acknowledged as instances of the notion of knowledge. For the general and comprehensive nature of the envisaged investigation forbids one to start with a partial selection and on the other hand one could expect from a philosophical investigation concerning knowledge that it does not merely tell us what people generally believe to be an instance of knowledge but also embodies a critical examination whether or not the concerned beliefs are justified and conveys some idea about what does not fall under the notion and why this should be so. Isn't it therefore recommendable to tackle the pertinent problem by investigating properties of a notion that deviates from knowledge exactly by lacking the commitment of truth which is inherent in that notion? Belief exhibits this feature. Moreover, a reliable assessment of what people actually believe does not appear unrealistic. There is no need to enumerate all instances of this notion. The general and topic neutral nature of the project entails merely that all relevant types of belief occurring in all areas of possible knowledge are accounted for. To be sure, it cannot be a priori guaranteed that actual accounts using this method fail to be exhaustive in this regard. It is even conceivable that lack of exhaustiveness is unavoidable due to the circumstance that relevant types of belief have not occurred in the society which is

accessible to the investigator, and a glimpse on the Indian intellectual tradition seems to show that this is not merely a theoretical possibility. Nevertheless, all those impediments also affect a procedure starting from the notion of knowledge. Therefore the advantage of avoidance of circularity characterising the approach by belief is decisive.

To be sure, in a philosophical context not every a posteriori investigation and classification of actually occurring beliefs and their possible objects is meaningful. But some classifications are in fact philosophically relevant. At the beginning of the Nyâya-bhâšya it is stated that an agent of cognition after having apprehended an object by means of knowledge desires either to acquire or to get rid of that object (pramanena khalv ayam jnatartham upalabhya tam artham abhipsati—variant reading: tam ipsati va jihasati va). Apparently the writer of the text thinks here that an 'apprehension' of an object represents something which is brought about by a pramana as a means, and the object can hardly be something else than a concrete particular because otherwise it would be hard to see how that could become an object of desire or aversion. In the light of the general conception of pramana as a means of (the acquisition) of knowledge this is puzzling given that this characterisation appears to rule out from the outset knowledge pertaining to abstract entities. If somebody recognises that the number 321 can be divided by three, does he thereby develop a desire to acquire or get rid of that object? Maybe, the remark concerning the alleged consequences of 'apprehensions' by a pramana are not really essential, but another component of the pertinent conception, namely that pramanas are means of apprehending objects seems to be a vital ingredient of such theories. As we had seen before, the Tarka-samgraha distinguishes between experiences that are in accordance with the object (yathartha) and experiences which are not (ayathartha). The four pramanas acknowledged in this work are viewed as instruments for the former type of cognition, which is according to the text designated by the term prama. Such experiences are defined as cognitions classifying objects as they really are, for example a cognition (jnana) with respect to a piece of silver that it is silver. Regarding the other type the author of the work remarks that it is an experience that classifies something as something which it is not and that the cognition

with respect to a conch-shell 'this is silver' represents an example. (tad-vati tatprakarako nubhavo yatharthay. yatha rajata idam rajatam iti jnanam. sa eva pramety ucyate. tad-abhâva-vati tat-prakârako nubhavo yatharthaÿ. yathâ oeaktâv idam rajatam iti jnanam—the second and the last sentence is missing in some manuscripts). This shows two things: (1) The expression jnana appears (in this passage and elsewhere) as a non-factive term, applying to yathartha experiences such as 'this is silver' with respect to silver as well as to ayathartha experiences such as the above cited one. (2) Both types of 'experiences' appear to correspond to a three place relation between a subject, an object and some mode of conceiving an object that could be represented by a sentence-scheme such as 'A apprehends B in the manner C'. Accordingly, the nature of this experience must be closely akin to the states that are described by sentence-forms such as 'A regards B as (a) C' and 'A believes B to be (a) C'. Irrespective of whether we even identify the pertinent cognitions as beliefs or acquisitions of beliefs or not, the following question is relevant: 'Must belief always be analysed as a relation that holds good between a subject, an object and a way of viewing an object?' There is no doubt about the correct answer: 'This is not true'. Cases exist in which belief cannot be analysed in this way. People can believe that Hanuman fought against Ravana, and for the existence of this belief it is absolutely immaterial that Hanuman and Ravana probably never existed, so that such a belief cannot consist in a relation of viewing-as concerning certain objects on the part of a subject. It is equally difficult to see how a conception of belief as a relation between a believer and a particular object can do justice to beliefs pertaining to non-specified objects, i.e. states of beliefs which are ascribed to some believing subject by sentences such as 'A believes that a / some cat is on the mat' (according to their most natural reading) and how those theories can account for the difference between such a belief and a belief which would be expressed by 'A believes that his cat is on the mat.' We had seen above that the Tarka-samgraha itself mentions counterfactual propositions like 'If fire did not exist, smoke would not exist either.' Those who persist in thinking that such sentences should be understood as expressing relations between (real) fire and (real) smoke should also consider counterfactuals such as: 'If a second sun existed it could be much warmer.' There should

be no need to elaborate in more detail that there are a lot of actual or possible beliefs that cannot be analysed in the manner suggested by the Tarkasamgraha, the Nyaya-bhasya and other sources. If one wants to specify a more general form and simultaneously wishes to preserve the conception of belief as a relation it would be more suitable to analyse it as a relation between a subject and an abstract entity that can be denoted by 'that'-clauses, but is surely not well suited as an object of acquisition or avoidance or of corresponding desires.

The upshot is that an analysis of belief reveals in a more immediate manner than an analysis of knowledge why theories of pramana are threatened by crucial deficiencies. An advocate of the pramana-tradition might argue that one should refrain from classifying as knowledge propositional attitudes pertaining to fictions. After all, the writer of the Tarka-samgraha explicitly assigns 'experiences' referring to counterfactual propositions to the realm of tarka which is subsumed under the category of experiences that do not correspond to an object, i.e. which are ayathârtha. But against the background of belief such a move turns out to be futile. The fact that beliefs can pertain to fictions is undeniable. It can equally be hardly denied that such beliefs can be true. After all, if Hanuman did not exist, the belief that Hanuman did not exist should be true. Accordingly, the question as to which factors either guarantee or increase the probability that if beliefs occur they are also true, irrespective of whether or not they are de re beliefs, i.e. beliefs about actually existing objects, is not spurious. If 'knowledge' were defined in such a manner that in principle all true beliefs could be classified as knowledge, then it follows that the question as to which factors might guarantee or enhance the probability of the occurrence of knowledge cannot be solved by taking only de re beliefs into consideration. If, on the other hand, one defined knowledge in some narrower sense then the aim of specifying all relevant factors for its existence might be attainable even if one restricted one's attention to particular varieties of belief, but in this case the relevance of achieving the pertinent aim becomes questionable. By considering the phenomenon of belief without supposing an artificially restricted meaning of the term the entire range of phenomena can be discerned which any theory of

means of knowledge or means of acquisition of knowledge must account for if it should be both correct and relevant.

Not only accounts of the nature of belief, but also a survey of manners of acquisition of beliefs is methodologically relevant for a theoretical account of means of knowledge. A first question that should be posed is: (a) 'Are all beliefs acquired?'. This question is not spurious because the view that there are innate beliefs is not absurd. Another question that must be equally considered is: (b) 'Are all beliefs that are acquired, acquired by experience?'. Obviously the notion of acquisition of a belief is vague to some extent. Nevertheless, there is a legitimate reading of the term according to which one could say that a person can acquire the belief that, say Peano's second axiom, which reads

$(x)(Nx \rightarrow (\ y)((Ny \ \& \ Syx) \ \& \ (z)(Szx \rightarrow z = y))$

and which means in ordinary language 'Every natural number has exactly one successor' is true. Is such a belief, if it is acquired, acquired by experience? Maybe, a staunch defender of pramana theories of the sort of the doctrine propagated in the Tarka-samgraha would be inclined to bring the pramana 'verbal communication' (sabda) into play and point out that ordinary people adopt the belief that Peano's second axiom is true by reading books written by competent mathematicians. But it is not difficult to discern that such a reply misses some most vital points. First one cannot reduce the problem to the acquisition of the belief, that Peano's second axiom is true. Most people who understand the axiom will not merely come to the conclusion that there was some person called 'Peano' who stated some mathematical truth, but they will rather, possibly 'triggered' by reading some book, come to believe that that which the axiom says is true. Should one nevertheless say that persons who believe that it is true that every natural number has exactly one successor after having read a book have adopted their belief by experience? Obviously a distinction must be drawn here. On the one hand one could admit that experiences like reading a book might stimulate persons to grasp the pertinent thought that every natural number possesses just one successor. But this does not entail that a person who has grasped the thought must rely on experience in order to believe it or to recognise that he is justified to believe it because it is true.

As a matter of fact, in this regard considerations of trustworthiness of the conveyor of a verbal message, which have usually been considered as an essential ingredient of verbal communication in pramana theories, are quite irrelevant. Acknowledgement of mathematical axioms or proofs only because of the trustworthiness of a person is a deficient manner of adopting a mathematical belief. If anything essentially matters it is insight into the content of a message and not assumptions regarding a conveyer of a message. In view of these facts it could appear natural to retort that theories of pramana are meant to account for just one of two aspects of acquisition of knowledge and argue that doctrines like the one proposed in the Tarka-samgraha are fully adequate because they specify a decisive factor, namely verbal communication, that causes persons to grasp a true thought. But in the final analysis this move is futile. For verbal communication can only serve to impart something which some person or maybe some god has recognised as true without being informed by acts of verbal communication. One should note that this view is in complete agreement with statements that can be found in the textual sources about verbal communication as a pramana. Accordingly, both grasping the thought which the above cited or some other axiom expresses and recognising its truth provided it is true should be possible without relying on any verbal communication as a means of knowledge. The most plausible supposition is that knowledge is at stake which can be acquired without any experience. Anyhow, the question as to whether beliefs pertaining to mathematical axioms or theorems are acquired by experience requires a differentiated answer embodying a reference to the distinction between grasping or entertaining a thought and judging it to be true. Even if acts of grasping thoughts are caused by experiences it does not follow that beliefs in their truth depend on experience. Thus an analysis of certain varieties of belief is suited to reveal crucial distinctions which in their turn throw a different light on the notion of a means of knowledge. This result has not only a bearing on the issue that emerged in the preceding paragraph as to whether 'rationality' or terms involving reference to rationality, such as 'rational intelligibility' etc., could designate something possessing the status of a means of knowledge. It possesses equally potential relevance for an explication of

the notion of a means of knowledge—and the question of the equivalence between 'means of knowledge' and pramana.

It had been suggested earlier that accounts of ways of acquiring beliefs might be bound to remain deficient due to 'social' circumstances because of the fact that a community in which a philosopher was active ignored certain sorts of cognitive practice. Now one can see, why this problem is not merely theoretically conceivable. In contrast to the Western tradition knowledge of mathematical axioms and mathematical proofs was not a central topic in Indian philosophy. The most plausible reason is that mathematical reasoning did not play the same role in ancient Indian communities as in ancient Greek society. This sort of limitation is, however, not peculiar to accounts of acquisitions of beliefs but affect accounts of knowledge and theories of pramana, too.

Nonetheless, even under an Indian perspective certain aspects of acquisition of beliefs which are not retrievable from theories of pramana could have been detected. The pertinence of the above formulated question, viz. 'Are all beliefs acquired?', can be recognised without taking special areas of knowledge into consideration. For it is in the first place observation of the world of everyday practice and common sense which undermines confidence in an affirmative answer. Is it reasonable to assert that people at some time acquire the belief that they are living or that other things apart from themselves exist? Perhaps one should even here observe a distinction which has been suggested in the preceding paragraph. For it seems implausible to maintain that very small children grasp the thought that they live or exist. In some sense at least, which involves the idea of grasping a thought, one might say that people acquire the belief that they exist. In another sense it seems apposite to ascribe even to small children a belief in their existence as well as the existence of an external world, because they behave in ways which (seems to) betray some grasp of a difference between their own existence and that of other persons and objects and because their behaviour could not be regarded as reasonable if the pertinent beliefs were not true. At any rate, given that a person grasps thoughts pertaining to her own existence or the existence of an external world, it appears doubtful that

additional experiences are needed in order to make valid assessments of their truth. This suggests the idea that there might be beliefs such that entertaining the thought (proposition) which is their content is sufficient for their truth and beliefs such that a recognition of the truth of their content cannot rely on additional experiences apart from grasping the pertinent content. Beliefs about one's own existence or the existence of an external world are by no means the only candidates for such a status; believing that something is the case and recognising that one is believing this or the proposition expressed by substituting 'thinking' for 'believing' in the preceding sentence could be other examples. At any rate, if one admits that there can be true beliefs classifiable as knowledge which do not require any experiences apart from grasping certain thoughts for a recognition of their truth, one might consider either the act of grasping thoughts as a means of knowledge or accept that states of knowledge occur which do not depend on any means of knowledge. Neither alternative has been accepted in any pramana theory, as far as one can see. It appears even that the latter alternative of knowledge not relying on means of knowledge has been unanimously rejected in the Indian philosophical tradition. Seen in the light of the preceding considerations this appears astonishing. One might accordingly think that a different idea has been associated with the term pramana and that the possibility of assigning to acts of grasping thoughts the status of a pramana should be rejected because pramana-theories ask for the primary causes of states of knowledge and therefore cannot recognise that acts of grasping a thought which are caused by different factors are means of knowledge in the pertinent sense. However, this move threatens to be self-defeating. All theories accepting inference as a pramana and this is the overwhelming majority acknowledge that inferences can and usually are 'triggered off' by acts of perception. As long as not the entire canon of pramânas reduced to perception, it needs to be admitted that mental processes that take perceptual data as inputs can in principle occupy the position of a pramana. In view of the above mentioned examples of presumably true beliefs or other common examples such as truly believing that one does not experience a severe tooth-ache at present, it is by no means immediately plausible that inference or indicators permitting valid inferences should be a means of knowledge but not

processes of grasping a thought, of becoming aware of something, of interpreting data etc. or their respective objects. Seen from a purely immanent perspective it could be objected that the notion of pramana is intimately connected with the notion of the acquisition of new information, so that e.g. acts of obtaining awareness might not appear as suitable candidates for the status of means of knowledge in the relevant sense. However, the notion of new information is affected by crucial vagueness. It is notorious that Dharmakîrti accepted as valid inferences derivations such as 'A is a tree' from 'A is an oak.' Given that this philosopher accepted also the tenet that a means of knowledge must impart new knowledge that did not exist before, it follows that the proposition that something is a tree must represent new information with respect to the proposition that the entity concerned is an oak. This is by no means a matter of course but might be accepted given a suitable understanding of 'new information'. The problem is, however, that precisely on this understanding of the notion it becomes difficult to see why subsuming perceptual data under concepts or other varieties of interpretation of data are denied the status of a separate means of knowledge. One could point out that problems of consistency of Dharmakîrti's theory must not affect in the same way other doctrines of pramana because they permit the hypothesis of a stronger reading of 'new information', according to which information is new relative to some (set of) data only if its recognition requires additional experience apart from experience of the pertinent data. Accordingly, something can be a pramana only if it plays an instrumental role for the acquisition of beliefs which are new in the strong sense. This, however, leads us back to a problem which had been encountered before: Internal consistency might be saved, but this has the price of diminishing the relevance of the entire theory as a general account of knowledge and acquisition of knowledge.

The methodological relevance of accounts concerning belief rests on purely systematic grounds and possesses two facets. First a registration of actually existing types of belief and an analysis of actual ways of belief acquisition constitute a relevant heuristic device for detecting properties of possible knowledge and its acquisition. On the other hand

any account that involves a specification of possible sources of knowledge can be effectively controlled by testing whether some pertinent inventory of sources of knowledge exhibits the property that for every variety of belief there is at least one source exemplifying a type occurring in the inventory. Even if a negative result does not immediately necessitate a rejection of the concerned knowledge account it either yields reasons for putting its adequacy into doubt or furnishes motives for specifying some regard in which the account would be adequate. Accordingly, the topic of belief and belief acquisition is in principle also relevant for the understanding of theories of pramana. Questions of detail as those mentioned in the preceding sections only illustrate the systematic connections.

The preceding considerations are compatible with the assumption that theories of pramana specify factors which are decisive for the possession or acquisition of certain true beliefs. They do not refute the conditional saying that every belief is such that if it has been acquired by means of a pramana then it is true and possibly an instance of knowledge. The arguments of the preceding paragraph concern only the contention that the reverse, namely that everything which is an instance of knowledge has been acquired by means of pramanas, is most probably false and that therefore the methodological relevance of belief casts a critical light on 'really existing doctrines of pramana'. But can one admit that the Indian doctrines of pramana identify factors for which it holds true that every belief that depends on those factors is also true and can be classified as an instance of knowledge? My claim is that this is not only not true but that certain textual sources even betray an implicit recognition of this fact. In the second half of the comments on NS 1.1.3 the Nyâya-bhâšya deals with the question as to whether the different pramanas pertain to different or to identical objects. The position of the Nyâya-bhâšya is that although certain objects can only be vindicated by one specific pramana various cases exist in which different pramanas can have common objects. An example is, among others, the acquisition of knowledge of the occurrence of fire at some place. Somebody might be informed (by a trustworthy person) that fire exists somewhere; somebody might infer the occurrence of the same fire because he perceives smoke and somebody might have a perceptual experience of the fire itself. These different

ways of ascertaining the existence of objects might even occur regarding one and the same person. In this connection the Nyâya-bhâšya remarks, however, that some sort of priority needs to be attributed to perception. This is illustrated by the example that somebody first ascertains an object about which he has a desire to acquire knowledge on the basis of verbal cognition but desires to ascertain it also by inference and after this task has been performed still wants to ascertain it by perception. Only after the object has been perceived, the 'desire to know' vanishes, according to the opinion of the author (sa ceyam pramitih pratyaksa-para. jijnasitam artham aptopadesat pratipadyamano linga-darsanenapi bubhutsate, linga-darseananumitao ca pratyaksato didåkšate, pratyakšata upalabdhe rthe jijnasa nivarttate). The significant fact is that the writer expresses the view that both after verbal communication and after inference a desire to know can persist. To be sure, one could interpret this remark as a result of the consideration that a subject might be unsure whether something which appears to him to be based on a pramana is really based on a pramana. This means that the initial ascertainment by linguistic communication leaves room for the doubt whether that which the subject cannot distinguish from valid linguistic communication and which would under the hypothesis that it is an instance of valid linguistic communication furnish an appropriate reason for believing that some communicated state of affairs is the case exhibits in fact the property which it appears to exhibit, i.e. whether it really is an instance of valid linguistic communication. Nevertheless, whereas such an interpretation might be acceptable regarding the stage of verbal cognition because misjudgements concerning the reliability of what other people say is not uncommon, a similar diagnosis appears little plausible as far as the stage of inference is concerned. In view of the fact that the standard inference of fire from smoke is pertinent in the present context one must ask: If even in standard cases of inference doubt can persist whether the inference is really valid, how could one rely on inference at all? To be sure, one could imagine that the writer of the Nyayabhasya had in mind that in the context of an inference a person can be subject to a perceptual error by considering something as smoke which is not smoke. But if perceptual error is a relevant issue here, then it is hard to understand why the author of the text categorically declares that after perception desire to

know comes to an end. The idea that the curiosity is satisfied by perception in particular because in a perceptual situation one recognises a number of characteristic features of an object which cannot be ascertained by means of communication or inference should not be decisive here because the remarks appear in the broader context of a discussion of the phenomenon that different means of cognition can pertain to the same object. Therefore the most plausible hypothesis is that the writer of the text intuited that both verbal communication and inference are relatively fallible and felt that perception possesses a higher degree of reliability. This could be true even if this view militated against the general theoretical outlook of the author. For whenever theoretical tenets are concerned which appear intuitively doubtful it can happen that in some context somebody expresses thoughts that do not fully harmonise with his theory. Perhaps it is no accident that later commentators such as Uddyotakara and others employ the more neutral term akanksa 'desire' instead of 'desire to know' (jijnasa).

1. Check your Progress

1. Anuman and Logic

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The recognition of the phenomenon that inferences can be blocked either by other inferences or by other means of cognition is attested by sources of various periods. Even relatively late treatises, such as the Tarka-samgraha, admit this possibility notwithstanding the fact that such a position probably implies a rejection of certain earlier tenets, in particular those of Dharmakîrti and his successors, and a reintroduction of views which were prevalent at still earlier periods. The Tarka-samgraha explicitly stipulates that among the fallacious reasons a variety, called sat-pratipakša, and another variety, called bâdhita, exist. The first one is exemplified in cases in which an inference or inferential argument is counterbalanced by a different inference or inferential argument employing a different 'reason' (yasya sadhyabhava-sadhakam hetv-antaram vidyate sa sat-pratipaksah). The second one occurs if the

outcome of an inference or inferential argument militates against some proposition that is vindicated by some other means of cognition (yasya sadhyabhavah pramanantarena niscitah sa badhitah). Although it is plain that these as well as other fallacious reasons or pieces of reasoning do not qualify for the status of a pramana, those phenomena possess relevance for the assessment of inference as a means of knowledge. For the manner in which they are treated strongly suggests that if the same pieces of reasoning would not be counterbalanced in the mentioned ways, then they would qualify for the status of a pramana. We may well abstain from investigations concerning the 'real intentions' of writers of works on pramana. For if one assesses the issue from an objective point of view the verdict should be that inferences, even if they are valid, do not guarantee truth. According to many theories of inference (anumana) compliance with the criteria for the validity of a reason leaves room for the possibility that the criteria are fulfilled and the outcome is false precisely because some pertinent case exhibits a unique exception to an otherwise general regularity. The examples which are commonly discussed in 'Indian Logic' only allow the diagnosis that that which is at stake is a derivation of some proposition from certain data under the premise that the pertinent data do not exhibit a deviance from a norm. Given that this is true, one must draw the conclusion that Indian theories of inference attempt to account for pieces of defeasible reasoning. It follows from this fact that the account of inferential reasoning that is represented by the tradition of Dharmakîrti is misleading. Although inferences employing so-called svabhâva-hetus could be considered as pieces of reasoning in which from given data propositions are derived which can be recognised as true without bringing other experiences into play, the variety of the kârya-hetus corresponds to pieces of reasoning in which the data do not license the derivation of the conclusion without bringing propositions relying on other data of experience into play. Whereas the first variety corresponds to acquisitions of beliefs which need not rely on any knowledge except knowledge of pertinent data, the second variety corresponds to acquisitions of beliefs which can never be licensed by knowledge of data without relying on additional experiential knowledge concerning regularities. The issue of the correct answer to the above formulated query (Q2), namely

If (a proposition) P logically implies (a proposition) Q, does it hold true for everybody that if he knows P and believes Q he knows Q? is quite intricate as far as 'Indian Logic' is concerned. If the phrase '(a proposition) P logically implies (a proposition) Q' is interpreted in the sense of '(a proposition) Q can be established by a faultless anumâna on the basis of (a proposition) P as a datum' an affirmative answer to the question might well correspond to views held by a number of writers even outside the tradition of Dharmakîrti's school. On the other hand, however, it is questionable whether such a stance is objectively adequate and it is even possible that a negative answer harmonises better with internal theoretical elements of doctrines advocated in the Indian epistemological tradition.

Knowledge imparted by verbal communication as defined in textual sources is equally defeasible because even if all the stipulated requirements of reliability of a verbal communication are met the fact that the linguistic data of a message need to be interpreted by a recipient of a message introduces an ingredient of fallibility that cannot be eliminated.

The proposition that defeasible reasoning is a primary concern of Indian Logic would alone suffice for a falsification of the above formulated conditional that whenever a belief has been acquired by means of a pramana then it is true and a possible instance of knowledge. Means of acquisition of new beliefs which, applied in a correct manner, guarantee true outcomes, might in fact exist. Arithmetical operations could be a suitable example. One could also mention phenomena such as the capacity to make safe predictions about possible outcomes of particular situations in certain games or the ability of competent speakers of a language to identify possible meanings of sentences not encountered before. But precisely examples like these are conspicuous by their absence in discussions on pramana. (The discussions on the pramana sambhava in the Prasastapada-bhasya or the Nyâya-bhasya do not invalidate this statement.) On a more general level the problem is that doctrines of pramana are meant to provide an account of empirical knowledge. In this context it is doubtful whether a specification of means

playing an instrumental role for the acquisition of states of beliefs or criteria that could be invoked for a justification of claims of knowledge, such that their existence or satisfaction guarantees truth, is possible and meaningful at all. For on the one hand considerations of relevance demand that the range of possible belief and knowledge should not be restricted to trivial and completely uncontroversial propositions, and on the other hand the desideratum that the account should be significant calls for a specification of means of knowledge that is not overtly or covertly circular. If it were stated e.g. that knowledge could be acquired by entertaining arbitrary thoughts and simultaneously ascertaining in oneself a feeling of wellbeing of some type and if the danger of the fallibility of such a criterion were averted by stipulating that a feeling of well being exhibits the relevant type only under the condition that the entertained thought is in fact true, then the provided specification would evidently trivialise the account. Similar consequences threaten if the concepts of perception, inference etc. were manipulated in such a way that they imply the truth of some concerned content.

If theories of pramana have neither achieved an exhaustive account of the acquisition of true beliefs nor a non-question begging specification of criteria such that beliefs complying with those criteria are guaranteed to be true, one might wonder whether those doctrines possess any value at all. Should we say that the Indian epistemological tradition including Indian Logic was an aberration in the history of philosophy? In order to recognise that this verdict is not justified we should reverse the perspective by looking at certain outcomes and pose the question in which respect those results could be useful. Let us only take the Nyaya doctrine of the four pramanas, 'perception', 'inference', 'comparison' and 'verbal communication', as an example and let us set aside the third pramana 'comparison' which usually plays a marginal role. Bearing in mind that pramânas are classified as instruments (karana) in textual sources, this means that we should ask whether perception, inference and verbal communication can be regarded as relevant factors for the acquisition of true beliefs in some respect. Or let us address the issue like this: 'Which question concerning belief or knowledge would exhibit the property that a specification of perception, inference and verbal

communication as instruments would provide a significant reply to it?' There is at least one promising answer to this question which demands though to give up the quest for a connection between pramanas and individual beliefs or individual pieces of knowledge. The proposal is: Perception, inference and verbal communication possess an exceptional relevance as instruments for the regulation of systems of beliefs. The term 'regulation of systems of beliefs' refers here to processes of acquisition of new beliefs, abandonment or suspension of previous beliefs as well as the replacement of old beliefs by new beliefs in the framework of a structure of a multitude of (partly interconnected) beliefs, representing a totality of beliefs held by an individual person or even a social community. If an individual or a group of individuals regularly employs perception, inference and verbal communication as a means of acquiring new beliefs and of controlling inherited or previously adopted beliefs he boosts the chances to better his score of knowledge', both in the sense that the amount of true beliefs is augmented and in the sense that the proportion between true and false beliefs is improved. This does not entail that the employment of those means of knowledge guarantees truth in each individual case. Their function is merely to contribute to increase of knowledge in the longer run. It is not any more assumed that those means fulfil only an instrumental role for acquisitions of beliefs because, in contrast to the view suggested in theories of pramana, it is acknowledged here that their employment might equally possess an abandonment of previous beliefs without an adoption of a different opinion as a result.

Against this background it is even possible to appreciate the adoption of verbal communication as a separate pramana in Nyaya. For verbal communication is the only pramana which hints at the dimension of social control of the adoption and preservation of beliefs of individuals. Notwithstanding the fact that historical examples show that the actual manner in which opinions of individuals are influenced by social communities is sometimes disastrous, the possibility of social control is immensely significant. An important way of detecting perceptual error is the knowledge, most often imparted by verbal communication, that other persons who are in a similar perceptual situation have divergent perceptual experiences. This also reveals the importance of the adoption

of a plurality of means of cognition. In this light one can recognise the questionable nature of the arguments of philosophers advocating a rejection of certain pramanas or a reduction of their number on the basis of the allegation that the concerned pramanas do not always generate true beliefs. By reducing the number of pramanas one diminishes the chances of mutual control. It is the conception of means of acquisition of knowledge which invariably generate true beliefs alone by themselves which deserves to be rejected rather than the admittance of instrumental factors that cannot perform such a task in isolation.

To be sure, as an account of instrumental factors enhancing increase of knowledge in general theories of pramanas in the form encountered in the texts are presumably deficient. It can hardly be doubted that the prevalent conception of inference explicated in the framework of Indian Logic is too narrow and that this diminishes the significance of those theories for a general account of increasing knowledge by inferential means. The textual sources betray the intention to single out as relevant inferences relying on the hypothesis of regularities to which no exceptions are known. Thereby the possible relevance of hypotheses concerning regularities to which exceptions are known is ignored. As far as the general question is concerned, as to precisely when and why extrapolations of regularities can be employed for the acquisition of new beliefs or of knowledge, it seems that some clues can be got from Dharmakîrti's works, but these represent at best a beginning. The role of an a priori component in the acquisition of belief and knowledge is completely ignored in pramana-theories. In addition to this, they provide no clue which instrumental function should be attributed to actions, such as sending someone to see what is happening, placing something on scales or making an experiment. Theories which simply declare that pramanas are mental entities do not provide a satisfying reply. The decisive problem is why non-mental activities must be precluded and in this connection answers relying on doctrinal tenets such as that in reality there are no entities except mental ones are hardly convincing. As far as the question of the factors relevant for 'improving the score of knowledge' is concerned, remembrance can surely not be ruled out as irrelevant. Judgements such as the one expressed by the sentence

(iv) He is now much bigger than last year

are only justified on a basis which involves acts of remembrance. Notwithstanding those and other problems, regarding the question as to how human beings are able to increase knowledge pertaining to the world of experience by bettering the score of true beliefs in the longer run, both theories of pramana and Indian Logic provide relevant answers, and this holds true despite the fact that those teachings were developed under a different perspective. Therefore, the results of Indian doctrines of pramana possess significance under the aspect of the question of how human beings can extend their realm of knowledge. One might even characterise pramanas, such as perception, inference of the sort of an Indian anumana or verbal communication, as means or instruments of knowledge as long as one bears in mind that the pertinent concept of the vague notion of a means of knowledge is that of a tool by which human beings are able to increase their knowledge both on the individual and on the collective level. The above mentioned items are suited as tools for increase of knowledge in two different ways: (a) They can function as quite reliable sources for the acquisition of new beliefs, such that individual beliefs that are adopted on their basis possess a fairly good chance of being true. (b) They can be employed as means of controlling possible beliefs in the manner that they are used as criteria for assessing the truth of (the contents of) potential beliefs either in the way of questioning the basis on which beliefs have been actually adopted or in the way of examining whether or not the propositional contents of possible beliefs are in accord with other possible experiences. This is a much more modest role than the one which is suggested concerning pramanas in many textual sources of the Indian tradition. One might wonder what should explain such a divergence. To this question at least a partial answer can be offered: Competing schools of thought in Ancient India were eager to establish their own doctrinal tenets and defend them against rival contentions and detected in the idea that their tenets can be vindicated by pramanas a useful device for validating their claims. Against this background every account of pramanas that emphasises aspects of fallibility must appear unattractive. Inquiries on belief in Indian philosophy will presumably yield quite meagre results as long as they only investigate what explicit statements occurring in textual

sources, and in particular treatises on pramana and inference, tell us about belief. Nonetheless, a pursuit of the question of belief in Indian philosophy can render an immense help for a better understanding of the subject-matter which was a concern of logic and epistemology in Ancient India.

2. Check your Progress

1.   Anuman as Pramana

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3.4   LETS SUM UP

The topic of 'Indian Logic' appears under an internal perspective as a component of the comprehensive area of epistemology and in particular of the theory of pramanas. Given the assumption that this outlook is not completely erroneous it emerges that logic in its Indian variety and belief are in fact significantly related and that this holds even true in various respects. The expression pramana is rendered by 'means of knowledge', 'means of (right) cognition'. All these expressions suggest that pramâna is instrumental in the acquisition of knowledge and one could even surmise that 'means of acquisition of knowledge' would be a very apt rendering of this expression

3.5   KEY WORDS

Anumana, : Inferential Cognition

epistemology, Theories of Kowledge

Pramana, 'means of knowledge', 'means of (right) cognition'

prameya, Objects of Knowledge

3.6 QUESTIONS FOR REVIEW

1. Anumana as a pramana

2. Anumana as a method

3.7 SUGGESTED READINGS AND REFERENCES

ABh	=	Sankara: Adhyasa-bhasya. Srimohan Tarkatirtha (ed): Brahma-sutra-sankara-bhasya Bhamati. Sanskrit Pustak Bhandar, Calcutta 1980.
BhG	=	Bhagavad-gita. Jayadayal Goyandaka (ed., Hindi tr.): Srimad-bhagavad-gita. With Sankarabhasya. Gita Press, Gorakhapur 1938.
BhPar	=	Visanatha: Bhasa-parichheda. Krishnaballah Acharya (ed): Nyaya-siddhanta-muktavali. Chowkhamba Sanskrit Series Office, Varanasi 2003
KA	=	Kavyaloka. Sudhir Kumar Dasgupta (ed.): Kavyaloka . Vol. I. A. Mukherjee & Co., Calcutta 1386 (Bengali Samvat).
NB	=	Dharmakirti: Nyâya-bindu. Gangopadhyaya, Mrinalkanti (ed.): Nyaya-bindu-tika. Indian Studies, Kolkata 1971.
NBh	=	Vatsyayana Paksilasvamin: Nyaya-bhasya. See: NS.
NMa	=	Jayanta-bhatta: Nyaya-manjari. Pt. Surya Narayana Sukla (ed.): Nyayamanjari of Jayanta Bhatta. Part 1. Kashi Sanskrit Series 106, Chowkhamba Sanskrit Series Office, Varanasi 1971
NS	=	Aksapada Gautama: Nyaya-sutra. Phanibhusana Tarkavagisa (ed.): Nyaya-darsana. Vol. I, West Bengal State

		Book Board, Calcutta 1989.
Vpar	=	Dharmaraja Adhvarindra: Vedanta-paribhasa. Swami Madhavananda (ed.; English tr.): Vedanta-paribhasa with Sanskrit Text. Belur Math 1972

3.8 ANSWERS TO CHECK YOUR PROGRESS

1Answeres to Check your Progress -1 .

- The claim that pramana is related to belief in a more significant manner than the one depicted above rests on the theses that pramanas themselves, i.e. items designated by the term pramana, are related to states of belief not only by some sort of instrumental relation,

- theories of pramana are linked with belief on account of methodological connections and

- an objectively proper explication or definition of the term pramana would contain reference to belief as an ingredient

- The first two points possess a special significance because they manifest different respects in which empirical knowledge is relevant for philosophical undertakings.

- As much as the contention of a significant relation between logic in its Indian variety and belief is concerned, it can be vindicated on account of three sorts of connection that are correlates of (1)–(3), namely (a) belief is a relevant object of cognitive processes which are an object of concern in 'Indian logic', (b) acquisition of belief constitutes a phenomenon that is methodologically important for the establishment of theories of the concerned type and (c) the ideas of belief and acquisition

of belief are needed for a description of the nature of pertinent logical doctrines

2. Answers to Check your Progress - 1

- In the context of doctrines of pramana belief comes into play as a relevant object in two regards. Belief is a possible object of a most significant variety of pramana and it is an important type of object of that variety.

- The fact that inference (anumâna) plays a central role in doctrines of pramana is beyond any reasonable doubt. It is equally plain that 'inference' in this context must be taken to represent a broad notion allowing for a subsumption of inferential activities taking place in everyday practice. If one poses the question as to what types of entities are the most common objects of inferences in common life, the following answer appears indisputable: states of beliefs are typical objects.

- Even against the background of a forthcoming perspective it is appropriate to assign to beliefs a distinguished status among the possible objects of inference.

- The tenet that states of beliefs of other people cannot be directly observed by ordinary men is, as far as one can see, universally acknowledged in the Indian philosophical and non-philosophical tradition. On the other hand, recognition of unobservable objects is at various places in the textual sources depicted as a distinguishing mark of inference.

UNIT -4 LOGIC OR ANUMANAPRAMAN AS ROOTED IN METAPHYSICS (PRAMEYASHASTRA)

STRUCTURE

4.0 OBJECTIVES

After studying this unit you should be able to

- understand what is relation between anumana and prameya

- learn contributions of various darsanas

- understand the importance of knowing the method of anumana to establish the prameyas

4.1 INTRODUCTION

A metaphysical thesis, in the context of classical Indian philosophy at least, usually takes the form of such a proposition as "Everything is F" or "Nothing is F." Philosophical rivalry springs from the varieties of such proposed positions, that is, varieties of such Fs. For example, the Advaita Vedantin says: "Everything is Brahman;" the Madhyamika, "Everything is empty of its own-being or ownnature;" and the Yogacarin,

"Everything is a vijnapti making of consciousness. We may add to the list even such positions as "Everything is non-soul, impermanent, and suffering" (the Buddhist in general), and "Everything is knowable and nameable" (the Nyaya-Vaisesika). If we have to add the Jainas to the list, then we can say theirs is: Everything is "non-one-sided" (anekanta). However, at least on one standard interpretation, the Jaina thesis is held at a slightly different level. If the others are called metaphysical, this one may be called meta-metaphysical. The sense of it will be clear later on. I do not wish to claim this to be the "one-up-manship" of the Jainas. The claim here is a modest one; it harks back upon the historical origin of the position.

It is rather hard to see how such metaphysical theses as illustrated above, in the form of "Everything is F," can be proven in a straight-forward manner. They are often presuppositions, sometimes accepted as an axiom of a system. The argument, if there is any, must be indirect or reductio-ad-absurdum; it is persuasive and suggestive. It may be pointed out at this stage that according to the later Nyaya school, any argument that has a conclusion (a thesis) of the form "Everything is F" is fallacious, because it would be inconclusive. To use their technical vocabulary, the inferred conclusion of the form "Everything is F" (where "Everything" is the subject term, playing the role of the paksa), is faulty because it suffers from the defect called anupasamharin. Such a defect occurs when and only when the paksa (the subject locus) is kevalanvayin, which corresponds to a universal class. Strictly speaking, we should say that the property that qualifies the subject-locus here, that makes it what it is, a subject-locus, is a universal (or ever-present) property. Such being the case, we cannot compare or contrast it with anything else. The Indian theory of inference, on the other hand, depends essentially upon the possibility of such comparison (by the citation of a sapaksa) and contrast (by the citation of a vipaksa). This does not make the Indian or the Nyaya theory a theory of inference based upon analogy. It only certifies its empirical, that is its non-a priori, character. Proving something to be the case here means to make it intelligible and acceptable by showing how (1) it is similar to other known cases and (2) what it does differ from, and in what way. This demand on the proof is much stricter than usual. Otherwise, the Indians will say that something may actually be the

case but it cannot be claimed or established as such. Hence, the inconclusiveness (anaikantika) of the said type of inference was regarded as a defect, a hetvabhasa.

A metaphysical thesis was usually expressed in the canonical literature of Buddhism and Jainism in the form of a question, "Is A B?" or "Is everything F?" to which an answer was demanded, either yes or no. If yes, the thesis was put forward as an assertion, that is, the proposed position "A is B" or "Everything is F" was claimed to be true. If no, it was denied, that is, it was claimed as false. Therefore, yes and no were substitutes for the truthvalues, true and false. The Buddhist canons describe such questions as ekamsa-akaraniya, those that can be answered by a direct yes or no. However, both the Buddha and the Mahavira said that they were followers of a different method or style in answering questions. They were, to be sure, vibhajya-vadin*, for they had to analyze the significance or the implications of the questions in order to reach a satisfactory answer. For it may be that not everything is F, although it may not be true that nothing is F.

The followers of the Mahavira developed their doctrine of anekanta from this clue found in the canonical literature. This is the clue of vibhajya-vada which originally meant, in both Buddhist and Jaina canons, a sort of openness lack of dogmatic adherence to any view-point exclusively. The philosophy of Jainism has been called "non-dogmatism" or "non-absolutism." I prefer the literal rendering "non-onesidedness," for it seems to retain the freedom of the interpreter as well as its openness.

A metaphysical puzzle seems to have started in the early period in India with a dichotomy of basic predicates or concepts such as being and non-being, permanence and change, is and is-not, substance and modes, identity and difference. Although these five pairs just cited are not strictly synonymous, they are nevertheless comparable and often interchangeable, depending, of course, upon the context. The first member of these pairs used to be captured by a common denominator, the Buddhist canons called Eternalism or sasvatavada while the second member constituted the opposite side, Annihilationism or uccheda-vada (sometimes, even Nihilism). Indulging in the same vein, that is, the vein of rough generalization, we put the spirituality of reality on one side and the materiality of reality on the other. Looking a little further, we can

even bring the proverbial opposition between Idealism and Realism, in their most general senses, in line with the above pairs of opposites.

Avoidance of the two extremes (anta = one-sided view) was the hallmark of Buddhism. In his dialogue with Katyayana, the Buddha is said to have identified "it is" as an 'anta' (= extreme) and 'it is not' as the other extreme, and then he said that the Tathagata must avoid both and resort to the middle. Hence Buddhism is described as the Middle Way. The Mahavira's anekanta way consisted also in not clinging to either of them exclusively. Roughly, the difference between Buddhism and Jainism in this respect lies in the fact that the former avoids by rejecting the extremes altogether, while the latter does it by accepting both with qualifications and also by reconciling them. The hallmark of Jainism is, therefore, the attempted reconciliation between opposites.

4.2 WHAT IS NON-ONESIDEDNESS?

It would be better to start with some traditional descriptions of the concept of anekanta. An alternative name is syadvada Samantabhadra (flourished seventh century) describes it as a position "that gives up by all means any categorically asserted view" (sarvathaikantatyagat) and is dependent (for its establishment) upon the method of "sevenfold predication" (Aptamimamsa, 104). Mallisena (flourished 1290) says that it is a doctrine that recognizes that each element of reality is characterized by many (mutually opposite) predicates, such as permanence and impermanence, or being and nonbeing. It is sometimes called the vastu-sabala theory (1933: 13), one which underlines the manifold nature of reality. Manifoldness in this context is understood to include mutually contradictory properties. Hence on the face of it, it seems to be a direct challenge to the law of contradiction. However, this seeming challenge should not be construed as an invitation to jump into the ocean of irrationality and unintelligibility. Attempts have been made by an array of powerful Jaina philosophers over the ages to make it rationally acceptable. We will see how.

Gunaratna Suri, in his commentary on Haribhadra's Saddarsana-samuccaya, says that the Jaina doctrine is to show that mutually-opposite characterizations of reality by rival philosophers should be reconciled,

for, depending upon different points of view, the same reality can be discovered to have both natures, being and non-being, permanent and impermanent, general and particular, expressible and inexpressible. The Jainas argue that there are actually seriously held philosophical positions that are mutually opposed. For example, we can place the Advaita Vedanta at one end of the spectrum, as they hold Brahman, the ultimate reality, to be a non-dual, permanent, substantial, and all inclusive being. This is where the "being" doctrine culminates. The Buddhists on the other hand are at the other end of the spectrum. Their doctrine of momentariness (as well as emptiness) is also the culmination of the "non-being" doctrine, which can also be called the paryaya doctrine. Traditionally, in Jainism, dravya ("substance," "being") is contrasted with paryaya "modification," 'change," or even "non-being." One should be warned that by equating Buddhism with the "non-being," I am not making it nihilistic. For "non-being" equals "becoming." Paryaya is what is called as process, the becoming, the fleeting or the ever-changing phases of reality, while dravya is the thing or the being, the reality which is in the process of fleeting. And the two, the Jainas argue, are inextricably mixed together, such that it does not make any sense to describe something as exclusively "permanent," a dravya, without necessarily implying the presence of the opposite, the process, the fleetingness, the impermanence, the paryaya. Being and becoming mutually imply each other, and to exclude one or the other from the domain or reality is to take a partial (ekanta) view.

The idea is not that we can identify some elements of reality as "substance" and others as "process" or paryaya. Rather, the claim is that the same element has both characteristics alternatively and even simultaneously. It is the last part "... even simultaneously" that would be the focus of our attention when we discuss the sevenfold predication The challenge to the law of contradiction discussed earlier can be located, in fact, pin-pointed, in this part of the doctrine. The anekanta has also been called akulavada, a "precarious" doctrine. The idea is, however, that it challenges any categorically asserted proposition, ordinary or philosophical. Its philosophical goal is to ascribe a "precarious" value to all such propositions. It condones changeability of values (that is, truth-values). However, it does not amount to skepticism, for the manifoldness

of reality (in the sense discussed above) is non-skeptically asserted. It is also not dogmatism, although it can be said that they were dogmatic about non-dogmatism! These theories can be proved by their own respective logical method which each systems developed.

4.2.1 Rationality And The Principle Of Contradiction

How do the Jainas argue in favor of their position and answer that charge of irrationality and unintelligibility? Traditionally, their method sapta-bhangi or "sevenfold predication" and their doctrine of "standpoints" (nayavada*), supply the material for the constructive part of the argument. To

answer criticism, however, they try to show how contradictory pairs of predicates can be applied to the same subject with impunity and without sacrificing rationality or intelligibility. This may be called the third part of their argument.

In his Anekantajayapataka (= "The Banner of Victory for Anekanta"), Haribhadra formulates the opponents' criticism as follows (we will be concerned with only a few pages of the first chapter). He first selects the pair: sattva "existence" or "being" and asattva "non-existence" or "non-being." The opponent says (p.11):

Existence is invariably located by excluding non-existence, and nonexistence by excluding existence. Otherwise, they would be non-distinct from each other. Therefore, if something is existent, how can it be non-existent? For, occurrence of existence and non-existence in one place is incompatible ...

Moreover, if we admit things to be either existent or non-existent, existence and non-existence are admitted to be properties of things. One may ask: are the property and its locus, the thing, different from each other? Or are they identical? Or, both identical and different? If different, then, since the two are incompatible, how can the same thing be both? If identical, then the two properties, existence and non-existence, would be identical ... And if so, how can you say that the same thing has [two different] natures?

The main point of the argument here depends on reducing the Jaina position to two absurd and unacceptable consequences. If the properties (or the predicates) are incompatible (and different), they cannot characterize the same entity. And if they are somehow shown to be not incompatible, the Jainas lose their argument to show that the same entity is or can be characterized by two incompatible properties. Haribhadra continues:

If they are both, identical and different, we have also two possibilities. If they are different in one form or one way and identical in another way, then also the same entity cannot be said to have two different natures. However, if they are different in the same way as they are identical with each other, this is also not tenable. For there will be contradiction. How can two things be different in one way, and then be identical in the same way? If they are identical, how can they be different?

This is the opponent's argument. The formulation is vintage Haribhadra. Now the answer of Haribhadra may be briefly given as follows:

You have said "How can the same thing, such as a pot, be both existent and non-existent?" This is not to be doubted. For it [such dual nature of things] is well-known even to the [unsophisticated] cowherds and village women. For if something is existent in so far as its own substantiality, or its own location, or its own time, or its own feature is concerned, it is also non-existent in so far as a different substantiality, a different location, a different time or a different feature is concerned. This is how something becomes both existent and non-existent. Otherwise, even such entities as a pot would not exist.

The existence of an entity such as a pot, depends upon its being a particular substance (an earth-substance), upon its being located in a particular space, upon its being in a particular time, and also upon its having some particular (say, dark) feature. With respect to a water-substance, it would be non-existent, and the same with respect of another spatial location, another time (when and where it was non-existent), and another (say, red) feature. It seems to me that the indexicality or the determinants of existence is being emphasized here.

To make this rather important point clear, let us consider the sentence: It is raining. This would be true or false depending upon various considerations or criteria. It would be true if and only if it is raining, but

false if it happens to be snowing. This may correspond to the "substantiality" (dravyatah) criterion mentioned by Haribhadra. Next, the same would be true if and only if it is raining at the particular spot where the utterance has been made, otherwise false (at another spot, for instance). It would be likewise true if and only if it is raining now when it has been uttered, but false when the rain stops. Similarly, it would be again true if and only if it is raining actually from rain-clouds, for instance, not so when it is a shower of water from artificial sprinklers. It is easy to see the correspondence of these criteria with those other three mentioned by Haribhadra.

Haribhadra, in fact, goes a little further to conclude that a statement like "It is raining" or even "The pot exists" has both truth-values; it is both true and false in view of the above considerations. In fact, it is better to talk in terms of truth-values (as will be clear below), rather than in terms of contradictory pairs of predicates. For the law of contradiction, as it is usually stated in ordinary textbooks of logic, requires that the denial of a predicate, F, of a subject, a, be the same as the affirmation of the contradictory predicate of the same subject, and vice versa. Besides, saying yes and no to such a question as "Is a F?" is equivalent to assigning truth or falsity respectively to the statement "a is F."

One may argue that discovery of the indexical elements on which the determinants of a truth-value depends, that is, of the indexical determinants for successfully applying a predicate, may not be enough to draw such a radical conclusion as the Jainas want, namely, co-presence of contradictory properties in the same locus or assigning of both truth and falsity to the same proposition. Faced with such questions where indexical elements play an important and significant role, we may legitimately answer, "Yes and no. It depends." However, to generalize from such evidence and conclude that the truth or falsity of all propositions suffers from this indeterminacy due to the presence of the indexical or variable elements, and further that all propositions are therefore necessarily and omnitemporally (sarvatha and sarvada) both true and false, may be an illicit jump. The successful application of any predicate to a thing on this view, depends necessarily upon a variable element such that it can or cannot be applied according as we can substitute one or another thing for these variable elements. These

elements which may remain hidden in a categorically asserted proposition, are sometimes called a "point of view" or a "standpoint." It also amounts to a view which announces that all predicates are relative to a point of view: no predicates can be absolutely true of a thing or an object in the sense that it can be applied unconditionally at all times under any circumstances. Jainas in this way becomes identified with a sort of facile relativism.

If the points in the above argument are valid, then it would be a sound criticism of Jaina philosophy. However, let us focus upon two related points. First, relativism. The reflexes of relativism are unmistakable in Jainism as they are in many modern writers. A typical argument is to show how the earth or the sun can be said to be both in motion and at rest depending upon the points of view. An obvious criticism of the facile relativism (though not that of Goodman) is that it can be shown to be self-inconsistent, for in trying to argue that all truths are relative to some point of view or other, it makes use of an absolute notion of truth. Will this charge hold against Jainism? For Jainism openly admits an absolute notion of truth that lies in the total integration of all partial or conditionally arrived at truths, and is revealed to the vision of an omniscient being such as Mahavira. The emphasis here is on the conditionality and limitedness of human power and human vision and therefore it applies to all humanly constructible positions. The concern is somewhat ethical. Rejection of a seriously held view is discouraged lest we fail to comprehend its significance and underlying presuppositions and assumptions. The Jainas encourage openness.

Are the Jainas guilty of illicit generalization? This is another point of the above critique. All predicates, for which there is a contradictory one, are indeterminate as regards the truth or falsity of their application. In fact by claiming that the contradictory pairs are applicable they take the positive way out as opposed to the Buddhists, the Madhyamikas, who take the negative way. Of the familiar four Buddhist alternatives, yes, no, both, and neither, the Jainas may prefer the third, both yes and no, while the Madhyamikas reject all four. If unconditionality and categoricality of any predication, except perhaps the ultimate one, anekanta in this case, is denied, then this is a generalized position. The only way to counter it would be to find a counter-example, that is, an absolute, unconditionally

applicable, totally unambiguous and categorically assertible predicate, or a set of such predicates, without giving in to some dogma or have some unsuspected and unrecognized presupposition. The Jainas believe that this cannot be found. Hence, anekanta.

Haribhadra and other Jaina philosophers have argued that we do not often realize, although we implicitly believe, that application of any predicate is guided by the consideration of some particular sense or criterion (excessive familiarity with the criterion or sense makes it almost invisible, so to say). In the Indian context, there is a well-entrenched tradition of talking about the "basis" or the "criterion" for the application of a predicate or a term. This can be called the nimitta theory (the "basis" or the "criterion" theory). A predicate can be truly applied to something x in virtue of a particular or a specific basis. The philosopher, when he emphasizes the particularity or specificity of such a basis, indirectly and implicitly commits himself to the possibility of denying that predicate (that is, of applying the contradictory predicate) to the same thing, x, in virtue of a different basis or criterion. Haribhadra says :

(The Opponent says:) The lack of existence in virtue of being a watery substance etc., belongs to a particular earth-substance, a pot; however, this is because the locus of non-existence of something cannot be a fiction. We admit therefore that it is the particularity of the earth-substance, the pot, that excludes the possibility of its being existent as a water substance (this does not amount to admitting the co-presence of existence and non-existence in one locus).

(The Jaina answers:) Oh, how great is the confusion! By your own words, you have stated the anekanta, but you do not even recognise it yourself! Existence in virtue of being an earth-substance itself specifies its non-existence in virtue of being a water-substance (you admit this). But you cannot admit that the thing has both natures, existence and non-existence. This is a strange illusion! No object (or thing) can be specified without recourse to the double nature belonging there, presence of its own existence in it, and absence from it, the existence of the other.

The general point of the Jainas seems to be this. Any predicate acts as a qualifier of the subject and also a distinguisher. That is, its application not only refers to a property that is present in the subject, but also indicates another set of properties that are not present in it at all. In fact,

insistence, that is absolute insistence, on the presence of a property (an essential property) in a subject, lands us invariably into making a negative claim at the same time, absence of a contradictory property, or a set of contrary properties from the same subject-locus. At this stage the opponent might say, with some justification, that the conclusion reached after such a great deal of arguing tends to be trivial and banal. All that we have been persuaded to admit is this. Existence can be affirmed of a thing, x, in virtue of our fixing certain determinants in a certain way, and if the contrary or contradictory determinants are considered, existence may be denied of that very thing. This is parallel to assigning the truth-value to a proposition when all the indexical elements in it are made explicit or fixed, and being ready to accept the opposite evaluation if some of their indexicals are differently fixed or stated. Realists or believers in bivalence would rather have the proposition free from any ambiguities due to the indexical elements an eternal sentence or a Thought such that it would have a value, truth or falsity eternally fixed. However, the Jainas can reply to the charge of predictability by putting forward the point that it is exactly such possibilities that are in doubt. In other words, they deny that we can without impunity talk about the possibility of clearly and intelligibly stating such propositions, such eternal sentences, or expressing such Thoughts. We may assume that a proposition has an eternally fixed truth value, but it is not absolutely clear to us what kind of a proposition that would be. For it remains open to us to discover some hidden, unsuspected determinants that would force us to withdraw our assent to it.

4.3 NYAYA VIEW

Although Indian tradition ascribes logic to Sage Gautama, of great antiquity, the aphorisms of Nyaya, which have come down to us, and which are attributed to Gautama are of relatively later origin. The author of Nyaya Sutras is, in fact, Aksapada. He must have flourished sometime after Buddha. For in the text of Nyaya aphorisms there is criticism of certain doctrines of Buddhism. Tradition identifies Aksapada with Gautama and justifies the name Aksapada, which literally means one having eyes to the feet, on the ground that the great sage, being master of

the science of logic, could commit no mistake anywhere and could see things even by the touch of his feet. However, the view of scholars is that Aksapada must have reformulated the logical principles originally enunciated by Sage Gautama.

The Nyaya system of philosophy is generally identified with logic. But it is by no means true that it is a system of logic alone and nothing else. It is primarily a method of controversy. Logic, like Metaphysics, is only a part of it. It is a matter of history that adherents of the system of philosophy laid great stress on methodology, which, in the course of time, was also accepted in large measure by other systems of philosophy to prove their propositions. Though it does include Prameya and Apavarga amongst the categories, from the aphorisms which have come down to us the metaphysical presuppositions of the system are by no means clear. On the other hand it is clear that the system provides instruments of controversy and decision. But traditionally and in its later thought at least, the followers of the Nyaya system accepted the metaphysics of the Vaisesikas. In fact later Indian logic is mostly the development of Vaisesika logic, unifying it with the main tenets of the Nyaya. Even Udyotakara regards Kanada, the propounder of Vaisesika system as a great sage and adores him with even greater veneration than Gautama.

As has been pointed out, it is common to identify Nyaya with logic. But it is not true that the use of the logical principles was the sole monopoly of the philosophers of Nyaya School. In fact every system of Indian philosophy developed its own instruments of methodology or pramanas - means of knowledge. Thus Kumarila, Prabhakara and Murari of the Purva Mimamsa School discuss in their writings several problems of logic and methodology. Even the Sankhya school, in its meagre literature that is now available, first discusses the means of knowledge's and enters the sphere of logic. "Prameya Siddhih pramanat hi" - This is the very fundamental motto of Sankhya. It is perhaps in the same way that the Vaisesika school of thought entered the sphere of logic .and developed a system of logic which was ultimately unified with the logic of the Nyaya. The author of the Vaisesika system was Kanada. His other name seems to be Uluka. Kanada was, perhaps, so called because he believed that the world was composed of atoms. Like the Greek Democritus, he tried to

reduce everything to four kinds of atoms, the atom of fire, the atom of earth, the atom of air and the atom of water. But his Cosmology and Ontology are not so simple and elementary. According to his system which has come down to us he believes in six (or seven) categories, substance (dravya), quality (guna) which also includes quantity and relations except one of inherence, the relation of inherence (samanya), class or universal particularity (visesa), action (karma). In addition to the four substances, fire, water, earth and air, Kanada also believed in manas or mind, ether, time, space and soul. The last four are not atomic or composed of atoms like the other substances. They are cosmic or all-comprehensive (vibhu). The manas is atomic. Kapada's system is logical, empirical and pluralistic. He does not mention God and believes in only two means of knowledge, perception and inference. The sutras or aphorisms of Kanada are not all found in one place, and the genuineness of the sutras is doubted. But the sutras, as quoted by others, have survived the test of time, and Kanada must have been the author of most of them. Since inference is one of the two means of knowledge, it is but natural that Kanada's system should discuss the theory of inference. And it has to be admitted, to the credit of the author of this system, that a well-advanced logic has been used by him for proving the theorems of his metaphysics and cosmology. Though they pay respect to Gautama as the sage who gave the system of logic, the later Indian logicians accept the logical and metaphysical parts of the system given by Kanada. Some philosophers of Vaisesika system mention ten categories and not seven as are given to us traditionally. Thanks to Ui, a Vaisesika system known as Dasapadarthi, is now available to us through Chinese sources.

Although the Nyaya and Vaisesika aphorisms are available to us through the authorship of Gautama and Kanada, the germs, of the system can be traced in much older thought. Manusmrti, Mahabharata, Caraka Samhita and Artha Sastra mention Anviksiki, Jalpa and Vada and sometimes discuss the categories, which may have a reference to Vaisesika categories. They also mention Pancasikha and Uluka who are some of the reputed authors of the system.

In Vanaparva, a chapter of Mahabharata there is a story about the controversy between Vandi, the court philosopher of King Janaka, and Astavakra, a young scholar. The story is illustrative of the fact that the

rules of controversy were known at the time of Mahabharata. It is certainly true that rules of controversy cannot be identified with the theory of logic. But it is the rules of controversy which are primarily discussed in aphorisms of Aksapada. So the reference to the rules of controversy in Mahabharata is very important for the historical development of logic. In Manusmrti there is a reference to tarka or logic and it is asserted that those who follow tarka would not attain Svarga or heaven. Perhaps even in those days, as now, the followers of reason or logic were not very orthodox people. Kautilya's Arthasastra says that a person well-versed in the art of governing ought to know logic also. The most important fact about these older documents of logic is that they mention ten parts or Avayayas of syllogism instead of the traditional five. Some of the Jain logicians like Bahubali, also refer to these ten parts. These additional five parts of the syllogism are strictly irrelevant to the theory of syllogism and so Vatsyayana, the commentator of Aksapada Sutras rejects them. But certainly these additional five parts give rise to much speculation.

The story of Indian logic covers a period of over two thousand years. From the time of Mahabharata, when logic was still a practical art of controversy, logical theory has steadily and constantly developed in India till about the seventeenth century A. D., when it culminated in a formal discipline of language in the neo-logical school of Navadvipa in Bengal. All this time it spread through three different disciplines, the discipline of orthodox Hindu logic, the discipline of Buddhist logic and the discipline of Jain logic. Each of these schools produced many logicians of great eminence who attacked and counter-attacked the logicians of the other schools by trying to point out the weakness in the theory of the opponents. Thus, for example, Nagarjuna, Dignaga and Dharmakirti tried to attack the Hindu logicians by pointing out the dimensions of Hetu (or reason) and its significance in the theory of inference. On the other hand the Hindu logicians tried to uproot the Apoha theory of negation, which was accepted by Buddhist logicians. The result was that logical theory became richer and richer and culminated in the finest and subtlest instrument of human thought and reasoning. Philosophers of the other schools of orthodox Hindu thought also contributed to the growth of logic. Though they rejected the metaphysical tenets, they accepted the

general methodology of Nyaya-Vaisesika school and soon thanks to their efforts it instead of remaining a mere school of philosophy, attained a position of pre-eminence in the science of methodology. Thus in ancient India a pupil was required to learn first grammar and then Nyaya or logic. Unless a student took lessons in Nyaya he was not supposed to be competent to study Purva Mimamsa or Vedanta.

If the Nyaya Sutras are regarded as the first attempt at systematising the Nyaya doctrines of logic and philosophy, some of its logical doctrines as well as the views propounded by Vatsyayana were subjected to very severe criticism by the logicians of the Buddhist school of thought. Neither the Nyaya nor the Vaisesika Sutras mention anything about Paramarsa or Tritiya Paramarsa as it is sometimes called. Paramarsa, as an important factor in the theory of inference, is for the first time mentioned in the orthodox Nyaya logic by Udyotakara, the author of the Nyaya Vartika. While criticising the Buddhist logic he must have improved on the discoveries of the great Buddhist logicians Dignaga and Dharmakirti who for the first time mention the threefold relation of Hetu, Sadhya and Paksa. Udyotakara incorporated this doctrine under the theory of Paramarsa by saying that two kinds of cognitions precede an inference. The first is the cognition of the relation between the mark and the object having the mark. This is necessary for Vyapti perception of a mark (in the minor term), The Paramarsa is the comprehension of these two together. In one sense of the term this term can be explained today by what is termed as Modus Poneus. The causation known as Arambhavada, also seems to be the formulation of Udyotakara, who must have evolved it as a synthesis between the Satkarya theory of the Sankhya and extreme Asatkarya theory of the Buddhist. The division of inference into Svartha and Parartha also seems to be the contribution of the Buddhist logicians, Dignaga and Dharmakirti. Dignaga had the title of Acarya great master— and Dharmakirti amongst Buddhist logicians the same position as Udyotakara did amongst the Nyaya logicians. Another important formulation of the Buddhist logicians was the Apoha theory of negation. This was subjected to severe criticism by the Nyaya logicians. The Apoha theory, however, is a very important step towards the theory of negation.

Buddhist logicians had two different concepts of logic in their mind. The logic of Dignaga and Dharmakirti can be compared to the syllogistic logic. But there was another logic lingering in the minds of the Buddhists, the dialectic and the dynamic logic. Early Buddhist logicians tried to make use of it, and even Nagarjuna had this vaguely in his mind when he formulated his theory of 'the middle path'.

The contribution of the Jain logicians to the general theory of logic is not in the least negligible. It has a long and independent tradition of over two thousand years. But the most important feature of the Jain logic is its introduction of Saptabhangi Naya, and formulation of the logic of Possibilities or Syatvada. I feel that these two doctrines arc independent and are valuable to logic. It must have been due to some confusion amongst the later Jain logicians that these two separate theories were identified as one.

The authors of the orthodox schools of logic had to accept a good deal from the logic of the Buddhists and the Jains before they could build their own logical structure. But this they could not do without certain metaphysical presuppositions. The Vaisesika system supplied these presuppositions and led to the unification of the Nyaya and Vaisesika systems.

The Nyaya and Vaisesika philosophers hold that language is one of the means of knowing the world or Universe. Thus they seem to think that corresponding parts of language reveal the parts of the Universe which can be analysed into padarthas or what in Western logic are called the categories. A syntax of words, on the language side, gives us a sentence and on the Ontological side gives us the world. The Vaisesikas analysed the world into seven categories. These categories are 1. substance ; 2. qualities; 3. action ; 4. universal ; 5. particular ; 6. relation of inherence and 7. non-existence. Of these categories the existence or being belongs to the first three only. The early logicians employ a very ingenious argument for proving their point that Universal, though real, have no existence. The general theory of categories has an important bearing on the theory of propositions and sentences; proposition is nothing but an assertion of a certain relation between the substratum and the dependent which are terms of this relation. The terms can be the names of entities. Though they are not quite specific Indian logicians, I think, make a

distinction between a description and a sentence. A sentence is an assertion whereas a description" behaves like a name. According to the Indian logical systems knowledge is always in the form of a judgment. The logicians also believe that by the same sense by which objects are perceived, the negation and the universal characteristics of the objects are also perceived.

Another important presupposition of these logicians is that a quality belongs only to a substance anti never to a quality (gune gunanangikarat). Thus substance and qualities always go together. Qualities cannot exist by themselves and substance always acts as the precondition for qualities. The substances also cannot remain without qualities except in the first instant. In the theory of Nyaya substance and qualities are regarded as cause and effect i.e. Karana and Karya respectively. The Nyaya theory of causation slates that cause and effect occupy two different moments of time, such that in the first moment the cause must be necessarily and invariably present without the effect coming into existence. It is necessary to point out that though Karan and Karya are usually translated as cause and effect the concepts of Karana and Karya as technically employed in Nyaya logic arc much wider than the concepts of cause and effect as we ordinarily understand.

In their metaphysics the Nyaya logicians also believe that a contact (Samyoga) can be only between two substances. In a similar manner they believe that Time is the (super) substratum of everything. Perhaps one of the important presuppositions in their logic is their belief in the law of Laghara or parsimony. The hypothesis which is less complicated and short is preferred by them to one that is more complicated. The logic of Nyaya makes several other metaphysical presuppositions but they need not concern us for our present purpose.

The logics of the Vaiseikas and the Naiyayikas proceeded for some time on parallel lines, but were ultimately unified in the neo-logical school. Perhaps the works of Udayana who wrote on both the systems must have been partly responsible for this unification. In fact Udayana has been regarded by some as the founder of the neo-logical school. He wrote profusely and criticised almost every logical doctrine of the Buddhists. The systematisation of the logical doctrines of Indian origin is most probably due to Udayana. That is perhaps the reason why he has been

regarded as Acarya or great teacher by his successors. He wrote on almost every topic of logical interest and contributed to the logical theory. Though at times he resorts to argumentum ad hominem in order to refute Buddhist doctrines, he may perhaps be defended on the ground that in ancient India as everywhere people did sometimes resort to argumentum ad hominem or Jalpa and Vitanda in order to refute the doctrines of the opponents. Even the Buddhist and Jain logicians seem to have taken resort to Jalpa and Vitanda. The logical significance of Jalpa and Vitanta is negligible. But they are discussed even in the books of logic like the aphorisms of Aksapada in order to show what made men fallacious. These fallacious arguments had some practical utility and religious teachers in those days exploited them to establish their religious dogmas. When Buddhism, Jainism and Hinduism were fighting for their supremacy the philosophers of different creeds occasionally had recourse to Jalpa and Vitanda. As a criticism against Buddhism the Hindus often said that even good milk if kept in a bowl of dog-skull should be rejected. Such a prejudice, however, cannot be justified. For a good logician ought to accept all that is logical in the theory of the opponents. But it must be admitted that in the past people did resort to such tricks. It is, however, necessary to note that they included in their own logic all that was logically valuable in the theory of their opponents and thus enriched their own theory. Sometimes a few logicians even recognised their debts to their opponents. In fact, that the Hindu logicians had to evolve a dictum like the one quoted above is a recognition of the fact that they found in the theory of their opponents, much that was important.

Udayana seems to have flourished in the 10th century A.D. Most probably he belonged to the Saiva school of religious sect. One of his most celebrated works, known as Kusumanjali 'A bunch of flowers'- is a work devoted to establishing the existence of God. In this work, as in others, he discusses in detail, the whole theory of logic and the work is indeed very important from the point of logical theory.

He wrote a commentary called Kiramvali - 'A beam of rays' - on the Bhasya of Prasastapada and on Nyaya side wrote another commentary called Nyaya-Vartika-Tatparya-Parisuddhi on Nyaya-Vartika-Tatparya of Vacaspati Misra. Another important work of his is Atmatatva Viveka where he tries to prove the existence of soul and analyses its nature. It is

here that he discusses the Buddhist doctrines of Apoha and Ksana-bhanga or flux. He revived and re-established the Nyaya and Vaisesika theory. On account of his epoch-making work, the Tatva Cintamani Gangesa Upadhyaya is usually called the father of neo-logical school. Udayana was, at least, responsible for preparing the ground for that great work of Gangesa.

Before Udayana, there flourished great logicians like Vatsyayana, Udyotakara, Vacaspati Misra, Bhasarvajna, Jayanta and several others on the Nyaya side. On the Vaisesika side there were celebrated authors like Prasastapada, Sridhara and Vyomasiva.

The work of Prasastapada is known as Padartha-Dharma- Sangraha. It is usually known as Bhasya though an independent work running along the line of Vaisesika Sutras. It is very valuable because it is the earliest Vaisesika work available. Unlike the Nyaya Sutras which have been arranged by Vacaspati, Vaisesika Sutras are not properly arranged and the authenticity of many of them is doubted.

Another important work on the Vaisesika side is the Nyaya-kandli of Sridhara. It is a commentary on Prasastapada Bhasya and shows a great advance in logical theory. Another very early commentary on the Bhasya of Prasastapada is known as Vyomavati and is useful as it preserves many of the doctrines of Indian logic in its early form.

All these earlier doctrines were unified in the works of Udayana who as pointed out earlier, prepared the ground for the work of Gangesa.

1. Check your Progress

1. Relation of Logic and metaphysics.

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4.4 NAVYA NYAYA

Gangesa most probably belongs to the twelfth century and is traditionally regarded as the founder of the Navadvipa and Mithila schools of logic known as Navyanyaya. His work was so different from the other works of logic, both in method and in treatment, that it immediately eclipsed all the earlier works. It provided a systematic language and insisted on the

precision which is and ought to be the aim of logic. This new logical language aims at removing even the slightest equivocation and thus provides the ground for precise and scientific thinking. Every concept of logic was put to severe test before it was used. Some of the early logical concepts were thus re-shaped and some of them were totally rejected. This revolution in logical thinking supplied hundreds of new concepts and Indian logic at once became the science of evidence and methodology. The pattern of thinking became so terse that hereafter no one, even belonging to other schools of thought, could avoid learning this new logic. Gangesa's book Tatva-cintamani is divided into four parts; each part dealing with one of the pramanas. Gangesa accepts the Pramanas as given by the Nyaya system. But he does not accept the categories given by the Nyaya. He prefers the Vaisesika categories and says that all the categories given by Gautama find a place in these seven Vaisesika categories. Hundreds of commentaries were written on this work and no one could do any philosophical thinking who either ignored the work or ignored the method of the work.

Great logicians flourished in this school. They developed the logic of inference, the theory of implication, the logic of classes, the logic of relation, the logic of negation, the theory of the class or classes, the theory of judgment and proposition, the theory of language and the like. Among these logicians are Jagadisa, Gadadhara, Raghunatha Siromani and Mathuranatha. Raghunatha who must have flourished in the 17th century was the most renowned logician of the school. He defeated his teachers on many points of theory and establishedthe Navadvipa school of thought. It was during his time that the seat of logical learning was transferred from Mithila to Navadveepa in Bengal. In his school logic was very vigorously studied for over a hundred years. Many works were written, and were of two types. Those which introduced logic were known as Prakaram Granthas and those which challenged the old logical theory and supplied the new one instead were known as Vada Granthas.

4.5 LETS SUM UP

In this unit we brought out the relation of anumanapramana and prameyashastra. A metaphysical puzzle seems to have started in the

early period in India with a opposition of basic predicates or concepts such as being and non-being, permanence and change, is and is-not, substance and modes, identity and difference. Although these five pairs just cited are not strictly synonymous, they are nevertheless comparable and often interchangeable, depending, of course, upon the context. The first member of these pairs used to be captured by a common denominator, the Buddhist canons called Eternalism or sasvatavada while the second member constituted the opposite side, Annihilationism or uccheda-vada (sometimes, even Nihilism). Indulging in the same vein, that is, the vein of rough generalization, we put the spirituality of reality on one side and the materiality of reality on the other. Looking a little further, we can even bring the proverbial opposition between Idealism and Realism, in their most general senses, in line with the above pairs of opposites.

2. Check your Progress- 1

Relation of Logic and metaphysics.

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4.6 KEY WORDS

Anekanat : non onsidedness, a view advocated by Jainismmadhyamaka, : As school of Buddhism which emphasis on Sunyata

arambhavada, : philosophical view which advocates that effect is not present in cause

satakaryavada, philosophical view which advocates that effect is present in cause

4.7 QUESTIONS FOR REVIEW

1 .Jain method of anekant (as a metaphysical view) and how can it be proved

2 Buddhist contribution to theory of anumana as rooted in its metaphysics

3   Vaisesikas view of reality

4.8 SUGGESTED READINGS AND REFERENCES

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- *Fāng biàn xīn lùn* (*Treatise on the heart of means*). Edition: *Taishō Chinese Tripiṭaka* 1632. Reference: T 1632 page.horizontal-band.vertical-line

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- *Upāya-hṛdaya*: see *Fāng biàn xīn lùn*.

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4.9 ANSWER TO CHECK YOUR PROGRESS

1. Answer to Check your Progress- 1

- A metaphysical puzzle seems to have started in the early period in India with a dichotomy of basic predicates or concepts such as being and non-being, permanence and change, is and is-not, substance and modes, identity and difference.

- Although these five pairs just cited are not strictly synonymous, they are nevertheless comparable and often interchangeable, depending, of course, upon the context.

- The first member of these pairs used to be captured by a common denominator, the Buddhist canons called Eternalism or sasvatavada while the second member constituted the opposite

side, Annihilationism or uccheda-vada (sometimes, even Nihilism).

- Indulging in the same vein, that is, the vein of rough generalization, we put the spirituality of reality on one side and the materiality of reality on the other.

- Looking a little further, we can even bring the proverbial opposition between Idealism and Realism, in their most general senses, in line with the above pairs of opposites.

3. Answer to Check your Progress 1

- Buddhist logicians had two different concepts of logic in their mind. The logic of Dignaga and Dharmakirti can be compared to the syllogistic logic. But there was another logic lingering in the minds of the Buddhists, the dialectic and the dynamic logic. Early Buddhist logicians tried to make use of it, and even Nagarjuna had this vaguely in his mind when he formulated his theory of 'the middle path'.

- The contribution of the Jain logicians to the general theory of logic is not in the least negligible. It has a long and independent tradition of over two thousand years. But the most important feature of the Jain logic is its introduction of Saptabhangi Naya, and formulation of the logic of Possibilities or Syatvada. I feel that these two doctrines arc independent and are valuable to logic. It must have been due to some confusion amongst the later Jain logicians that these two separate theories were identified as one.

- The authors of the orthodox schools of logic had to accept a good deal from the logic of the Buddhists and the Jains before they could build their own logical structure. But this they could not do without certain metaphysical presuppositions. The Vaisesika system supplied these presuppositions and led to the unification of the Nyaya and Vaisesika systems.

UNIT- 5 LOGIC OR ANUMANAPRAMANA AS HETUVIDYA OR VADAVIDHI AND ANVIKSHIKI

STRUCTURE

5.0 OBJECTIVES

After studying this unit, you should be able to:

- learn about the nature of logic

- understand what is hetuvidya

- understand the concepts of anvikshiki and anumiti

5.1   INTRODUCTION

Atma-vidya in later stage was called Anviksiki the science of inquiry. Manu   uses Anvisiki as an equivalent for atma-vidya, and his followers, the Manavas describe it evidently considering it synonymous with the Upanisad – as a branch of the Vedas. Anviksiki while comprising the entire function of Atmavidya was in fact different from it, and consequently from the Upanisad   too. Kautilya (about 327 B.C.) recognized Anviksiki as a distinct branch of study over and above the three, viz. Trayi (the Vedas), Vartta (Commerce) and Dandaniti (Polity) enumerated in the school of Manu. The distinction between Atma-vidya and Anviksiki lay in this, that while the former embodied certain dogmatic assertions about the nature of the soul, the latter contained reasons supporting those assertions. Anviksiki dealt in fact with two subjects, viz. atma, soul, and hetu, theory of reasons. Vatsyayana observes that Anviksiki without the theory of reasons would have like the Upanisad been a mere atma- vidya or adhyatma-vidya. It is the theory of reasons which distinguished it from the same. The Samkhya, Yoga and Lokayata, in so far as they treated of reasons affirming or denying the existence of soul, were included by Kautilya in the Anviksiki. The formation of Anviksiki must have commenced in the period of the Upanisad in which some of its technical terms were forestalled, but it did not take any definite shapes until about 650 B.C. when it was recognized as a distinct branch of learning.

5.2 ANVIKSIKI BIFURCATES INTO PHILOSOPHY AND LOGIC

Anviksiki, as previously pointed out, treated of two subjects, viz. the soul and the theory of reasons. In so far as it was mainly concerned with the

soul, Anviksiki was developed into Philosophy called Darsana and in so far as it dealt largely with the theory of reasons it was developed into Logic called pre-eminently the Anviksiki or Anviksiki par excellence. This bifurcation of Anviksiki into Philosophy and Logic commenced with the very formation of the science but specially about 550 B.C. when Medhatithi Gautama expounded the logical side of the Anviksiki. The Anviksiki continued however for many centuries to be used in the general sense of a science which embraced both the subjects of Philosophy and Logic.

5.3 ANVIKSIKI IN ITS PHILOSOPHICAL ASPECT CALLED DARSANA

As already observed, Anviksiki treating of the soul was called Darsana (philosophy). "Darsana" literally signifies seeing: it is in fact the science which enables us to see our soul. The Brhadaranyakopanisad says that "the soul is verily to be seen," and the Yajnavalkya-samhita declares that "the highest virtue consists in seeing the soul through meditation." In the Mundakopanisad we find that "when the soul is seen, the knot of the heart is untied, all doubts are dispelled and all act-forces are exhausted." It was about the first century B.C. that the Anviksiki dealing with the soul was replaced by the word "Darsana." The Samkhya, Yoga and Lokayata which were incorporated in Anviksiki were designated as Darsana or branches of philosophy. The word Darsana in this special sense occurs in the Mahabharata, Bhagavata Purana, Nyaya-bhasya Vedanta-bhasya etc.

5.4 VARIOUS NAMES FOR ANVIKSIKI IN ITS LOGICAL ASPECT

As already observed, Anviksiki dealing with the theory of reasons was developed into Logic designated specially as the Anviksiki or Anviksiki par excellence. We find the term Anviksiki used in this special sense of Logic in the Manusamhita, Gautama-dharma-sutra, Ramayana, Mahabharata, etc. In about 327 B.C. Kautilya characterised the Anviksiki (evidently Logic) as a highly useful science which furnished

people with reasons for the estimation of their strength and weakness, kept their intellect unperturbed in prosperity and adversity, and infused into their intelligence, speech and action, subtlety and power.

The Anviksiki, in virtue of the theory of reason predominating it was called Hetu-sastra or Hetu-vidya, the science of reasoning, as is evident from the Manusamhita, Mahabharata, etc. It was also called Tarka-vidya, the art of debate, or Vada-vidya, the art of discussion, inasmuch as it dealt with rules for carrying on disputations in learned assemblies called parisad.

Tarka-vidya or Vada-vidya is referred to in the Manusamhita, Mahabharata, Skandapurana, Gautama-dharma-sutra, Ramayana, Yajnavalkya Samhita, etc. The Anviksiki was, as we shall see later, also called Nyaya-sastra, the science of true reasoning.

The theory of reasons (hetu), which formed an important subject of Anviksiki, grew out of debates in councils of learned men. In the Chandogya and Brhadaranyaka upanisads there are references to councils for the discussion of metaphysical subjects, e.g. the nature of the soul and the Supreme Being. The Prasnopanisad reports the proceedings of a council, in which Sukesa Bharadvaja, Saivya Satyakama Sauryayani Gargya, Kausalya Asvalayana, Bhargava Vaidarbhi and Kabandhi Katyayana approach the sage Pippalada and ask him a series of questions such as "how has this world been produced," "how is it sustained" and "how does the life-breath come into our body." Such a council was called samsad, samiti, sabha, parisad or parsad. In the socio religious institutes of Manu Parasara, Yajnavalkya and others, we find that the council consisted generally of four, ten or twenty-one Brahmnas, who were learned in the Vedic and secular literatures and could give decisions in matters on which people might ask their advice. The debates or dialogues, such as those described in the Prasnopanisad, the Chandogyopanisad and the Brhadaranyaka, were in all probability the precursors of the theory of reasons (hetu-vada) treated in the Anviksiki. The words, which had to be used in special senses to carry on debates in the councils, constituted the technical terms of the Anviksiki.

5.5 THE TECHNICAL TERMS USED IN THE COUNCILS OF DEBATE

(900-500 B.C.).

Some of the technical terms used in the councils of debate Some of the terms used had grown up along with the Upanisads. For instance in the Taittiriya Aranyaka, we meet with four terms. viz. (1) Smrti (scripture), (2) pratyaka (perception) (3) aitihya (tradition), and (4) anumana (inference). These terms recur in the Ramayana with a little alteration as (1) aitihya (tradition), (2) anumana (inference), and (3) sastra, scripture. Three of these terms, are used in the Manu-samhita, as (1) pratyaksa, anumana and sastra.

Similarly, in the Aitareya Brahmana, Kathopanisad, etc., there occur such terms as tatka (reasoning), vada (debate), yukti (continuous argument), jalpa (wrangling), vitanta (cavil), chala (quibble), nirnaya (ascertainment), prayojana (purpose), pramana (proof), prameya (the object of knowledge), etc.

5.6 TANTRA-YUKTI – THE TERMS OF SCIENTIFIC ARGUMENT

(QUOTED BY KAUTILYA ABOUT 327 B.C.)

In the last chapter of the Artha-sastra (a work on polity), Kautilya gives a list of thirty-two technical terms called Tantra-yukti or "the forms of scientific argument" (dvatrimsadakara-stantrayuktayah). This list appears also in the Caraka-samhita and the Susruta-samhita two authoritative works on medicine. It was evidently prepared neither by Kautilya nor by the authors of the two samhitas, but by a person or persons who wanted to establish debates on a scientific basis.

The terms included in the list are found to have been employed more widely in works on Nyaya Philosophy than in those on Polity or Medicine. Definitions of some of those terms have been actually quoted by Vatsyayana and other commentators on the Nyaya-sutra. The Tantra yukti which literally signifies "scientific argument" was compiled possibly in the 6th century B.C. to systematize debates in Parisads or learned councils. In the Susruta-samhita it is distinctly stated that by

means of Tantra-yukti a debater can establish his own points and set aside those of his opponents who indulge in unfairness. In the department of Hetu-sastra (Logic) there is indeed no work older than the Tantra-yukti which is a little manual on the systematization of arguments or debates.

The technical terms constituting the Tantra-yukti are the following:-

(1) Adhikarana (a subject), (2) vidhana (arrangement), (3) yoga (union of words), (4) padartha (category), (5) hetvartka (implication), (6) uddesa (enunciation), (7) nirdea (declaration), (8) upadesa (instruction), (9) apadesa (specification). (10) atidesa (extended application), (11) pradesa (determination from a statement to be made), (12) upamana (analogy), (13) arthapatti (presumption), (14) samsaya (doubt), (15) prasanga (a connected argument), (16) viparyaya (reversion), (17) vakya-sesa (context), (18) anumata (assent), (19) vyakhyana (description), (20) nirvacana (etymological explanation), (21) nidarsana (example), (22) apavarga (exception), (23) sva-samjna (a special term). (24) purva-paka (question), (25) uttara-paka (reply), (26) ekanta (certain), (27) anagataveksana (anticipation), (28) atikrantaveksana (retrospection), (29) niyoga (injunction), (30) vikalpa (alternative), (31) samuccaya (aggregation), and (32) uhya (ellipsis).

In the Caraka-samhita the Tantra-yukti, which consists of thirty-four terms, includes the following:-

(1) Prayojana (purpose), (2) nirnaya (ascertainment), (3) anekanta (uncertain), (4) pratyuccara (repetition), (5) uddhara (citation), and (6) sambhava (probability).

5.7 MEDHATLTHI GAUTAMA'S DOCTRINES AS REPRODUCED IN THE CARAKA-SAMHITA (ABOUT 78 A D.)

The Caraka-samhita gives a summary of the principal doctrines of Anviksiki possibly as propounded by Medhatithi Gautama. Caraka is a general name for the ancient sakhas (branches) of the Yajurveda as well

as for the teacher of those sakhas. The word "Carakah" signifies, according to Panini, the persons who study the Veda the sakhas of the Yajurveda) enounced by the teacher Caraka. Some say that the exact meaning of "Caraka," as applied to the Caraka-samhita, is unknown. The expression "Caraka-samhita" may, according to them, mean the Ayurveda-samhita of the school of Carakah or the Ayurveda-samhita as redacted by a member of the Caraka sect or by a physician named Caraka. According to the Nyaya manjari Caraka was a physician, and the Chinese Tripitaka describes him as a physician at the court of Kaniska, the Kusana king of Gandhara. Punarvasu Atreya (about 550 B.C.) was the original author of the Caraka-samhita called Ayurveda-samhita, and the physician Caraka was perhaps the redactor of the Samhita at the beginning of the Christian era. The doctrines of Anviksiki did not evidently constitute a part of the original Ayurveda of Punarvasu Atreya. These doctrines seem to have been the incorporated into the Caraka-samhita by the redactor Caraka in whose time they were widely known and studied. The doctrines (with the exception of those relating to Karyabhinir- vrtti) seem to have been the productions of Medatitthi Gautama, who flourished in the 6th century B.C. Medhatithi Gautama's doctrines were embodied in the Caraka-samhita of Caraka as well as in the Nyaya-sutra of Aksapada. But while Caraka accepted them in their crude forms, Aksapada pruned them thoroughly before they were assimilated in the Nyaya-sutra.

The doctrines as we find them in the Caraka-samhita are treated under three heads, viz. :-

(1) Karyabhinrvrtti, the aggregate of resources for the accomplishment of an action.

(2) Pariksa, the standard of examination, and

(3) Sambhasa-vidhi, or vada-vidhi, the method of debate.

As regards Karyabhinirvrtti, it does not appear to have been a part of the Anviksiki of Medhatithi Gautama. Perhaps it was a part of the Vaisesika philosophy in an early stage. Parika is redundant as the four terms coming under this head, viz.: aptopadesa, pratyaksa amtmana and yukti reappear with a little modification in the names of sabda, pratyaksha,

anumana and aupamya under the sub-head vadamarga of sambhasha-vidhi. It is uncertain as to whether the first four or the last four were included in the Anviksiki of Medhatithi Gautama. Sambhasa-vidhi or vada-vidhi was undoubtedly the principal topic of Anviksiki-vidya. Some of the terms coming under the sub-head vada-marga did not however form a part of the original sambhas vidhi.   For instance the terms dravya, guna, karma, samanya, visesa and sama- vaya were borrowed from the Vaisesika philosophy in its first stage and incorporated into the vada-marga by Caraka himself. There are other terms such as pratijna, sthapana, pratisthapana, hetu, upanaya, nigamana, uttara, drstanta and siddhanta which in their technical senses were perhaps unknown to Medhatithi Gautama and were introduced into the· v:ida-mxrga by Caraka while he com- piled and redacted the Ayurveda-samhita in the first century A.D.

The terms corning under the three heads are explained in the Caraka-samhita as follows:-

1 Karyabhinirvrtti-the   aggregate   of   resources   for   the accomplishment of an action.

A person who is determined to accomplish an action successfully should examine the following resources :-

(1)   Karana or hetu-the actor or agent who accomplishes an action.

(2)   Karana-the instrument which co-operates with the actor to accomplish the action:

(3)   Karya-yoni-the material cause which while undergoing modification is developed into the action.

(4)   Karya-the action for the accomplishment of which the actor moves.

(5)   Karyaphala-the effect for the attainment of which the action is undertaken.

(6)   Anubandha-the adjunct, that is, that pleasurable or painful condition which resulting from the action attaches unavoidably to the actor.

(7)   Desa- the place of the action.

(8)   Kala-the time of the action.

(9)   Pravrtti-the activity or exertion put forth for achieving the action.

(10) Upaya - favourable circumstance or that condition of the actor, instrument and the material cause in which they can well render   facilities and aids to the action being accomplished.

Things, existent or non-existent, are tested by four standards, viz. (I) aptopadesa, reliable assertion (2) pratyaksha, perception, (3) anumana, inference, and (4) yukti, continuous reasoning. These are collectively called pariksa (examination), hetu (reason), or pramana (means of valid knowledge):

Reliable assertion is the assertion of a person who is trustworthy, noble, wise and freed from evil propensities, whose perception runs unimpeded, and the truth of whose words is never called in question.

Perception is the knowledge which is produced through a union of the soul with the mind, senses and their objects.

Inference is preceded by perception and refers to three times, e.g. a fire is inferred from smoke, fruits are inferred from a seed, etc.

Continuous reasoning refers to the knowledge which beholds conditions resulting from the co-operation of many causes and abiding in three times.

5.8 SAMBHASA OR VADA-VIDHI – THE METHOD OF DEBATE

Utility of Debate (sambhasa-prasamsa).

If a person carries on debate with another person both being versed in the same science, it increases their knowledge and happiness. Besides, it produces dexterity, bestows eloquence and brightens reputation. If there was any misapprehension in a subject already studied it removes that misapprehension, and if there was no misapprehension in the subject it produces zeal for its further study. It also makes debaters familiar with certain matters which were unknown to them. Moreover, some precious mystic doctrines, which a preceptor imparted to his favourite pupil, come out in essence from the pupil who, owing to a temporary excitement and

ambition for victory, is impelled to expound them in the course of the debate. Hence wise men applaud debate with fellow scholars.

5.8.1 Two Kinds Of Debate (Dvividha Sambhasa).

A debate with a fellow-scholar may be carried on either (1) peacefully (sandhaya) or (2) in a spirit of opposition (vigrhya). The first is called a congenial debate (anuloma sambhasa), and the second a hostile debate (vigrhya sambhasa). The congenial debate takes place when the respondent (or opponent) is possessed of erudition, wisdom, eloquence and readiness of reply, is not wrathful or malicious, is well versed in the art of persuasion, and is patient and sweet-speeched. In debating with such a person one should speak confidently, interrogate confidently and give answer in confidence. One should not be alarmed at suffering defeat from him nor should one rejoice in inflicting defeat on him. It is improper to show obstinacy towards him, or to introduce before him matters which are irrelevant. While using persuasion with gentleness, one should keep in view the subject of debate. This kind of debate is called a peaceful or congenial debate.

Before entering upon a hostile debate with a person one should examine one's strength through a casual conversation with him and observation in any other way of his merits. Such an examination should settle the opportuneness or otherwise of entering upon the debate. The merits considered as good are   erudition, wisdom, memory, ingenuity and eloquence. The demerits considered as bad are irritability, shallowness, shyness and inattentiveness.

Three classes of respondents (trividhah parah).
In consideration of the merits and demerits mentioned above the respondent (or opponent) may be of three kinds, viz. superior, inferior, and equal
A Council of Debate (parisad).
The assembly (parisad) in which a debate is to take place may be of two kinds, viz. (1) learned, i.e. an assembly of wise men, and (2) ignorant, i.e. an assembly of fools. Each of these may be sub-divided as (a) friendly, (b) indifferent or impartial, and (c) hostile or committed to one side.

It is not advisable to enter upon debate in a hostile assembly, no matter whether the assembly is learned or ignorant. In an ignorant assembly, friendly or indifferent, one may enter upon debate with a person who is of blazing fame, but who neither possesses erudition, wisdom and eloquence, nor is held in esteem by respectable: people. In debating with such an opponent one may employ crooked and long-strung word-bolts. Now assuming a delightful countenance and now indulging in ridicule one should engage the assembly in such a way that the opponent does not find an opportunity of speaking. If the opponent utter-s an unusual word he should be immediately told that such a word is never used or that his original proposition has fallen to the ground. In the case of his attempting to offer challenge he should be stopped with the observation: "Go and study for a full year, sitting at the feet of your preceptor: this much that you have done to-day is enough." If in the meantime the shout of "vanquished, vanquished" has even once been uttered, no further debate need be held with the opponent.

Some say that this procedure may be adopted in debate even with a superior opponent, but experts do not approve of its adoption when the opponent happens to be an old man. In a friendly assembly one may enter upon debate with an opponent who is inferior or equal.   In an indifferent (or impartial) assembly consisting of members that are endued with attentiveness, erudition, wisdom, memory and eloquence one should speak with great care marking the merits and demerits of one's opponent. If the opponent appears to be superior, one should, without expressing one's inferiority, never engage in debate with him. If on the other hand the opponent happens to be inferior, one should at once defeat him. An opponent, who is weak in the scriptures, should be defeated through citations of long passages from them. An opponent devoid of erudition should be defeated through the employment of unusual words and phrases. An opponent whose memory is not sharp should be defeated with crooked and long-strung word bolts. An opponent devoid of ingenuity should be defeated through the use of same words bearing different meanings and different words bearing the same meaning. An opponent who is devoid of eloquence, should be defeated

through the jeering imitations of his half-uttered speeches. An opponent whose knowledge is shallow should be defeated by being put to shame that account. An opponent of irritable temper should be defeated by being thrown into a state of nervous exhaustion. An opponent who is timid should be defeated through the excitement of his fear. An opponent who is inattentive should be defeated by being put under the restraint of a certain rule. Even in a hostile debate one should speak with propriety, an absence of which may provoke the opponent to say or do any thing.

Influencing the assembly one should cause it to name that as the subject of debate with which one is perfectly familiar and which presents an in surmountable difficulty to one's opponent. When the assembly meets one should observe silence after saying to one's opponent: "it is not now permissible for us to make any suggestions. Here is the assembly which will fix the subject and limits of debate agreeably to its wishes and sense of propriety.

The Limits of Debate. (vada-maryada)

The limits of debate consist of such directions, as: "This should be said, this should not be said, if this occurs defeat follows, etc."

The Course of Debate (vada-marga).

The following are the categories which should be studied for a thorough knowledge of the course of debate:-

(1) Debate (vada)-a discourse between two parties agreeably to the scriptures and in a spirit of opposition on a subject such as "whether there is rebirth, or there is no rebirth." It is of two kinds, viz. (1) wrangling (jalpa) which is a debate for the purpose of defence or attack, and (2) cavil (vitanda) which is a perverse debate for the purpose of a mere attack.

(2) Substance (dravya)-that in which actions and qualities inhere and which can constitute a material cause, e.g. ether, air, fire, water, earth, soul, mind, and space.

(3) Quality (guna)-that which inheres in a substance and is inactive, e.g. colour, taste, odour, touch, sound, heavy and light, cold and hot, intelligence, pleasure and pain, desire and aversion, dissimilarity, contrariety, union, separation, number, measure, etc.

(4) Action (karma)-that which is the cause of both union and separation, which inheres in a substance and represents the function which is to be performed, and which is not dependent on any other action.

(5) Generality (samanya)-that which produces unity.

(6) Particularity (visesa)-that which produces diversity.

(7) Inherence (samavaya)-a permanent relation between a sub- stance and its qualities or actions in virtue of which they cannot exist separately.

(8) Proposition (pratijna)-the statement of what is to be established, e.g. the soul is eternal.

(9) Demonstration (sthapana)-the establishment of a proposition through the process of a reason, example, application and conclusion, e.g.

  (i) The soul is eternal (a proposition).

  (ii) Because it is a non-product (reason).

  (iii) Just as ether which being a non-product is eternal (example).

  (iv) The soul similar to ether is a non-product (application).

  (v) Therefore the soul is eternal (conclusion).

(10) Counter-demonstration (pratisthapana)-the establishment of the counter-proposition, e.g.

  (i) The soul is non-eternal (a proposition).

  (ii) Because it is cognized by the senses (reason)

  (iii) Just as a pot which being cognized by the senses is non-eternal (example).

  (iv) The soul similar to a pot is cognized by the senses (application).

  (v) Therefore the soul is non-eternal {conclusion).

(11) Reason (hetu)-the source of knowledge such as perception (pratyaksha), inference (anumana), scripture (aitihya), and comparison (aupamya).

(12) Application (upariaya)-as shown above.

(13) Conclusion (nigamana)-as shown above.

(14) Rejoinder (uttara)-the proposition in a counter-demonstration.

(15) Example (drstanta)-the thing about which an ordinary man and an expert entertain the same opinion, and which describes the subject, e.g.

hot as "fire," stable as "earth," etc. or just as the "sun" is an illuminator so is the text of the Samkhya.

16)   Tenet or conclusion (siddhanta)- a truth which is established on examination by experts and on proof by reasons. It is of four kinds, viz. a truth accepted by all the schools, that accepted by a particular school, that accepted hypothetically, and that accepted by implication.

(17)   Word (sabda)-a combination of letters. It is of four kinds, viz. that which refers to a matter which is seen that which refers to a matter which is not seen, that which –corresponds to what is real, and that which does not correspond to what is real.

(18) Perception (pratyaksa)-that knowledge which a person acquires by himself through his mind conjoined with the five senses. Pleasure, pain, desire, aversion, and the like are objects of the mind while sound, etc., are objects of the five senses.

(19)   Inference (anumana)-a reasoning based on the knowledge of connected facts, e.g. fire is inferred from the power of digestion.

(20)   Comparison (upamana)-the   knowledge of a thing acquired through its similarity to another thing.

(21)   Tradition (aitihya)-consisting of reliable assertions, e.g. the Veda, etc.

(22)   Doubt (samsaya)-uncertainty, e.g. is there, or is there not, untimely death

(23) Purpose (prayojana)-that for the accomplishment of which actions are undertaken, e.g. I shall live carefully "to avoid untimely death."

(24)   Uncertain (savyabhicara)-going astray, e.g. this 1nedicine may be or may not be suited to this disease.

(25) Inquiry (jijnsa)-examination.

(26)   Ascertainment (vyavasaya)-determination, e.g. that disease is due to the disturbance of   wind in the stomach, and this is its medicine.

(27) Presumption (artha-prapti)-the knowledge of a thing implied by the declaration of another thing, e.g. when it is said that a person should not eat during the day, it is implied that he should eat during the night.

(28)   The originating cause (sambhava)-that from which something springs out, e.g. the six ingredients (dhatus), constitute the originating cause of the foet.us in the womb.

(29)   Censurable (cnuyojya)-a speech which is fraught with fault, e.g. a person makes a general statement while a particular one is required: instead of saying 'this disease is curable by medicine,' one should say this disease is curable by an emetic medicine or a purgative medicine.

(30)   Non-censurable (ananuyojya)-the reverse of the censurable.

(31)   Interrogation (anuyoga)-an inquiry about a subject made by a person who studies it, e.g. when a person asserts that the soul is eternal, his fellow-scholar inquires "what is the reason" This inquiry is an interrogation.

(32) Re-interrogation   (pratyanuyoga) an inquiry about another inquiry, e.g. when one says that the soul is eternal because it is non-produced, the re-interrogation will be "why it is non-produced"

(33)   Defect of speech (vakya-dosa)-consisting of inadequacy, re-dundancy, meaninglessness, incoherence, contradiction, etc.

  (a) "Inadequacy" or saying too little which occurs when there is an omission of the reason, example, application or conclusion.

  (b) "Redundancy" or saying too much which consists of (i) "irrelevancy" e.g. a person talks of the polity of Vrhaspati or Sukra while the subject of discourse is medicine, or (ii) "repetition," e.g. when a person repeats a word or its meaning several times, as bhaisajya, sadhana, ausadha, etc., all of which signify medicine.

  (c) "Meaninglessness "-consisting of a mere grouping of letters without any sense, e.g. k, kh, g, gh, it, etc.

  (d) "Incoherence "-a combination of words which do not convey a connected meaning, e:g. whey, wheel, race, thunder, morning, etc.

  (e) "Contradiction "-consisting of opposition to the example, tenet OT.' occasion, e.g. on the occasion of sacrifices, animals should be offered up. Anything uttered inconsistently with the occasion is contradiction.

(34)   Excellence of speech (viilcya-pra8am.sa)-when a speech is freed from inadequacy, etc., is fraught with well-expressive words and is otherwise un-censurable, it is applauded as excellent, perfect or meritorious.

(35)   Quibble (chala)-a speech consisting of mere words fraught with cunning, plausibility and diversion of sense. It is of two kinds, viz. (1) 'quibble in respect of a word,' e.g. a person uses the word 'navatantra' to signify a man who has studied nine scriptures, though he really intends to signify a man who has studied his scripture recently, or (2) 'quibble in respect of a generality,'   e.g. the medicine which cures phthisis should also cure bronchitis, as both come under the genus 'disease.'

(36)   Non-reason or fallacy (ahetu)-which is of three kinds, viz.:

(a)   "Begging the question" ("prakarana-sama") occurring when that which is to be prayed is taken as the reason, e.g. the soul is eternal because it is distinct from the body: the body is non-eternal, and the soul being heterogeneous from the body must be eternal.

(b)   "Assumption based on doubt" ("samsaya-sama") occurring when that which is a cause of doubt is regarded as dispelling the doubt, e.g. it is doubtful whether a person who has studied a portion of the science of medicine is a physician this person has studied a portion of the science of medicine hence he is a physician. This is another form of "begging the question."

(c)   "Balancing the subject (varnya-sama) occurring where the example is not different from the subject in respect of their questionable character.   e.g. the intellect is non-eternal, because it is intangible, as a sound. Here the eternality of the intellect is as questionable as that of the sound.

(37)   Mistimed (atita-kala)-a fallacy which arises when that which should be stated first is stated afterwards.

(38)   Attribution of censure (upalambka)-imputation of defect to the reason adduced.

(39)   Avoidance of defeat (parihara) which occurs when the defect is corrected or amended, e.g. when the soul resides in the body, the signs of life are noticeable; but, when the soul leaves the body those signs are no longer noticed: hence the soul is distinct from the body.

(40)   Abandonment of a proposition (pratijna-kani)-which occurs when a disputant, being attacked, abandons the proposition first advanced by him, e.g. A person advances first a proposition, viz. the soul is eternal; and being attacked by an opponent. he abandons it saying, the soul is not eternal.

(41)   Admission (abhyanujna)-the acceptance by a person of what is attributed to him by his opponent, whether agreeable or disagreeable. e.g. A disputant says: "you are a thief."

His opponent replies: "you too are a thief."

The reply of the opponent is an admission.

(42)   Shifting the reason (hetvantara)-which occurs when one instead of advancing the proper reason adduces a different one.

(43)   Shifting the topic (arthantara), e.g. A person cites the symptoms of gonorrhoea while he was to have cited those of fever.

(44)   A point of defeat or an occasion for rebuke (nigrahasthana)-which occurs when a disputant suffers defeat at the hands of his opponent. It consists in the disputant misapprehending, or being unable to apprehend, something repeated thrice in an assembly the members whereof have apprehended it. It may also occur when one censures that which is not censurable or abstains from censuring that which is censurable.

Origins

The Sanskrit word for discussion or debate is katha or vada. There was a long and time-honored tradition in ancient India according to which philosophers, thinkers, or religious teachers used to meet each other in order to debate a controversial issue, about which the two sides held opposite views. In this respect, the situation in India resembled to some extent the Greek situation during the time of Socrates, Plato, and Aristotle. One need not belabor this point of resemblance, for perhaps it was just a historical accident, and we must remember, too, that the subject matter for debate in India differed considerably from that in Greece. While the Greeks were primarily interested in moral and political issues, the Indian interest lay in such metaphysical questions as the distinction of the soul from the body, in the purpose of life and concern for the after-life, and only consequently also in moral issues.

As early as the Brhadaranyaka Upanisad (Chapter IV, Brahmana I), a pre-Buddhist text, it is reported that the philosopher King Janaka used not only to patronize debates between the sages and priests but also to participate in such debates. Women debaters, and by the same token women scholars and philosophers, were not unheard of at that time. It was Gargi, the woman scholar in Janaka's court, who debated with a certain Yajñavalkya, along with many others, and finally declared the latter to be the best among those scholars of Kuru and Pañcala who had assembled in Janaka's court on the occasion in question. Yajñavalkya, it seems, used to come to Janaka's court frequently. On one occasion, Janaka challenged Yajñavalkya with the question: "What is on your mind Yajñavalkya today? Do you want cattle as a gift? Or do you wish to participate in a philosophical discussion about subtle truths?" Yajñavalkya replied, "Both!"

Although debate was popular at the time of the Upanisads, we still did not have a theory of the structure and variety of debate. This came along later, in the sramana period, with the rise of the Buddha, the Mahavira Jina, and other ascetics or religious reformers (sramanas). Gradually "good" debates were separated from "bad" ones, much as the notion of a good argument from that of a wrong or an unacceptable one. By the third and second century BC, monks and priests were required to have a training in the art of conducting a successful debate. Several debate manuals were written in different sectarian schools. Instructions for learning the method of debate were also inserted, as separate chapters, in large texts within different schools. Unfortunately, the early debate manuals are not extant in Sanskrit. Part of the picture can be recovered from the Buddhist Chinese sources (see Tucci, 1929a, 1929b) as well as from Pali sources like the Kathavatthu. The Kathavatthu, though written much later, is supposed to be a report of the Buddhist Council, supposedly held around 255 BC but according to the latest research, perhaps as much as one hundred years later. It records various topics for debate which a Buddhist monk may undertake, as well as various types of argument. It also discusses how they are resolved. In this text we find examples of actual debate, how they were conducted and the strictly defined rules that guided them. From an analysis of such

actual cases of debates, we can discover the underlying logical theory on which they were based. It is, therefore, worthwhile dealing with the theory and structure of a debate as it was presented in this and other standard texts.

Debate : A Preferred Form of Rationality A passage from the Milinda-pañho (1962, 2.6), which relates a conversation between the Greek king Menander and the Buddhist monk Nagasena, is worth quoting in this connection (Menander, incidentally, is supposed to have ruled over the Punjab and the adjoining areas of what used to be called the Indus Valley). At the invitation to debate with the king, the monk Nagasena supposedly said that he would debate with the king with the proviso that it was a debate for the wise, and not a debate for the king. On being asked to specify this distinction further, Nagasena said:

When scholars debate, your Majesty, there is summing up and unravelling of a theory, convincing and conceding, there is also defeat, and yet the scholars do not get angry at all.

When the Kings debate, your Majesty, they state their thesis, and if anyone differs from them, they order him punished, saying "Inflict punishment upon him."

Despite the touch of levity, reminiscent of the Queen of Heart's "Off with her head!" in Lewis Carroll's Alice in Wonderland, it is significant to note what these lines reveal to us. They reveal a world where scholars used to enter into a debate that was controlled by strictly defined rules and where defeat or victory was decided, and such a decision was reached on the basis of the well-defined principles of argument. J. Bochenski, in his History of Formal Logic, commented that the situation was "not unlike that which we meet in Plato" (1961: 421). One may have reservations about this urge to note similarities with the Greek situation, but it is useful to record in detail the rules and categories that define the parameters of the ancient Indian debates, because of the contributions they made to the development of logical thinking in India. Human rationality may not be globally definable, for it takes a contextual character in different traditions, as well as in different contexts of other types. But there seems to be a universal trait that we recognize (even if we are unable to articulate it) in different rational arguments and

decisions. By virtue of this trait, we are able to recognize a rational argument as rational. Some say today that, even if rationality is "marginally context-neutral," it is philosophically more interesting to see how far and to what extent it is context-dependent or whether it is totally so. However, though the context-dependence of certain basic ideas such as rationality is worth exploring, their context transcendent character is equally so. We might end up in a narrow relativistic view of the world, if we ignore completely the context-transcendent aspect of such basic ideas.

Rationality can be used or abused. Clever and disputatious persons can always try to win a debate using clever tricks thereby confounding the audience and the opponent. All debate manuals in India provided an elaborate list of such tricks, to help the programme of training the novices so that they would be able to identify and rebut such tricky arguments when advanced by their opponents. In this way a theory of logical adequacy or acceptability was developed in order to separate the tricky arguments from the good ones.

1   Check your Progress

1.   Explain anvikshiki as a method of debate

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5.9 NYAYASUTRA: THE METHOD OF GOOD DEBATE

There is a close affinity between Caraka's section on debate and the Nyayasutra version of the same. There are also certain post-canonical Buddhist debate-manuals available to us from the Chinese sources (see Tucci, 1929a, 1929b) which reflect similar theories and style. It is difficult to determine which are earlier strata and which are later. For not only is their authorship still in doubt but also it was the practice of the compilers to copy verbatim earlier fragments or texts. In any case, the Nyayasutra presents a more systematic and perhaps an improved version, and a discussion of it will be fruitful from the point of view of our study of logical theories.

The term for philosophical debate in the Nyaya school was katha (literally "speech" or "discourse"). Vatsyayana* uses the term in the beginning of his commentary on Nyayasutra 1.2.1. The Nyayasutra mentions three kinds of debate: vada, jalpa, and vitanda. Uddyotakara (Vatsyayana's commentator) explains that this threefold classification is dependent upon the nature of the disputants. The first variety is between a proponent and his teacher or somebody with a similar status. The other two are between those who want victory. Thus by implication the goal of the first is establishment of truth or an accepted doctrine, that of the other two is victory. The first corresponds to Caraka's friendly or congenial debate, and the other two to his hostile debate.

Nyayasutra 1.2.1 states that vada, the good or honest debate, is constituted by the following characteristics:

(1)   Establishment (of the thesis) and refutation (of the counter-thesis) should be based upon adequate evidence or means for knowledge (pramana) as well as upon (proper) "hypothetical" or "indirect" reasoning (tarka).

(2)   The conclusion should not entail contradiction with any tenet or accepted doctrine (siddhanta).

(3)   Each side should use the well-known five steps of the demonstration of an argument explicitly.

(4)   They should clearly recognize a thesis to be defended and a counter thesis to be refuted.

The last characteristic is logically very interesting. For it led to the formulation of the rule for contradiction. Vatsyayana explains that when the mutually-incompatible attributes are ascribed to an identical subject-locus, and they are ascribed with reference to the same point of time, and when neither of them are deemed certain or established, then and then only a contradiction arises. Uddyotakara illustrates the point of such a rule of contradiction by citing some examples not counter to it:

(1)   "The soul is permanent and the cognitive event is impermanent." No contradiction, for permanence and impermanence are not attributed to the same subject-event.

(2)   "This substance (a chariot) moves now, and it was not moving a little while ago." No contradiction, for motion and rest are not attributed to the substance at the same time.

The five-step argument-schema has already been referred to in 1.2, and in connection with Caraka. The second characteristic here ensures that well-known and accepted doctrines are not upset or rejected by this type of debate where we try to discover truth. The very first characteristic underlines the commitment of this type of debate to rational procedure. Both pramana and tarka are technical terms elaborately explained elsewhere in the Nyaya* system. Four well-known pramanas or means of knowledge are recognized there: Perception, Inference, Comparison, and Testimony. Tarka, which I have tentatively translated as "indirect reasoning," has been rather ambiguously explained in Nyayasutra 1.1.40. From the elaborate comments of Vatsyayana and Uddyotakara, it transpires, as explained elsewhere that it is a reasoning based only upon some a priori principle, or what comes closest in the Indian tradition to something a priori. For it is repeatedly warned by both the above authors that this reasoning cannot deliver a conclusion that would constitute a piece of empirical knowledge. In their technical vocabulary, the claim is that tarka is not a pramana, but it lends essential support to a pramana. Later logicians formulate the tarka as a reductio:

If A were not B then A would not have been C. But it is absurd to conceive A as not-C (for it is inconsistent with our standard beliefs or rational activity). Hence, A is B.

Here we have the same interplay in the conditional as before: we deny the antecedent by denying the consequent. On the other hand, tarka had a close affinity also with the so-called prasanga type of argument which Nagarjuna championed in the Buddhist parlance, and after which a sub-school of the Madhyamika Buddhists, Prasangika, was named. The later Naiyayikas, such as Udayana, used such arguments to lend support to the inductive generalization employed in the kind of inferential reasoning. According to Udayana, a lingering and nagging doubt about the truth of a general statement can be set at rest with the help of such an hypothetical reasoning.

One question arose in connection with this good debate (vada). Since here no party is looking to humiliate the opponent, would there be any clincher or defeat-situation (nigrahasthana). We may recall, however, what Nagasena told King Milinda: in a good debate there could be defeat or censure or clincher but no animosity. For a debate should technically always end in a clincher. The solution to this is easily given. Nyayasutra 5.2.32 informs us that in this type of debate the detection of faulty reason or pseudo-reason (hetvabhasa*) would be the proper clincher. Thus, faith in logical argument is re-asserted here. Nobody should win using a pseudo-reason.

Besides, technically two or three other clinchers or censures can be relevant in the vada debate. Since it is required that the five-step argument be used, two kinds of censure may occur: (1) hina, "insufficient," if less than five steps be used, and (2) adhika, "redundant," if more than five steps were used. Uddyotakara says that even apasiddhanta, "accepting of a false tenet or doctrine," may arise in this debate as a clincher, for one of the four characteristics mentioned above emphasizes that there should not be any contradiction of an accepted tenet. The debater cannot without censure embrace any false doctrine. The Nyaya list of clinchers in debate will be further elaborated below and in 3.5.

We may note that, in the Buddhist tradition, Vasubandhu, in a manual for debate, defined the vada debate as a discourse (vacana) which is conducted for the sake of establishing one's own thesis and refuting (disestablishing) the opponent's (contrary) thesis. Vasubandhu's text is not available to us. However, Uddyotakara (1915: 150-151) quotes him and tries to find fault with his definition in every possible way. Uddyotakara excels in such policies, although his discussion of this point is not philosophically interesting. Hence we will omit it here.

5.9.1 Nyayasutra: The Method Of Bad Debate

Jalpa, the second type of debate, is defined in Nyayasutra 1.2.2 as a debate where, among the stated characteristics of the first type of debate, only such characteristics as would seem appropriate would be applicable, and in addition, the debater can use, for the establishment of his own

position and for the refutation of the opponent's thesis, such means as (1) quibbling (chala), (2) illegitimate rejoinders (jati) and (3) any kind of clincher (nigrahasthana). Three kinds of quibbling are listed, twenty-four kinds of illegitimate rejoinders and twenty-two kinds of clinchers (compare Nyayasutra 1.2.11-14, 5.1.1-39, 5.2.1-25). The full lists will be examined in the next chapter; here follows a brief description of how they are used in bad debate.

It has been indicated that this debate has victory as its goal. Hence the debater may indulge in all sorts of tricks to outwit the opponent. However, he runs the risk of being censured and defeated by clinchers if the opponent can catch him at his own game. Quibbling is based upon equivocation. One kind (vak-chala) is illustrated by the use of a homonym:

One says: The boy has a nava (= new) blanket.

The quibbler says: No, the boy does not have nava (= nine) blankets, only one.

The word "nava" in Sanskrit has two meanings: (1) new, and (2) nine. Obviously the quibbler's reply can be refuted. As Vatsyayana says, either the quibbler does not understand the proper meaning of the uttered sentence, in which case he is defeated because of lack of comprehension, or he understands it, in which case he does not refute the thesis. For "x is not B" is not a refutation of "x is A."

The second type of quibbling (samanya-chala) is by stretching the meaning of a word in its very general sense while actually it has been used in a particular or specific sense:

One says: He is a brahmin, possessed of scriptural knowledge.

Reply: No. For some (fallen) brahmins do not possess scriptural knowledge.

Here the opponent wrongly construes the first statement as asserting brahminhood as the ground for possession of scriptural knowledge and hence refutes it by citing the cases of fallen brahmins. The debater uses the word "Brahmin" to refer to a particular brahmin where the connection between brahminhood and scriptural knowledge holds good. The opponent quibbles and protests that the connection is not universally valid, for there are counter examples, for example, vratyas or fallen

brahmins. The third type of quibbling (upacara*-chala) is based upon the conflation of an ordinary use of a word with its metaphorical use:

One says: The cradle cries.

The quibbler says: No. The cradle cannot cry, for it is an inanimate object.

Here, according to the Sanskrit idiom, the word "cradle" can be metaphorically used to refer to the baby in the cradle. Similarly, the word "manca," which means a platform, can metaphorically refer to the people or speakers on the platform. The opponent obviously takes it literally in order to quibble. He can

easily be defeated as explained above.

Nyayasutras 1.2.15-16 raise an objection based upon the apparent lack of distinction between the first and the third type. For in both cases, unlike the second type, one object is the intended meaning ("new" and "the baby") while another object ("nine" and 'the cradle") is imputed as its meaning. The answer is right given by pointing out an essential difference between the two. In the first, the properties are considered as the subject of refutation (newness versus the property of being nine) while in the third, the subject-locations dharmin are so considered (the cradle versus the baby). Hence it is argued here that this is not a distinction without a difference.

An illegitimate rejoinder (jati) is based upon what we may call false parity of reasoning. The rejoinder is made usually with the help of a false analogy, based upon superficial similarity. A logically sound argument is one which illustrates an inference of a property (s) from the presence of another (h) in a particular subject-locus (p). However, the Indian logicians invariably demand that a relevant example must be cited to show that the logical connection between what we infer (s) and that by which we infer (h) is a genuine, not a superficial one. The example and the subject-locus of inference both are said to have shared characteristics, for example, to resemble each other in respect of containing the property, h, by which we infer the presence of what is inferred, s, in that locus. Here the possibility was open for a number of illegitimate rejoinders, where the disputant cites a spurious example in support of his counter-thesis an example that has only superficial resemblance with the subject-

locus in illustrating only an accidental connection between what we infer, s, and that by which we infer, h. Identification of several types of such accidental connection (which do not legitimatize inference, or victory in debate) led to the search for the exact nature of the logical, by which I mean simply "inference-warranting," connection. This "inference warranting" connection was called vyapti, pratibandha, or niyama, terms which have been translated as "pervasion," "concomitance," or "invariance" in modern writings. The study of the futile rejoinders in debate thus led to a gradual unfolding the nature of this logical connection.

One example of a futile rejoinder will make the above point clear:

The proponent says: Sound is impermanent because it is a product, such as a pot. The opponent rejoins: If by sharing one property of the pot, product-hood, sound shares impermanence, another property of the pot, then by sharing one property of the sky (or space), for example, invisibility (a-murtatva = "to be something that we can neither see nor touch"), sound would share permanence, another property of the sky (or space).

Nyayasutra 5.1.2 describes this rejoinder, and the next sutra, 5.1.3, exposes its futility as a proper rejoinder to the argument:

Just as cowhood (as a reason) establishes the cow, that (impermanence of sound) is also established (by the universality of the connection of impermanence with product-hood).

This translation (and interpretation) of Nyayasutra 5.1.3 leaves no doubt about the awareness of the need for the universality of the relation between what we infer (s) and by which we infer (h). Although the word for "universality" is not found in the sutra, the example of cowhood makes it clear that the logical or inference-warranting relation must be a universal one. Just as all cows have cowhood, all cases of producthood have impermanence. Hence rejoinders based upon mere (non-universal) analogy are bound to be wrong. This refutes, in my view, the rather pervasive opinion of modern writers on Indian logic that awareness of the need for a universal relation for making a correct or sound inference was not present at the time of the compilation of the Nyayasutra but appeared only later, with Dinnaga. Dinnaga was no doubt one of the

finest logicians of India, and we owe to him a great deal as far as formulation of the universal concomitance relation and other logical theories is concerned. However, the pre-Dinnaga writers had enough sense to understand and underline what constituted a sound inference.

The third items in a bad debate are called the clinchers or "checks" in a debate situation. One type of clincher (the complete list will be supplied in 3.5) is contradicting the thesis (Nyayasutra 5.2.4). It is defined as a case where the reason adduced contradicts the thesis. Uddyotakara exemplifies it thus: The substance is distinct from its quality for the two are not apprehended as distinct.

The substance is distinct from its quality for they are non-distinct.

Uddyotakara says that there are other varieties of this clincher. For example, it will arise when the predicate contradicts the subject: "She who is a nun is also pregnant." The idea is that the meaning of "nun" includes complete abstinence from sexual intercourse, and pregnancy will be contradictory to somebody's being a nun.

In a bad debate one pertinent question is often raised as follows: why should a debater resort to such means as quibbling and illegitimate rejoinder? For if he finds that the opponent's reason is flawed, he should presumably uncover the flaw itself, supposedly by identifying it as a pseudo-reason. If, however, the opponent's reason is flawless, the debater would not gain anything by using a futile rejoinder. By using such illegitimate means he only makes himself vulnerable to defeat. Thus no debater in their right mind would make use of such false means. The question is as old as the Nyayasutra itself. Sutra 4.2.50 answers it in a cryptic manner:

Jalpa and vitanda (the two types of bad debate) are meant for preserving the true view (truth), just as the thorns and branches are used for the protection of the (tender) sprout of the seed.

The idea is that a novice may not yet be properly skilled in debate. If he enters into a debate, he may not remember the proper reason at the right time to support his thesis. In such a crisis, he may get away with such tricky debate. In any case, if the opponent is not quick witted, the (novice) debater may gain some time to think of the proper reason. Thus,

he may even win the debate and the sprout of his knowledge would be protected.

However, this was not altogether acceptable, and Uddyotakara found a better answer to the quandary. Why should people who care for establishing truth waste time in learning these tricks to outwit the opponent? Uddyotakara says, in the beginning of his commentary on chapter 5 of the Nyayasutra, that it is always useful to learn about these bad tricks, for at least one should try to avoid them in one's own debate and identify them in the opponent's presentation in order to defeat him. Besides, when faced with sure defeat, one may use a trick, and if the opponent by chance is confused by the trick, the debater will at least have the satisfaction of creating a doubt instead of courting sure defeat. This last point, was, however, a very weak defence, as Dharmakirti elaborately pointed out in his book on debate, the Vadanyaya (Dharmakirti, 1972).

5.9.2 The Third Type Of Debate And The Sceptics

The third debate mentioned in the Nyayasutra is called vitanda, which has sometimes been translated as wrangling. This may not always be a fair translation. Nyayasutra 1.2.3 defines it as a debate where no counter-thesis is established. In other words, the debater here tries to ensure victory simply by refuting the thesis put forward by the other side. Elsewhere, I have called it "refutation only" debate (1985, 1.2). It is sometimes claimed to be a type of bad debate, for the only goal is victory, as in the second type, and the use of such trickery as quibbling and illegitimate rejoinder is allowed.

Philosophers from Vatsyayana onwards argued that this third type of debate is not only unfair but also that it is impossible to conduct rationally. For the debater cannot simply get away with his destructive strategy and not defend, or even formulate his own position. For, as Vatsyayana insists, the debater, by refuting the opponent's thesis, p, must be forced to accept the opposite thesis, not-p, and should then be asked to defend it by citing a reason. If he concedes, he gives up his original stance as a "refutative debater" (= vaitandika). If he does not concede

not-p, his rationality is to be called in question, and the debate can be brought to a close without allowing victory to the "refutative debater."

The above position is arguably sound, for one could interpret destructive debate in this way. There were skeptics in every tradition, and Vatsyayana's argument can be interpreted as exposing the irrationality of skepticism. There was indeed a skeptical tradition in India, as e argued elsewhere (Matilal, 1986). Jayarasi, and perhaps Sañjaya in earlier days, were its principal exponents. Of course, thousands of texts were lost, and many opponents of the established schools survive only in name and often in anonymous citations. Skepticism was not a well-defined theory, though the sceptical method was used unabashedly by other philosophers who held a non-dual view of reality.

Skepticism, in order to be a sustainable philosophical position, needs (1) to be combined with a notion of refutation which is non-committal, that is, does not imply affirmation of the opposite thesis, and (2) a plausible answer to the charge of irrationality or inconsistency. A commitment-less refutation is possible, I would argue, if it is held to be something close to the notion of illocutionary negation, as developed by J. Searle in his "speech-act" theory. Thus the debater can stick to his "refutation only" of the opponent's thesis, p, without conceding, even by implication, the counter thesis, not-p. An illocutionary negation usually negates the act or the illocutionary force, whereas a propositional negation would leave the illocutionary force unchanged, for the result would be another proposition, a negative one, which is asserted just as was the affirmative one. For example, Sañjaya, being asked about after-life, said: "I do not say there is an after-life." We may represent this (in the manner of Searle, 1969: 32-3) as:

(x is F)

(read: "it is not a theorem that there is an F," or "it is not asserted that there is an F"). The propositional negation of the positive thesis is, by contrast, "There is no after-life," which can be represented as:

(x is F)

("it is asserted that there is no F"). Sañjaya said in the same breath both:

(a) I do not say there is an after-life, and

(b) I do not say there is no after-life,

and the charge was that he contradicted himself. However, Sañjaya claimed that he did not contradict himself but only wanted simply to avoid making a false knowledge-claim. He did not want to say that he knew while he did not. Note that the two claims are not in fact contradictory, as the following symbolic representation shows:

(a)

(b)

The notion of illocutionary negation in speech-act theory fits well here with the context of debate.

We may note here that the fourfold (catuskoti) negation of another "skeptic/vaitandika," the Buddhist Madhyamika, Nagarjuna (circa 100 AD), can be explained in the same way, to show that it too does not violate the law of contradiction. It is best to start with the first verse of Madhyamakakarika, where the Nagarjuna says "no" to four interrelated questions, and then ask ourselves whether the joint refutation of these four propositions or theses landed Nagarjuna into a blatant logical contradiction. The four questions are:

A. Does a thing or being come out itself? No.

B. Does it come out of the other? No.

C. Does it come out of both, itself and the other? No.

D. Does it come out of neither? No.

Using ".... causes" as a two-place predicate to stand for "... comes out of", we may re-write the question, together with its rejection, thus:

A'   (x cause x)

B'   (y causes x. x ≠ y)

C'   (x causes x. (y. causes x. x ≠ y)

D'   (x causes x) . (y causes x. x ≠ y)1

Alternatively, we may write them as follows. Let "S" = "I say that," and "Cxy" = "x causes y." Then we have the new formulations:

A' - S (Caa),

B' - S (Cba · b ≠ a)

C' - S (Caa · (Cba · b ≠ a))

D' - S (Caa · (Cba · b ≠ a))

This formulation shows clearly that A and B are not contradictories, for it is possible for something to be caused partly by itself and partly by

another. Hence C is a possibility. However if we reject all three A, B and C, have we exhausted all possibilities concerning the causal origin of a thing? If we have, D is then to be construed as the rejection of production or causation itself. For "Does it come out of neither?" can be rephrased as "Does it not come out at all?" or "Is it not produced at all?". Nagarjuna, however, says that he rejects this too, that is, says "no" to D also.

2.   CHECK YOUR PROGRESS

1. Vada, the good or honest debate, is constituted by the following characteristics:

_____

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5.10   LETS SUM UP

Anviksiki, treated of two subjects, viz. the soul and the theory of reasons. In so far as it was mainly concerned with the soul, Anviksiki was developed into Philosophy called Darsana and in so far as it dealt largely with the theory of reasons it was developed into Logic called pre-eminently the Anviksiki or Anviksiki par excellence. Nyaya , Buddhist and Jains developed their own systems in the sense of methods of debate. These methodologies were purely to gain knowledge about truth. NO doubt there were other weak methods of debates also.

5.11   KEY WORDS

Anviksiki, Critical analysis

vada, Genuine method of debate, the purpose of which is to arrive at truth

vitanda, : Skeptical method which points out logical loopholes in opposition without presenting one's position

Vatsyayan, : Commentator of Nyaya Sutra

Vasubandhu, 4th Century Buddhist logician

Uddyotkara, Nyaya logicians

5.12   QUESTIONS FOR REVIEW

1. How did the Buddhist develop their method of debate

2. Discuss the nyaya method of vada

3. Examine the jain approach of vada

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5.14 ANSWER TO CHECK YOUR PROGRESS- 1

1. Answer to **Check your Progress- 1**

- Anviksiki, in virtue of the theory of reason predominating it was called Hetu-sastra or Hetu-vidya, the science of reasoning, as is evident from the Manusamhita, Mahabharata, etc.

- It was also called Tarka-vidya, the art of debate, or Vada-vidya, the art of discussion, inasmuch as it dealt with rules for carrying on disputations in learned assemblies called parisad.

2. **Answer to Check your Progress**

(1) Establishment (of the thesis) and refutation (of the counter-thesis) should be based upon adequate evidence or means for knowledge (pramana) as well as upon (proper) "hypothetical" or "indirect" reasoning (tarka).

(2) The conclusion should not entail contradiction with any tenet or accepted doctrine (siddhanta).

(3) Each side should use the well-known five steps of the demonstration of an argument explicitly.

(4) They should clearly recognize a thesis to be defended and a counter thesis to be refuted.

The last characteristic is logically very interesting. For it led to the formulation of the rule for contradiction. Vatsyayana explains that when the mutually-incompatible attributes are ascribed to an identical subject-locus, and they are ascribed with reference to the same point of time, and when neither of them are deemed certain or established, then and then only a contradiction arises.

UNIT -6 DEFINITION OF ANUMANA: NYAYA AND BUDDHIST PERSPECTIVES

STRUCTURE

6.0 OBJECTIVES

- Definition of anumana according to nyaya
- Definition of anumana according to Buddhism

6.1 INTRODUCTION

Anumana literally means such knowledge as follows some other knowledge. It is the knowledge of an object due to a previous knowledge of some sign or mark (lingo) The previous knowledge is the knowledge of the linga or mark as having a universal relation with the sadhya or major term and as being present in the paksa or minor term. Hence anumana has been defined in the Nyaya system as the knowledge of an

object, not by direct observation, but by means of the knowledge of a linga or sign and that of its universal relation (vyapti) with the inferred object.

The object of inference is some fact which follows from some other fact because of a universal relation between the two. With regard to something of our experience we want to know by means of anumana that which may not be perceived but is indicated by what is perceived in it. Anumana as a pramana is therefore the source of our knowing through the medium of a sign or mark that a thing has a certain character. It leads to the knowledge of a thing as possessing a character, say fire, because of its having another character, smoke, which we apprehend and which we know to be always connected with it. Thus in anumana we arrive at the knowledge of an object through the medium of two acts of knowledge or propositions.

6.2   ANUMAN AS METHOD OF TRUTH

All systems of Indian philosophy agree in holding that anumana is a process of arriving at truth not by direct observation but by means of the knowledge of vyapti or a universal relation between two things. The Nyaya view is stated already. According to the Vaisesikas, anumana is the knowledge derived from the perception of a linga or sign which is uniformly connected with something else, such as cause, effect, co-effects and correlative terms. The Buddhists take anumana to consist in the perception of that which is known to be inseparably connected with another thing. Such inseparable connection between two things is due either to the law of causality or the principle of essential identity (tadutpatti and tadatmya). So also the Jainas hold that anumana is the method of knowing an unperceived object through the perception of a sign and the recollection of its invariable concomitance with that object. The Sanhkhya and the Yoga, the Mimamsa and the Vedanta system too define anumana as the knowledge of one term of a relation, which is not perceived, through the knowledge of the other term which is perceived and is explicitly understood as invariably related to the first term. In anumana what is perceived leads us on to the knowledge of what is

inferred through the knowledge of a universal relation (vyapti) between the two.

1. Check your Progress

1. Define Anuman

_____

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6.3 DISTINCTION BETWEEN PERCEPTION AND INFERENCE

Perception and inference are equally valid methods of human knowledge (pramana). But while perception is independent of any previous knowledge, inference depends on previous perception. Inference is sometimes defined as knowledge which is preceded by perception. It depends on perception for the knowledge of the linga or the middle term as subsisting in the paksa or the minor term. It depends on perception also for the knowledge of vyapti or the universal relation between the middle and major terms of inference. It is only when we have observed two things to be always related that from the perception of the one we infer the existence of the other. Thus inference is knowledge derived from some other knowledge, while perception is not derived from any other knowledge. That is, inference is mediate and perception immediate knowledge of an object.

All perception is essentially of one kind, namely, that it is a knowledge of what is given. But there are different kinds of inferences based on different kinds of vyapti or universal relation. Perception is generally due to some contact of our sense-organs with the objects perceived by us. It gives us knowledge of only those objects which lie within the range of the senses. Hence it is limited to the here and the now, i.e. to present objects. Inference, on the other hand is due to the knowledge of vyapti or universal relations among objects. It is by means of such universal principles that inference gives us a knowledge of objects beyond the reach of our senses. It extends our knowledge from the present to the past, distant and future. Ordinarily we perceive objects that are in actual contact with our senses, but we infer those that are not open to sense perception. Perception usually excludes inference but not vice versa.

What is perceived or directly known does not ordinarily require to be known indirectly by means of inference. Inference functions with regard to neither what is absolutely unknown nor what is definitely known. It relates to objects that are doubtful, i.e. objects which we have reasons to believe in, but which are not yet established facts. Hence inferences generally require confirmation by means of perception.

2.Check Your Progress- 1

Perception and inference are equally valid methods of human knowledge (pramana).

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6.4.   THE CONSTITUENTS OF INFERENCE

Prom the definition of inference (anumana) it will appear that there must not be less than three propositions and more than three terms in any inference. In inference we arrive at the knowledge of some unperceived character of a thing through the knowledge of some linga or sign in it and that of vyapti or a universal relation between the sign and the inferred character. There is first the knowledge of what is called the linga or mark in relation to the paksa or the subject of inference. This is generally a perceptual judgment relating the linga or middle term with the paksa or minor term of inference (lingadarsana), as when I see that the hill is smoky, and infer that it is fiery. It is a proposition in which the linga is predicated of the paksa and thus corresponds to the minor premise of a syllogism. Secondly, inference requires the knowledge of vyapti or a universal relation between the linga and the sadhya, or the middle and major terms. This knowledge of the linga or middle term as always related to the sadhya or major term is the result of our previous experience of their relation to each other. Hence it is a memory-judgment in which we think of the linga as invariably connected with the sadhya (vyaptismarana), e.g. 'all smoky objects are fiery.' Thirdly, we have the inferential knowledge (anumiti) as resulting from the previous knowledge of the linga and that of its universal relation (vyapti) with the

sadhya. It is a proposition which relates the paksa or minor term with the sadhya or major term, e.g. 'the hill is fiery.' The inferential cognition (anumiti) is a proposition which follows from the first two propositions and so corresponds to the conclusion of the syllogism.

Corresponding to the minor, major and middle terms of the syllogism, inference in Indian logic contains three terms, namely, paksa, sadhya and hetu. The paksa is the subject under consideration in the course of the inferential reasoning. Every inference proceeds with regard to some individual or class of individuals about which we want to prove something. Hence the paksa is that individual or class about which we want to establish something or predicate an attribute which is suspected but not definitely known to be present in it. That which possesses the inferable character is called paksa or minor term of inference, e.g. 'the hill' when we want to prove that it is fiery. In relation to the paksa or minor term in any inference, a sapaksa or homogeneous instance is that which is decisively proved to be related to the inferable character, e.g. 'the hearth' in relation to 'the hill.' Contrariwise, a vipaksa or heterogeneous instance is that which is definitely known to be characterised by the absence of the inferable character, e.g. 'water' as marked by the absence of 'fire.'

While the paksa is the subject, the sadhya is the object of inference. It is that which we want to know or prove by means of any inference. The sadhya is that character of the paksa or minor term which is not perceived by us, but indicated by some sign present in it. In short, it is the inferable character of the minor term and thus corresponds roughly to the major term of the syllogism. It is that character which is predicated of the minor term in the resulting inferential knowledge or the conclusion of the syllogism.

With regard to the exact nature of the sadhya there is some difference of opinion among the different systems of Indian philosophy. According to the Advaita Vedanta, what is inferred is the unperceived character of the subject or minor term of inference. In the inferential knowledge that 'the hill is fiery,' it is 'the fire' that is inferred and not 'the hill' which is but perceived. The Buddhists contend that 'the fire' cannot be the object of inference from smoke. We know it just when we know the smoke as related to fire. So there remains nothing more to be inferred. Nor do we

infer the relation between 'the fire' and the hill. We cannot speak of a relation unless there are two things to be related. But in inference we have only one thing, namely, the hill, since the fire is not perceived. The hill being perceived cannot be said to be the object of inference. What is therefore inferred is 'the hill as possessed of fire.' The Mimamsakas also hold that what we infer is the subject or minor term as related to the predicate or the major term. The Naiyayikas however maintain that the object of inference may be different in different cases. What is inferred may be either the subject or minor term as related to the major terra, or the major term as related to the minor, or the middle term taken as a particular individual and related to the major term. When we perceive smoke in a hill, what we know by inference is either 'the hill as related to fire,' or 'fire as related to the hill,' But when the site of the smoke cannot be perceived, what we infer is that the perceived individual smoke is related to fire.

The third term of inference is called the linga or sign because it serves to indicate that which we do not perceive. It is also called the hetu or sadhana in so far as it is the ground of our knowledge of the sadhya or what is inferred. Like the middle term of a syllogism, it must occur at least twice in the course of an inference. It is found once in relation to the paksa or minor term and then in relation to the sadhya or the major term. It is through a universal relation between the hehu and the sadhya, or the middle and major terms that the paksa or minor terra, which is related to the middle, becomes connected with the sadhya or major term. That is, the paksa is related to the sadhya through their common relation to the hetu or middle term. There are five characteristics of the middle term. "The first is paksadharmata, or its being a character of the paksa. The middle term must be related to the minor term, e.g. the hill is smoky (S is M). The second is sapaksasattva or its presence in all homogeneous instances in which the major exists. The middle must be distributively related to the major, e.g. all smoky objects are fiery (M is P). The third is vipaksdsattoa, or its absence in all heterogeneous instances in which the major is absent, e.g. whatever is not fiery is not smoky (No not-P is M). The fourth is Abadhitavisayaiva, or the uncontradictedness of its object. The middle term must not aim at establishing such absurd and contradictory objects as the coolness of fire or the squareness of a circle.

The fifth character of the middle is asatpratipaksatva, or the absence of counteracting reasons leading to a contradictory conclusion. These five characteristics, or at least four of them, must be found in the middle term of a valid inference. If not, there will be fallacies. We shall have to consider these points more fully later on.

6.5 THE GROUNDS OF INFERENCE

6.5.1 . The Logical Ground Of Vyapti Or Universal Relation

In inference our knowledge of the sadhya or major term as related to the pahsa or minor term depends on the knowledge of vyapti between the middle and major terms. It is on the ground of vyapti or a universal relation that the middle term leads to the knowledge of the inferred object vyaptibalenarthagamakani lingam). Every inference is thus logically dependent on the knowledge of vyapti. Hence the questions that we have to consider here are: (i) What is vyapti ? and (ii) how is it known?

With regard to the first question we have to say that vyapti literally means the state of pervasion or permeation. It thus implies a correlation between two facts, of which one is pervaded (vyapya) and the other pervades (vyapaka). A fact is said to pervade another when it always accompanies the other. Contrariwise, a fact is said to be pervaded by another when it is always accompanied by the other. It follows from this that the vyapaka or the pervader is present in all the places in which the vyapya or the pervaded is present. In this sense smoke is pervaded by fire, since all smoky objects are also fiery. But while all smoky objects are fiery, all fiery objects are not smoky, e.g. the red-hot iron ball. Similarly, all men are mortal, but all mortals are not men, e.g. birds and beasts. A vyapti between terms of unequal extension, such as smoke and fire, men and mortals, is called asamavyapti or visamavyapti. It is a relation of non-equipollent concomitance between two terms, from one of which we may infer the other, but not vice versa. Thus we may infer fire from smoke, but not smoke from fire. As distinguished from this, a

vyapti between two terms of equal extension is called samavyapti or equipollent concomitance. Here the vyapti holds between two terms which are co-extensive, so that we may infer either of them from the other. Thus there is a samavyapti between cause and effect, substance and attribute. We may infer the cause from the effect, the substance from the attribute, or vice versa. Thus whatever is produced is non-eternal, and whatever is non-eternal is produced.

It will appear from the above that visamavyapti is a universal proposition, of which only the subject is distributed, i.e. taken in its entire extension. A samavyapti, on the other hand, is a universal proposition which distributes both the subject and the predicate. They would thus correspond respectively to the universal affirmative and universal negative propositions in Western logic. It is to be noted however that there are some universal affirmative propositions which distribute both their subject and predicate. Thus 'whatever is produced is non-eternal,' 'men are rational animals' are cases of samavyapti or universal affirmative propositions in which both the subject and the predicate are distributed.

For any inference the minimum condition is some kind of, vyapti between the middle and major terms. It does not matter whether the vyapti is sama or visama, i.e. equipollent or non-equipollent. This satisfies the fundamental law of syllogistic inference that one of the premises must be universal. Now the vyapti between the middle and major terms means generally a relation of coexistence (sahacarya) between the two, e.g. wherever there is smoke there is fire. Every case of coexistence, however, is not a case of vyapti. Thus all the children of a certain father may be dark. But this does not mean that there is vyapti or a universal relation between a particular parentage and dark complexion. In many instances fire may coexist with smoke. Still there is no vyapti or universal relation between fire and smoke, since there may be fire without smoke. The reason is that in such cases the relation of coexistence is dependent on certain conditions (upadhi) other than the terms related. Thus the darkness of complexion is determined by certain physiological conditions, and the presence of smoke in fire is conditioned by moisture in the fuel. Hence we are to say that vyapti is that relation of coexistence between the middle and major terms which is

independent of all conditions (upadhi). It is an invariable and unconditional relation (niyata anaupadhika sambandha) of concomitance between the middle and major terms. This means that there is no exception to the relation of concomitance between the two, no instance in which the middle is present without the major. Hence vyapti as the logical condition of inference may be defined either positively or negatively. Positively speaking, vyapti is the uniform existence of the middle term in the same locus with the major term such that the major term is not absent in any locus in which the middle term exists. In the terminology of the Navya Nyaya, vyapti is such a relation of coexistence between the middle and major terms that the major is not a counter-entity to any negation abiding in the middle, i.e. it is none of those things which are absent in the middle term. Vyapti has been negatively defined as the nonexistence of the middle term in all the places in which the major term does not exist. That there is vyapti between the middle and major terms means that the middle (M) never is, if the major (P) is not. These two definitions of vyapti give us two universal propositions, one positive and the other negative, e.g. 'all cases of smoke are cases of fire,' and 'no case of not-fire is a case of smoke' (All M is P, and No Not-P is M). This means that the vyapti or universal proposition which is the ground of inference may be either affirmative (anavaya) or negative (vyatireka). Hence vyapti is said to be of two kinds, namely, anvaya or affirmative and vyatireka or negative. While in anvaya-vyapti or the universal affirmative proposition the middle term is vyapya or subject and the major is vyapaka or predicate, in vyatireka-vyapti or the universal negative proposition the contradictory of the vyapaka or predicate becomes vyapya or subject and the contradictory of the vyapya or subject becomes the vyapaka or predicate. Thus 'whatever is smoky is fiery,' or 'All Not-P' is an anvaya-vyapti, of which the corresponding vyatireka-vyapti will be 'whatever is not-fiery is not-smoky,' or 'Ail not-P is not-M.' The logical ground of inference then is vyapti in the sense of a universal proposition which may be either affirmative or negative.

So much for the definitions of vyapti or the universal relation between the middle and major terms of inference. The next question is: How is vyapti known? How do we pass from particular cases of the relation between smoke and fire to the universal proposition 'all cases of smoke

are cases of fire'? This is the problem of induction, which is not separately treated in Indian logic, but is made a part of the general theory of inference. Indian systems of philosophy take inference as a process of reasoning which is not only formally valid but also materially true. Hence in an inference of any kind the question arises: How do we get the universal proposition (vyapti), on which inference depends?

The Carvakas, who are radical empiricists, contend that all knowledge is limited to particulars. We cannot pass from the knowledge of particular cases of the relation between two objects to that of all possible cases. There is no successful method of generalisation from particulars. Perception, which is the only source of human knowledge, does not help us to establish a universal proposition. It is limited to present facts and cannot tell us anything about the past, distant and future. Hence from perception we know what is true of a thing or a limited number of things. That is, perception gives us particular, but no universal propositions. If perception cannot give us a knowledge of vyapti or universal proposition, inference and the other alleged sources of knowledge certainly cannot do so. All sources of knowledge except perception depend on vyapti or a universal relation between two things and cannot, therefore, be made the ground of our knowledge of it. To take them as such is to reason in a vicious circle.

The Buddhists meet the Carvaka contention in two ways. First, they point out that the Carvakas refutation of inference is itself a process of reasoning which, on their own admission, depends on some kind of vyapti. As such, it practically amounts to a refutation of their own position, namely, that no process of reasoning including inference is valid. As a matter of fact, the Carvakas employ the method of inference more than once in their philosophy.

For example, it is by means of inference that they can know that other people differ from them with regard to the question of inference, or that other sources of knowledge are as fallacious as inference, or that God, soul, etc., do not exist because they are not perceived.

Next the Buddhists proceed to show how vyapti or a universal proposition may be based on the principles of causality and essential identity (tadatmya and tadutpati). When two things are related as cause and effect, they are always and everywhere related to each other. There

can be no exception to their relation, since the cause cannot be separated from its effect, nor the effect from its cause. To say that there is no necessary relation between the cause and the effect, or that there may be an effect without its cause is not admissible, because such a hypothesis involves self-contradiction and makes life impossible. Hence we are to take the law of causality as a universal law. To determine whether the relation between two objects is causal or not we are to apply the test of pancakarani. According to it, there are five steps in the determination of a causal relation. First, the effect is not perceived before it is produced. This means that the effect is an event 'which appears after another phenomenon that is its cause. The causal phenomenon' is thus antecedent to the effect phenomenon. Secondly, the cause is perceived, i.e. there is a change in the existing order of things. Thirdly, the effect-phenomenon appears in immediate succession. Fourthly, the cause is made to disappear. Fifthly, the effect disappears in immediate succession.' The Buddhist method of determining the causal relation corresponds to Mill's method of difference in its double application. If, all other conditions remaining the same, the appearance of one phenomenon is immediately followed by that of another, and its disappearance is immediately followed by the disappearance of the other, then the two are related as cause and effect. When once we know them to be related as cause and effect, we may very well take them as universally related. Similarly, the principle of essential identity (tadatmya) is another ground on which we may base a universal proposition. A thing is always related to what is identical with it. Identity does not mean a mere repetition of the same thing, e.g. 'A is A.' Nor can there be any identity between things that are absolutely different, e.g. a horse and a cow. By identity we mean the relation between two different things that coexist in the same locus (samanadhhikaranyam). Thus there is identity between the genus and the species coming under it, or the class and the individuals included in it. A simsapas is identical with a tree, in so far as the two refer to the same object. From this we know that all simsapas are trees, since simsapas will cease to be simsapas if they are not trees Thus vyapti or a universal proposition is to be based on the necessary principles of causality and identity. Experience, or observation and non-observation cannot be the sure ground of generalisation. Empirical knowledge, however well

founded, can never be necessary and universal. There is an element of doubt and uncertainty in ail empirical generalisations. Causality and identity being the presuppositions of all experience are necessary and universal truths, to which ail sense experience must conform. Hence any generalisation based on either of these two principles is universally valid and not open to any doubt.

That Naiyayikas criticize and reject the Buddhist method of ascertaining vyapti on the following grounds. According to the Buddhists, vyapti or a universal relation between the middle and major terms is to be deduced from the relation of causality or identity between the two. This, however, is not true. There are many cases of vyapti or universal relation which is independent of the notions of causality and identity. Thus there is a universal relation of succession between day and night, or between the different seasons, or between sunset and the appearance of stars. Similarly, we find a universal relation of coexistence between a certain substance and its attributes, or between a certain colour and a certain taste. Here we have vyapti or a universal relation between terms which are neither cause and effect nor identical with one another, but from one of which we can validly infer the other. Further, the relation of identity between two things can hardly be treated as a ground of inference from the one to the other. If the two things be identical, then both must be equally perceived or inferred. The tree being identical with the simsapas, must be perceived just when we perceive the latter, and so need not be inferred. For the same reason, if we infer the tree from the simsapas and say all Simsapas are trees, we should be able to infer the simsapa, from the tree and say" all trees are simsapas. The two things being identical, we should be able to infer either of them from the other. Nor again does the abstract principle of causality help us to draw inferences in particular cases. Granting that there is a universal and an unconditional relation between the cause and effect, it is extremely difficult for us to determine whether the relation between two particular things is causal or not. The test of pancakarani recommended by the Buddhists is not an absolute guarantee for there being a causal relation between two things. That test applies when all the conditions of a certain relation remain the same. But it is only with regard to the known or the perceptible conditions that we may be sure whether they remain the same or not. With regard to the

imperceptible conditions we cannot be absolutely certain that no change in these corresponds to a change in the relation between two things. Thus in the relation of fire to smoke it is just possible that au invisible agent (pisaca) always intervenes between the two and produces the smoke. Moreover, there is such a thing as a "plurality of causes," which makes it hazardous to infer any particular cause for any single effect. Thus we may admit that fire is the cause of smoke in a particular case, and yet say that it is not a cause in other cases, or that there are other causes producing smoke in other instances. Hence it is not always safe to infer a particular cause from an effect as such.

According to the Vedanta, "vyapti or a universal proposition is the result of an induction by simple enumeration. It rests on the un-contradicted experience of agreement in presence between two things. When we find that two things go together and that there is no exception to their relation, we may take them as universally related. The Nyaya agrees with the Vedanta in holding that vyapti is established by means of un-contradicted experience of the relation between two things. It is based, not on any a priori principle like causality or identity, but on the uniform experience of concomitance between two objects. The Nyaya, however, goes further than the Vedanta and supplements the un-contradicted observation of agreement in presence by that of agreement in absence and tarka or indirect proof. The Nyaya method of induction or generalisation may be analysed into the following steps. First we observe that there is a uniform agreement in presence (ammya) between two things, or that in all the cases in which one is present the other also is present. Secondly, we see that there is uniform agreement in absence (vyatireka) between them, i.e. in every case in which the one is absent the other also is absent. So far we see that the two things go together both in their presence and absence, or that there is positive and negative coincidence between them (sahacara). Thirdly, we do not observe any contrary instance in which one of them is present without the other (vyabhicaragraha). From this we conclude that there must be a natural relation of invariable concomitance between the two things.

Still, we are not sure if their relation is dependent on any condition (upadhi) or not. Vyapti or a universal relation between two things is that relation of concomitance between them which is independent of all

upadhis or conditions. An upadhi or condition is a term which is coextensive with the major but not with the middle term of an inference. Thus when one infers the existence of smoke from fire, he relies on a conditional relation between fire and smoke, since fire is attended with smoke on condition that it is fire from 'wet fuel.' It will be seen here that the condition of 'wet fuel' is always related to the major term 'smoke,' but not so related to middle term 'fire,' as there are cases of fire without 'wet fuel.' Hence to make sure that a certain relation of uniform concomitance between two things is a vyapti or a universal relation, we must eliminate all conditions. This can be done by repeated observation (bhuyodarsana) of their agreement in presence and absence under varying circumstances. Here if we see that there is no material circumstance which is present or absent just when the major term is present or absent, we are to understand that its concomitance with the middle term is unconditional. In this way we can exclude all the suspected conditions of a relation of concomitance between the middle and major terms and say that it is a relation of vyapti or unconditional concomitance. If even after repeated observation we have any doubt as to there being vyapti or a universal relation between the middle and major terms, we are to have recourse to tarka or indirect proof to end such doubt. Thus the universal proposition, 'all cases of smoke are cases of fire,' may be proved indirectly by disproving its contradictory. If this universal proposition be false, then its contradictory, 'some cases of smoke are not cases of fire,' must be true. This means that there may be smoke without fire. But the supposition of smoke without fire is contradicted by the known relation of causality between fire and smoke. To say that there may be smoke without fire is to say that there may be an effect without its cause, which is absurd. If anyone has the obstinacy to say that sometimes there may be effects without causes, he must be silenced by the practical contradictions

(vyagraha) involved in the supposition. If there can be an effect without a cause, why should he constantly seek for fire to produce smoke or for food to alleviate his hunger? Thus its contradictory being proved to be false, the universal proposition 'all cases of smoke are cases of fire' comes out as true, i.e. there is vyapti or a universal relation between smoke and fire.

So far the Naiyayikas try to establish vyapti or a universal proposition by the method of simple enumeration supported by tarka or a hypothetical reasoning which indirectly proves its validity. By examining a number of positive and negative instances of agreement in presence and absence between two things, they conclude that there is a universal relation between them. This conclusion is then indirectly confirmed by showing that a denial of the universal relation between these two things leads to contradictions. But as we have already seen in connection with their theory of samanyalaksana perception, a general proposition like 'all smoky objects are fiery' cannot be logically proved by "Induction by Simple Enumeration." In simple enumeration we pass from some observed cases of the relation between two things to a statement about their relation in all cases. Thus from some observed cases of the relation between smoke and fire we infer that all smokes are related to fire. But this inference is not valid, since it violates the general rule of inference that we must not go beyond the evidence. The method of simple enumeration cannot, therefore, conclusively establish vyapti or a universal proposition. Hence the question is: How from the observation of some smokes as related to fire do we know that all smokes are related to fire? The Naiyayikas explain this by the help of samanyalaksana perception. The universal proposition 'all smokes are related to fire' cannot be explained by the perception of particular instances of smokes as related to fire, for any number of particulars cannot make up the universal. For this we require a perception of the whole class of smokes as related to fire. We have such a perception through the perception of the universal 'smokeness' as related to 'fireness. In perceiving particular smokes we perceive the universal 'smokeness' inhering in them. But to perceive 'smokeness' is to perceive, in a non-sensuous way, all smokes so far as they possess the universal 'smokeness.' Hence the universal proposition 'all smoky objects are fiery' is given by a non-sensuous perception of all smokes as related to fire through the perception of smokeness as related to fireness.

The Nyaya method of establishing vyapti brings out the importance of class-essences or universals for induction. It shows how the validity of a generalisation from the particulars of experience depends ultimately on the discovery of certain common essences or universal characters of

particular things. From the observation of a limited number of instances of the relation between two things we cannot know anything for certain about all possible instances of them unless we find that the things possess a certain essential nature which is the basis of their relation in some cases. The particular objects of experience lend themselves to a generalisation when they are recognised as instances of a class and possessed of some essential common nature. A number of things are arranged in one class in view of such common essence or universal which is present in all the members of that class, but absent in those of a different class. Hence if in some cases we see that something is related to the essential nature or the universal underlying a class, we know that it is related to all the members of that class. The observation of particular instances is important because it helps us to find the universals underlying difficult classes of things and their relations with one another. Hence the problem of induction is the problem of the discovery of class-essences or universals exemplified in particular things. As we have already remarked, some Western logicians are slowly recognising the truth of the Nyaya view that an inductive generalisation must be based on the knowledge of class-essences or universals embodied in particular things. But they do not go so far as to say with the Naiyayikas that an empirical generalisation from particular instances is a matter of non-sensuous intuition based on the perception of universals. They would generally treat it as an inference from known resemblance or as a perfect analogy. Mr. Eaton, however, goes further and maintains that the first step in induction is a direct perception of the universal in the particular. He says: "Induction proceeds from the particular to the general, but not from the sheer particular. The particular must be seen to embody some characters or relations, to exemplify some form. Given a particular, let us say a blinding streak of light, and another particular, a loud crash following immediately after, we must be able to characterise these occurrences and frame a generalization 'lightning is followed by thunder,' in order that induction may have a beginning. This most primitive of all inductive steps can be described as the direct perception of the universal in the particular. A generalization relevant to particulars must be framed if it is to be tested, and this primary relevance of a generalization to particulars cannot be manufactured from particulars as

mere thises and thats. There is no process by which this relevance can be inferred. It can only be directly apprehended." To this first stage of the inductive procedure, Mr. Eaton adds a second, in which isolated generalisations are made more probable by the elimination of irrelevance and by fresh evidence, and a third, in which generalisations reinforce one another by entering into logically organised systems. It is to be observed, however, that a generalisation is framed at the very first stage, and that the second and third stages only help us to test and confirm it. Hence so far as the knowledge of the general proposition is concerned, we are to say that it is given to us by way of a direct perception of the universal in the particular.

6.5.2 . The question of petitio principii in inference

As we have already seen, every inference involves the knowledge of vyapti or a universal relation between the major and the middle term. Without a universal relation between the two, no valid conclusion can be drawn from the premises. It is only when we know that smoke is universally related to fire that we can conclusively prove the existence of fire in a hill in which we see smoke. Otherwise, the inference will be inconclusive and invalid. On the other hand, it would seem that if we know smoke to be universally related to fire, we already know the smoke in the hill to be related to fire. The truth of the universal proposition all cases of smoke are cases of fire' involves, nay, depends on the truth of the proposition 'this case of smoke is a case of fire.' Thus it would seem that the major premise of an inference, which is a universal proposition, assumes what we want to prove in the conclusion, i.e. an inference involves the fallacy of petition principii or begging the question.

The above dilemma of inference has been anticipated and solved in Indian philosophy. The solution is generally based on the distinction between the knowledge of the universal and that of the particulars coming under it. When we know that smoke is always related to fire, we know them in their general character as two universals. This does not imply that we know the relation between all particular smokes and fires. Thus the Mimamsakas' argue that the knowledge of vyapti or a universal relation between smoke and fire does not necessarily involve any

knowledge of a particular instance of fire, e.g. the fire in a hill. When we know the universal proposition 'all cases of smoke are cases of fire,' we do not know anything about the hill, far less, about its relation to fire. If that were not so, or, if we knew anything about the fire in the hill, there could be no necessity for the perception of smoke in the hill, in order to know the existence of the fire in it. Hence it follows that the conclusion of the inference, namely, 'that hill is fiery,' is a new knowledge which is not involved in the knowledge of its premises. The Naiyayika view of vyapti as covering all the individual cases of a relation seems to commit inference to the fallacy of petitio principii. Thus it has been held by the Naiyayika that when we know the vyapti or the universal relation between smoke and fire, we know all the individual cases of smoke to be related to fire. Otherwise, we cannot account for the inference of fire from the smoke in a bill. If we do not know that the hill-smoke is related to fire, we could not possibly pass from the one to the other. But then the difficulty is that if we already know the hill-smoke to be related to fire, there is no room for an inference to arrive at a new truth The conclusion of such an inference will only repeat what is already stated in the premises. This difficulty in the Nyaya view of inference may however be explained. According to the Naiyayika, to know that smoke is universally related to fire is indeed to know that 'all cases of smoke are cases of fire.' But the knowledge we have of all fires and smokes is mediated by the knowledge of the universals 'fireness' and 'smokeness' (samanyalaksanapratyasatti). This means that we know all fires and smokes in so far as they participate in 'fireness' and 'smokeness,' i.e. in their general character without any reference to their specific characters. So while the vyapti gives us a knowledge of the relation between smoke and fire in general, an inference based on it gives us the knowledge of the relation of fire to a particular object, namely, the smoky hill. The major premise of the inference 'all cases of smoke are cases of fire' does not by itself lead to the conclusion that there is fire in the hill. It is only when the major premise is combined with the minor, 'there is smoke in the hill,' that we draw the conclusion 'there is fire in the hill.' This shows that the truth of the conclusion is not epistemically involved in that of the major premise or the universal proposition. Hence we are to conclude

that inference is neither inconclusive nor a petitio principii, since it gives us a new knowledge.

6.6 BUDDHIST INFERENCE

The epistemological thinkers in India have generally adopted a causal approach to knowledge. knowledge is taken to be an occurrence, an outcome of a particular causal complex (karana samagri) in which the causal condition acting as an instrumental cause (karana) is known as pramana. pramana is the mode of knowing. the buddhist thinkers do not entertain the distinction between pramana and its outcome (pramana phala= prama) mainly because this distinction is not needed in their epistemological set up. as opposed to the school of nyaya which maintains such a distinction because of its presupposition that pramana is the ground for the truth of a prama (manadhina meyasiddhih) which is its phala (outcome), the buddhists repudiate this distinction because for them a reference to the object of knowledge (prameya) is the ground for the truth of prama.1 moreover, they maintain that no rigid separation is possible between the act of cognizing and the cognition of the object.2   anumana, which in the buddhist tradition is one of the two pramanas, is at once a mode of knowing and a way of reasoning. thus it has an epistemic as well as a logical aspect.   The word anumana literally means 'a knowledge which follows'. this means that inferential knowledge is necessarily a knowledge which is to be preceded by some other knowledge. in other words, anumana consists of two stages, one pertaining to the preceding and the other to the succeeding knowledge. but the two cases of knowledge must have a particular type of relationship known as linga-lingi-bhava which implies that the succeeding one should necessarily come from the preceding. the preceding knowledge has to be in the form of linga. a linga is defined as that which is a necessary mark of something other than itself.3 'lingin' stands for that which is marked by linga. between linga and the lingin there is always a gamya-gamaka-bhava which can roughly be regarded as the relation of entailment such that every case of the presence of linga is necessarily a case of the presence of lingin and every case of absence of lingin is the case of the absence of linga.

In the buddhist tradition linga and lingin are in the form of concepts (vikalpas) and not objects or events or meta-physical reals as they are taken in the nyaya tradition. between any two concepts there will be gamya-gamaka-bhava if and only if they have avinabhava i.e., necessary connection. it is the presence of the necessary connection which is the basis for the passage from the one to the other. this relationship of avinabhava is also known as vyapti. vyapti therefore constitutes the very basis of the inferential process.   Nyaya analysis of anumana: in order to have a better understanding of the buddhist analysis of 'anumana' it will be worthwhile if we discuss in brief the nyaya analysis of 'anumana'. according to nyaya, anumana is the knowledge of an object on the basis of the cognition of its mark along with a remembrance of a previous knowledge concerning an invariable and unconditional relation between the object and its mark.   In other words, in every case of anumana in the preceding cognition, which can be treated as a premise, there are two elements, viz., (i) perceptual cognition of the linga (paksadharmata), and (ii) the remembrance of unconditional and invariable relation between the linga and the lingin (vyapti). the perceptual cognition of the mark leads to the remembrance of its unconditional and invariable relationship with the lingin resulting in a synthesized knowledge. the synthesis of both these stages is named as paramarsa, which is therefore defined as 'vyapti visista paksadhamatajnanam'. the act of paramarsa can thus be said to consist of three elements, viz., the knowledge   of   vyapti, the knowledge of paksadharmata and the knowledge of the vyapti qualifying paksadharmata. it is only this unification of paksadharmata and vyapti in paramarsa which entails inferential knowledge. thus though vyapti is one of the causal conditions, and a necessary causal condition (karana), yet it is not the sufficient condition of inference. the sufficient condition (vyapara) is paramarsa only.   Buddhist rejection of paramarsa: the buddhist logicians do not draw a sharp distinction between the paksadharmata and vyapti in the way in which the nyaya logicians do. according to them, paksadharmata and vyapti are both comprehended under the concept of trairupya linga and therefore there is no point in talking of vyapti qualifying paksadharmata. thus the nyaya notion of paramarsa is not acceptable to the buddhists.

6.7 LETS SUM UP

All systems of Indian philosophy agree in holding that anumana is a process of arriving at truth not by direct observation but by means of the knowledge of vyapti or a universal relation between two things. The Nyaya view is stated already. The Buddhists take anumana to consist in the perception of that which is known to be inseparably connected with another thing .however the nyaya and Buddhist have also been on loggerheads with each other

6.8 KEY WORDS

Paksha, : paksa is the subject under consideration in the course of the inferential reasoning

sadhya,: is the object of inference.

6.9 QUESTIONS FOR REVIEW

1 Nyaya definition of anumana

2. Buddhist definition of anumana

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6.11 ANSWER TO CHECK YOUR PROGRESS

1. Answer to Check your Progress -1

- Anumana literally means such knowledge as follows some other knowledge.

- It is the knowledge of an object due to a previous knowledge of some sign or mark (lingo)

- The previous knowledge is the knowledge of the linga or mark as having a universal relation with the sadhya or major term and as being present in the paksa or minor term.

- Hence anumana has been defined in the Nyaya system as the knowledge of an object, not by direct observation, but by means of the knowledge of a linga or sign and that of its universal relation (vyapti) with the inferred object.

2. Answer to Check your Progress -1

- Perception is independent of any previous knowledge, inference depends on previous perception.

- Inference is sometimes defined as knowledge which is preceded by perception.

- It depends on perception for the knowledge of the linga or the middle term as subsisting in the paksa or the minor term. It depends on perception also for the knowledge of vyapti or the universal relation between the middle and major terms of inference.

- It is only when we have observed two things to be always related that from the perception of the one we infer the existence of the other. Thus inference is knowledge derived from some other knowledge, while perception is not derived from any other knowledge. That is, inference is mediate and perception immediate knowledge of an object.

UNIT-7 CONSTITUENTS OF ANUMANA: NYAYA, BUDDHIST PERSPECTIVES

STRUCTURE

7.0 OBJECTIVES

- Know vyapti

- Learn about sadhya and hetu

- Difference in Nyaya and Buddhist view of the above terms and relation

7.1   INTRODUCTION

The word 'Vyâpti' literally means 'the state of pervasion.' It implies a correlation between two facts, of which one is pervaded (vyâpya), and the other pervades (vyâpaka). A fact is said to pervade another when it always accompanies the other. A fact is said to be pervaded by another when it is accompanied by the other. In the given example, smoke is pervaded by fire, since it is always accompanied by fire. But while all smoky objects are fiery, all fiery objects are not smoky, e. g. the red hot iron ball. Thus, vyâpti is a relation of invariable concomitance between middle term and the major term. In our inference of the presence of fire in a hill what is the justification of our inference? First, we perceive the presence of smoke which is the mark (the middle term or hetu or paka). This presence of the middle term in the minor term is known as

pakadharmatâ. Secondly, we recollect the invariable relation between the middle term (Madhya) and the major term (Sâdhya). For example, we have several times seen the smoke and the fire together in the kitchen etc, and we have ascertained the invariable relationship between the two. Now, we perceive smoke on the hill, so we infer fire on the hill. There cannot be smoke in the absence of fire. Because of this universal relationship between fire and smoke, the existence of fire is necessarily to be admitted in every case of smoke. Without the definite knowledge of such a relation, our inference of fire is impossible in spite of the perception of smoke.

1. Check Your Progress-1

1. Constituents of Anuman

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7.2 TYPES OF VYAPTI

A vyapti may be of two types— 1.Samavyâpti 2. Asamavyâpti.

A vyâpti between terms of equal extension is called samavyâpti or equipollent concomitance, e.g. 'nameable' and 'knowable'. Whatever is nameable is knowable and again whatever is knowable is nameable. Here, we can infer either of the term from the other. On the other hand a vyâpti between terms of unequal extension is called asamavyâpti. It is the relation of non-equipollent concomitance between two terms. Here, we can infer one term from the other, but not vice-versa, e.g. we may infer fire from smoke, but not smoke from fire. Fire is present in all cases wherever smoke is present, but the reverse is not true.

We have already stated that vyâpti is a relation of invariable concomitance between the middle term and the major term. Now our question is—how it is possible for us to ascertain the relation of vyâpti? In the inference of the presence of fire in a hill, we first observe an invariable relation between smoke and fire, i. e. wherever there is smoke, there is fire. We can infer the existence of fire only when we observe that

smoke is always accompanied by fire. But the question arises at this point is – how does one pass from particular cases of the relation between smoke and fire in the kitchen,etc. to the universal relation such as 'all cases of smoke are cases of fire.' This relation of vyâpti does not include only the observed cases, but also includes unobserved cases too. But, how it is possible for us to get such universal proposition which includes unobserved cases of all times? To put it differently, what are the ways or methods by which we can ascertain the universal relation? There are different views regarding the ascertainment of vyâpti. According to the Cârvâka philosophers, inference cannot be a source of knowledge and hence establishment of the relation of vyâpti does not arise. The Buddhists hold that vyâpti depends on the laws of causality and essential identity. The relation of causality means when two things are related as cause and effect, they are always and everywhere related to each other. Vyâpti involves a knowledge of the relation of cause and effect. For the determination of the causal relation between them the Buddhists adopt the method of pancakarani. There are five steps in the method of pancakarani.a)neither the cause nor the effect is perceived, b)the cause is perceived, c) the effect immediately succeeds its cause, d) the cause disappears, e) immediately the effect disappears. Again, if two things are essentially identical, they must be universally related. For example there is an essential identity between a class and its individuals. The class and its members cannot be separated. When two things are known to be essentially identical, the relation obtaining between the two is taken to be universal. The Vedântins hold that vyâpti is the relation which is the result of an induction by simple enumeration. It is derived from the uncontradicted existence of agreement in presence between two things. When we find that two things are co-existent and there is no exception to their relation they are to be regarded as universally related. Kumârlila - Bhatta of Mmskas maintains that vyâpti is ascertained through repeated observation. Prabhâkara maintains that even a single observation is enough for the establishment of vyâpti. The Naiyayikas maintain that there are five ways or methods for the establishment of vyâpti. They are the following:

1. Anvaya or agreement in presence : Vyâpti is a relation of agreement in presence (anvaya) between two things. It means that the hetu and the sâdhya should agree in being present together. There should not be any case in which one is present and the other is absent. ' Wherever there is smoke, there is fire, as in the kitchen' is an example of agreement in presence.

2. Vyatireka or agreement in absence: The hetu and the sâdhya should agree in being absent together.For example, 'where there is no fire, there is no smoke as well, as in a lake.'Just as in a kitchen the presence of both smoke and fire is observed, similarly in a lake the absence of both fire and smoke is observed. These two steps taken together correspond to Mill's joint method of Agreement in presence and in absence.

3. Vyabhicaragraha : We do not observe any contrary instance in which one of them is present and the other is absent. That is, they must be related to each other. 4. Upâdhinirasa or elimination of condition : Vyâpti is an unconditional relationship which is universal and necessary. An adventitious condition may vitiate the natural and invariable relation between hetu and sâdhya. For example,the invariable relation between smoke and fire is conditioned by wet fuel. In case of a hot iron ball, there is actually fire, but no smoke due to the absence of wet fuel. The condition 'wet fuel' is always related to the minor term 'smoky,'but not so related to the major term 'fire', because there are cases of fire without wet fuel. This condition requires elimination in order to ensure the invariable and unconditional relation of vyâpti. The elimination of a suspected condition is not an easy task. It needs repeated observation. This is known as Bhuyodarúana. This repeated observation is the observation of their agreement in presence and in absence under varying circumstances. We observe the co-existence of fire and smoke in two or three places and also observe that smoke is never seen to be present in a place where fire is not present. When we observe this repeatedly, we are in a position to affirm the invariable relation between smoke and fire.

5. Tarka or hypothetical reasoning: Tarka is an indirect method of ascertaining vyâpti. All the methods mentioned above are direct methods Ratiocination : Process of thinking about something in a logical way. for

the establishment of vyâpti. According to B. N. Singh, tarka is a mental ratiocination which detects the practical contradiction. Let us take an example to illustrate this method. The universal proposition 'all cases of smoke are cases of fire' is false. Then its contradictory proposition, 'some cases of smoke are not cases of fire' must be true. This means that there is smoke without fire. It involves a practical contradiction, because no effect can come out without a cause. Thus there can not be smoke without fire. The contradictory proposition 'some cases of smoke are not cases of fire' is false, because it is contradicted by practical experience. Hence it is proved that the proposition 'all cases of smoke are cases of fire' is true. This process of indirect proof may be said to correspond to the method of reductio ad absurdum in Western logic.

5. Sâmânyalakaa pratyaka: The sixth way of establishing vyâpti is Sâmânyalakaa pratyaka. Sâmânyalakaa pratyaka is an extra- Ordinary perception. They maintain that when we perceive an individual case, we also perceive all the actual and possible instances of fire and smoke. It means that when we perceive an individual case of fire and Smoke, we also perceive the universals 'fireness' and 'smokeness' which inhere in the individuals. The universals 'fireness' and 'smokeness' are brought into contact with the sense-organs in an extra-ordinary way, known as Sâmânyalakaa sannikara. It enables us to become directly aware of all the objects of the past, present and future through observing the Universals residing in the particulars. Such generalization is possible through sâmânyalakaa pratyaka. These are the six ways or methods, according to the Naiyayikas, by means of which vyâpti can be established.

From the definition of inference (anumana) it will appear that there must not be less than three propositions and more than three terms in any inference. In inference we arrive at the knowledge of some unperceived character of a thing through the knowledge of some linga or sign in it and that of vyapti or a universal relation between the sign and the inferred character. There is first the knowledge of what is called the linga or mark in relation to the paksa or the subject of inference. This is generally a perceptual judgment relating the linga or middle term with the paksa or

minor term of inference (lingadarsana), as when I see that the hill is smoky, and infer that it is fiery. It is a proposition in which the linga is predicated of the paksa and thus corresponds to the minor premise of a syllogism. Secondly, inference requires the knowledge of vyapti or a universal relation between the linga and the sadhya, or the middle and major terms. This knowledge of the linga or middle term as always related to the sadhya or major term is the result of our previous experience of their relation to each other. Hence it is a memory-judgment in which we think of the linga as invariably connected with the sadhya (vyaptismarana), e.g. 'all smoky objects are fiery.' Thirdly, we have the inferential knowledge (anumiti) as resulting from the previous knowledge of the linga and that of its universal relation (vyapti) with the sadhya. It is a proposition which relates the paksa or minor term with the sadhya or major term, e.g. 'the hill is fiery.' The inferential cognition (anumiti) is a proposition which follows from the first two propositions and so corresponds to the conclusion of the syllogism.

Corresponding to the minor, major and middle terms of the syllogism, inference in Indian logic contains three terms, namely, paksa, sadhya and hetu. The paksa is the subject under consideration in the course of the inferential reasoning. Every inference proceeds with regard to some individual or class of individuals about which we want to prove something. Hence the paksa is that individual or class about which we want to establish something or predicate an attribute which is suspected but not definitely known to be present in it. That which possesses the inferable character is called paksa or minor term of inference, e.g. 'the hill' when we want to prove that it is fiery. In relation to the paksa or minor term in any inference, a sapaksa or homogeneous instance is that which is decisively proved to be related to the inferable character, e.g. 'the hearth' in relation to 'the hill.' Contrariwise, a vipaksa or heterogeneous instance is that which is definitely known to be characterised by the absence of the inferable character, e.g. 'water' as marked by the absence of 'fire.'

While the paksa is the subject, the sadhya is the object of inference. It is that which we want to know or prove by means of any inference. The sadhya is that character of the paksa or minor term which is not perceived by us, but indicated by some sign present in it. In short, it is

the inferable character of the minor term and thus corresponds roughly to the major term of the syllogism. It is that character which is predicated of the minor term in the resulting inferential knowledge or the conclusion of the syllogism.

With regard to the exact nature of the sadhya there is some difference of opinion among the different systems of Indian philosophy. According to the Advaita Vedanta, what is inferred is the unperceived character of the subject or minor term of inference. In the inferential knowledge that 'the hill is fiery,' it is 'the fire' that is inferred and not 'the hill' which is but perceived. The Buddhists contend that 'the fire' cannot be the object of inference from smoke. We know it just when we know the smoke as related to fire. So there remains nothing more to be inferred. Nor do we infer the relation between 'the fire' and the hill. We cannot speak of a relation unless there are two things to be related. But in inference we have only one thing, namely, the hill, since the fire is not perceived. The hill being perceived cannot be said to be the object of inference. What is therefore inferred is 'the hill as possessed of fire.' The Mimamsakas also hold that what we infer is the subject or minor term as related to the predicate or the major term. The Naiyayikas however maintain that the object of inference may be different in different cases. What is inferred may be either the subject or minor term as related to the major terra, or the major term as related to the minor, or the middle term taken as a particular individual and related to the major term. When we perceive smoke in a hill, what we know by inference is either 'the hill as related to fire,' or 'fire as related to the hill,' But when the site of the smoke cannot be perceived, what we infer is that the perceived individual smoke is related to fire.

The third term of inference is called the linga or sign because it serves to indicate that which we do not perceive. It is also called the hetu or sadhana in so far as it is the ground of our knowledge of the sadhya or what is inferred. Like the middle term of a syllogism, it must occur at least twice in the course of an inference. It is found once in relation to the paksa or minor term and then in relation to the sadhya or the major term. It is through a universal relation between the hehu and the sadhya, or the middle and major terms that the paksa or minor terra, which is related to the middle, becomes connected with the sadhya or major term. That is,

the paksa is related to the sadhya through their common relation to the hetu or middle term. There are five characteristics of the middle term. "The first is paksadharmata, or its being a character of the paksa. The middle term must be related to the minor term, e.g. the hill is smoky (S is M). The second is sapaksasattva or its presence in all homogeneous instances in which the major exists. The middle must be distributively related to the major, e.g. all smoky objects are fiery (M is P). The third is vipaksdsattoa, or its absence in all heterogeneous instances in which the major is absent, e.g. whatever is not fiery is not smoky (No not-P is M). The fourth is Abadhitavisayaiva, or the uncontradictedness of its object. The middle term must not aim at establishing such absurd and contradictory objects as the coolness of fire or the squareness of a circle. The fifth character of the middle is asatpratipaksatva, or the absence of counteracting reasons leading to a contradictory conclusion. These five characteristics, or at least four of them, must be found in the middle term of a valid inference. If not, there will be fallacies.

7.4 JAIN VIEW

Inference or anumāna-pramāṇa means the knowledge of sādhya or probandum or major term which is derived from sādhana or probans or middle term. That means, anumāna means that kind of knowledge which arises from hetu or sādhana. As for example, fire is inferred from smoke. Here, smoke is the middle-term or sādhana and fire is the major-term or sādhya. A sādhana or hetu is ascertained from its being inseparably related with the sādhya. The knowledge of this inseparable relation or avinābhāva-sambandha of sādhya and sādhana is called vyāpti;which is derived from tarka. Vyāpti is the main feature of anumāna. So, inference is based on universal concomitance or vyāpti-jñāna of the middle-term with the major-term.

Anumāna-pramāṇa is of two types, viz., (i) svārthānumāna and (ii) parārthānumāna. Svārthānumāna means that kind of knowledge of sādhya which is arising from sādhana by one's own-self. That means, svārthānumāna is the knowledge of probandum which is caused

by the recollection of the relationship and the knowledge of the proban by one's own-self. As for example, when one person has perceived the smoke (sādhana) in the mountain (pakṣa) and has also recollected the vyāpti-jñāna that wherever there is smoke, there is fire (sādhya); then on the basis of that relation he says that "the mountain contains fire". Here, three parts are necessary to know svārthānumāna, viz., sādhya, sādhana and pakṣa. Sādhya, pakṣa and hetu are the main basis of inference. Sādhya or major-term is that which has to be proved. Pakṣa or minor-term is that where one has to prove the sādhya. Hetu or middle-term is that by which one has to prove the sādhya, because there is a relation of vyāpti between hetu and sādhya. As for example: "All the places of smoke are the places of fire. The mountain has smoke. Therefore, the mountain has fire". In the above example—sādhya is fire, pakṣa is mountain and hetu is smoke. Parārthānumāna means that cognition resulting from a statement that refers to the knowledge of svārthānumāna. In other words, it is the knowledge of the probandum or sādhya derived from the communication made by another person. As for instance, if a person knows the vyāpti-jñāna between sādhya and sādhana of fire and smoke that wherever there is smoke, there is fire, he derives the knowledge that the mountain contains fire seeing smoke in the fire. From the statement of this cognition, if another person cognizes the knowledge of the sādhya from the sādhana, then it is called parārthānumāna. Like the svārthānumāna, parārthānumāna has two parts, viz., (i) pakṣa (here it means pratijñā)—e.g., the hill is fiery and (ii) hetu—e.g., because it is smoky. But the Naiyāyikas accept five numbers of parārthānumāna. These are: (i) pakṣa or pratijñā—the hill is possessed of fire; (ii) hetu—because it is possessed of smoke; (iii) dṛṣṭānta—whatever is possessed of smoke, that is possessed of fire, like a kitchen; (iv) upanaya—the hill is possessed of smoke and (v) nigamana—therefore, the hill is possessed of fire. Of these five numbers pratijñā is āgama (tenet). Hetu is the anumāna proper, because the tenet or sādhya can be inferred only through this hetu. Dṛṣṭānta is pratyakṣa, i.e., it is based on perception. Upanaya is upamāna because it is based on the similarity between the dṛṣṭānta and sādhya. Nigamana is the result or conclusion that all these four are applicable to one thing only. So, parārthānumāna is

known by these five avayavas. But Prabhācandra does not subscribe to this view of the Naiyāyikas and says that parārthānumāna consists only of two parts, viz., pakṣa or pratijñā and hetu. The example is not necessary for the recollection of vyāpti; because the recollection of vyāpti is known by the relation of sādhya and sādhana. Like dṛṣṭānta, upanaya and nigamana are also not necessary, because all kinds of doubts or errors are destroyed by the knowledge of inseparable relation or vyāpti-jñāna of sādhya and sādhana. So, for intelligent person, inference is known by the two parts, i.e., pakṣa and hetu. However, the Sūtrakāra makes some concession to the Naiyāyikas here and says that though anumāna consists of only two parts, yet the example (dṛṣṭānta), the application (upanaya) and the conclusion (nigamana) can be included in inference to convince persons of dull intellect who want to know the truth of an inference. This is done only in context of instruction and not for argumentation.

The example or dṛṣṭānta is that in which the middle term is perceived to be accompanied by the major term. The example is of two kinds, viz., (i) anvaya and (ii) vyatireka. That is called anvaya-dṛṣṭānta where the sādhana is pervaded by the sādhya. Thus wherever there is smoke, there is fire, as in the kitchen is an example of anvaya-dṛṣṭānta. That is called vyatireka-dṛṣṭānta where the absence of sādhana is demonstrated wherever sādhya is absent. Thus wherever there is the absence of fire, there is the absence of smoke, e.g., a lake. The application or upanaya is reassertion of the presence of the middle-term in the minor-term in which the presence of the major-term is to be proved. The conclusion or nigamana is reassertion of the presence of the major-term in the minor-term. So, for dull intelligent persons, parārthānumāna consists of five parts: (i) The hill is fiery—pratijñāvacana;(ii) because the hill is smoky—hetuvacana; (iii) whatever is smoky is fiery, e.g., the kitchen— dṛṣṭāntavacana; (iv) the hill is smoky—upanayavacana and (v) therefore, the hill is fiery—nigamanavacana.

The Jainas hold that like the anumāna, hetu or sādhana is of two types, viz., (i) upalabdhi-hetu and (ii) anupalabdhi-hetu, which are both positive and negative. The former is divided into two types, viz.,

(i) aviruddhopalabdhi-hetu which is positive, i.e., it proves something positive and (ii) viruddhopalabdhi-hetu which is negative, i.e., it proves something negative. Aviruddhopalabdhi-hetu is sub-divided into six categories, viz., (a) aviruddhavyāpyopalabdhi-hetu; (b) aviruddhakāryopalabdhi-hetu; (c) aviruddhakāraṇopalabdhi-hetu; (d) aviruddhapūrvacaropalabdhi-hetu; (e) aviruddhottaracaropalabdhi-hetu and (f) aviruddhasahacaropalabdhi-hetu. Like aviruddhopalabdhi-hetu, viruddhopalabdhihetu is also of six kinds, viz., (a) viruddhavyāpyopalabdhi-hetu; (b) viruddhakāryopalabdhi-hetu; (c) viruddhakāraṇopalabdhi-hetu; (d) viruddhapūrvacaropalabdhi-hetu; (e) viruddhottaracaropalabdhi-hetu and (f) viruddhasahacaropalabdhi-hetu.

The later hetu, i.e., anupalabdhi-hetu is also of two types, viz., (i) aviruddhānupalabdhi-hetu which is negative, i.e., it proves something negative and (ii) viruddhānupalabdhi-hetu which is positive, i.e., it proves something positive. Again, aviruddhānupalabdhi-hetu is sub-divided into seven categories, viz., (a) aviruddhasvabhāvānupalabdhi-hetu; (b) aviruddhavyāpakānupalabdhi-hetu; (c) aviruddhakāryānupalabdhi-hetu; (d) aviruddhakāraṇānupalabdhi-hetu; (e) aviruddhapūrvacarānupalabdhi-hetu; (f) aviruddhottaracarānupalabdhi-hetu and (g) aviruddhasahacarānupalabdhi-hetu. The later viruddhānupalabdhi-hetu is sub-divided into three categories, viz., (a) viruddhakāryānupalabdhi-hetu; (b) viruddhakāraṇānupalabdhi-hetu and (c) viruddhasvabhāvānupalabdhi-hetu. Hetu or sādhana means that which exists in the presence of sādhya, but without the existence of sādhya, the existence of sādhana will not be possible. By this nature of tathopapatti and anyathānupapatti, the hetu is known. So, hetu means that which is related with sādhya by the inseparable relation. A question may arise here thus: what is the nature of this inseparable relation or avinābhāva? Avinābhāva means the constant regularity of sahabhāva, i.e., simultaneous accompaniment and kramabhāva, i.e., consecutive occurrence. Sahabhāva or yugapad events are those which are the co-products of the same set of causal conditions, such as colour and taste of a fruit; or which are related as vyāpya (middle-term)

and vyāpaka (majorterm),suchas śiśaṃpā or aśoka tree and vṛkṣa. Kramabhāva events are those which are found in the successive occurrence of preceding and succeeding things, such as the appearance of the star Kṛttikā after Śakaṭa; or which are related as effect and cause, such as smoke and fire.

Sādhya or major-term is to be inferred by the hetu or middle-term. Sādhya means that which is neither known, i.e., asiddha nor contradicted, i.e., abādhita and desirable, i.e., iṣṭa. The epithet of "neither known" excludes those objects which come under doubt. The epithet of "not contradicted" has been given here to avoid the acceptance of that object as sādhya, which is contradictory to direct perception etc. The epithet of "desirable" is given to prove that an undesirable thing cannot be an sādhya. So, sādhya is that which has the characteristics of asiddha, abādhita and iṣṭa. From the point of view of universal concomitance, dharma itself is sādhya, because otherwise it cannot be established; whereas from the point of view of inference, dharmī together with its dharma is sādhya. Dharmī is also called pakṣa. Pakṣa or dharmī is the object which is qualified to be proved by the quality of dharma. Though these two dharma and dharmī are related with sādhya, yet dharma is related with sādhya in universal concomitance, because otherwise it cannot be related with sādhya by avinābhāva relation.

2. Check your Progress

1. Jain View of Anuman

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7.3 BUDDHIST CONSTITUENTS OF INFERENCE:

In the buddhist analysis, the of inference involves three basic terms and their interrelations. this is quite evident from the following definition of inference given by dharmakirti, "trirupallingadanumeye yajjnanam tatsvarthanumanam". the three terms are paksa (anumeya), hetu (linga)

and sadhya (lingin).   paksa: paksa is the subject under consideration in the inferential reasoning. every inference pertains to some individual or class of individuals about which we want to prove something. hence paksa is that individual or class of individuals about which we want to establish something. it is also named as anumeya because it is the object about which something is to be inferred. in a special sense it also means the underlying substratum (dharmin) to which sadhya is to be ascribed as a property. that is why dharmakirti defines anumeya as "jijnasitavisesa sadhya dharmi."7   hetu: the other term involved in the process of inference is linga or hetu. in fact it is the pivotal element in the process of anumana. it is the necessary mark which leads to the inference of its marked object. hetu (linga) has three formal characteristics—the satisfaction of which alone enables it to act as a sufficient reason for the inference of its marked object. a hetu which possesses these three characteristics is known as sadhetu.   sadhya: the third entity involved in the inferential process is sadhya or lingin. it is this which constitutes the property (dharma) which is to be inferred in relation to the paksa.   sapaksa: another significant concept which is given in the analysis of the inferential process is sapaksa. sapaksa means an object similar to paksa. in other words, all those objects which possess the property which is to be inferred are known as sapaksa; for example, if fire is the predicate which is to be inferred in relation to a hill, then all those instances like kitchen etc., where fire is known to be a predicate, constitute sapaksa. a sapaksa is similar to paksa in this sense only that both of them comprehend a common property.8   asapaksa: a case which is not similar to paksa is regarded as asapaksa. In other words, asapaksa is that which is never a possessor of the property commonly possessed by paksa and sapaksa. asapaksa can be of three types: (a)different from it(anya). (b) contrary to it (viruddha). (c) absence of it (abhava).   vyapti: the entire inferential process, as we have said above, is based upon the relation between linga and lingin, which can be understood in terms of necessary dependence (avinabhavaniyama) and which is technically known as vyapti. the buddhist conception of vyapti stands for an invariable necessary connection. vyapti is a necessary bond because of the fact that it is rooted in what is technically known as svabhava pratibandha or existential dependence. Existential dependence

means dependent existence. It may be in the form of a causal relation or an analytical entailment. For example, the dependence of effect on its cause enables us to infer the cause the moment the effect is known to us. Similarly, an analytically deduced fact by its very essence depends upon the fact from which it is deduced. Thus there is svabhava pratibandha between cause and effect and between the deduced object and that from which there is deduction. the example of the former type is the relation between smoke and fire and of the latter type is the relation between rose and flower. we can deduce one fact from another only if there is existential dependence. it can be asked why is it that we can deduce one fact from another only if there is existential dependence.11 the answer given by the buddhist logicians is that this is so because effect which is not dependent upon another object cannot be invariably and necessarily concomitant with the later. in other words, if effect is not tied up by its existence to another object, it can not be necessarily concomitant with the latter. there will be no invariability (avyabhicara). thus the possibility of deducing one fact from the other depends upon an invariable and necessary connection which precludes the existence of the one without the existence of the other. therefore, if two facts are existentially connected we can assert that one of them can not exist independently of the other and therefore from the presence of the one follows the presence of the other.   kinds of linga: there are three varieties of linga, viz., anupalabdhi, svabhava and karya. the lingin is a sort of predicate and a predicate is either denied or affirmed. when it is denied, this is done on the basis of the non-existence of its mark. such a mark is known as anupalabdhi hetu or anupalabdhi linga. when it is affirmed, its mark is either existentially identical with it or if different, it is its effect. in the former case its linga is known as svabhava hetu or svabhava linga and in the latter case it is known as karya hetu or karya linga.   anupalabdhi: anupalabdhi has been defined as non-cognition of such an object which otherwise fulfils the conditions of cognizability. for example, a jar is an object which fulfils the condition of cognizability. if at a particular place there is non-cognition of jar, this enables us to infer its non-existence. so here non-cognition of the jar is the linga and non-existence of the jar is the lingin. the non-cognition (of a thing) is to be regarded as the linga for the non-existence (of that thing) which is its lingin on the ground that if

the things were present, it would have necessarily been perceived when all other conditions of perceptibility are fulfilled. if inspite of all the conditions of perceptibility being present, if a thing is not perceived, we can legitimately infer its non-existence.12   svabhava linga or svabhava hetu: the second type of linga is known as svabhava linga or svabhava hetu. the svabhava hetu is defined as that whose mere existence is sufficient for the deduction of sadhya.13 for example, in the judgement, "it is a flower because it is a rose" the reason, namely, rose is sufficient for the deduction of flower. here the terms 'rose' and 'flower' have one and the same object for their reference though they may have different meanings. it is this sameness of reference known as tadatmya which is responsible for the existential tie between rose and flower.   karya linga or karya hetu: the third type of linga is karya linga or karya hetu, which is in the form of an effect. it necessarily presupposes its cause like smoke necessarily implying the existence of fire. the causal connection is given to us in our experience of both anvaya and vyatireka type i.e., on the basis of agreement in presence and agreement in absence between two phenomena.14   three types of anumana: since there are three types of linga, there are three types of anumana, viz., anupalabdhi, svabhava and karya.   though a linga may be either in the form of anupalabdhi or svabhava or karya, every linga necessarily possesses three marks. the doctrine of three marks of a linga, technically known as trairupyavada, is of great logical significance in the buddhist theory of inference.   the concept of trairupya: the concept of linga provides the starting point of the inferential process. if the two stages of the inferential process are classified as premise and conclusion then linga can be regarded as the most basic concept in the premise. The process of inference consists of a transition from linga to lingin. that is why dharmakirti regards linga as the very basis of inference.Regarding the function of linga dharmottara aptly remarks, "therefore the function of the logical mark, owing to which it is able to create cognition of not directly known things, is nothing else than the necessity of an invariable concomitance between the perceived mark and the non-perceived object. It follows that the world 'necessary' must be referred to all the three aspects in which the mark manifests itself, since all these three viz. (i) the positive concomitance of the mark with the

deduced predicate; (ii) its contraposition (or the inverted) concomitance of their negations) and (iii) the presence of the thus characterized mark upon the subject of the conclusion represent the essence of the function performed by a logical mark and must be ascertained as being necessary"   In this passage dharmottara refers to a very significant term, viz., nantariyakatva which has also been referred to by uddyotakara, a nyaya thinker in his nyaya-vartika. he has referred to a definition of anumana given by some thinkers as "nantariyakartha darsanam tadvido anumanam" i.e. "the experience of a thing, which is inseparably connected with another thing is the instrument of inference for one who knows that they are inseparably connected." the concept of nantariyakatva is perhaps explicated by dignaga in the form of trairupya. the term nantariyakartha implies presence of hetu in the paksa, its presence in the sapaksa and its absence in the vipaksa, because in the absence of such a situation there can not be inseparable connection between hetu and sadhya. According to Buddhist logic the linga is, thus, characterized by three essential characteristics. In fact in the history of Indian logic we find different views with regard to the essential characteristics of linga. whereas the nyaya tradition insists on five characteristics and the jaina tradition regards only one characteristic, the buddhist tradition maintains that there are three and only three essential characteristics of a linga. Every linga must possess all the three characteristics simultaneously (trilaksana hetu). Then and then only it can be regarded as a linga, and be made use of in the process of inference. (that is why dharmakirti, while defining anumana, writes trirupallingad etc.

7.5   LETS SUM UP

Inferential judgement is arrived when vyapti is known. The relation of vyapti, sadhya and hetu are to understood. Nyaya system rest on inherent casual relation whereas Buddhist rely on dependent relation.

7.6   KEY WORDS

Vyapti : The word 'Vyâpti' literally means 'the state of pervasion.' It implies a correlation between two facts, of which one is pervaded (vyâpya), and the other pervades (vyâpaka)

sadhya : it is this which constitutes the property (dharma) which is to be inferred in relation to the paksa.

hetu: , that which is related with sādhya by the inseparable relation

sapaksha, : paksa. in other words, all those objects which possess the property which is to be inferred are known as sapaksa; for example, if fire is the predicate which is to be inferred in relation to a hill, then all those instances like kitchen etc.,

anuplabhi : as been defined as non-cognition of such an object which otherwise fulfils the conditions of cognizability. For example, a jar is an object which fulfils the condition of cognizability. if at a particular place there is non-cognition of jar, this enables us to infer its non-existence

7.7 QUESTIONS FOR REVIEW

1. Vyapti according to nyaya

2. Vyapti according to Buddhist

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7.9 ANSWER TO CHECK YOUR PROGRESS

1. **Answer to Check your Progress -1**

- 'Vyâpti' literally means 'the state of pervasion.'

- It implies a correlation between two facts, of which one is pervaded (vyâpya), and the other pervades (vyâpaka).

- A fact is said to pervade another when it always accompanies the other. A fact is said to be pervaded by another when it is accompanied by the other. In the given example, smoke is pervaded by fire, since it is always accompanied by fire. But while all smoky objects are fiery, all fiery objects are not smoky, e. g. the red hot iron ball.

- Thus, vyâpti is a relation of invariable concomitance between middle term and the major term. In our inference of the presence of fire in a hill what is the justification of our inference?

- First, we perceive the presence of smoke which is the mark (the middle term or hetu or paka).

- This presence of the middle term in the minor term is known as pakadharmatâ.

- Secondly, we recollect the invariable relation between the middle term (Madhya) and the major term (Sâdhya). For example, we have several times seen the smoke and the fire together in the kitchen etc, and we have ascertained the invariable relationship between the two.

- Now, we perceive smoke on the hill, so we infer fire on the hill. There cannot be smoke in the absence of fire. Because of this universal relationship between fire and smoke, the existence of fire is necessarily to be admitted in every case of smoke. Without the definite knowledge of such a relation, our inference of fire is impossible in spite of the perception of smoke.

2. Answer to Check your Progress-1

- Inference or anumāna-pramāṇa means the knowledge of sādhya or probandum or major term which is derived from sādhana or probans or middle term. T

- hat means, anumāna means that kind of knowledge which arises from hetu or sādhana. As for example, fire is inferred from smoke. Here, smoke is the middle-term or sādhana and fire is the major-term or sādhya.

- A sādhana or hetu is ascertained from its being inseparably related with the sādhya. The knowledge of this inseparable relation or avinābhāva-sambandha of sādhya and sādhana is called vyāpti; which is derived from tarka.

- Vyāpti is the main feature of anumāna. So, inference is based on universal concomitance or vyāpti-jñāna of the middle-term with the major-term.