

## CHAPTER – 8

### Conclusive Remarks

We may cite some concluding remarks as discussed in earlier chapters regarding the implication and application of some mathematical principles in Indian philosophical tradition.

First, inference is taken as most fundamental means of knowing in Western Mathematical Logic as found in different fields of knowing. In fact, without inference no knowledge is possible. Such is the view held by the Naiyāyikas though to them the form of *anumāna* is somehow different. Though there are fundamental differences between the theory of inference and *anumāna* yet in both the systems it is accepted as very important way of knowing. One may enquire in this context that to the Western Logicians the following form of inference is a correct one :

1.  $P \supset Q$
2.  $P$
- $\therefore Q$

It is valid, because the conclusion is deduced under M.P. rule. Can it be applicable to the form of inference admitted in Nyāya ? It may be expressed in the following way :

1. Wherever there is *śimśapātva* (a kind of tree called *Śiśu*) there is *vrkṣatva* (i.e., treeness).
2. There is *śimśapātva* (i.e., the property existing in a *Śiśu* tree).

Therefore, there is treeness.

The Nāiyayikas can explain the case as *anumāna* (inference) if it is desired strongly by them which is called *siṣādhayiṣā* (desire to infer). To them anything can be inferred from the related thing if there is strong desire to infer, even if it is a case of perception. In the previous example, that a *śimśapā* is a tree is known through perception. In spite of this one, is allowed to infer 'treeness' from the *śimśapātva* if he has got strong desire to infer (*siṣādhayiṣā*).

The rule of M.P. is directly applicable to the Buddhist notion of inference. To them 'treeness' is inferred on the strength of the property *śimśapātvā*. To the Buddhist any determinate cognition (*savikalpaka*) is inferential in nature. That which is expressed through language, universal etc. is called determinate cognition. The entity which is devoid of such language and momentary in nature is alone perceptual. When a tree is known as such through the fact that it is *śimśapā*, it is surely inferential. The first premiss is – 'Wherever there is *śimśapātva* there is treeness'. The second premiss is 'This has got *śimśapātva*'. The conclusion follows from these is : 'This has got treeness'. This is a clear case of Modus Ponence. In this way all the rules can be applied to Indian theories of inference.

Secondly, mathematical logic deals with the proof by *Reductio-ad-absurdum* or Indirect Proof as a method. We have shown already that the Naiyāyikas have made use of such method technically known as *Tarka* in connection with determining the nature of an object and with removing the doubt of deviation (*vyabhicāraśamkā*). The *Reductio-ad-absurdum* method is known as *vipaḥṣabādhakatarka* in Indian Logic.

Thirdly, we have shown the applicability of the Set theory in Indian Logic. The Set-Subset relationship is found among the Indian Logicians when they deal *para*, *apara* and *parāpara sāmānya*. In this connection an effort has been made to show that the concept of null set is not foreign to Indian systems. So far as the grammarians view is concerned, the terms conveying null set are well accepted by them. As they provide meaning. On the other hand the Naiyayikas do not admit such position. Because, cannot be included under seven accepted categories and hence nonsensical.

Fourthly, the concept of *śūnya* (zero) is found in both in mathematics and Indian philosophical literature almost in the same sense. Sometimes, absence (*abhāva*) is expressed with the term *śūnya* or zero. If someone wants to convey the absolute absence of money in his house, it may be conveyed with the term *śūnya* or zero. It is said in the proverb used in Bengali language, which runs as follows : '*dustu garur ceye śūnya goāl bhālo*' (i.e., it is better to have an empty cowshed than to have a notorious cow). Another example may be taken from the song of Kazi Nazrul Islam which runs as follow : '*Śūnya e buke pākhi mor phire āy*' (That is, O bird, come back to my chest which is empty). Here also the term *śūnya* has been taken as empty. Another meaning of it is accepted by the Buddhists. To them *śūnya* means *catuṣkoṭivīnirmukta* (free from four-fold modes of expression). When an object is relative it cannot be expressed in language like *astī*, *nāstī* etc. For this reason it is called relative. Moreover, the Upaniṣadic seers have to show an inner link between *śūnya* and *pūrāṇa*, as both of them have some connotation in certain stage as found in the Mantra – '*pūrṇasya pūrṇamādāya pūrṇamevāvāśisyati*'.

Lastly, the Sanskrit rendering of the term 'number' is *saṁkhyā*, which occupies a prominent role in Indian Philosophy as well as in Mathematics. Any type of calculation, pointing out, direction, identification etc. are done with the help of number. Hence in our day to day behaviour the use of number has a significant role. The number serves the purpose of identifying an object from others and hence it has the power of distinguishing an object from the rest (*itaravyāvarttaka*). In fact, through number we can 'see' the thing in its own nature and it is instrumental to the right cognition of an object, which is echoed in the derivative meaning of the term *Samkhyā*. The root *khyā* is prefixed with *saṁ*, which means *samyak jñāna* or right cognition. The term *samkhyā* means right cognition of an object in wider perspective. The literature dealing with the right cognition of the entities is called *samkhyā*. There are two entities admitted in *Samkhyā*, which are *Prakṛti* and *Puruṣa*. The real cognition (*saṁkhyā*) of these lies in the fact of knowing that they are two in number, but *not* identical. In this way, the term *saṁkhyā* means right cognition of the discrimination between two objects. In other

words, the cognition of *Prakṛti* and *Puruṣa* as two (but not one) is called *saṁkhyā*. In the same way, to realise the existence of only *one entity* in the whole world movable and immovable is also called right cognition according to the Advaita Vedānta. That is why, *saṁkhyā* is defined as the cause of the phenomenon of *counting* (*‘gananāvyavahāre tu hetuḥ saṁkhyā bhidhiyate’* – *Bhāṣāpariccheda*, Verse No. 106). It is said in the commentary that a jar is known as different from a pot through the instrumentality of the number given to the jar and it is a case of perception. The number ‘one’ is identified with the particular jar and it cannot be realised elsewhere in another jar or cloth (*ghatādisvarūpasya ekatvasaṁkhyāve ghatāntare tatpratyayābhāvaprasaṅgāt*). The number ‘one’ is the basic depending on which the property called ‘*twoness*’ existing in both the entities can be known. That is why, the cognition of ‘*two*’ and more than ‘*two*’ is generated through the dependence to the comparative cognition (*“dvitvādayo vyāsajyavṛttisaṁkhyā apekṣābuddhijanyāḥ”* – *Siddhāntamuktāvalī* on Verse – 106). When someone realises ‘*two*’, he attains it ‘*one*’, and another ‘*one*’ (*ayaṁ ekaḥ ayaṁ ekaḥ iti buddhiḥ*). From the number ‘*two*’ to ‘*innumerable*’ this comparative cognition works and hence it is called *apekṣābuddhijanyāḥ*.