CHAPTER I

INFERENCE (ANUMĀNA IN INDIAN PHILOSOPHY

Historical Introduction

Originally, the study of the problem of inference (anumāna) was done in the Vedic schools, notably, in the Vaiśeṣika and the Nyāya. The Buddhist and the Jaina philosophers took to Logic rather late.

It is evident from the contents of the Nyāya Sūtras that in many ancient circles of philosophic thinking in India, skepticism was held and defended rigorously. Saṅjaya is known as one of the staunch sceptics. He answers all the four following questions in the negative: (1) Is it good? (2) Is it not good? (3) Is it both good and not good? (4) Is it neither good nor non-good? The Āryaṇas formed another circle of the mild sceptics who accepted that only perceptual knowledge could be certain and denied this claim to any other form of knowledge. The Madhyamika Buddhists were also sceptics as they denied the possibility of absolutely certain knowledge.

In some other circles, skepticism must have been opposed as even skepticism cannot develop without opposition. The Nyāya Sūtras which have come down to us represent in a systematic form the other theory which holds that certain knowledge of what exists and what does not exist can be obtained and that there are means to obtain such knowledge. The Nyāya-sūtra recognises four sources of certain knowledge - perception (pratyakṣa), inference (anumāna), identification (upamāna) and testimony (Saṁda). It aims at establishing the possibility of absolutely certain knowledge and the vindication of the authority of the four sources of such knowledge (pramāṇas) against the attacks of the sceptics. It gives a detailed account of various methods, forms and tools of philosophic debate. The four 'pramāṇas' have not been discussed in it to the length
to which the methodology of debate has been discussed. The most important of all the topics discussed under the methodology of debate is the five-membered form of argument called the 'Nyāya'. It is important to note here that the five-membered form of argument which was later on regarded as a kind of inference (inference for the other - parārthānumāna) was not mentioned in the Nyāya-sūtra in the context of inference (anumāna). To the inference proper, one sūtra alone is devoted. It says that inference is that (cognition) which is led up to by perception and is of three kinds - 'purvavat', 'Seṣavat' and 'sāmīnyatodṛṣṭa'.

The Vāisēśika-sūtras which are older than the Nyāya-sūtras represent a fairly developed theory of inference. There, it is defined as the knowledge of a thing derived from its mark. Kaṇḍāda, the author of the Vāisēśika-sūtra, recognises the knowledge of Universal connection between the thing to be inferred and its mark as the necessary condition of inference. He mentions five ways in which the thing to be inferred can be universally related with its mark. A thing to be inferred (itiṣṭa) may be effect, cause, conjunct, antagonist or coherent of its mark.

It should be noted that the relations which are mentioned here as the basis of inference are material relations - i.e. the relations between actual things or phenomena. Kaṇāda could not develop the general form of logical relation. Later on, Prasātāpāda and the Buddhist Logician Dignāga developed the concept of formal logical relation.

Vatsyāyana (400 A.D.) does not mention the logical relation in the form of 'anvaya' and 'vyātireka' as the basis of inference. Though Vatsyāyana clearly says that mere analogy cannot be basis of inference and that inference is based on the knowledge of the
necessary connection between the thing to be inferred and its mark, he was not aware of the relation of 'Vyāpti'.

'Vyāpti' is a formal logical relation. The early Indian Logic was not formal. It seems quite natural as in the initial stages of the study of inference, its formal conditions cannot be clearly formulated. Kanāda's maxim of enumeration of the four real relations as the basis of inference and Vatsyāyana's interpretation of 'purvavat' as inference of effect from cause and that of 'sesavat' as inference of cause from effect clearly show that they could not formulate the general concept of 'avīnābhāva' or 'vyāpti' as the basis of inference.

The formal conditions of inference were not clearly formulated before Prāsastapāda (400 A.D.). In the fully developed theory of inference, Vyāpti and 'paksadharmatā' are regarded as the two formal conditions of inference and they were first formulated in the form of 'trairūpya' by Prāsastapāda (400 A.D.) among the non-buddhist logicians and Dīnāga (500 A.D.) among the Buddhist logicians. Dīnāga defines a valid reason as "one which is present in that of which something is to be inferred and also in what is similar to it but is absent from that which is not similar to it." Prāsastapāda also defines valid reason in a similar way. Prāsastapāda formulates the general logical relation—the relation between the reason (hetu or linga) and the predicate (sadhya) as anvaya—vyātireka form, and calls it 'vidhi'. He illustrates it as follows: Where there is smoke there is fire (anvaya); where there is absence of fire, there is absence of smoke (vyātireka). Fire is inferred at a particular place on the basis of definite perception of smoke there, and the recollection of the law of invariable concomitance between smoke and fire. He declares that in all cases of inference the mark is universally related to that which is to be inferred and that such a relation is not limited to a particular time or
a particular place. He does not accept the fourfold relation mentioned by the Vaisesika sutra as the basis of inference. For inference, the nature material relation that holds between the thing inferred and its mark has no value. It is the universal form of the relation that has logical value. The universal form of a relation can be expressed in the 'anyaya-vyatireka' form. He says that the Vaisesika-sutra mentions the four-fold material relation only to illustrate such material relations as have universal form.

In fact, it is simply out of reverence to the 'Sāstra' that Prasastapāda is reading his advanced logical theory in the Sāstra. By separating the form of logical relation from the material relations, prasastapāda made a great advancement in the logical theory of inference. All the later logicians of the Vaisesika and the Nyāya schools followed him in disregarding the material relations mentioned in the Vaisesika-sutra or in the Nyāya-bhāṣya as the basis of inference.

Prasastapāda distinguishes between inference for one-self (svarthānumāna) and inference for others (pararthānumāna). He holds that the inference for others (pararthānumāna) consists of five parts called 'pratijñā', 'apadesa', 'nidarsana', 'anusandhana' and 'pratyammāya'.

He mentions 'nidarsana' as the statement of the logical relation in the form of 'anvayā-vyatireka' along with corroborative examples. Vatsyāyana did not mention the statement of universal relation in the form of anvaya and 'Vyatireka' as the third member of the five-membered argument. The later Nyāya Logicians followed Prasastapāda in recognising the distinction between the inference for oneself and inference for others. They accepted his formulation of the inference for others along with the terminology of the Nyāya-sutra.

Dīnaṅga (600 A.D.), the celebrated Buddhist Logician presents a theory of inference which resembles in many respects that of Prasastapāda.
Both Prasastapäda and Dignäga recognise 'trairüpa' as the basis of inference and the distinction between inference for oneself and inference for the sake of others.

However, there are important points of difference between the logical theory of Dignäga and that of Prasastapäda. In his analysis of inference and its conditions Dignäga was more critical than Prasastapäda. Dignäga's logical system was based on his critical study of the nature of knowledge. He was the first Indian thinker who raised epistemological questions and who after having critically examined the naive view regarding the relation between knowledge and its object, presented his theory which resembled the critical theory of Kant. Like Kant he maintained that though the 'thing in-itself' (vastu) is at the base of knowledge, it never is the object of knowledge. The object of knowledge is a thought-form which is taken for the form of an external thing. He distinguished 'sense-datum' (pratyakṣa) from the perceptual judgment and maintained that what appears to us as the object of perceptual judgment, in fact, is not the external thing but a thought form taken to be externally real.

Prasastapäda does not at all refer to this epistemological problem. This suggests that Prasastapäda was anterior to Dignäga. We can imagine that if Prasastapäda had the knowledge of Dignäga's epistemological theory, he would have commented on it. It is only after Dignäga that the logicians of the Vaisēśika, Nyaya and Mimamsa took to the study of the epistemological questions. The distinction between indeterminate perception (sense-datum = 'nirvikalpa pratyakṣa) and determinate perception or perceptual judgment (savikalpa-pratyakṣa) which was accepted later on in almost every system of Indian Philosophy was not known at all before Dignäga.

In conformity with his epistemological theory, Dignäga rejects all the earlier definitions of inference which maintain that inference depends
on the perception of the connection between the mark and the thing inferred. He says, "A connection is never cognised through the senses".

Prasastapāda does not regard any specific kind of material relation as the basis of logical relation called 'Vidhi' (avīnābhāva). But Dignāga's recognition of 'effect' (Kārya) and 'the Identity of essence' (svabhāva) as the marks for inference indicates that he regarded some specific material relations as the basis of logical relation. Later on, working out the implications of his theory, Dharmakīrti regarded two material relations viz; 'the relation of being produced from' (tadutpatti) and 'the relation of material identity (tādātmya) as the basis of logical relation - 'avīnābhāva'.

While Prasastapāda recognises five organs of the inference for others, Dignāga recognises only two.

Dignāga's devastating criticism of the naive - realistic view of the cognitive -relation which was uncritically held by the early Naiyāyikas and the Vaiśeṣikas and that of Vatsyayana's theory of inference made the later Naiyāyikas shift their attention from the study of the dialectics to the study of Logic proper. Uddyotakara (600 A.D.) took up the cause of refuting Dignāga's logical theory and that of establishing the real Nyāya Logic. He criticizes almost every point of Dignāga's Logic, specially his formulation of the three - aspects of the reason (trāṇa trairūpya). He deviates from the Nyāya - bhāṣya with regard to the interpretation of some Nyāya Sūtras and interprets them independently. This is true with regard to his interpretation of the Nyāya Sutra 1-1-5 which defines inference and mentions its three kinds. While interpreting this Nyāya Sutra, he formulates his theory of inference, the most important feature of which is the concept of 'paramarsa' or 'trīyaliṅgaparamarsa'. The next important feature of his theory of inference lies in his interpretation of the three kinds of inference as purely affirmative, 'anvaya', purely negative 'vyatireki', and affirmative - negative 'anvaya-vyatireki'.

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Uddyotakara makes distinction between 'knowledge' (pramiti) and its instrument (pramāna). It is, perhaps, in opposition to Dignāga's emphasis on epistemology that he emphasises the distinction between the instrument of knowledge and the knowledge. For Dignāga, the question of the relation between knowledge and its object appears to be primary. But Uddyotakara does not seem to pay much attention to this problem. He appears to be interested more in the study of the instruments of knowledge than in that of the knowledge as such. Unlike Dignāga he does not take the term 'anumāna' in the sense of inferential knowledge. By the term 'anumāna' he means the instrumental conditions of in the inferential cognition (anumiti). He regards 'paramarśa' as the instrumental condition of inference.

Uddyotakara was followed by Dharmakirti (700 A.D.), a great Buddhist logician who advocated Dignāga's theory of knowledge and Logic with great logical acumen and novelty. He was a great thinker and a prolific writer.

Dharmakirti not only elaborated and defended Dignāga's Logical theory, but had also improved upon it. He improves upon Dignāga's definition of perception and his formulation of the three aspects of the reason (trairūpya).

His exposition of the logical relation called 'avivahāva' its material basis called 'svabhivika-pratibandha', its two forms - 'tadatmya' and 'tadutpatti' and the formulation of the logical relation in 'anvaya - vyatireka ' form is marked by great originality. In Dharmakirti, the Buddhist Logic achieved its zenith.

He regards the analysis of concepts (vivecana) as the main function of philosophy. He is not so much concerned with the defence of 'idealism' as with the philosophic analysis of common concepts and terms. The Nyāya-vaisesika philosophers hold that all terms have positive meaning. Even the terms which are ordinarily regarded negative have positive meaning because for them even 'absence' is a positive category. They hold that
Dharmakīrti accepts that whatever is knowable i.e., whatever is the object of knowledge, is nameable. But he does not accept that whatever is the object of knowledge is real. He thinks that it is too naïve to hold that whatever is the object of knowledge is real. The Nyāya-vaśesika concept of 'universal' (jāti) is the main target of his criticism. He is unparalleled in the defence of the theory of 'apāṇa'.

Dharmakīrti's Logic was so powerful that it completely overshadowed the logic of Uddyotakara. Vacaspati Miśra (841 A.D.) mentions that the old logic of Uddyotakara grew weak like old cows and was drowned in the depth of the innovating vigorous Logic of Dharmakīrti. In order to save the 'Old cow' - the old Nyāya Logic - from being completely submerged in the swift currents of the Logic of the Buddhists Vacaspati wrote his Nyāya-Vārtika-Tattvāryātīka which is a commentary on Uddyotakara's Nyāya-Vārtika.

While defending the Nyāya Epistemology and the Nyāya-Logic, Vacaspati introduces some new concepts under the influence of the Buddhist Logicians - Dignāga and Dharma-Kirti. He is the first Naiyāyika to recognize the distinction between indeterminate perception (nirvikalpa pratyakṣa) and determinate perception (savikalpa pratyakṣa). Like Dharma Kirti, he also distinguishes the logical relation (avimābhava) from its material basis. But he does not accept Dharma Kīrti's view that the relations of 'identity of material essence' (tādātmya) and of 'being produced from' (tādutpatti) alone constitute the material ground of the logical relation. He holds that any kind of relation of one phenomenon with another can be regarded as the basis of logical relation, provided the relation is unconditional (anauṇḍhika).

The concept of 'Upādhi' and that of unconditional relation (auṇḍhika-sāmbandha) were first introduced by Vacaspati Miśra. He discusses in detail the methods of establishing Vyāpti (Vyāpti grahāṇa). One of the important merits of his Nyāya Vārtikatātparyātīka lies in its faithful exposition of the Buddhist logical theory.
Vācaspāti Mīśra was preceded by the two eminent philosophers of the Mīmāṃsā school - Kumārila Bhatta and Prabhākara. Prabhākara imbibed many tenets of Buddhist Epistemology. Stcherbatsky calls him the bastard son of the Buddhist.

Kumārila was a celebrated realist philosopher. The latter Naiyāyikas, Vācaspāti, Jayanta and others had a great reverence for him, and while counteracting the logical and the epistemological theories of the Buddhists, they profusely quote in their support from his Sūkavārtika. So far as the theory of inference is concerned both Kumārila and Prabhākara preferred Prāsastapāda’s analysis to Uddyotakara’s.

Jayanta (about 1000 A.D.) gives a fine exposition of the Nyāya theory of inference. His Nyāyamañjary is the store house of the philosophic ideas which took shape in his time. He gives detailed exposition of the Buddhist theory of Vyāpti and criticizes it. His treatment of the problem of the methods of establishing Vyāpti deserves to be specially noted.

After Prāsastapāda the vaisesika Logic was elaborated by Śrīdhara (about 1000 A.D.) in his Nyāya Kandali. All these eminent philosophers of the Nyāya Vaisēśika and the Mīmāṃsā schools agree in rejecting the Buddhist’s analysis of knowledge, their theory of tādātmya and tādutpatti as the basis of ‘avinabhava’ and the theory of ‘anoha’.

During the period in which the Buddhist and the Nyāya Logicians were actively engaged in developing their theories of inference, each group defending its own against the attacks of the others, parallel to them the Jaina Logicians were also carrying on their studies of the problem of inference and other sources of knowledge. With regard to the problem of inference, the originality of the Jain Logicians, lay in their recognition of two kinds of Vyāpti called by them ‘antara - vyāpti’ - internal invariable concomitance and ‘behiar’ - vyāpti - external invariable concomitance. While Jaina division of vyāpti into internal and external was accepted by the Buddhists, it was rejected by the Naiyāyikas.
Udayanacarya (about 1050 A.D.) wrote a commentary on the Nyāyavārtika-tatparyatika of Vācaspati, known as the Nyāyavatikatatparyatika-parisuddhi, and several independent works on the Vaiśeṣika Philosophy. He dwells on the topic of inference in his Nyāyakusumanjali and Nyāyavārtika-Tatparyatika-Parisuddhi, has nothing much to add to the theory of inference developed by the earlier Naiyāyikas except the formulation of definition of some logical terms i.e. g'upādhi and systematising the Nyāya theory of induction. It is held that he gave a death blow to the Buddhist philosophy. But I doubt that he achieved this on the basis of the merit of his logic.

Udayana's logic was criticised by Śrīhāra (1150 A.D.) who belonged to the Vedānta school. In his Khandana-Khandkhādyā, he follows the dialectical method of the Madhyamika Bauddhā philosopher Nāgārjuna and criticises the Nyāya definition of the pramanās with a view to prove that the Reality is beyond the grasp of thought.

The Naiyāyikas who came after Śrīhāra concentrated on devising a technique of defining their terms with accuracy and precision. Gāngesā (1200 A.D.) was the first Naiyāyika who developed a new technique of expression. He gave a new form to the old ideas of Nyāya Logic and epistemology, and also refined many old concepts. His Logical system as compared to that of earlier Nyāya came to be known as the New Logic (Navya- Nyāya).

Gāngesā concentrates mainly on the problems of epistemology and Logic. His Tattvacintāmaṇi contains an amalgam of epistemology and Logic. It presents a new style of logical thinking and expression which possesses the qualities of accuracy and precision. The Tattvacintāmaṇi - the 'magnāopus' of Gāngesā was found to be so original and refreshing in style that the later Nyāya Logicians preferred to write commentaries on this work to the old text which followed the Nyāya-Sūtra.
In connection with the study of the problem of inference, Gangesā, discusses 'paramārśā', nature of 'vyāpti', the method of cognising 'vyāpti', three kinds of inference - 'kevalānvyāpti', 'kevalavyātireki' and 'anvaya-vyātireki'. He recognises distinction between 'svārthānumāna' and 'parārthānumāna' and discusses the five kinds of fallacies of reason in detail.

With regard to the process of inference, he regards 'vyāpti' as its instrument and 'paramārśā' as the function of 'vyāpti'. In the old school of Nyāya established by 'Uddyotakara', 'Paramārśā' itself was regarded as the instrument of inference.

The Navya-nyāya established by Gangesā differed from the old Nyāya in another respect. While the polemic of the Old Nyāya was directed against the Buddhists, that of the Navya-Nyāya was directed against the Mīmāṁsākas and the Vedāntins.

The Nyāya-Logicians who wrote commentaries on Tattvacintamānī flourished in Nūdea or Navadvīpa, a district in Bengal. Their school was known as the Nūdea school of Nyāya. Raghunātha Mathurānātha, Jagadīśa and Gadadhara were the eminent logicians of this school. Raghunātha was a great original thinker, and a great logician. He rejected the classification of the categories borrowed by the Nyāya from the Vaiśeṣika. He regarded 'Paramārśā' as the instrument of inference.

There are many introductory manuals on the Nyāya Logic. They represent an amalgam of Nyāya Logic with the Vaiśeṣika Metaphysics. Of them Visvanātha's Bhaṣapariccheda, Annām Bhata's Tarkasangraha with Dipika, Kesavamisra's Tarkabhāṣā and Laugaksi Bhāskara's Tarka Kaumudi are very popular.

In the modern times the study of Indian Logic is mainly confined to the traditional sanskrit schools (pathaśalas) and the sanskrit colleges (vidyālayas). It does not form part of the syllabi of the Indian Universities.
Many eminent scholars have made efforts to interpret the Indian Logic in the Western terminology and to connect it with the development that have taken place in this field in the West. The following are the important works on Indian Logic:

(i) Buddhist Logic by Stchervatsky.
(ii) Indian Logic and Atomism by A.B.Keith.
(iii) History of Indian Logic by Satish Chandra Vidyabhushana.
(iv) The Indian Logic in the early schools by Randle.
(v) Nyāya Theory of knowledge by S.C.Chatterjee.
(vi) Six ways of knowing by D.M.Datta.
(vii) Translation of N,S,Nāha, N.V.by G.N.Gha.
(viii) Nyāya-Darśana in four volumes in Bengali by Phanibhusana Tarkavagisa.
(ix) Translation of a portion of Nyāya Manjary by Pancanana Tarkavagisa
    In Bengali.
(x) Materials for the study of Navya – Nyāya Logic by D.H.H.Ingalls.
(xi) Translation of Raghunātha's Padartha Tattvāngraha by Karl Potter.
(xii) A Modern Introduction to Indian Logic by S.S.Barlingay.