Chapter VIII

Indian Logic and The Problem of Vyapti
Synthesis of Western and Eastern Logics

Introductory:

We have made reference to Nyāya efforts at defining pratiyogitā for counter positiveness in the preceding chapter and have noted Gangesh, Raghunāth and others vying with one another or defining pervasion with the help of two basic concepts i.e. relational adjuncthood and relational subjuncthood. We have also taken note of their effort at defining pervasion through negation and have taken note of their failure purely to define this basic concept of all inferences due to their neglect of the ontological background on which the whole theory of Nyāya logic is based. They tried their level best to overcome the difficulties purely on epistemological background. We shall therefore enter into the ontological background of this concepts through their theory of negation.

(1) Nyāya Theory of Negation:

Negation points to an affirmation-negation dichotomy. It has also been construed as 'Non Being' as opposed to 'Being of
Perminides'. According to Perminides 'Non-Being' is an impossibility. When atomists Leucippus and Democritus argued that, 'Being is in no way, more necessary then, Non Being'. Atoms are being, the space may be looked upon as 'Non Being' Universe as constituted by atoms in space cannot dispense with the wither(i) To Plato, negation is difference or diversity of Being and not a 'Non Being and the difference is Pidos or archetype. Aristotle transferred the problem from pure ontology to the realm of epistemology or logic. Negation according to him is related to assertion. An affirmation says he, is positive assertion of something about something, a denial is negative assertion'. He continues, 'every affirmation has an opposite denial, similarly, every denial has an opposite, denial'. They are relative and one is meaningless without the other. They are based upon the law of contradiction and the law of excluded middle.

Modern logic, regards negative partials as 'logical words' which can be taken out and replaced by a negative sign before the whole sentence, so that all negative statements can have the same form. If P is stands for an affirmative statement then not P stands for negative statement and the formal truth condition is stated as (i) P is true if ~P is false, (ii) P is false if ~P is true, Negation has assumes the form of true or (i) Raven and Kirk : Pre Socratic Philosophers
Russell and others have found difficulties in such a mode of delineation for how can we experience directly that \( P \) is false? 'P is false' is therefore, arrived at inferentially. But here we are making the use of negative premise which is an intuitive generalisation of the form.

\[
(X)\{FX \lor GX\}
\]

or direct, experience like 'this is not blue'.

Negative statements are significant only in so far as they presuppose a corresponding attribution of a contrary or contradictory property. Thus, 'it is not blue' means or presupposes that it is either green or yellow or red etc. This theory rejects what are called 'infinite judgements' as unmeaningful e.g. (statement like Virtue is not square). Bonsanquet suggested that every significant negation. 'A is X which excludes B were X is an unknown property excludes the property B. Such analysis is too vague and everything in it depends upon the meaning of the term 'exclude'.

Ryle rejected such negation as 'virtue is not square' as nonsense on the ground that they are not genuine propositions. However, he argued in favour of the theory of that there are negative propositions which may be the expression of something. He
proposed that some negative propositions may be taken as expressing otherness. H.W.B. Joseph says, 'In negative judgement, I assert nothing real'. That the denial as nothing real to correspond and that it is mere supposition.

If we begin by neglecting outside reality and concentrate upon our judgements about it, the door may be well open to a kind of subjective idealism. The modern logician avoids any reference to subjective activity of thinking and takes about objective content of a proposition.

The Naiyāikas also interested in the objective content of a cognition. They go a little further and argued that if, in a judgement like, 'there is bread on the table', bread's presence can lead one to construe bread as a property of table, bread's absence may similarly be construed as a property of a table. The emphasis on the objective contents does not however imply, on the part of Nyāya, that nowhere in the negative judgement do we make inference. It means simply that our perceptual apparatus is itself sufficient to give both affirmation as well as denial as assertion at least in certain obvious cases.
(2) **Denial of Dichotomy of Affirmation Negation**

The dichotomy of assertive or affirmative negative type of judgements rest upon subjectivity. When we say, 'bread is not on the table' we argued more than is warranted by the situation because there is only an empty table. From Nyāya point of view, it can be suggested that the phrase, 'empty table', is somewhat misleading, because to explain just what is meant by negative judgement, we need another negative judgement and that to explain the meaning of the negative statement in terms only of positive concepts since impossible. Various types of statements in the categorical affirmatives describes the world of experience. It is only under a naive picture theory of meaning, that one can claim that negative judgements are subjective because their content elements which do not correspond with the reality. The question becomes crucial as to what is real: a table or an empty table? The question of context cannot be seriously entertained because of the ontological status of the negation.

(3) **Ontological Status of Negation**

Nyāya does not accept the dichotomy of the affirmative negative among judgements: All determinate cognitions or judgmental cognitions involve a qualification or an attribution and
such an attribution cannot be construed either as affirmative
or as negative. In a declarative sentence, in ordinary language,
there is assertive force as well as the content of an assertion.
The components of such a content are divided by Nyāya into
qualifier and qualificand which are related by a qualification
relation. To say that a judgement is affirmative or negative
amounts to saying that the qualifier is expressed in ordinary lan-
guage by positive phrase like, 'is blue' in a sentence, 'the
pot is blue' or by negative phrase that contains a negative
partical such as, 'is not blue', in a sentence, 'the pot is not
blue'. The qualifier in the first sentence is the property of
being blue or blue colour, whereas in the second, is the pro-
erty of not being blue or the absence of blue colour. Nyāya
asserts that the blue colour is the name of the property that
characterises certain things or occurs in certain loci than by
the same token, 'the absense of blue colour' is the name of
another property which like wise characterises some X or other
things merely assets that a qualifier qualifies or a qualificand.
Frege, on the ground of economy of logical primitives and their
expressions in language urged that it is useless to assume the
different ways of judging. Rather we should prefer a single way
of judging in which we need only one assertion sign instead of
two, viz. affirmative assertion and negative assertion. Nyāya
construes negation as an objective component of the content of a judgemental cognition, as an absence, not as a psychological act of denying something. According to Nyāya a property is real or genuine and can be used in all logical or philosophical discourses if there is something i.e. some locus that it some characterises. This can be symbolised in modern terminology as:

\[( x) (x \text{ is a locus of } P)\]

This means that if blue colour characterises things that are blue, absence of blue colour characterises things that are not blue. If there were nothing that was not blue, the absence of blue colour would then have been unjustified and the property, 'absence of blue colour' would be an unexampled property i.e. unreal property which can not be used in logical or philosophical discourse.

(4) Nyāya Ontology:

According to Nyāya ontology, all things are knowable and hence knowability characterises everything, while the absence of knowability characterises nothing. The absence of knowability is, therefore, an empty or unreal property. We cannot use such a property to characterise some entity, nor can we negate such a
property characterise some entity, nor can we negate such a property or talk about an absence of such an unreal property as characterising everything that is real. In the world of properties, some are positive and independent, in the sense that there is only one way, at least, to express them in language. Without using a negative particle like 'not' and some are not positive or 'dependent' in the sense that there is no way to express them in language without using negative particle in some form or the other.

An absence as a property, is necessarily dependent upon a counter positive and has, been urged as such by Gangesh. We shall follow the procedure adopted by Nyåya for reducing declarative sentences into a complex term expressing a complex of ideas:

1. A is P
2. There is an A, which is P
3. Some one asserts A (which is) P
4. A is not P

A declarative sentence usually combines the subject and the predicate in various ways:

1. An attributive way
2. An identifying way
e.g. Ghato Nilah (The pot is blue) exemplifies the first:
Ramo Narah (Ram is a man) exemplifies the second: Nyāya recognizes two types of absences:
(i) Relational Absence (Sansargā Bhāva)
(ii) Mutual Absence or (Anyonyā Bhāva)

Nyāya doctrine of Negation is based upon their doctrine of relations which are of four types. We have mentioned earlier. The concept of relation is defined with the help of adjunct (Pratiyoginā) or subjunct (Anuyoginā). A relation accounts for their being so cognised and hence a relation can be said to govern such a qualificative cognition. This elementary definition of relation seems to be tacitly assumed by Naiyāsikas throughout.

All determinate cognitions involve a qualification or an attribution and such an attribution cannot be construed either as affirmative or as negative.

(5) Nyāya Theory of Inference:

Nyāya defines inference as the meaning grasped after observing certain marks(2). The inference thus follows the process of perception which is defined as knowledge resulting through
the contact of sense organs with their objects. It is sense organs' activity generated by the relation of sense organs with their objects. If through some obstacle, the sense organs fail to come in contact with their objects, then there is no preceptual knowledge. The relation of sense organs with their objects is known as sannikarsha which according to Vātsyāyana assume the form of (i) Effect (ii) Cause (iii) Conjunction (iv) Contrapositions or (v) Inherence.

This type of relation of the sense organs with their objects is known as linga paramārsha and the knowledge generated by this relation is known as laṅgikam inānaṃ anumānam.

There are two types of inferences based on the real relations like effect, cause etc., according as the mark is seen or unseen. The mark functions inferentially in virtue of certain read relations in which things stand to each other. Thus Indian Logic differs from its Western Counter part which is only formal and which does not touch the real world even at a tangent.

Even with regard to this two fold division of inferences Randle contends that very notable in this is the absence of all the reference to the function of the example in inference and also the absence of any doctrine of the members of the syllogism.

(3) Pratikhyate Drastha Samabandha, Samanyeto Drasta Sambandha: Prasashta Pād bhāṣya
This means that it stresses the function of the example, making inference turn on resemblance (Sadārmya). Instead of naming it real relations as the cases of inference, it defines the function of hetu through the general conception of (probativeness (Sadya Sadhana)(4) derived from likeness to examples (Udāharana Sāhārmyāt). The real relations on which inferences based are enumerated in Vatsyāyana as effect of, cause of etc. But there are clearly recognise two different kinds of the inferences based on these real relations. These two types of inferences are known as 'seen (Drashtaling) and seen, from likeness' (Adrastha or Samanyato Drashtaling). These two fold division of inference is found also in other schools e.g. Sabar in his Bhdysya on his mimāmsa says that two kinds of inferences are (1) That in which the relation has been experienced in perception (Pratyaksho Drashta sam bandha), and that in which it is experienced from likeness (Samanyato Drashta Samabandha). The distinction like this was considered very real and important but latter on, it was not considered as specific and hence new classification in terms of meaning was introduced. It is (i) Purvavet i.e. from cause to effect; (ii) Sheshvat i.e. from effect to cause and (iii) Saman yato Drastamqcha i.e. based upon invariable concomittance of cause and effect.

(4) Randle : Indian Logic in the Early Schools Page 148
It is on the strength of validity or otherwise of Hetu or Probativeness, the validity of inference depends. There are five conditions on which the validity of hetu depends:

(i) It must be existent in the subject
(ii) It must exist in similar instances
(iii) Must not be in dissimilar instances
(iv) Must be free from contradiction
(v) Must not have counter balanced instance

There are five types of invalid hetu or hetvabhasah.

(6) Constitution of Five Membered Syllogism:

There are five member of demonstrative syllogisms

(i) Pratijnā
(ii) Hetu
(iii) Vyāpti and Udāharena
(iv) Upanaya
(v) Nigamana

(i) Pratijnā: A proposition which states the theme to be proved, it is the announcement of the thesis in distinct, unambiguous terms. It is always in the form of a statement of the relation of the subject with the predicate and hence is in the
form of judgement. The relation of subject and predicate may be either an affirmation or denial e.g. The sound is non eternal (5) what is inferred may be of two kinds

(i) A predicate
(ii) A subject e.g.

(i) Non eternity may be related to sound.
(ii) Non eternity of sound has been announced in the form of sound is non ternal. This is Natayanas view supported by Udyotkar. The pron or pratijna is different from conclusion. The former is a statement to thes proved while the later is a statement proved by the inference.

(ii) Hetu : The second constituent is a statement of the reason which is favourable to the inference of the predicate and in which similarity between subject and an example in g respect of a common character which is connected with the predicate is announced.
Hetu thus is a statement of a concomittance between two terms of syllogism. It is known as Vyapti or 'pervasion'. The rule of universal concomittance is aimed at establishing relation of un- variable concomittance between two terms of syllogism one of which can become hetu or middle term and the other the saddya term

(5) Prajnapaniyena Dharmena Dharmino Vishista$syya
Parigraha Vachanam Pratijna N.S. 33
(major probandum). Vyāpti is a base on which inference stands. The earliest explicit formulation of inference is that contained in Vaisheshik sutra were inference is defined as 'knowledge from a mark' (6). This inferential mark or middle term is of two kinds: (i) Drashtam lingam (ii) Adrashtam or Sumanyato

Drashtam Lingam. The mark functions inferentially in virtue of certain relations in which things stand to one another. These relations are enumerated in Vaisheshik Sutra 9.2.2. We have already made reference to this.

Navya Nyāya criticises old school for giving much importance to ling or sign because the old school says that the sign or ling actually being known universally and invariably concomittant, e.g. in case of smoke and fire is the instrument of fire. Now if the ling or sign be the instrument of inference, than from a sign that is yet to come or has been destroyed, there would be no inference, for the sign which is the instrument of inference is then absent. The Navya Nyāya school defines concomittance as existing in the subject and is the absence of relation of the reason to anything other than what has the thing to be inferred. (7) It is also defined as the coexistence of the reason with the thing to be inferred which must not be counter

(6) Laingikam Jñānam
(7) See Bhasā Pariccheda
positive of any non-existence that may abide, things having the reason. Invariable concomittance between the major and hetu forms the crux of inferential process. Vatsyayana says that a valid hetu must exist in the subject, in the similar cases and must not exist in dissimilar cases.

(iii) Vyāpti: There are three kinds of Vyāpti:

1. Anvaya
2. Vyatireka
3. Anvaya-Vyatireka

(1) Anvaya:

Anvaya Vyāpti is a statement of invariable concomittance of the presence of the reason or the presence of the predicate, or it may state the invariable concomittance of the absence of the predicate with the absence of the reason. The statement accompany by an example which shows that it is the result of an induction and hence its material truth is also simultaneously guarantied. It states either affirmative uniform relation (Anvāya) or negative uniform relation between the reason and the predicate (Vyatireka).
(4) **Upānaya**:

Upānaya is an application is a statement with regard to the existence of the reason in the subject which is invariably concomittant with the predicate. It is an application of a general principle to a particular instance. It conveys the knowledge of paramursha or the presence of the reason pervaded by the predicate in the subject which leads to a conclusion. It removes all doubts with regards to the presence of reason in the subject. Without which there cannot be any conclusion. The application is necessary because in its absence the prem., the reason and the exemplification are not adequate to prove the conclusion. It may be either affirmative or negative. The application shows that a demonstrative inference is deductive. The demonstrative syllogism must be both inductive deductive or formal as well as material.

(5) **Nigaman**:

The conclusion is the statement of the pron. as established or demonstrated as conclusively established.

(7) **Types of Inference**:

There are three types of inference. We have taken note of earlier i.e.

(i) Purvavat   (ii) Sheshvat   (iii) Samanyato Drashta or
That proceeding from cause to effect, e.g.

(1) The sky cast by heavy clouds is a cause of inference, that there is a possibility of rain.

(2) From effect to cause e.g. after observing muddy water and increased flow of the river, one infers that it must have rained in the catchment area.

(3) Based upon common experience e.g. the motion of the sun is inferred from daily experience of the movements of sun from east to west.

These inferences of unperceived objects, from a perceived mark which is known to be uniformly related to it.

Udyotkar and Vishvnath observe that samanyato Drashta inference is not based upon the uniformity of causation but is based upon the non causal uniformity. Vatsyayana gives another meaning of these kinds of inferences.

(i) According to him, purvavat inference is based upon previous experience of invariable concomitance of two perceived objects. e.g. the existence of unperceived fire is inferred from perceived smoke on the ground of uniform relation between them perceived in the past.
(ii) Sheshvat inference is inference by elimination e.g. Sound is not a substance because it inheres in one substance i.e. either. If is not in action since it is a cause of another sound. It is not inherence, particularity or community also. So it is a quality.

(iii) Samanyato Drashta is an inference of an unperceived object from a mark which is perceived through the relation between them is not perceived e.g. we infer the existence of the soul from qualities of cognition, pleasure, pain, desire etc. which must in here in a substance. Udyotkar has rejected purvavat as an inference from a cause to the effect. He has also rejected the sheshvat as an inference from effect to cause and has defined Samanyato Drashta as an inference based upon uniformity of existence as distinct from uniformity of causation.

Bhasarvajna has distinguished between Drashta or Vishistodrashta and Samanjata Drashta, in the former a perceptible object i.e. fire is inferred from the perception of a mark i.e. smoke but in the later an unperceptible object i.e. the visual organ is inferred from the perception of a mark i.e. colour.

Gangesh has mentioned three kinds of inference i.e.
(i) Kevalenvayi (ii) Keval Vyatireki (iii) Anvaya Vyatireki
In Kevalanvayi inference the reason has affirmative uniform relation with the presence of predicate (Sadhya). It has an affirmative reason which exists in all similar instances and has no dissimilar instances. e.g., The jar is nameable because it is knowable. The reason 'Knowbility' exists in all nameable objects. There are not knowable objects which are not nameable. The reason is not the counter positive entity of the negation of the predicate. (8) The amjor is a universal affirmative proposition, it can not be a universal negative proposition, the minor as well as the conclusion also are universal affirmative proposition. e.g.

(1) All knowable objects are nameable
(1) The jar is a knowable object therefore the jar is nameable.

Kevalanvayi inference, as stated by Gangesh, is a syllogism of the first mood in the first figure called Barbara in Western Logic. In this kind of inference, an uniform affirmative relation between the reason 'knowability' and the predicate 'nameability' is established by the method of agreement.

In Kevalvyatireki inference, the reason has negative in variable concomittance with the absence of predicate. Its reason exists in the subject only. It is devoid of similar instances in which the reason and the predicate may coexist. (9) It depends

(8) Gangesh : Tatvachintamani : Asedvipaksha styaśtā Bhava Pratiyogyi Sadhyakam

(9) Asat Pratipaksha Kevalvyatireki
upon a negative invariable concomittance or uniform relation between the absence of reason with the absence of predicate. This is established by the method of Agreement in Absence. e.g. The earth differs from other objects because it has odour or what is not different from the other objects has no odour, the earth has odour therefore the earth is different from the other elements. In this case the reason, 'odour', is the uncommon attribute of the subject earth. It is co-existensive with the subject, there is no similar instance in which it may exist. In Kevalvyatireki type of inference the reason is the counter positive entity of the absence which pervades the absence of the predicate(10).

(2) In Anvaya Vyatireki inference there is universal affirmative relation of the reason with the predicate as well as a universal negative relation between them. The first is known by the method of Agreement in presence and the second, by the method of Agreement in Absence. The reason is present in similar instances and absent from dissimilar instances e.g.

(1) All smoky objects are fiery
   The hill is smoky
   The Hill is fiery

(10) Sadhya Bhava Vyapaki Bhata Bhava Prati Yogitwam
(ii) No nonfirey objects are smoky

The hill is smoky

The Hill is firey

All inferences are based upon Vyāpti i.e. universal concomittance of the predicate with the subject. It depends upon three conditions:

(i) The reason must be known to be present in the subject. This is known as Pakshadharma

(ii) It must be known to have invariable concomittance to the predicate

(iii) The universal concomittance of subject with predicate is the ground on which the inference is based. What has variable concomittance is not a valid reason.

(8) Fallacies:

There are five kinds of fallacious reasons that are recognised by Gautam i.e.

(i) Inconclusive (Savyayichār)

(ii) Contradictory (Viruddha)

(iii) Counter balance (Prakaransama)
(iv) Unproved (Saddhya sama)
(v) Mistimed (Kalatita)

(i) Inconclusive: reason has been defined by Gautam as one in which the subject has variable concomittance with the predicate. Vātsyāyana defines variable concomittance as the absence of uniform relation of the reason with the predicate. Uddyakar defines variable concomittance as the existence of reason in the subject, similar instances and also dissimilar instances e.g. The sound is eternal because it is intangible. Intangibility is concomitant with eternity and non eternity. Intangible souls are eternal, but intangible cognitions are not soul. So the reason is inconclusive.

(ii) This type of Heśvabhāsa is defined by Gautam as that which arises due to non-observance of any of the rules laid down so far. It is reason which contradicts itself. e.g. In Sānkhya the effect is pronounced as immutable in the cause but is declared as mutable in the effect. The contradictory reason is one which contradicts the predicate though it is employed to prove the existence. e.g. The sound is eternal because it is produced.

(iii) The reason which is counter balanced by another reason and cannot resolved the controversy as to the real character of an
object is known as counter balanced (Prakaranasama) Vātsyāyana defines it as that in which the mind oscillates between two contradictory character of an object due to indeterminate nature of an argument and the counter argument both being equally strong.

(iv) Saddhyasama or an unproved reason is defined by Gautam as one i.e. required to be proved like a predicate but infact it does not require any proof as such. Vātsyāyana regards it as non different in logical validity from the predicate in as much as it is required to be proved like it. This is also called asiddha e.g. Shadow is a substance because it has motion. In this case the reason, the movement of the shadow, is to be proved.

(v) A mistimed reason defined by Gautam as one that partly exists at some other time than when it is intended e.g. The sound is durable because it is manifested by conjunction like colour. The colour of a jar is manifested or perceived owing to the conjunction of the jar with light which exists before its manifestation. So sound, which already exists is manifested or perceived owing to the conjunction of a drum with a stick. Therefore, sound is durable because it is manifested by conjunction is a faulty reason, because it is mistimed. The colour of a jar is perceived at the time when there is conjunction of the jar with light. But the sound is perceived at a distance after conjunction
of a drum with a stick has ceased. In other words the perception of sound does not synchronize with the conjunction of drum with a stick, hence it is not due to conjunction. In the absence of cause there is a absence of effect. So manifestability by conjunction is a mistimed reason for durability of sound. Udottarkar gives the same meaning of the fallacies of mistimed(11).

We saw that even in cases of fallacies of inference, it is the relation of Hetu or reason with major or minor term that plays an important role. We can, therefore, say that, as was the case with valid reasoning, invalid reasoning of hetu with other terms. Even in case of fallacies of perception they are more or less based upon the relation of the perceiver with the perceived. If this relation is correctly based there is correct perception, otherwise it is likely to give rise to fallacies of perceptions. Similar is the case with fallacies of example wherein the example fails to explain the relation of reason with either major or minor term. The same is obvious in case of comparison or upmāna. Certain other fallacies like begging the question (Ātamāshraya), mutual dependence (Anyonyā Shraya), Argument in circle (Chakrīka), and infinite regress (Anāvastha).

We donot enter into other details of philosophical disputation, quibble etc.

(11) See Nyāya Vārtik