

An Understanding of Vyāpti with the Help of Western Logic Tools

Bheeshm Narayan Singh

(Research Scholar at the Department of Philosophy, University of Rajasthan Jaipur India)

ABSTRACT

This article is an attempt to draw some comparison between concept of 'vyāpti' the Indian inferential tool and inference in western logic. The aim of this paper is to enhance scholarly understanding of logic using the tools of western logic like; Mill's inductive method and inferential rules of MPP and MTT. The paper discusses the concept of 'Vyāpti' in Nyāya school to Indian philosophy in context of inferential rules of western propositional logic. Vyāpti is an Indian inference based on cause and effect. The paper is an attempt to bring out some basic similarities of argumentation and bridging the gulf between the two schools.

KEYWORDS: Vyāpti, Tautology, Inference, Mill's Method, Syllogism

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I. INTRODUCTION

“Nyāya Philosophy” is a school of Indian Philosophy which deals with Pramāna to establish validity of an argument. Nyāya school discusses epistemological aspects of Nyāya-Vaisesika allied system of Indian philosophy. Five elements (Pancāvaya) are inferential ground of Nyāya's logic to establish vyāpti. Vyāpti is a necessary association of effect with its cause. Pratiñā, Hetu, Udāharana, Upanaya and Nigamana are the five elements of the Nyāya argument and it can be further reduced to three elements, Udāharana statement, Upanaya statement and Nigamana statement. These three statements compose a syllogistic argument which is exactly similar to syllogism of western logic. Vyāpti is an inferential mean to achieve non-erroneous knowledge (pramā). Vyāpti is an invariable concomitance between cause and effect. For an example there is fire because I can see the smoke; in this case vyāpti (concomitance) is a necessary relationship between smoke and fire. If there is smoke then its cause the fire must be presence there as the presence of smoke in absence of fire is impossible. there are three vyāpti relations in Indian logic; Kevalanvayi, Kevalavyatireki and Anvayavyatireki. On the other hand, in Mill's method these different inferences known as methods; method of agreement, method of disagreement and joint method of agreement and disagreement.

Truth and validity are essential part of propositional logic and syllogism. In a syllogism there are only three terms; minor term, middle term and major term. A syllogism has only three propositions that are; major premise, minor premise and conclusion. The structure of the argument provides validity while content provides truth or falsity.

II. MAIN TEXT

Vyāpti-

“Vyāpti Vishishta Paksha Dharmata Jnanam Iti Anumana.” Vyāpti is a necessary and universal relationship between Hetu (middle term) and Sādhyā (major term) which need to have pakshadharmata, to be located in Paksha (the locus). In the case of smoky fire on the hill, the smoke is hetu, the fire is sādhyā and the hill is paksha. Tautology is vyāpti where consequence is a logical product of its antecedent. Tautology is a logical derivation of conclusion from its premises (P) in an argument. MPP and MTT propositions of Western logic are basically tautologies.

Mill's method

John Stuart Mill introduced five rules informal methods of inductive inference for establishing causal connections. Three of them has been discussed here.

1. The method of agreement- The method of agreement helps show that a certain factor is necessary to bring out a certain effect. The method of agreement is a causal link between cause and effect.
2. The method of difference or disagreement- The method of difference helps establish that a certain factor is sufficient to bring out a certain effect.

3. The Joint Method- A combined method of agreement and disagreement comprises if an effect there then it's cause is must. If there is no absence of effect then the cause exists.

Illustration-A: similar argument in Indian logic:

1. Kevalānvayi- An inference is called Kevalānvayi when it is based on a middle term which is only positively related to the major term. In the presence of hetu (middle term) the presence of sādhya (major term) can be inferred.

P1 if there is smoke on the hill (p) then there is fire (q)

P2 there is smoke (p)

C therefore there is fire (q)

2. Kevalavyatireki- An inference is called kevalavyatireki when it is based on a middle term which is only negatively related to the major term. instance of absence of hetu in the absence of sādhya.

P1 if there is smoke on the hill (p) then there is fire (q)

P2 there is no fire (-q)

C therefore there is no smoke on the hill (-p)

3. AnvayaVyatireki- When the middle term is both positively and negatively related to the major term, the inference is called AnvayaVyatireki.

(a) All Smokey objects are fiery. The hill is smoky.

Therefore, the hill is Fiery.

(b) No non-fiery objects are Smokey. The hill is Smoky.

Therefore, the hill is fiery.

Illustration-B: MPP, MTT and MTP are tautologies of deductive reasoning:

1. Modus Ponendo Ponens (MPP) Premise (P)1 if p then q

P2 p

Therefore q

2. Modus Tollendo Tollens (MTT) P1 if p then q

P2 -q

Therefore -p

3. Modus Tollendo Tollens (MTP) P1 either p or q

P2 -p

Therefore q

Illustration-A is identical with Mill's method of inductive reasoning. Thus, Mill's inductive method is essentially based on vyāpti or a necessary relationship between cause and effect. Illustration-B has first two examples of MPP and MTT are deductive inference and have structures that are similar to illustration-A and agreement and disagreement in Mill's method but the argument-3 of illustration-B has a disjunctive hypothesis not a hypothetical statement which has no property to share with Nyāya's anvayavyatireki argument except having a formal similarity of argument. The third example of illustration-B is deductive in structure but doesn't have a relation of cause and effect. So, the difference between inductive and deductive reasoning is clear here. Being a realistic school Nyāya's argument is based on vyāpti or induction which aims to imply its inference universally. Nyāya school is a realistic school and goes with realism which seeks reality, universality and certainty in arguments. Thus, Nyāya doesn't make a distinction in deductive and inductive inference. Nyāya arguments have both the qualities of inductive and deductive arguments. In addition to Nyāya Indian logic is less formal or structural and more realistic and content based.

Comparing the mentioned arguments, it is quite clearly how the structure of the both different systems have great similarities. MPP, MTT and MTP provides solid understanding to understand depth of Indian Tarka (using 'Tarka' instead of logic here is to show fundamentally the Indian logical system as dialogical. Thus, it has such depth that logic word of West can't assimilate real essence of the Indian dialogical tradition). Not only in 'Nyāya' school but entire Indian tradition of logic treats 'Tarka' as an important tool to understand and interpret the phenomenon of external world.

III. CONCLUSION

The effort of understanding vyāpti with the help of J.S. Mill's Methods and to bring out some structural similarity of MPP and MTT at the same time inductive input of Mill's methods. Kevalānvayi, Kevavyatireki and Anvayavyatireki all these inferences are based on vyāpti relationship which is formed in arguments in such an interesting way that it assembles western logic tools. The dialogue between the two different traditions initiate a cross-cultural enquiry can enhance understanding of deep-rooted Indian system of Tarka. Thus, this enquiry needs further exploration to achieve true goals.

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