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# CONTENTS

## I. ARTICLES

## II. SHORT PAPERS

## III. BOOK REVIEWS AND NOTICES

## IV. NOTES AND NEWS

# A Study on the Mādhyamika Method of Refutation and Its Influence on Buddhist Logic

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I

Despite modern and contemporary scholarship, logical analysis of the Mādhyamika method of refutation has not sufficiently opened the scope of understanding. The past achievement in this field is far behind the level of metaphysical and religious interests in the concept of *śūnyatā* which the method was designed to demonstrate. This is an attempt to abridge this disparity. My contention is that the Mādhyamika dialectic has an intrinsic relation to the inferential structure of Indian syllogism, especially, the dual rules of *anvaya* and *vyatireka* as formulated by Buddhist logicians such as Dignāga. As part of a study on this subject matter, I presented a paper at the Nalanda conference, demonstrating the possibility that the method of dialectic may have been innovated in parallel to the pre-Classical Abhidharmist method of debate as recorded in *Kathāvatthu*. The purpose of this paper is to clarify further the relationship between the Mādhyamika method of demonstration and that of syllogistic inference in reference to Nāgārjuna's *Vigrahavyāvartanī*.

II

Of the major texts written by Nāgārjuna, I believe the *Vigraha-vyāvartanī* is the most concise and comprehensive critique of the realistic system of language and logical convention. The text is equipped with his self-commentary which, at times, inserts syllogistic arguments, but its attractiveness is, most of all, due to the subject

87

matter itself, for the points of issue are concerned with the question as to whether words (*śabda*) or communicable symbols have their own power of being (*svabhāva*), in the sense that they constitute an independent means of cognition (*pramāṇa*). Nāgārjuna's critique does not repudiate the practicality of convention (language and logic), but it leads to the twofold conclusion: (1) words have no real objective reference, and (2) they create only illusory subjective cognition. In short, his refutation is designed to demonstrate these two phases of our phenomenal or empirical universe by way of repudiating the Naiyāyika or common sense realistic conviction in the power of human convention.

Traditionally, the Mādhyamika method is defined as the absolute type of negation (*prasajyapratiṣedha*), which means that, in contradistinction to ordinary negation (*añyonyapratiṣedha*), it does not accompany any counterthesis. Of the nature of words, for instance, the Mādhyamika negation of the Naiyāyika thesis: "*śabda* is impermanent," does not mean to assert the Mīmāṃsaka thesis: "*śabda* is permanent," nor does his negation of the latter mean to assert the former. What is really intended by him is that "*śabda* is devoid of its own being (*niḥsvabhāva*), hence void (*śūnya*)." This is evident in the syllogistic argument Nāgārjuna gives in the above text. "Surely, those which have arisen in dependent origination are not in possession of their own being," he claims, "because such own being is not found. Why? because their origination depends on the concatenation of causes and conditions."[1] In similar token, he argues, we cannot find any *svabhāva* in language, because their genesis is derived from multiple material principles (*mahābhūta*) as well as human anatomical efforts. Nāgārjuna even proposes his instantiation elsewhere in the text in terms of *māyā* metaphor for the practicality of convention (*vyavahāra*). He states that assertion and negation are equally comparable to an interaction between magically created beings.[2] As my first step, I am obliged to demonstrate how the Mādhyamika applied the syllogistic form of argument to his method of refutation, and why this method was regarded as deficient.

III

There is good reason to believe that Bhāvaviveka, the forefather of the Svātantrika, who advocated the syllogistic argument, may have obtained his idea of syllogistic formulation from the aforementioned

type of demonstration Nāgārjuna applied. In his *Karatalaratna*, Bhā-vaviveka gives two standard forms of argument, respectively repudi-ating the own being from phenomenal (*saṃskṛta*) and transcendental (*asaṃskṛta*) *dharmas*, both of which, in the Abhidharmist doctrine, constitute the ultimate building blocks of the entire universe. Let us take the first one which is designed to repudiate phenomenal or psycho-physical elements:[3]

> Thesis: Phenomenal elements are devoid of own being from the standpoint of absolute truth (*paramārthatas*);
> Reason: Because their arising depends upon causes and condi-tions (*hetupratyayatā*);
> Instantiation: Just like magically created beings.

The rivalling Prāsaṅgika, however, who advocated the dialectic as the sole method, vehemently denounced the Svātantrika for three basic reasons. I believe that these reasons precisely point to the fact that the Mādhyamika dialectic itself is structurally rooted in and concerned with the logical structure of syllogistic inference or demonstration.

First, the Prāsaṅgika dialectician, such as Candrakīrti, de-nounced the adverbial qualifier "from the standpoint of absolute truth." Although this qualification was designed to indicate that the given judgment is transcendental, Candrakīrti regarded it as super-fluous, serving no purpose, because non-Buddhists would neither understand nor accept the Buddhist differentiation of the two levels of truth (*vyavahāra* and *paramārtha*). Second, as shown in the fore-going examples, not only Bhāvaviveka but also Nāgārjuna himself applied their unique principle which invokes the Buddhist insight of causality, i.e., "Whatever arises from causes and conditions is devoid of own being." Here, the reason, "dependent origination," constitutes an antecedent in relation to its necessary conclusion, "voidness." Or in Indian tradition, these two are concomitant. Let us question, then: Could this concomitant relation (or the Buddhist presupposition) be accepted universally? The Prāsaṅgikas thought that it could not be, especially in matters of doctrinal controversy, because any refutation based on the principle admitted by one party alone would not lead to any conclusiveness.[4]

Third, although the Prāsaṅgikas do not seem to have brought it to the forefront, there is the problem of inadequate instantiation in those instances given by Nāgārjuna as well as Bhāvaviveka. No matter how experientially profound an implication it might bear, instantia-

89

tion in terms of magical beings, dreams, or hallucinations, does not seem to be really convincing to the mind of our common humanity. On the other hand, non-Buddhists, such as the Mīmāṃsakas, would be prompt in proposing a counter argument as well as its instantiation, though this may not convince any Buddhists, precisely because of their doctrinal difference. Why, however, does successful demonstration depend on adequate instantiation? Obviously it is because an adequate instance is supposed to embody the logical validity of the given argument, or the validity of the logical or causal relation between Reason (*hetu*) and Conclusion (*sādhya*). What are the conditions that obstruct adequate instantiation, and how could this be improved? All these questions may have been of prime importance for those ancient doctors of Buddhism and Hinduism, and I think that in Buddhist history, the problem of instantiation seems to have gradually differentiated the roles of syllogistic and dialectical demonstration respectively for the sake of phenomenal and transcendental spheres.[5] I believe the beginning of this development can be detected in Nāgārjuna.

## IV

It was Dignāga of the 5th century who, for the first time, theorized the three rules of valid inference (*trairūpya*). Let us see how these rules are applicable to demonstration. In order to demonstrate a breakout of a fire from rising smoke on a distant hill, the speaker is obliged to create a deductive process in the mind of his listeners through three steps. Here, let us transcribe the logically concomitant predications, such as "having smoke" and "having fire," respectively as "P" and "Q," and a distant hill as "a." The demonstration proceeds in the following order:

(1) $P(a)$ "The hill having smoke" — Reason
(2) $(x)\{P(x).Q(x)\}$ "Wherever smoke, there fire" — Logical Relation
(3) $Q(a)$ "Therefore, the hill having fire" — Conclusion

What is required by Dignāga is that the speaker is obliged to give a similar instance such as a kitchen (Let us transcribe it as "b") where both smoke and fire are invariably observed as concomitant, and at the same time, he is obliged also to give another but dissimilar in-

stance, such as a lake (Let us transcribe it as "$\beta$") where both can never be observed. Technically, similar instances and dissimilar instances are respectively called Positive (*sapakṣa*) and Contrapositive (*vipakṣa*) classes. These two groups of instances can respectively test the validity of a given logical relation either positively as "P then Q" or contrapositively "−Q then −P." At the same time, these operations can determine the given locus, such as a hill, as a possible locality where "P" and "Q" are jointly probable. By transcribing the similar and dissimilar class members repsectively as "x" and "y," we have the actual instantiations as:[6]

(x){P(x).Q(x)} and P(b).Q(b)—*anvaya*
(y){−Q(y).−P(y)} and −Q($\beta$).−P($\beta$)—*vyatireka*

and the standard formula of dual instantiations conjointly as:

(x){P(x).Q(x)} . (y){−Q(y).—P(y)}.

It is clear that the deductive process "P(a) then Q(a)" and the first rule that "the predication, i.e., 'having smoke,' has to be found, in the locus in question," are equally implied in the dual instantiations, and more importantly, that the dual instantiations can be regarded as simultaneous processes in the mind. For, they perform, on the one hand, inductively class differentiation between *sapakṣa* and *vipakṣa*, and on the other hand, calculation of truth values in terms of verification as "P.Q" and falsification as "−Q.−P." My contention is that Nāgārjuna's dialectic can be analyzed in parallel to the formula of *anvaya* and *vyatireka*.


V


Some Naiyāyika logicians at the time of Nāgārjuna defended their theory of four *pramāṇas* (Means of Knowledge) as having their own being by means of a metaphor of lamp-light and nightly darkness. Nāgārjuna refutes this in *Vigrahavyāvartanī*, to the effect that the four means of cognition are just as dependent as their respective objects (*prameya*). Since the Naiyāyika held that knowledge is self-luminous, it is supposed that light is capable of "illumining itself" and capable of "illumining others."[7] These predications are concomitant, and

hence they can be transcribed as "P" and "Q" respectively. Darkness, on the other hand, is an entity capable of obstructing illumination, and hence falsifies the above predications as "$-Q$" and "$-P$." Let whatever is capable of illumining be a member of *sapakṣa* "x" and whatever is capable of obstructing illumination be a member of the class of *vipakṣa* "y." Now, in *kārikā* 36, *Vigrahavyāvartanī*, Nāgārjuna argues that when light illumines both itself and others, which means that "x" verifies both "P" and "Q" (*anvaya* operation), darkness "y" which is supposed to be simultaneous, operates also in obstructing illumination, which means that "y" falsifies both predications as "$-Q$" and "$-P$" (*vyatireka* operation). His argument here is perfectly in accord with the formula of the dual rules of syllogistic inference:

$$(x)\{P(x).Q(x)\} \cdot (y)\{-Q(y).-P(y)\}.$$

Yet the predicament created by this dialectic is due to the unexpected contradiction which our convention implies, and this feature is suddenly disclosed by the particular context in which two contrary entities are juxtaposed over the same sphere and moment of illumination. There is no sophistry here, however, because in convention, the co-presence of the agent of illumination and its object is *a priori* accepted. Yet I must state that the demonstration acutely points to the fact that our convention finds no objective reality as a reference for the fact of illumination.

The absence of real object of reference is further demonstrated in the subsequent *kārikās*. Note 8 contains simplified translations of *kārikās* 36 through 39 and their symbolic notations, including my supplementary dialectic for *kārikās* 37 and 39.[8] Although it is not directly detectable in the forms of language, the formulas of symbolic notation can reveal a significant insight behind the apparent absurdity, such as *position without contraposition* or *vice versa*. For instance, *kārikās* 37 and 39 show the former case, where illumination alone is present, as $(xy)\{P(xy).Q(xy)\}$, while my supplements represent the case of *contraposition but without position*, where darkness alone is present, as $(yx)\{-Q(yx).-P(yx)\}$. Yet, either of the two cases equally has its variables as "xy" or "yx" despite "x" and "y" being mutually exclusive. In order to explain the fact of $(xy)\{P(xy).Q(xy)\}$ or that of $(yx)\{-Q(yx).-P(yx)\}$ simultaneously, since they are equally derived in reference to the same sphere and moment, there is only one condition such that "x" and "y" are identical while simultaneously

they are different. This amounts to saying that "x" and "y" could reciprocally assume each other's nature! How can we call this kind of entity as anything but "a phantom created by magic!"


## VI


I am obliged to reflect upon the significance of what has been discussed above. The way the Mādhyamika dialectic could have influenced the system of Buddhist logicians may be retroactively inferred. No matter whether it is logical or dialectical, the process of our mind is dualized through the dual operations of *anavaya* and *vyatireka*. In the logical context we are concerned with determining the given referential variable as a member of *sapakṣa* and also as clearly differentiating it from the class of *vipakṣa*. The processes of deduction or induction here keep two mutually contrapositive variables in separation. In the dialectical context, on the other hand, we shift our concern toward one and the same sphere and moment where we look for those two variables for verification or falsification, which necessarily leads to total contradiction. The key point is that the logically separated referential processes such as "a hill having smoke and fire" and its contraposition "a lake having no fire nor smoke" are co-present in our mind, although in the use of language the position alone comes into being or *vice versa*. The negated is nevertheless definitely there in the process of taking that alternative. The Mādhyamika critique of convention contributed to the clarification that our use of symbols has its reference exclusively in our mental processes and not anywhere in the external world, and that this referential object in our mind itself is invariably constructed as dual-natured comprising a potential self-contradiction. I believe that Buddhist logicians took their cues from the Mādhyamika dialectics before introducing their theories of *apoha* as well as *kṣaṇabhaṅga*.

For my closing statement, I must admit that my analysis of the Mādhyamika dialectic in terms of the logical structure of *anvaya* and *vyatireka* has not been tried by any one, nor is it in accord with the traditional Prāsaṅgika approach. If my demonstration can withstand scrutiny, however, I can confidently say that the Mādhyamika dialecticians and Yogācāra logicians strived for the same scientific endeavor as regards to the nature and function of convention. We know that medieval India witnessed brilliant intellectual activities, much of

93

which were due to the controversies sprung spontaneously between Buddhist logicians and dialecticians on the one hand, and the Naiyā-yika and Mīmāṃsaka schoolmen on the other. The aforementioned theories (i.e., *apoha* and *kṣaṇabhaṅga*) were the major subject matters of their exchanges. Considering the fact that Hindu metaphysics and logical thoughts were originally evolved on the basis of the Grammar-ian system of thought and convention, I find it is of great interest that those Buddhist paṇḍitas regarded their critical examination of the basis of Indian civilization itself as a way toward the Buddhist goal of religious emancipation.

## NOTES

1. *Vigraha.*, Comm. under k. 22: *ye hi pratītyasamutpannā bhāvās te na sasvabhāvā bhavanti svabhāvābhāvāt! kasmāt! hetupratyayasāpekṣatvāt!*

2. *Ibid.*, k. 27: *athavā nirmitakāyām yathā striyām striyam ity asadgrāham! nirmitakaḥ pratihanyāt kasyacid evam bhaved etat!!*

3. *Karatalaratna* (Sanskritized by N. Aiyaswami Shastri from the Chinese version *Chang-Chen Lun*), *Visva-Bharati Annals*, II (1945), p. 34.

4. Re: Stcherbatsky's translation of *Prasannapadā* (ch. 1), which contains the Prāsaṅgika polemics fully as given by Candrakīrti against Bhāvaviveka: *The Conception of Buddhist Nirvana*, esp. p. 107 and p. 119.

5. The dual rules of instantiation pragmatically determines the sphere of logical validity to our empirical world. For literary evidence, refer to Candrakirti's polemics against Yogācāra logicians. Stcherbatsky, *Ibid.*, esp. p. 140.

6. Cf. Sankaraswāmin's formulation: *Nyāyapravesakasūtram*, GOS, vol. 38, (1930), p. 1. *sapakṣe sattvam vipakṣe asattva!*

7. Cf. Vātsyāyana, *Nyāyabhāṣyam*, Comm., under Ch. II, Sect. 1, sūtra 20, where the author defends and defines the Naiyāyika notion of *pramāṇa* in reference to Nāgār-juna's critique in *Vigrahaiyāvartanī.*

8. *Vigraha.*, kk. 36–39:

k. 36:                                      *anvaya and vyatireka*

|  |  |
|---|---|
| Where light illumines itself and darkness, Darkness also obstructs illumination there.* | $(x)\{P(x).Q(x)\} \, . \, (y)\{-Q(y).-P(x)\}$ |

k. 37:                                   *anvaya without vyatireka*

|  |  |
|---|---|
| Where there is light there is no darkness. | $(x)\{P(x).Q(x)\} \, . \, -[(y)\{-Q(y).-P(y)\}]$ |
| How can light illumine anything?* | $= \qquad (xy)\{P(xy).Q(xy)\}$ |

94

Supplement: *vyatireka without anvaya*

Where there is darkness $-\{(x)\{P(x).Q(x)\}\} . (y)\{-Q(y).-P(y)\}$
there is no light.
How can light illumine
anything? $= (yx)\{-Q(yx).-P(yx)\}$

k. 38: *anvaya and vyatireka*

Does light illumine $(x)\{P(x).Q(x)\} . (y)\{-Q(y).-P(y)\}$
darkness at its
moment of arising?
No, light does not reach
it from the beginning.*

k. 39: *anvaya with vyatireka*

If light here illumines $(x)\{P(x).Q(x)\} . -\{(y)\{-Q(y).-P(y)\}\}$
darkness without reach-
ing it, $= (xy)\{P(xy).Q(xy)\}$
This light illumines all
the world.*

Supplement: *vyatireka without anvaya*

If darkness here destroys $-\{(x)\{P(x).Q(x)\}\}.(y)\{-Q(y).-P(y)\}$
light without reaching
it, $= (yx)\{-Q(yx).-P(yx)\}$
This darkness destroys
light in all the world.

*Karikas 36–39 in Sanskrit:

*yadi ca svaparātmānau tvad vacanena prakāśayatyagnih*
*pracchādayiṣyati tamah svaparātmānau hutāśa iva* 36
*nāsti tamaśca jvalane yatra ca tiṣṭhati parātmani jvalanah*
*kurute katham prakāśam sa hi prakāśo ndhakāravadhah* 37
*utpadyamāna eva prakāśayaty agnir ity asadvadah*
*utpadyamāna eva prāpnoti tamo na hi hutāśah* 38
*aprāpto 'pi jvalano yadi vā punar andhakāram upahanyāt*
*sarveṣu lokadhātuṣu tamo 'yam iha saṃsthito hanyāt* 39

Editor's note: The following information should be added to note 3:
*tattvatah saṃskṛtāh śūnyā māyāvat pratyayodbhavāt*. Although this sanskritization does not
apply *paramārthatas* and *hetupratyayatā*, these usages, as identical with *tattvatas* and *prat-yayodbhava* respectively, are authentic as Bhāvaviveka's in his other works.

95