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CUT THE SYLLOGISM TO ITS SIZE! SOME REFLECTIONS ON INDIAN SYLLOGISM

Students of Indian philosophy have grown up with the platitude, indeed created and recreated through popular text-books, that the difference between Indian [1] and Western syllogism lies in that the former is five membered whereas the latter, basically of the Aristotelian model, is three membered. We rarely question the validity of the statement. But such a generalization, in my opinion, fails to grasp adequately the nature of syllogism in Indian logic and epistemology. In the course of this essay, I would like to suggest that this inadequate understanding of the nature of Indian syllogism stems from a failure to distinguish between the twofold aspects of inference, epistemological and the logical, and this, in turn, is grounded in the failure to keep logic and epistemology apart, at least as theoretically distinct disciplines, howsoever closely they are related. [2]

Needless to say, the discussion on syllogism in Indian philosophy is largely ih the context of a doctrine on the means of knowledge (*pramāṇa-vicāra*). Accordingly the nature of syllogism is probed into in the context of inference as a genuine epistemic mode (*anumāna-pramāṇa*). It is rather unfortunate here that most books treat first the nature of inference and only then its classification. While this method is pedagogically sound, it fails, however, to incorporate the insights that may be derived from the classification of inference within its nature. Further, the distinction between logic and epistemology as distinct disci-

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plines was not maintained in India, the way it was done, say, between epistemology and metaphysics. With its axiological orientation, every branch of learning, including logic, the discipline of infinite possible world, was subordinated to a doctrine of liberation (*mokṣa-vicāra*) – *mānādhīnā meya-siddhiḥ* is only one instance thereof –, that did not necessarily well augur to the independent development of logic as a distinctive discipline. The Sanskrit terms, *nyāya, anvīkṣikī, parāmarśa, tarka,* all meant roughly 'analysis' and were rather indiscriminately used for epistemological as well as logical enterprise. And yet, it must undoubtedly be acknowledged that the *anumāna-pramāṇa* has a double aspect, epistemological and logical *Anumāna* is an epistemological category in so far as it is a means, or an instrument (*karaṇa*), of valid cognition (*pramā*). It is also a logical category in so far as it is a mode of reasoning (*nyāya/tarka-vidhāna*). Indeed these twofold aspects are highlighted in one type of the traditional classification of inference, the ground of which is the viewpoint of the *cui* ('to-whom ?') of the inference, viz. inference for oneself (*svārthānumāna*) and inference for another (*parārthānumāna*)

Following the above classification, I suggest my own terms for the syllogisms formulated in their respective inferences Let me name the former the psychogenic syllogism and the latter logogenic syllogism.

The psychogenic syllogism bears upon the psychology of knowledge and thus bespeaks of the epistemological aspect of inference. Consider the following example :

Whatever is smoky is fiery
The yonder hill is smoky
∴ The yonder hill is fiery

In the parlance of the Aristotelian logic, this could be considered to be a good and valid syllogism in the form of M–P, S–M,

∴ S–P, since the middle term ('smoke') is equally distributed in the major and the minor premises, and therefore the validity of the conclusion is said to be guaranteed, (although validity is not the concern of the form of a syllogism). Likewise in the Indian parlance this is considered to be a valid syllogism in so far as we conclude to the presence of the *sādhya* (major term) on the *pakṣa* (minor term) on the basis of our knowledge of the universal concomitance (*vyāpti*) between *sādhya* and *liṅga* (middle term), or of the state of universal pervasion of the *sādhya* in the *liṅga*, and also on the basis of the perceptual knowledge of the *liṅga* as present on the *pakṣa*. Thus, in the example cited, the first premise, 'Whatever is smoky is fiery', is the enunciation of the knowledge of the invariable concomitance (*vyāpti*) of *sādhya* with *liṅga*. We shall not ask if the knowledge enunciated therein is actually a case of cause-effect relation. This question, so often associated with Hume in modern western philosophy, was first raised by the Buddhists in the history of philosophy. They spoke of a contingent co-production of events as an alternate model for the causal theory. In our present context, it is sufficient for us to regard *vyāpti* to be a statement based on the repeated observation (*bhūyodarśana*) of the co-existence of two things/events, either causally joined or casually conjoined. The second premise is the enunciation of the perceptual knowledge of the *liṅga* as present on the *pakṣa*. In the example cited, 'The yonder hill is smoky', the *pakṣa* is a 'definite where' and the *liṅga* is perceived on it. Moreover, when it is stated to be an enunciation of a truth of perception, we should not imagine it to be a mere perception : it is also in the very same act conjoined to our memory of the *vyāpti* in question, lest the two premises should hang in the air without any relation between them. Thus, in the second stage there is indeed in our understanding the perception of something conjoined with the remembrance of *vyāpti*. Only when we put the

two premises together in our epistemic situation, we are in fact in a position to validate the conclusion in the third premise, 'The yonder hill is fiery'.

Having given the bare outlines of a psychogenic syllogism, I must now make two important observations. In the first place, the syllogism in question is psychogenic because it is framed in the context of inferential process that directly presents the truth to one's self (*psyche, svārtha*). Hence, as such it is not so much concerned with the formal *logical demonstration* of the truth arrived at inferentially This way of looking at it, I admit, is rather negative. More positively however, the psychogenic syllogism may be said to present immediately before one's own psyche, or mind the truth of the inference. It is the (inferred) truth that such and such is the case, unperceived though, on the basis of something perceived as well as of the memory of the *vyāpti* relation between this perceived somthing and unperceived object/event. Hence, I may add, the psychogenic syllogism is the product of an 'inferrence that' (as distinct from the logogenic syllogism that will shortly be shown to be a product of an 'inference how').

In the second place, it is necessary that the stages, or premises in a psychogenic syllogism should keep to the order of sequence indicated above : 1. the enunciation of the knowledge of the universal concomitance between two events/things (*vyāpti*) obtained by our past experience; 2. the enunciation of the knowledge of the perceived event, along with the memory of *vyāpti*; and 3 the conclusion. The importance of the sequential order cannot be overstated, not only because we keep on expanding our epistemic enterprise where experience is the foundation of all auto-didactics, therefore in all syllogistic reasoning, but also because it determines the types of syllogistic. But when it is stated that the order should be the same, it is not intended to

mean that the nature of premises cannot be the same in a different type of syllogism; much less it is intended to mean that the number of the premises cannot be the same in a different type of syllogism.

The point I am driving home will be elucidated further, as I lay bare the outlines of the logogenic syllogism to compare and contrast it with the psychogenic syllogism.

Whereas the psychogenic syllogism may be said to be geared to the discovery of truth, the logogenic syllogism is directed to the formal *demonstration* of the truth discovered. Thus, the latter not only originates in the context of, but also at once bears itself upon the logical aspect of inference. Hence, while in the psychogenic syllogism, the culminating point being the discovery of truth, the truth discovered is presented as the conclusion, in the logogenic syllogism on the contrary, the culminating point being the demonstration of the truth discovered, we begin the syllogism by way of stating a thesis that stands in need of vindication (*probandum*) and proceed to explicate the reasons whereby the thesis may be said to have been finally and fully vindicated (*probatum*) It now goes without saying that, if the nature of logonenic syllogism is determined by its function, the order of premises rather than their number is crucial in our understanding of the logogenic syllogism, too.

The traditional Indian five membered syllogism, given in the context of *parārthānumāna* is, strictly speaking, a classic example of a logugenic syllogism. But, is it necessary that a logogenic syllogism ought to be constituted of five, and only five, premises ? In the light of our discussion, it does not seem so We can indeed formulate a logogenic syllogism with only three premises. Consider the following example :

The yonder hill is fiery
∵ It is smoky
(and) Whatever is smoky is fiery

The first premise, here, is the thesis that stands in need of a demonstration; it is the *probandum* (*pratijñā*). The second premise is the *ratio* (*hetu*); it gives (some) reason for the thesis. The third premise is the statement of *vyāpti* and, as such we would be justified in according it the status of the major *ratio* (*hetu*), as distinct from and in continuation with the minor *ratio* enunciated in the second premise. The thesis may now be considered as vindicated in virtue of the minor and the major *hetu*. This at once indicates that we can, without any logical flaw, formulate a three membered logogenic syllogism. By implication it follows that it is not then the number of premises but their sequential order that constitutes the difference between the logogenic and the psychogenic syllogisms : In the one we present the (concluded) thesis and demonstratively state the reasons therefor to view the thesis as established; in the other we conclude directly to the truth on the basis of the same reasons. The nature of both syllogisms is determined by their respective function, and the function is clearly exhibited in the order of premises. As distinct from the 'inference that' that psychogenic syllogism is, the logogenic syllogism is the 'inference how'; it highlights the logical aspect of inference, as it bears upon logically demonstrating the truth arrived at.

If logogenic syllogism can legitimately be constructed with three premises, it may now be asked why the Indian logicians indulge in blowing up the law of parsimony in presenting us a logogenic syllogism that consists of five premises. The question is pertinent in the context where the Indian logicians do take pains to justify the legitimacy of the five premises in a syllogism. The crux of their justification boils down to the need of four logical

stages in order to show in the fifth and the concluding premise the force of the logical demonstration of the truth. But, in my considered opinion, the justification is misguided due to their failure to distinguish clearley between the twofold aspects of inference, to take into account the fuller implications of their own classification of inference as *svārtha* and *parārtha*,, and thereby incorporate this insight into their understanding of the nature of syllogism itself. Let me explain.

Surprisingly, the third premise in the example cited of the logogenic syllogism is not named by the Indian logicians as *vyāpti*, in spite of the fact that *vyāpti* is the very foundation and the differentia of inference, whether psychogenic or logogenic. There is indeed to them an additional element within it, when it is incorporated in the traditional *parārthānumāna;* this is the element of an example (*udāharaṇa*). This has bestowed its own character on the naming of the third premise, in so far as what is essentially a *vyāpti* or the major *hetu*, is now known technically to be *udāharaṇa*. This at once introduces a serious difficulty in our understanding of the nature and function of the third premise. Whereas the nature and function of the third premise are determined by its being the *vyāpti* and the major *hetu*, it, being now conjoined to an example, is known by a psychological factor, extraneous to the (demonstrative) function of the logogenic syllogism. The Indian logicians seem to be confusing between the logical and the psychological aspects of an inference, therefore of a syllogism, especially within a syllogism that is supposedly for the demonstrative purposes. Thus, the *udāharaṇa*, or the third premise reads, 'Whatever is smoky is fiery, as for example kitchen'. 'As for example kitchen' imposes a psychological burden on a syllogism that is so far smoothly moving on the hinges of strictly logical relations between the *pakṣa* and the *liṅga* on the one hand and between *liṅga* and *sādhya* on the other. Needless to

say, such psychological intrusion within the pure logical relations is not merely redundant but undesirable.

To be fair to the Indian logicians, it is possible that they introduced an empirical instance in the form of an example to suggest that the *vyāpti*, or the major *hetu*, derives ultimately its justification from the empirical instances. Thus they may have been keen on showing the empirical character of *vyāpti*. But, in my opinion, this explanation does not hold good for three reasons.

In the first place, the Indian philosophers are not in any better position than their western counterparts in establishing the validity of principle of induction beyond doubt. The attempts of such philosophers as Hume and Mill in the west either to destroy or to establish this principle on the basis of simple enumeration of particular instances were anything but successful. The statement is all the harsher in regard to the vindication of the principle. If all the particular instances in a given class are perceptually to be verified (which more often is a physical impossibility !), all syllogistic reasoning would become reduddant If, on the contrary, only a few instances are taken as sufficient to validate the principle of induction, it is surely a highly doubtful sufficiency. There is no reason why, having been proved true in hundred instances, our conclusion should not be proved false in the very next instance.

In the second place, proving the empirical character of *vyāpti* is not the same as proving the validity of *vyāpti* by way of particular instance. For the former can still be a logical exercise but the latter is not; The latter, I am afraid, is a psychological prop.

In the third place, what does an Indian logician look for in *vyāpti* ? He is surely not looking for a statistical probability the kind of which Russell may be said to have formulated in his

understanding of the knowledge of general principles, without which there is no valid inference at all, thus the expansion of knowledge beyond the limited range of private experience of sense data and probably of one's own existence. Most Indian logicians are much more Naiyāyikas than they are prepared to admit. If they are the avowed Naiyāyikas, the universal *(sāmānya)*, therefore the *vyāpti* relation, is said to be directly *perceived* by way of extra-ordinary perception *(sāmānya-lakṣaṇā-pratyāsatti)*. But such an understanding of *vyāpti* obtained through extra-epistemological considerations, besides violating their definition of *pratyakṣa (indriyārtha-sannikarṣa-janyaṁ-jñānam)*, may be said to be dubious epistemology; going a step further, it is bad logic, too Again, if they are not the avowed Naiyāyikas, *vyāpti* is said to be abstracted from the particulars. This position is no better, as it begs the question. It is precisely this mode of abstraction that is under consideration and stands in need of justification Hence the attempts of the Indian logicians for vindicating the logical relations with recourse to particular instaces is bound to be futile. Logical relations are logical because they hold good universally in any possible world They have little to gain from the empirical insances as psychological props. Therefore, it may be suggested that the Indian logicians should sever the appendage of the example from the *vyāpti* and reinstate it in its original logical status.

While only a modification is suggested in regard to the third premise, we may suggest, going a step further, that the fourth and the fifth premises should be completely deleted from the Indian *parārthānumāna*. There is a need to cut the Indian syllogism to its size.

The fourth premise therein, technically known as *upanaya*. enunciates an instantiation of *vyāpti* in the *pakṣa*. As the name indicates, it is a 'bringing closer' ($\sqrt{nī} + upa$) of the *pakṣa* to the

vyāpti, and thereby by implication, to *sādhya*. Hence the fourth premise, 'The yonder hill is smoky' for all its innocuous appearance, subtly includes within itself *vyāpti*. We are told, as a matter of fact, in our understanding it should be expanded to read in the from, 'The yonder hill has such smoke as is invariably pervaded by first'. If this is not done, *vyāpti* and *upanaya* are said to merely dangle in the air without any logical connection. Finally, the fifth premise, '∴ The yonder hill is fiery', in form, is a repetition of the first. But, in content, it is said, it is not a mere restatement of the thesis *(pratijñā)* but rather the statement of the thesis as conclusively established *(nigamana)*. This is the traditional understanding of *upanaya* and *nigamana*, according to the Indian logicians.

But our cohtention here bears upon the redundancy of both premises Neither the logogenic syllogism nor the Indian syllogism in general requires *upanaya* or / and *nigamana* Without any logical flaws, we can think of perfectly valid syllogisms with either the first three or last three premises of the five membered traditional *parārthānumāna*, provided that we divest the third premise of its psychological burden of an example and view its character purely as *vyāpti* or the major *hetu*. (I have already shown, there is no reason why it should not be done so) The first three premises would constitute a logogenic syllogism in my scheme; likewise the last three (in the order af nos 3, 4, 5) the psychogenic syllogism. This mode of viewing syllogisms at once emphasizes the importance of the sequential order of the premises, that bestows on them the specific names, logogenic and psychogenic, and thereby highlights the logical or the epistemological aspects of inference itself. Indeed such a distinction is possible for the simple reason that we can theoretically distinguish between the disciplines of logic and epistemology, howsoever closely they are related in an epistemic enterp ise

It should be possible then to make a distinction between the 'how' and the 'that' of inferential knowledge. In the light of the above discussion, it needs hardly to be stated that the fourth and the fifth premises within the India *parārthānumāna* are not only superfluous but also tend to confuse between the logical and the epistemological issues. A careful analysis of the fourth premise reveals its superfluity, as it turns out to be only a combination of the second and the third premises sans example. There is no reason why we should not consider the thesis to have been established d monstratively in virtue of the two *hetus*, minor and the major; this at once makes the fourth premise redundant. To carry this argument a bit further : the thesis now stands already vindicated and the need for the fifth premise (*nigamana*), too, exposes itself to be vacuous.

By way of concluding, it must be admitted that the distinction between the western (Aristotelian) and the Indian syllogism as well as the distinction between the types of Indian syllogisms does not stem from the number of premises but rather from the order of the premises. The order has a direct bearing on the distinction between the aspects of inference, namely logical and epistemological, and thereby between the theoretical disciplines of logic and epistemology within our epistemic enterprise. The last of the distinction is very important in the history of philosophy. For, ironically, the west, that has furthered the cause of logic in recent times so significantly in the development of Mathematical logic from the humble beginning of the Aristotelian logic and thus espoused the cause of establishing a distinctive discipline of logic, seemed to have at least in its inception emphasized only the epistemological aspect of inference. Its concern for long seemed to have been restricted to psychogenic syllogism. Aristotle does not seem to have been aware of the possibility of a logogenic syllogism. What is worse, in the

presentation of his characteristic forms and modes, he even seems to confuse the psychogenic syllogism with the logogenic yllogism. But, if in recent times the west could redeem itself of this deficiency and acknowledge the *sui generis* character of logic, the impetus and the reasons therefor lie outside western philosophy, though not outside its intellectual culture. They lie largely in the development of knowledge in the area of physics and mathematics. Language philosophers seized only upon the opportunity provided by the physicists and the mathematicians.

Indian philosophers, on the other hand, seemed to have been aware of the double aspects of inference. But, again, ironically, India that did so much to further the cause of logic in its initial stages, be it in Buddhism or Nyāya, or Vedānta, failed to give it a distinctive status of a theoretical discipline. This may in part be due to the lack of impetus from the matnematical and the positive sciences. But this may perhaps be excused on the ground that India did not have a socio–cultural milieu requisit for the development of the mathematical and positive sciences. But what cannot be easily excused is the failure on the part of the Indian philosophers to seize upon the philosophical distinction that they had made between the epistemological and the logical aspects of inferential reasoning. Even within the limited context of inference, they ended up confusing the epistemological issues with the logical ones. The case of confusing a psychological/ empirical example with the pure logical relation of *vyāpti* is a point at issue. Thus, their greater concern for the logical aspect of inference got so confounded with the epistemological issue that they failed to recognize that a logogenic syllogism could legitimately be framed with the first three premises of their five membered syllogism. Thus, the advantage of having recognized the double aspects of inference was blown up to the winds due to their confusing and confounding the logical and the episte-

mological issues within inferential knowledge. Little wonder then if logic in India could not establish itself as a theoretically independent discipline and was forced to remain as an appendage to epistemology.

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NOTES

1. I shall not enter into the question, if Indian philosophy has a syllogism (consisting of propositions) in the western sense. A student of philosophy everywhere has some common understanding of syllogism, when he speaks of a syllogistic reasoning.

2. N. V. Banerjee (*The Spirit of Indian Philosophy* : New Delhi : Arnold Heinemann Publishers, 1974, p. 65) is an exception at least in so far as the first half of my statement is concerned.