

THE MIDDLE TERM

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Sibajiban¹ writes that there was a certain controversy between two schools of Indian philosophy, the Pūrva-Mīmāṃsā and the Nyāya. The controversy centered on the problem: Is knowledge of the specific nature of the middle term necessary for syllogistic inference or not? The first school held that it was necessary, the second that it was not. In his paper, Sibajiban presents an argument in support of the latter view, and he says that the argument is found in a Nyāya text of the 17th century. He does not offer the reasons put forward by the members of the first school in support of their view. The purpose of this discussion is to show that Sibajiban has misunderstood the nature of the controversy, and also that he has a confused idea as to what the inference conception of the syllogism is.

First, let us see how Sibajiban explains the meaning of the expression 'the specific nature of the middle term'. He writes:

For even when we use a specific term as the middle term of a syllogism the special properties of the objects denoted by the middle term are not relevant for the conclusion or for the syllogism.²

For example, in the syllogism

All men are mortal,
 All kings are men,
 therefore, all kings are mortal

we have a specific middle term 'man' and the specific nature of this middle term is "the special properties of the objects denoted by the middle term". Sibajiban does not give examples of "special properties" of objects denoted

1. Sibajiban, "The Middle Term," *Notre Dame Journal of Formal Logic*, vol. IX (1968), pp. 229-32.

2. *Ibid.*, p. 231.

by a middle term nor does he write whether the “special properties” are essential properties or accidents.

Now, the question arises: Why do the Nyāya logicians, according to Sibajiban, believe that the specific nature of the middle term is not necessary for syllogistic inference? His answer is: Because

the ‘putting together’ of the two premisses of a syllogism is not a mere conjunction of them, but is a complex judgment involving second order predication.³

Sibajiban supports the above answer by writing that if a syllogism is conceived as an implication with universally quantified term-variables, then it is not necessary to have a specific term functioning as a middle term. And to complete the reasoning: since it is not necessary to specify the middle term, then it is not necessary to know its specific nature. Sibajiban thinks that the following implication is a concrete example of a syllogism in the mood *Barbara*, and in this example the middle term is not specified:

Syl 2.(3) $(\exists a)(a \subset M . K \subset a) \supset (K \subset M)$ ⁴

(‘*a*’ is a class-variable, ‘*M*’ is an abbreviation of ‘the class of mortals’ and ‘*K*’ an abbreviation of ‘the class of kings’). He gives the following argument in support of his view that Syl 2.(3) is a concrete example of a syllogism:

If we accept the theory that the middle term of a syllogism need not be specified, then we can explain why given the conclusion ‘all kings are mortal’ we cannot uniquely determine the premisses from which it follows, although in this particular case the figure and the mood are uniquely determined. This indeterminacy of the premisses (not of the *form* of the premisses) is due wholly to the fact that different middle terms can be used to construct premisses from which ‘all kings are mortal’ can be deduced syllogistically. The theory that the conclusion of a syllogism follows only from a conjunction of its so-called premisses fails to bring out the essential feature of the middle term. A conclusion can be derived syllogistically even if a conjunction of the premisses like Syl 1.(4) [$H \subset M . K \subset H$, where ‘*H*’ is an abbreviation of ‘the class of men’] is not a premise, for Syl 2.(4) [$(\exists a)(a \subset M . K \subset a)$] suffices to prove the conclusion (in our opinion syllogistically).⁵

Sibajiban seems to argue as follows: If the conclusion ‘all kings are mortal’ is given, then the premisses from which this conclusion follows is not uniquely determined. This means that there is not only one set of premisses from which the above conclusion follows. The premisses are indetermined but in this particular case the form of the premisses is not. (We should observe here that although in this particular case the form of the statements is uniquely determined, this is not always the case. There

3. *Ibid.*

4. *Ibid.*, p. 230.

5. *Ibid.*, pp. 230-231.

are statements which can be derived from sets of premisses of different forms. For example, an E statement can be derived by using either *Camestres* or *Cesare*, hence the indeterminacy is not a characteristic of the content of the premisses only, but in some cases of their form too). This indeterminacy of the premisses lies in the fact that different middle terms can be used to construct premisses from which the conclusion 'all kings are mortal' can be derived syllogistically. Sibajiban calls this fact the 'essential feature of the middle term', and he says that this fact can be explained if we accept the theory that the middle term of a syllogism need not be specified. But "the theory that the conclusion of a syllogism follows only from a conjunction of its so-called premisses" cannot explain this fact.

I believe that Sibajiban is confused here. According to the inference conception of the syllogism, if 'all kings are mortal' is the conclusion of a certain syllogism then it is true to say that it "follows *only* from a conjunction of its so-called premisses". Now, to say: given the *conclusion* 'all kings are mortal' there are many different sets of premisses from which this conclusion can be deduced, is to say something false. It is not the *conclusion* 'all kings are mortal' that follows from different sets of premisses, but rather the *statement* 'all kings are mortal'. But in each case, the statement 'all kings are mortal' is the conclusion of a different syllogism, and it is false to say that the conclusion of one syllogism is also the conclusion of another. A certain statement is called 'conclusion' in relation to the premisses from which it is deduced, and if it is deduced from another set of premisses too, then it is the conclusion in relation to that set of premisses. So, given the syllogism

All men are mortal,
All kings are men,
therefore, all kings are mortal

the conclusion 'all kings are mortal' does follow only from the two premisses of the syllogism 'put together' in the sense of a conjunction.

Now, if one asks not the improper question: How does the inference conception of the syllogism account for the fact that the same *conclusion* can be deduced from different sets of premisses?, but rather: How does the inference conception of the syllogism account for the fact that the same *statement* can be deduced from different sets of premisses?, then there is no problem. Given the statement 'all kings are mortal', we can determine the mood and the figure in which the form of this statement can occur as a conclusion, in our case

$$\begin{array}{l} \text{All } M \text{ is } P \\ \text{All } S \text{ is } M \\ \hline \text{All } S \text{ is } P \end{array}$$

This syllogistic schema exemplifies the inference rule: Given a premiss of the form "All *M* is *P*" and another of the form "All *S* is *M*", it is legitimate to infer the corresponding proposition of the form "All *S* is *P*".

If the major and the minor terms are already specified, it is easily seen that any specific term whatsoever can fill the position of the middle term. If the middle term is substituted by different specific terms, we get different concrete syllogisms of the above syllogistic schema, but not the same concrete syllogism.

But why does the implication $(\exists a)(a \subset M . K \subset a) \supset (K \subset M)$, where the middle term is not specified, explain the essential feature of the middle term? Sibajiban, I think, would say that it explains because a conclusion can be derived syllogistically even if a conjunction of premisses is not a premiss in the derivation, for we need not a conjunction of two premisses but one premiss only to prove the conclusion syllogistically. For example,

$$\frac{(\exists a)(a \subset M . K \subset a) \supset (K \subset M) \quad (\exists a)(a \subset M . K \subset a)}{K \subset M}$$

Now, whether this is a syllogistic inference or not, I let the reader decide. Anyway, Sibajiban's argument is a *petitio*. He wants to show that $(\exists a)(a \subset M . K \subset a) \supset K \subset M$ is a concrete example of a syllogism. He says that this is a concrete example because it explains the "essential feature of the middle term". And this is the case because we can derive syllogistically $(K \subset M)$ from $(\exists a)(a \subset M . K \subset a) \supset K \subset M$ and $(\exists a)(a \subset M . K \subset a)$. But in so doing, he assumes that $(\exists a)(a \subset M . K \subset a) \supset K \subset M$ is a concrete example of a syllogism. I shall not discuss whether or not Syl 2.(3) is a concrete example of a syllogism because I think that the view that the form of a syllogism can be conceived as an implication with universally quantified term-variables is mistaken, since one would have to accept "the novel moods corresponding to such theorems as $(Aab \ \& \ Oab) \supset Icd$ or $(Aab \ \& \ Acd) \supset Aee$ ".⁶ Instead, I will return to the controversy between the Indian schools.

Sibajiban writes that knowledge of the specific nature of the middle term is not necessary for syllogistic inference because "it is only its relation to the major and minor terms which are relevant to the syllogism". And the relations he probably has in mind are the relations of affirmation, negation, universality and particularity. Of course, nothing more is needed in order to determine the validity of a syllogism if the form of its conclusion is already given, according to the inference conception of the syllogism. But why would the Pūrva Mīmāṃsā logicians hold that the specific nature of the middle term is necessary for syllogistic inference? It must be noted that they did not only think that knowledge of the *specific middle term* is necessary but also knowledge of the *specific nature* of the middle term is necessary, and these are two different things. Since Sibajiban does not tell us, I will make a guess. They might want to have knowledge of the specific nature of the middle term in order to decide

6. Smiley, J. M., "What is a Syllogism?," *Journal of Philosophical Logic*, vol. 2 (1973), p. 139.

whether or not, when the specific middle term was predicated or another, that was to count as a genuine case of predication. They might have a theory of predication as that one found in Aristotle's *Categories*. Aristotle makes a distinction there between 'being predicated of' and 'being present in'. According to some Aristotelian scholars, by 'A is predicated of B' Aristotle meant that A is an essential attribute of B. If the Pūrva Mīmāṃsā logicians took such a view of predication then it is understandable why they thought that knowledge of the specific nature of the middle term was necessary for syllogistic inference. If this were the case, then talk about unspecified middles and second order predication is beside the point.

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