

THE LOGICAL VALIDITY OF THE INFERENCES
IN THE *SIDDHĀNTALAKṢAṆA* CHAPTER OF
THE *TATTVACINTĀMAṆIDĪDHITI*

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I

Navya-nyāya utilizes inferences to test whether a given definition of *vyāpti*¹⁾ is satisfactory or not. If the definition applies in the case of a valid inference,²⁾ it is satisfactory. If the definition does not apply in the case of an invalid inference, it suffers from the defect of over-application (*ativyāpti*). If the definition does not apply in some case of a valid inference, it has the defect of narrow-application (*avyāpti*). If the definition does not apply in any case of a valid inference at all, it is subjected to the defect of non-application (*asambhava*).³⁾ Before the test of the definition of *vyāpti*, one must confirm whether an inference used for the test is valid or not. We do not, however, actually know why some inferences may be claimed to be valid. This paper aims to explain the validity or invalidity of all the inferences cited in or reconstructed from the *Siddhāntalakṣaṇa* section of the *Tattvacintāmaṇidīdhiti* (*TCD*) of Raghunātha Śiromaṇi. Those inferences are twenty-seven, and five among them are what I reconstructed from their contexts. Finally I would like to point out features of those inferences from the perspective of analytic philosophy.

II

The inferences cited in or reconstructed in the section have been arranged below in the alphabetical order of Sanskrit. To indicate the reconstructed inferences, I have marked them with the sign *. In arranging the inferences, if their subjects (*pakṣa*), which generally come first in inferences, are referred to by the pronoun 'ayam' or 'idam', I have neglected those pronouns. In this case, I have regarded their probanda (*sādhya*) coming after their subjects as the first member. The list of the inferences also includes the examples expressive of *vyāpti*. (In this paper those examples are referred to simply as examples of *vyāpti*.) After the inferences and those examples, I have written in brackets whether they are valid or invalid.

(1) *kapisamyogābhāvavān ātmatvāt*. (*TCD*, p. 343, 11: valid)

TRANS.: [This] possesses the absence of the contact with a monkey, because [it possesses] soulness.

The probandum is the absence of an entity which partially occurs on its locus (*avyāpyavrttin*), because contact exists only on a part of its locus. In Navya-nyāya, the absence of such an entity is unnegatable (*kevalānvayin*),⁴⁾ and it pervades in the whole universe. The probans is also an unnegatable entity, because its locus, a soul, is omnipresent in Navya-nyāya.⁵⁾ Wherever the probans exists, the probandum also exists. Hence, the inference is valid.

(2) *ayam kapīsamīyogī etadvṛkṣatvāt.* (TCD, p. 317, 23: valid)

TRANS.: This [tree] possesses the contact with a monkey, because [it possesses] this-tree-ness.

The probandum of this inference is the contact (*samīyoga*) with a monkey, and the probans is this-tree-ness. This-tree-ness exists only in the tree called this tree. The contact with a monkey does not always exist. As a result, the inference appears invalid to us. But the inference is dealt with as a valid one by Raghunātha, because he implies that the satisfactory definition of *vyāpti* must apply in the case of the present inference. In order to interpret the inference as valid, it is necessary to contend that the probans must exist only in the locus of the probandum. The locus of the probans is only a tree called this tree, and the probandum must exist on this tree. In other words, it should be presupposed that a monkey stays on a tree called 'this tree'. Thus the inferer keeps his eye on a tree where a monkey stays, and he calls such a tree 'this tree'. Without this presupposition, we cannot explain why Raghunātha regards the inference as valid.

(3) *ayam guṇakarmānyatvaviśiṣṭasattāvān jāteḥ.* (TCD, p. 331, 21: invalid)

TRANS.: This possesses the highest generic property qualified by the difference from a quality and [the difference from] action, because [it possesses] a generic property.

The probandum is the highest generic property qualified by the difference from a quality and the difference from action. This amounts to a combination of the highest generic property and those two differences.⁶⁾ The highest generic property exists in a substance (*dravya*), a quality (*guṇa*), and action (*karman*).⁷⁾ The difference from a quality abides in a substance, action, a generic property (*sāmānya, jāti*), a particular (*viśeṣa*), inherence (*samavāya*), and absence (*abhāva*).⁸⁾ The difference from action abides in a substance, a quality, a generic property, a particular, inherence, and absence. The highest generic property and those two differences together exist in a substance only. The probans is a generic property, and it can exist in a substance, a quality, or action.⁹⁾ In a quality which is the locus of the probans, the highest generic property qualified by the two differences does not exist. It is not true that wherever the probans (a generic property) exists, the probandum (the highest generic property qualified by the two differences) also exists. The said inference, therefore, is invalid.

(4) *caitrānyatvaviśiṣṭaitaddaṇḍavān etaddaṇḍāt.** (TCD, p. 357, 24-27:¹⁰⁾

invalid)

TRANS.: [Caitra] possesses that stick [possessed by the person] qualified by the difference from Caitra, because [Caitra grasps] that stick.

Imagine that Caitra and another person, for example, Maitra, keep a tight grasp on one stick and pull it against each other. Caitra insists that the stick is his possession, and Maitra also insists that the stick is his possession. Suppose no one knows who is the real possessor of that stick.

The probandum is the stick possessed by the person qualified by the difference from Caitra. 'The person qualified by the difference from Caitra' means the person different from Caitra, namely, the person who holds the stick and who is not Caitra. Such a person is Maitra alone. The inference intends to prove, by the fact that Caitra grasps the stick grasped by Maitra also, that the stick is Caitra's possession.

The probans is that stick, and Caitra grasps it. However, he regards the stick as his own stick, and hence he does not possess the stick possessed by Maitra. Since the probandum is the stick possessed by Maitra, Caitra (the possessor of the probans) does not possess the probandum. The inference, therefore, is invalid.

(5) *jātimān bhāvatvāt. (TCD, p. 341, 4: invalid)*

TRANS.: [This] possesses a generic property, because [it possesses] the state of being a positive entity.

The probandum is a generic property, and it resides¹¹⁾ in a substance, a quality, and action. The probans is the state of being a positive entity, and it resides in a substance, a quality, action, a generic property, a particular, and inherence.¹²⁾ The probans exists in a particular, which lacks the probandum. It is not true that whatever possesses the probans possesses the probandum. Hence, the inference is invalid.

(6) *jñānavān dravyatvāt. (TCD, p. 341, 3: invalid)*

TRANS.: [This] possesses knowledge [through inherence], because [it possesses] substanceness [through inherence].

The probandum is knowledge, and it resides only in a soul through inherence.¹³⁾ The probans is substanceness. Subtanceness exists, for example, in a pot (*ghaṭa*) through inherence. But knowledge does not exist there through inherence. It is not true that wherever knowledge exists through inherence, substance also exists through inherence.

(7) *idaṃ dravyaṃ guṇakarmānyatve sati sattvāt. (TCD, p. 314, 5: valid)*

TRANS.: This is a substance, because [it possesses] the highest generic property qualified by the difference from a quality and [the difference from] action.

When later Raghunātha refers to the probandum (*sādhya*) of this inference, he states *viśiṣṭasattā*¹⁴⁾ (qualified highest generic property). This suggests to me that I might translate the locative absolute in the expression of the

probandum as 'qualified'. The probans of the inference is the highest generic property qualified by the difference from a quality and the difference from action. This probans is nothing but a combination of the highest generic property and two differences, similar to the probans of inference (3). Those three entities together exist in a substance alone. (See the explanation under inference 3.) The probandum of the inference is substanceness (*dravyatva*), and it resides in a substance only. It is true that wherever the highest generic property qualified by the two differences exists, substanceness also exists. The present inference, therefore, is valid.

(8) *dravyam jāteh*. (TCD, p. 367, 34: invalid)

TRANS.: [This] is a substance, because [it possesses] a generic property.

The probandum is substanceness, and the probans is a generic property. The probans exists in a substance, a quality, or action.¹⁵⁾ For instance, the probans exists in a quality, where the probandum does not exist. It is not true that wherever the probans exists, the probandum also exists. The inference therefore is invalid.

(9) *dravyatvābhāvavān sattvāt*. (TCD, p. 343, 7: invalid)

TRANS.: [This] possesses the absence of substanceness, because [it possesses] the highest generic property.

The probandum is the absence of substanceness, and it exists in entities other than substances. The probans is the highest generic property, and it exists in a substance, a quality, and action.¹⁶⁾ A substance possesses the probans but does not possess the probandum. The inference, therefore, is invalid.

(10) *dhūmavān vahneh*.* (TCD, p. 357, 24-27:¹⁷⁾ invalid)

TRANS.: [This] possesses smoke, because [it possesses] fire.

The probandum is smoke, and the probans is fire. For instance, a red-hot iron ball does possess fire but not smoke. It is false that whatever possesses fire (the probans) possesses smoke (the probandum). Hence, the inference is valid.

(11) *bhūtatvamūrtatvobhayavān mūrtatvāt*. (TCD, p. 331, 22: invalid)

TRANS.: [This] possesses both elementness and corporeality, because [it possesses] corporeality.

The probandum is both elementness and corporeality. Elementness abides in earth (*prthivī*), water (*ap*), fire (*tejas*), wind (*vāyu*), and space (*ākāśa*),¹⁸⁾ and corporeality abides in earth, water, fire, wind, and mind (*manas*).¹⁹⁾ Elementness and corporeality together exist only in earth, water, fire, and wind. The probans (corporeality) exists in mind, where the probandum (both elementness and corporeality) does not exist. It is false that wherever the probans exists, the probandum also exists, so that the inference is invalid.

(12) *yatra sāsñādiḥ sa gauḥ*. (TCD, pp. 347,35-348,1: valid)

TRANS.: That in which dewlap and so forth exists is a cow.

Indian logicians regard dewlap as the defining characteristic (*lakṣaṇa*) of a cow. Hence, what possesses dewlap is a cow only.

(13) *yadā adr̥ṣṭam tadā janyam̐ jñānam*. (TCD, p. 335, 34: invalid)

TRANS.: When unseen merit or demerit exists, produced knowledge exists.

Even in the time of the intermediate dissolution of all substance-products in the universe (*khaṇḍapralaya*),²¹⁾ unseen merit or demerit (*adr̥ṣṭa*) continues to remain in souls.²²⁾ But since all substance-products are destroyed in this time, souls do not possess produced knowledge. Hence, it is false that when unseen merit or demerit exists, produced knowledge also exists.

The terms '*yadā*' and '*tadā*' can specify the relations between unseen merit or demerit and its locus and between produced knowledge and the locus. It is temporal relation (*kālikasambandha*). We can interpret the above Sanskrit expression as the inference 'this possesses produced knowledge through temporal relation, because it possesses unseen merit or demerit through that relation'.

(14) *yadā adr̥ṣṭam tadā duḥkham*. (TCD, p. 335, 34: invalid)

TRANS.: When unseen merit or demerit exists, suffering exists.

Even in the time of the intermediate dissolution of all substance-products in the universe, unseen merit or demerit exists in souls as in the case of (13). Souls, however, possess no suffering in the intermediate dissolution, for suffering is a product. Hence, it is false that when unseen merit or demerit exists, suffering also exists. Like expression (13), the present expression can be rewritten as 'this possesses suffering through temporal relation, because it possesses unseen merit or demerit through that relation'.

(15) *yadā gotvaṃ tadā gauḥ*. (TCD, p. 335, 32: invalid)

TRANS.: When there exists cowness, there exists a cow.

Cowness is a generic property, and hence it is eternal.²³⁾ It exists even in the time of the intermediate dissolution of all substance-products in the universe (*khaṇḍapralaya*). In this time any substance dissolves into separate atoms. In this time, a cow does not exist at all since it is a substance. But cowness persists. It is false that when cowness exists, a cow also exists. Like expression (13), the present expression can be rewritten as 'this possesses a cow through temporal relation, because it possesses cowness through that relation'.

(16) *yadā tasya adr̥ṣṭam tadā tadīyam̐ jñānam*. (TCD, p. 335, 34-35: invalid)

TRANS.: When the unseen merit or demerit of a particular person exists, his knowledge exists.

When a man is in deep sleep (*susupti*), he has no knowledge. But even in that time he preserves his unseen merit or demerit.²⁴⁾ Hence, it is false that when his unseen merit or demerit exists, his knowledge also exists. Like expression (13), the present expression can be transformed into the inference

'this possesses the knowledge belonging to a particular person through temporal relation, because it possesses his unseen merit or demerit through that relation'.

(17) *yadā spandas tadā dvyañukam.* (TCD, p. 335, 34: invalid)

TRANS.: When there exists the vibration of an atom, a dyad exists.

In the time of the intermediate dissolution of all substance-products in the universe (see case 13), all dyads dissolve into separate atoms. Then atoms keep themselves vibrating (*spandamāna*).²⁵⁾ It is false that when the vibration exists, a dyad also exists. Like expression (13), the present expression can be interpreted as the inference 'this possesses a dyad through temporal relation, because it possesses the vibration of an atom through that relation'.

(18) *yo yadīyayāvadviśeṣābhāvavān sa tatsāmānyābhāvavān.* (TCD, p. 319, 14: invalid)

TRANS.: Whatever possesses all specific absence of all the members of the class *M* possesses the generic absence of all the members of the class *M*.

Specific absence is the absence of each and every member of a class, and generic absence is the absence of all the members of a class. Suppose there are only ten pots in the world. When there is no pot on a particular area of the ground, one may perceive the absence of pot 1, the absence of pot 2, ... and the absence of pot 10. Here each absence is that of a particular pot. Such absence, whose counterpositive or negatum (*pratiyogin*) is an individual, is specific absence. The same fact that there is no pot on that area may lead one to the apprehension of the absence of any pot or the absence of all ten pots. Here the counterpositive is not an individual but all ten pots. Such absence is generic absence. From a logical point of view, all absence of each and every pot is equivalent to the absence of all ten pots. It seems that we can equate the former absence to the latter absence. From this example, we will be allowed to deduce that all specific absence of all the member of a class is logically equal with the generic absence of all the members of the class, so that the present example of *vyāpti* seems valid.

Gaṅgeśa denies the equivalence of the above two types of absence.²⁶⁾ Since Raghunātha implies that the traditional neo-logicians (Navya-naiyāyika) do regard the *vyāpti* as invalid²⁷⁾ and he does not deny their view, he follows Gaṅgeśa on this issue. Raghunātha makes those logicians introduce three reasons why the present example of *vyāpti* is invalid. One of them is that we can show the condition (*upādhi*) with reference to the inference. The condition in Navya-nyāya proves a probans does not possess the relation of *vyāpti* to its probandum.²⁸⁾ According to Raghunātha, the condition in the present case is the state of possessing all specific absence of all members of the class *M* on the whole locus of the absence (*ekāvachchedena tadīyayāvadviśeṣābhāvavattva*).²⁹⁾

Let us examine whether this condition satisfies the definition of the

condition. The condition is defined as that which is the pervader (*vyāpaka*)³⁰⁾ of a probandum and which is not the pervader of a probans.³¹⁾ We can get an inference for our examination if we rewrite the example of *vyāpti* as follows: [this] possesses the generic absence of all the members of the class *M*, because [it possesses] all specific absence of all the members of the class *M*. Let us substitute the class *M* with the class of contact to make our examination clearer and simpler. The probandum of the inference is the generic absence of contact. The condition is the state of possessing all specific absence of contact on the whole locus of the absence, namely, all specific absence of contact on the whole locus of the absence.³²⁾ It is true that wherever there is the generic absence of contact (the probandum), there is also all specific absence of contact on the whole locus of the absence (the condition). For instance, in a quality there exists the generic absence of contact, and there also exists all specific absence of contact on the whole body of a quality. The reason for this is as follows: a quality does possess no quality, and contact is a quality.

The probans of the inference is all specific absence of contact. This absence, according to the opponent of those neo-logicians, exists on a tree.³³⁾ Each absence of contact occupies only a part of the tree. This implies that the absence of contact occurring on the whole body of the tree does not exist on that tree at all. It is not true that wherever there is all specific absence of contact (the probans), there is also all specific absence of contact on the whole locus (the tree) of the absence (the condition). Hence, the given condition is not the pervader of the probans. Thus the definition of the condition applies to the present condition. Because the condition has been pointed out, the inference is proved invalid. This is to say, the present example of *vyāpti* is also invalid.

(19) *vahnidhūmobhayavān vahneh*. (*TCD*, pp. 367,34-368,1: invalid)

TRANS.: [This] possesses both fire and smoke, because [it possesses] fire.

The probans is fire, and it exists on a red-hot iron ball (*taptāyogolaka*). Fire and smoke (the probandum) do not exist together there, because the ball lacks smoke. It is false that wherever fire exists, both fire and smoke also exist. The inference therefore is invalid.

(20) *vahnimān dhūmavataḥ*. (*TCD*, p. 345, 15-19:³⁴⁾ valid)

TRANS.: [This is] the possessor of fire [due to the relation of identity], because [it is] the possessor of smoke [due to the relation of identity].

This inference does not have a general form of inference in Indian logic such as 'x possesses y, because [x possesses] z' or 'there is x in y, because there is z [in y]'. The probandum is not fire but the possessor of fire, and the probans is not smoke but the possessor of smoke. In this inference, the relations between the probans and the subject (*pakṣa*) and between the probandum and the subject are identity. Since Indian logicians accept that any possessor of smoke is the possessor of fire, the inference is valid.

(21) *viśeṣaḡuṇavān mano'nyadravyatvāt.* (TCD, p. 341, 3-4: invalid)

TRANS.: [This] possesses a special quality, because [it possesses] the state of being a substance other than mind.

The probandum is a special quality. Special qualities are color (*rūpa*), taste (*rasa*), smell (*gandha*), touch (*sparśa*), natural fluidity (*sāmsiddhikadravatva*), viscosity (*sneha*), sound (*śabda*), knowledge (*buddhi*), pleasure (*sukha*), suffering (*duḥkha*), desire (*icchā*), aversion (*dveṣa*), effort (*prayatna*), merit (*dharma*), demerit (*adharmā*), and impression (*bhāvanā*, a kind of acquired impulse [*saṃskāra*]).³⁵⁾ They reside in earth, water, fire, wind, space, and a soul only through inherence. The probans is the state of being a substance other than mind, and it resides for instance in time (*kāla*).³⁶⁾ Since time possesses no special quality (the probandum), it is false that whatever possesses the probans possesses the probandum. The inference, therefore, is invalid.

(22) *vṛkṣaś śiṃśapāyāh** (TCD, p. 346, 30:³⁷⁾ valid)

TRANS.: [This is] a tree, because [it is] a śiṃśapā tree.

This inference does not have a general form of inference in Indian logic like inference (20). Raghunātha regards an entity called 'this' as the subject, a tree as the probandum, and a śiṃśapā tree as the probans. The relations among them are all identity as in the case of inference (20). Since whatever is a śiṃśapā tree is a tree, the inference is valid.³⁸⁾

(23) *ayaṃ saṃyogasāmānyābhāvanān saṃyogayāvadvīṣeṣābhāvanattvāt.* (TCD, p. 319, 16-17: invalid)

TRANS.: This possesses the generic absence of contact, because [it possesses] the state of having all specific absence of contact.

Like the example of *vyāpti* (18), the absence of all the members of a class is logically equivalent to all the absence of each and every member of the same class. It seems that we can affirm the former absence on the ground of the latter absence, so that the inference seems valid.

Gaṅgeśa denies the equivalence of the above two types of absence.³⁹⁾ Since Raghunātha implies that the traditional neo-logicians (Navya-naiyāyika) do regard the inference as invalid⁴⁰⁾ and he does not refute their view, he follows Gaṅgeśa on this issue. Similarly to the case of *vyāpti* (18), those logicians show the condition (*upādhi*) to invalidate the inference. The condition in Navya-nyāya proves a probans does not possess the relation of *vyāpti* to its probandum. According to Raghunātha, the given condition in the present case is the state of possessing no quality (*nirguṇatva*).⁴¹⁾

Let us examine whether this condition satisfies the definition of the condition. The condition is defined as that which is the pervader (*vyāpaka*) of a probandum and which is not the pervader of a probans.⁴²⁾ The probandum of the inference in question is the generic absence of contact. Wherever there is the generic absence of contact (the probandum) exists, the state of

possessing no quality (the condition) also exists. For instance, there is the generic absence of contact in a quality, where there is also the state of possessing no quality. The reason for this is as follows: contact is a quality, and a quality does possess no quality. Hence, the condition is the pervader of the probandum.

The probans of the inference is the state of possessing all specific absence of contact. It is not true that wherever there is the state of possessing all specific absence of contact (the probans), there is also the state of possessing no quality (the condition). For instance, there is the state of possessing all specific absence of contact on a tree, where there is not the state of possessing no quality. The person who holds the inference true accepts that all specific absence of contact exists on a substance like a tree,⁴³⁾ and a substance possesses at least one quality. Thus the condition is not the pervader of the probans. Hence, the definition of a condition applies to the state of possessing no quality. Because the condition has been pointed out, the inference is proved invalid.

(24) *saṃyogasāmānyābhāvavān sattvāt.* (TCD, p. 343, 6-7: invalid)

TRANS.: [This] possesses the generic absence of contact, because [it possesses] the highest generic property.

The probandum is the generic absence of contact, namely, the absence of all contact. This resides in a quality, action, a generic property, a particular, inherence, and absence. The probans resides in a substance, a quality, and action.⁴⁴⁾ The probans exists in a substance, while the probandum does not exist there. It is not true that wherever the probans exists, the probandum also exists. Hence, the inference is invalid.

(25) *saṃyogī guṇakarmānyatvāt.** (TCD, p. 355, 1:⁴⁵⁾ invalid)

TRANS.: [This] possesses contact, because [it possesses] the difference from a quality and [the difference from] action.

The probandum is contact, and it inheres in substances. The probans is those two differences. The difference from a quality abides in a substance, action, a generic property (*sāmānya*, *jāti*), a particular (*viśeṣa*), inherence (*samavāya*), and absence (*abhāva*).⁴⁶⁾ The difference from action abides in a substance, a quality, a generic property, a particular, inherence, and absence. Those two differences together exist in a substance, a generic property, a particular, inherence, and absence only. The differences exist together in a particular, where contact (the probandum) does not exist. It is false that the probans exists, the probandum also exists. Hence, the inference is invalid.

(26) *idaṃ saṃyogi dravyatvāt.* (TCD, p. 317, 24: valid)

TRANS.: This possesses contact, because [it possesses] substanceness.

The probandum is contact, and the probans is substanceness. Subcenceness resides in a substance alone, and so does contact. Contact is a quality, which inheres in a substance only. Wherever substanceness exists, contact also

exists. Consequently, the inference is valid.

(27) *samavāyena jātimān meyatvāt.** (TCD, p. 354, 31:⁴⁷) invalid)

TRANS.: [This] possesses a generic property through inherence, because [it possesses] the state of being an object of true cognition.

The probandum is a generic property, and the probans is the state of being an object of true cognition. This probans exists, for instance, in a particular, where the probandum does not exist through inherence.⁴⁸ The probandum, a generic property, can reside only in a substance, a quality, or action through inherence. It is not true that wherever the probans resides, the probandum also resides through inherence. Hence, the inference is invalid.

III

Among the twenty-seven instances listed above, analytic, valid inferences are five. Synthetic, valid ones are two. Analytic, invalid inferences are seventeen, and synthetic, invalid ones are three. We can show this classification with the following table.

	valid	invalid
analytic	(1) (7) (12) (22) (26)	(3) (5) (6) (8) (9) (11) (13) (14) (15) (16) (17) (18) (21) (23) (24) (25) (27)
synthetic	(2) (20)	(4) (10) (19)

I have used 'analytic' in the following sense: an analytic statement is a statement whose negation is self-contradictory.⁴⁹ Take inference (26) '*idaṃ samyogi dravyatvāt*' (this [substance] possesses contact, because [it possesses] substanceness). The negation of this inference is 'this substance possesses no contact, because it possesses substanceness'. In Nyāya-Viaśeṣika metaphysics, a substance necessarily possesses contact. For instance, since space (*ākāśa*) is an omnipresent substance, any substance possesses the contact with space. If 'substance' in the negation is substituted by 'possessor of contact', we will get 'this possessor of contact possesses no contact, because it possesses substanceness'. This is obviously self-contradictory, so that inference (26) is analytic.

Raghunātha uses more analytic statements (inferences) than synthetic statements. This is because with analytic statements, there is no dispute between Raghunātha and his opponents in proving them to be valid or invalid.

He engages in a great deal of discussion, however, in the section treating of *vyāpti* (18) and inference (22). Raghunātha seems to want to discuss problems of generic absence and specific absence and not to test whether the definition of *vyāpti* applies in the cases of those two inferences.

Raghunātha makes use of five synthetic inferences. Among those five, we cannot say from a logical point of view that inference (2) is valid. To interpret it as valid, we had to postulate the particular situation which is not apparently known. We have no difficulty to judge whether the other four instances are valid or not.

The inferences used in the Sanskrit text are mostly analytic statements in Nyāya-Vaiśeṣika system. The synthetic inferences are easily ascertained to be valid or invalid, except inference (2). Thus in facilitating the test of the definition of *vyāpti*, Raghunātha avoids any discussion that explains the very ground for the validity or invalidity of most inferences employed in the text.

NOTES

- 1) The concept of *vyāpti* corresponds to that of logical subsumption in Western logic in the sense that both the concepts are the logical basis for inference in each system of logic. To be precise, those concepts connect one thing with something to be proved. Modern philosophers, however, cannot equate them. This is because in Indian logic, for instance, smoke and fire exists in the relation of *vyāpti*, and because in Western logic it is not true that concept of 'smoke', for instance, is subsumed by the concept of fire. In the latter type of logic, the extension of the word 'smoke' is not subsumed by the extension of the word 'fire'. If the former were subsumed by the latter, all smoke would be fire. But the concept of 'locus of smoke' is subsumed by the concept of 'locus of fire', or the extension of 'locus of smoke' is subsumed by the extension of 'locus of fire'. The concept of subsumption, therefore, applies to the relation of the 'locus of smoke' to the 'locus of fire' in the present example and not to the relation of smoke to fire.
- 2) The term 'definition' here is used to mean *lakṣaṇa*, and *lakṣaṇa* is generally a defining character of something to be defined (definiendum, *lakṣya*). That *lakṣaṇa* applies to its definiendum means that *lakṣaṇa* exists in or on the definiendum. For the concept of *lakṣaṇa*, see [WADA 1990: Ch. 3, Sec. E]. The definiendum of the definition of *vyāpti* is a pervaded entity (*vyāpya*), so that *vyāpti* is the defining character of a pervaded entity [MIYASAKA 1987: 48-49]. A pervaded entity is *x* when Navya-nyāya says that wherever *x* exists, *y* also exists. The entity *y* is a pervader (*vyāpaka*). (In another way, when Navya-nyāya says that whatever possesses *x* possesses *y*, *x* is the pervaded entity of *y*.) In inference, a pervaded entity is a valid probans (*saddhetu*). As a result, the definition of *vyāpti* can be considered a property residing in a valid probans only. A valid probans is the probans of a valid inference.
- 3) From a logical point of view, the defects of narrow-application and non-application are not complementary to each other.
- 4) The *Nyāyabodhinī* (p. 42, 11-12) suggests that the absence of contact is unnegatable: *atyan-tābhāvapratiyogitvaṃ kevalānvayitvaṃ. na caivam akāśābhāve saṃyogābhāve cāvvyāptir iti vācyam.*
- 5) . . . *tathā cātmetivacanāt paramamahatparimānam.* [*Praśastapādabhāṣya*: 70, 15-16] *jīvātmā prati-śarīraṃ bhinno vibhur nityaś ca.* [*Tarkasamgraha*: 12, 11-12]
- 6) 'A-*viśiṣṭa*-B' can signify that A is connected to B by some relation. In some case, it simply means B plus A. (Here B is considered as prominent and A as subordinate.) See [WADA 1988: 502-503].
- 7) *nityam ekam anekānugatam sāmānyam. dravyagunakarmavṛtti. tad dvivīdham parāparabhedāt. param sattā. aparām dravyatvādiḥ.* [*Tarkasamgraha*: 60, 20-21]

- 8) The categories in Nyāya-Vaiśeṣika are only seven. (*dravyagunakarmasāmānyaviśeṣa-samavāyābhāvah sapta padārthaḥ*. [*Tarkasaṃgraha*: 2, 20])
- 9) For the Sanskrit source, see note 7.
- 10) *dhūmasamyoge vahnyadhikaraṇāyogolakānuyogikatvasya, caitrānyatvaviśiṣṭaitaddaṇḍasamyoge etaddaṇḍādhikaraṇacāitrānuyogikatvasya, guṇakarmānyatvaviśiṣṭasattāsamavāye ca jātyadhikaraṇaguṇānuyogikatvasya virahān nātiprasaṅgaḥ*.
- 11) For the Sanskrit source, see note 7.
- 12) A positive entity is one other than a negative entity, i.e., absence. Since the categories are seven, a positive entity is of six kinds. For the seven categories, see note 8.
- 13) *jñānādhikaraṇātmā*. [*Tarkasaṃgraha*: 12, 11] Knowledge is a quality, and a quality resides in a substance through inherence. (*rūparasagandhasparśa-saṃkhyāparimānapṛthaktvasamyogavibhāgaparatvāparatvagurutvadratvasnehaśabdabuddhisukhaduḥkhecchādveṣaprayatna-dharmādharmasamskāraś caturvimsatigunāḥ*. [*Tarkasaṃgraha*: 5, 9-11] Navya-nyāya holds that the relation of inherence exists between two entities in five cases only: (1) a part and its whole, (2) a quality and a substance, (3) action and a substance, (4) a generic property and a manifested entity [i.e., a substance, a quality, or action], and (5) a particular and an eternal substance [i.e., an atom, space, time, direction, soul, or mind]. (*nyasambandhaḥ samavāyah. ayutasiddhavṛtīḥ. yayor dvayor madhya ekam avinaśyad aparāśritam evāvatiṣṭhate tāv ayutaid-dhau. yathāvayavāvayavināu guṇaguṇināu kriyākriyāvantau jātivyakṛti viśeṣanityadravye ceti*. [*Tarkasaṃgraha*: 61, 18-20])
- 14) *itthaṅ ca idaṃ dravyaṃ guṇakarmānyatve sati sattvād ityātau sattvādyadhikaraṇaguṇādinīṣṭhātyantābhāvapratiyogitve 'pi dravyatvāder nātivṛptīḥ. sādhanasya viśiṣṭasattāder guṇādāvavṛtteḥ*. [*TCD*: 314, 5-7]
- 15) For the Sanskrit source, see note 7.
- 16) For the Sanskrit source, see note 7.
- 17) For the Sanskrit source, see note 10.
- 18) *pṛthivyādīnām pañcānām api bhūtatvendriyaprakṛtitvabāhyaikaikendriyagrāhyaviśeṣaguṇavattvāni*. [*Prāśastapādabhāṣya*: 22, 22-23]
- 19) *rūparasagandhasparśaparatvāparatvagurutvadratvasnehavegā mūrtaguṇāḥ*. [*Prāśastapādabhāṣya*: 95, 3-4] *tathā hi rūpasparśaparatvāparatvavegāḥ pṛthivyādiṣu triṣu vāyau rūpavarjam rūpasparśavaḥram manasi rasagurutve pṛthivyudakayoḥ dravatvam pṛthivyudakatejassu snehombhasi gandhaḥ pṛthivyām*. [*Nyāyakandalī*: 95, 6-8]
- 20) For the concept of *lakṣaṇa*, see note 2.
- 21) There are two kinds of the dissolution of the universe (*pralaya*): intermediate dissolution and final dissolution (*mahāpralaya*). The *Tarkadīpikā* (p. 10, 9-10) defines intermediate dissolution as the destruction of all produced substances (*sarvakāryadravyadhvamso 'vantarapralayaḥ*) and final dissolution as the destruction of all produced positive entities (*sarvabhāvakāryadhvamso mahāpralayaḥ*).
- 22) *. . . tataḥ pravibhaktāḥ paramānavovatiṣṭhante dharmādharmasamskāranūviddhā ātmānas tāvan-tam eva kalam*. [*Prāśastapādabhāṣya*: 48, 17-19]
- 23) To understand that a generic property is eternal, see note 7.
- 24) For the Sanskrit source, see note 22.
- 25) The purpose to assume the vibration of atoms in intermediate dissolution is to mark the duration of the dissolution. The vibration is supposed to be produced by violent shaking or impact which leads products to dissolution. [BHADURI 1947: 146-147] It is explained in the *Nyāyasiddhāntamuktāvalī* (p. 152, 2-4) how time is marked by action.
- 26) [GOEKOOP 1961: 116-119]
- 27) *na ca yo yadiyavādvaiśeṣābhāvavān sa tatsāmānyābhāvavān iti vyāpter yāvatsamyogābhāvā eva mānam. yattadarthayor ananugamād ekāvachedena tadīyāvadvaiśeṣābhāvavattvasyopādhitvā ca*. [*TCD*: 319, 14-16]
- 28) See [KITAGAWA 1965].
- 29) For the Sanskrit source, see note 27.
- 30) For the concept of pervader, see note 2.

- 31) *sādhyavyāpakatve sati sādhanāvyaṅgya upādhiḥ*. [Tarkasamgraha: 46, 20]
- 32) The system of Navya-nyāya accepts the view of Kātyāyana (ca. 300-200 B.C.), who wrote the *Vārttika* on Pāṇini's *Aṣṭādhyāyī*, that *x-vattva* is *x*. If 'x' is substituted by '*tadīyayāvadvīṣeṣābhāva*', *tadīyayāvadvīṣeṣābhāvattva* is equated to *tadīyayāvadvīṣeṣābhāva*.
The *Vārttika* on the *Aṣṭādhyāyī* 5.1.119 reads: it is concluded that the suffixes '*tva*' and '*tal*' (i.e., '*tā*') are employed to express a quality of a substance denoted by a word which is used to express the substance as what possesses the quality (*siddham tu yasya guṇasya bhāvād dravye śabdāniveśas tadabhidhāne vatalau*.) It seems that the philosophico-logical tradition in India framed a general rule based upon this statement of Kātyāyana, according to which the suffix '*tva*' or '*tal*' expresses a qualifier when added to a stem expressive of its qualificand. See [MATILAL 1971: 101]. The above equivalence of '*x-vattva*' to '*x*' is also referred to by [GOEKOOP 1961: 136] [MUKHERJEA 1976: 49].
- 33) The opponent states: *yat tu idaṃ saṃyogī dravyatvād ity atra avyāptivāraṇāya tat saṃyogasya śākhāvachedena vṛtter vṛkṣatvāchedena tatsāmānyābhāvavṛttāv avirodhāt*. [TCD: 317, 24-26]
- 34) *tathā hi tādātmyena sambadhena dhūmavataḥ sambandhini mahānase vartamāno yo 'nyonyābhāvas tasya tādātmyasambandhāvachinnā yā pratiyogitā tadanavachedakavahnimattvāvachchinasya vahnimatas tādātmyena sambandhini mahānase dhūmavatas tādātmyena sambandhitvam*.
- 35) *saṃkhyādayo 'ṣṭau naimittikadravatvavegasthitishāpakāḥ sāmānyaguṇāḥ. anye rūpādayo viśeṣaguṇāḥ*. [Tarkadīpikā: 59,19-60,1] A special quality is defined as 'that which does not occur in an entity coexistent with a couple of entities which function as the principles of division for substances, which does not occur in a substance and a quality, and which has a generic property (*dravyavibhājakopādhidvayasamānādhikaranavṛttidravyakarmāvṛttijātimattvam viśeṣaguṇatvam*). [Tarkadīpikā: 60, 1-2]
- 36) A substance is of nine kinds: earth, water, fire, wind, space, time, direction, soul, and mind (*tatra dravyāni pṛthivyaptejovāyavākāśakāladigātmamanāmsi navāiva*). [Tarkasamgraha: 3, 16]
- 37) Raghunātha deals with a śiṃśapā tree and a tree as two relata of the relation of *vyāpti* and not as the probans and the probandum of valid inference. (*itham eva ca tādātmyād vṛkṣaśiṃśapāyor vyāptiniścaya iti saṃgacchate*.)
- 38) When Raghunātha refers to the *vyāpti* between a śiṃśapā tree and a tree, he seems to bear in mind Dharmakīrti's example of *vyāpti*: *vṛkso 'yaṃ śiṃśapātvāt* [Nyāyabindu: 24, 1].
- 39) [GOEKOOP 1961: 116-119]
- 40) *etenāyam saṃyogasāmānyābhāvavān saṃyogayāvadvīṣeṣābhāvavattvād ity parāstam, vyartha-vīṣeṣaṇatvād aprayojakatvān nirguṇatvāder upādhitvāc ca*. [TCD: 319, 16-18]
- 41) For the Sanskrit source, see note 40.
- 42) For the Sanskrit expression, see note 31. For the pervader, see note 2.
- 43) For the Sanskrit source, see note 33.
- 44) For the Sanskrit source, see note 7.
- 45) *viśiṣṭasya 'natiriktatvāt. samavāyena jāteḥ sādhyatve meyatvādāv atiprasaṅgāt. jātimanniṣṭhābhāvapratiyogitāyā jātitvena 'navachedāt, jātiśūnye ca tādr̥sasambandhena vṛtter aprasiddheḥ. saṃyogādisādhyakaguṇakarmānyatvātau ca 'tivyāptiḥ. adravye hetumati tādr̥sasambandhena vṛtter aprasiddher dravye ca saṃyogāder api vṛtteḥ*. [TCD: 354,31-355,3]
- 46) The categories are seven only. See note 8.
- 47) For the Sanskrit expression from which inference (27) is reconstructed, see note 45.
- 48) For the condition of inherence, see note 13.
- 49) I owe my understanding of 'analytic' to [HOSPERS 1967: 162]. [QUINE 1962] casts a doubt about the fundamental cleavage between 'analytic' and 'synthetic'.

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