

CHAPTER TEN

Raghunātha on *Arthâpatti*

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Classical Indian epistemologists agree on one thing: whenever we know something, there is an epistemic instrument—a *pramāṇa*—which explains how we acquire this knowledge (*pramā*).¹ Suppose I look out of my window and see a white picket fence. If I thereby know that there is a white picket fence outside, perception (*pratyakṣa*) is the epistemic instrument which explains how I acquire this knowledge. If you tell me, “Bob is in his office,” and I thereby learn that Bob is in his office, testimony (*śabda*) is the epistemic instrument which explains how I learn this.

For these classical Indian philosophers, an epistemic instrument *M* is *independent* (*svatantra*) just in case there is no other epistemic instrument *M** which explains how we gain knowledge by *M*. Now, reductionism about any epistemic instrument *M* is the view that *M* isn’t an independent means of knowing. For example, a *reductionist about testimony* might claim that we can explain how we acquire testimonial knowledge by appealing solely to inference of some sort.

In this chapter, we will focus on a certain kind of reductionism: *reductionism about arthâpatti*. Consider:

Absent Devadatta. You know Devadatta is alive, but you don’t see him at home. Therefore, you judge, and therefore come to know, that he’s outside.

How do you gain this knowledge? According to one story, you antecedently know a generalization on the basis of empirical investigation, e.g., the generalization that anyone who isn’t outside their home must either be dead or present at their home. When you learn that living Devadatta isn’t at home, you infer that Devadatta must be outside. On this story, therefore, your knowledge is derived from a form of observation-based inference,² which classical Indian epistemologists label *anumāna*. Many Nyāya philosophers—the *Naiyāyikas*—favor this story.

According to another story, your inference isn’t based on the prior empirical knowledge of any generalization. On one version of the story, in **Absent Devadatta**, you know that Devadatta is quite old. So, when you don’t find him at his home, you suspect that he might not be alive. But you also know that he’s alive on the basis of

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² The term “inference” is used here to refer to any episode of reasoning. So, the term “inference” will not only cover *anumānas* but also other kinds of reasoning, e.g., inductive or abductive reasoning, which cannot straightforwardly be treated as kinds of *anumāna*.

an independent source of information. That is why you resolve your doubt by judging that Devadatta must be outside. This is the story that Prābhākara Mīmāṃsakas typically support. On another version of the story, in **Absent Devadatta**, when you learn that Devadatta isn't at home, you realize that Devadatta's being alive is incongruous or inexplicable unless he is present outside. Then you resolve this incongruity or inexplicability by judging that Devadatta must be outside. This is the account that Bhāṭṭa Mīmāṃsakas typically support. On both accounts, you posit Devadatta's existence outside his home in order to resolve either a doubt (*saṃśaya*) or an incongruity (*anupapatti*) pertaining to his being alive, without having recourse to any purely empirically discoverable generalization. For these Mīmāṃsakas, therefore, the relevant epistemic instrument isn't *anumāna*; it's a separate epistemic instrument called *arthâpatti*.

The Naiyāyikas and the Mīmāṃsakas disagree about whether *arthâpatti* is an independent epistemic instrument. The Mīmāṃsakas are anti-reductionists about *arthâpatti*: they say that no other epistemic instrument can explain how we acquire knowledge by *arthâpatti*. In contrast, many Naiyāyikas are *reductionists* about *arthâpatti*: they say that we can explain how we gain *arthâpatti*-based knowledge by appealing to *anumāna*.

Interestingly, however, the unorthodox fifteenth-century Naiyāyika, Raghunātha Śiromaṇi, argued against reductionism about *arthâpatti* in his commentary *Splendor (Dīdhiti, D)* on Gaṅgeśa Upādhyāya's (fourteenth century CE) *The Jewel of Reflection on the Truth (Tattva-cintā-maṇi, TCM)*. In this chapter, I reconstruct and explain the significance of this argument. I show that Raghunātha's anti-reductionist argument crucially depends on his opposition to a principle about the ontology of absence (*abhāva*) accepted by earlier Nyāya philosophers like Udayana (tenth/eleventh century CE) and Gaṅgeśa. I also argue that Raghunātha's argument poses a serious challenge for the Nyāya reductionists about *arthâpatti*: they cannot resolve the challenge without making implausible psychological claims. This, I think, reveals an instability within the standard Nyāya view about *arthâpatti*.

This chapter is divided into five parts. In §1, I outline the Nyāya reductionist view about *arthâpatti*, and different ways of precisifying it. On a popular precisification of the view, putative instances of *arthâpatti*-based knowledge are based on negative-only *anumānas* (*kevala-vyatireky-anumāna*). In §2, I discuss how Gaṅgeśa rejects the view that episodes of such reasoning cannot be treated as *anumānas* because they proceed from an awareness (*jñāna*, sometimes translated as "cognition")³ of negative pervasion (*vyatireka-vyāpti*). The second of these arguments depends on a principle about the ontology of absence. In §3, I show that Raghunātha rejects this principle,

³ The translation of the word "*jñāna*" as "cognition" is misleading. There is an open question in contemporary philosophy and psychology of perception about whether there is a distinction between perception and cognition, where cognition only includes mental states, e.g., beliefs and judgments, which can be directly utilized for the purposes of reasoning, verbal reports, and action. Since some Indian philosophers (e.g., Yogācāra Buddhists) think that some *jñānas* (which are perceptual in character) don't fit this description, it would be a mistake to call them "cognition" in this sense of the term. So, if we want our translational choices to be consonant with contemporary philosophical and psychological terminology, something more neutral like "awareness" or "awareness-event" (which can refer to both perceptual experiences as well as judgments) seems appropriate as a translation for "*jñāna*."

so he has the resources to block Gaṅgeśa's argument. In §4, I explain how Raghunātha defends the claim that an episode of reasoning that proceeds solely from an agent's awareness of negative pervasion cannot be treated as an *anumāna*. In §5, I say why he takes this to support anti-reductionism about *arthāpatti*.

1. NYĀYA REDUCTIONISM

In this section, I outline the basic commitments of Nyāya reductionism about *arthāpatti*. A simple case:

Smoke and Fire. You see smoke coming out of a hill. You had learnt earlier by empirical investigation that wherever there is smoke, there is fire. You recall this. So, you conclude that there is fire on the hill.

Here, your inference establishes the presence of an unobserved property, i.e., the fire. This is the property to be proven (*sādhya*). The place where the fire is established, i.e., the hill, is the subject (*pakṣa*). Finally, the observed property from which the fire is inferred, namely the smoke, is the reason (*hetu*). Suppose you know, in **Smoke and Fire**, that the subject possesses the property to be proven. According to almost all Naiyāyikas after Uddyotakara (sixth century CE), you arrive at your knowledge in three steps, each of which involves an awareness-event about the reason.

Step 1. First, you undergo a perceptual awareness-event, whereby you learn that the reason, i.e., the smoke, is present in the relevant subject, i.e., the hill (what the Naiyāyikas call the awareness of the reason's being a property (*dharma*) of the subject (*pakṣa-dharmatā-jñāna*)).

Step 2. Next, you recall that there is a relation of pervasion (*vyāpti*) between the reason and the property to be proven. The reason is pervaded by the property to be proven just in case wherever the reason is present, the property to be proven is also present. In **Smoke and Fire**, you recall what you previously learnt: namely, that wherever there is smoke, there is fire. This is what the Naiyāyikas call the recollection of pervasion (*vyāpti-smṛti*).

Step 3. Finally, you undergo an awareness-event where you unify the contents of the previous two awareness-events: you judge that the reason is both pervaded by the property to be proven and a feature of the subject. In **Smoke and Fire**, you judge that the hill possesses smoke which, in turn, is pervaded by fire. This awareness-event is what Naiyāyikas call a subsumptive judgment or consideration (*parāmarśa*).

Immediately after the third step, you judge that the subject possesses the property to be proven. If the judgment constitutes knowledge, the resulting knowledge is called *anumiti*. The epistemic instrument by which this knowledge arises is *anumāna*.

An *anumāna* can be of different kinds, depending on what relation of pervasion underlies the relevant inference, and how the agent apprehends the relevant relation of pervasion. As I said earlier, a property H is pervaded (*vyāpta*) by another object or property S if and only if wherever H is present, ~~so~~ also is S. (This will be made

more precise later.) An *anumāna* that proceeds from smoke to fire, for instance, could be based on two generalizations:

1. Wherever there is smoke, there is fire.
2. Wherever there isn't any fire, there isn't any smoke.

The first generalization says that smoke is pervaded (in the specified sense) by fire. The second generalization says that the absence of fire is pervaded by the absence of smoke. The first kind of pervasion is therefore a relation between two positive entities (i.e., entities that aren't themselves absences), while the second is a relation between two negative entities (i.e., entities that are absences). So, the first kind of pervasion is called positive pervasion (*anvaya-vyāpti*), while the second kind is called negative pervasion (*vyatireka-vyāpti*).

We can define these two relations as follows. Let's say that the counterpositive (*pratiyogin*) of an absence is the thing that is absent; for instance, the counterpositive of the absence of a pot is the pot itself. Suppose H is the reason involved in an *anumāna*, and S is the property to be proven. If H bears a relation of positive pervasion to S, then that relation consists in H's being co-instantiated with S such that H is pervaded by S (*hetu-vyāpaka-sādhyā-sāmānādhikarānya*). If H bears a relation of negative pervasion to S, then that relation consists in H's being the counterpositive of an absence that pervades the absence of S (*sādhyābhāva-vyāpakī-bhūtābhāva-pratiyogitva*). In **Smoke and Fire**, smoke bears relations of both positive and negative pervasion to fire. On the one hand, smoke is co-instantiated with fire which, in turn, pervades it. For fire and smoke occur together such that wherever there is fire, there is smoke. On the other hand, smoke is the counterpositive of an absence that pervades the absence of fire. For, wherever fire is absent, smoke is also absent. Using this distinction amongst the two kinds of pervasion, we can distinguish two types of *anumāna*: the first kind involves a recollective awareness of a relation of positive pervasion between the reason and the property to be proven, while the second kind involves a recollective awareness of a relation of negative pervasion between them.

We can classify *anumānas* in another way. In **Smoke and Fire**, you had learnt that wherever there is smoke, there is fire. How could you have learnt this? There are two possibilities. You might have observed lots of places where smoke is present, e.g., a kitchen, and noticed that fire is always present in such places. Or you might have observed lots of places where fire is absent, e.g., a cold lake, and noticed that smoke is always absent from such places. Call places where both fire and smoke are present together instances of positive correlation (*anvaya-sahacāra*) between fire and smoke. And call places where both fire and smoke are absent instances of negative correlation (*vyatireka-sahacāra*) between fire and smoke. In general, a relation of pervasion between a reason and a property to be proven can be known in three distinct ways: either (a) by observing only positive correlation, or (b) by observing only negative correlation, or (c) by observing positive as well as negative correlations. An *anumāna* where the relevant relation of pervasion is known (or can only be known) in the first way is called positive-only (*kevalānvayin*). An *anumāna* in which the relevant relation of pervasion is known (or can only be known) in the second way is called negative-only (*kevala-vyatirekin*). Finally, an *anumāna* in which the

relevant relation of pervasion is known in the third way is called positive-and-negative (*anvaya-vyatirekin*).⁴

Here are some stock examples that illustrate the distinction.

i. Consider the inference, “This is nameable (*abhidheya*), since it is knowable (*prameya*).” Here, the reason is knowability, and the property to be proven is nameability. For many Naiyāyikas, everything is nameable. So, the only way you could learn that nameability pervades knowability is by observing cases where both nameability and knowability are present. Since the relevant pervasion here is known solely on the basis of positive correlation, this is a positive-only *anumāna*.

ii. Take another inference: “The earth is different from other substances (*itarābhīma*); for it has smell.” Here, the reason is smell, and the property to be proven is difference from substances other than earth. But since the earth is the subject, there is no observed place (other than the subject itself) where the property to be proven is present. So, the only way the agent could learn that there is a relation of pervasion between the reason and the property to be proven is by observing negative correlation between the two. Hence, this is a negative-only *anumāna*.

iii. Finally, in **Smoke and Fire**, you can apprehend the relevant relation of pervasion by observing instances of both positive and negative correlations, i.e., cases where smoke and fire are present together and cases where they are absent together. When that happens, the resulting *anumāna* is positive-and-negative.

Let us now turn to reductionism about *arthāpatti*.

For many Naiyāyikas, all putative instances of *arthāpatti*-based knowledge are produced by *anumānas*.⁵ Even before Gaṅgeśa, several Naiyāyikas, e.g., Udayana and Śāśadhara, explicitly considered the view that at least some—if not all—instances of *arthāpatti*-based knowledge have to be produced by negative-only *anumānas*.⁶ Here is an example from Kumārila that motivates this view.

Present Devadatta. I learn by perception that Devadatta is standing at this location. So, I conclude that he is absent everywhere else.

⁴ See Uddyotakara’s *Nyāya-vārttika* (NV) on *Nyāya-sūtra* (NS) 1.1.5 and Vācaspati Miśra’s *Nyāya-vārttika-tātparya-ṭikā* (NVTṬ) on it. (NS 144–5.)

⁵ See Vātsyāyana’s *Nyāya-bhāṣya* (NBh), Uddyotakara’s NV, and Vācaspati Miśra’s NVTṬ on NS 2.2.2–6 in NS, 575–81. However, Jayanta Bhaṭṭa and Udayana are exceptional amongst early Naiyāyikas for their systematic defenses of reductionism about postulation; for these passages, see Jayanta Bhaṭṭa’s *Nyāya-mañjarī* (NM).³

⁶ For a translation of the Udayana passage, see Das. NKA, 425–6: kevala-vyatireky-anumānaṃ parābhitam arthāpattir anvayābhāvād iti cet. evam etāvātā viśeṣeṇānumāne’rthāpatti-vyavahāraṃ na vārayamaḥ. tatrānumāna-vyavahāraḥ kuta iti cet. avinābhūta-liṅga-samutpannatvāt. sādhyā-dharmeṇa vinā hy abhavanam anvayina iva vyatirekiṇopy aviśiṣṭam, tan-niścayaścānvayavyatirekābhyām anyatareṇa veti. (Editor’s note: transliteration in this passage and the following does not break *saṃdhi* at word boundaries where the edition preserves it; for instance, *nāsti* will be retained rather than *na asti*.) For Śāśadhara’s *Nyāya-siddhaṅta-dīpaḥ* (NSD, 100): “With this, we reject the view that *arthāpatti* is a negative-only proof (*māna*). For even a negative-only proof depends on pervasion and the presence of the reason in the subject. Therefore, this again is nothing but attaching a different label” (etena vyatireki-mānam arthāpattir ity api parāstam. vyatirekiṇopy vyāpti-pakṣa-dharmatādhinatvāt. tathā ca punar api nāmāntara-karaṇam eva).

For Kumārila, this is a case of *arthâpatti*-based knowledge: since Devadatta's being located here is incongruous (*anupapanna*) without his being absent everywhere else, I posit Devadatta's absence everywhere else to resolve that incongruity. Now a reductionist about *arthâpatti* should say that this knowledge is in fact produced by an *anumāna*. The reason for that *anumāna* would have to be the property of being located here (*etad-deśa-sambandhitva*) and the property to be proven would have to be the property of being absent from every other place (*anyatrâbhāva*). In his *Śloka-vārttika* (ŚV), Kumārila says that in this case, a relation of positive pervasion between the reason and the property to be proven cannot be established by observing instances of positive correlation. For in order to know that something is absent everywhere else, one would have to go to those places and check whether the relevant object is present.⁷ So, the Naiyāyikas must say that in this scenario, I gain my knowledge by an *anumāna* of the negative-only variety.

This still leaves open some further possibilities. In **Absent Devadatta**, you gain your knowledge by an *anumāna* where the subject is Devadatta, the reason is the property of being alive but absent from home, and the property to be proven is the property of being outside one's home. Now, two different relations of pervasion could hold between the property of being alive but absent from home and the property of being outside one's home. We can express them as follows:

3. Whoever is alive but absent from home is outside their home.
4. Whoever isn't outside their home is either not alive or not absent from their home.

Relation (3) expresses a relation of positive pervasion between the reason and the property to be proven, while (4) expresses a relation of negative pervasion. This means that the Nyāya reductionist view about *arthâpatti* could be sharpened in (at least) two ways.

The Positive Story. In any case of *arthâpatti*-based knowledge, the *anumāna* on the basis of which the agent gains her knowledge involves an awareness of positive pervasion.

The Negative Story. In all cases of *arthâpatti*-based knowledge, the *anumāna* on the basis of which the agent gains her knowledge involves an awareness of negative pervasion.

In the positive story, in **Absent Devadatta**, your reasoning goes like this.

Step 1. First, you perceive that Devadatta who is alive and isn't at home.

Step 2. Then you remember that whoever is alive but absent from home must be outside their home.

Step 3. Next, you make a subsumptive judgment that Devadatta who is alive possesses the property of being absent from home, which is pervaded by the property of being outside one's home.

⁷ See Ollett and Freschi in the present volume, p. xxx. Sanskrit: vv. 35–46 in ŚV, 324–8.

Finally, you conclude that Devadatta isn't at home. In the negative story, you reason as follows.

Step 1. First, you perceive that Devadatta who is alive isn't at home.

Step 2*. Then, you remember the content of (4): namely, that whoever isn't outside their home is either dead or present at their home.

Step 3*. Next, you make a subsumptive judgment that Devadatta who is alive possesses the property of being absent from home, which is the counterpositive of an absence that is pervaded by the absence of being outside one's home.

The difference between the two episodes of reasoning lies in the second and third steps. At Step 2 in the positive story, you recall a relation of positive pervasion between the reason and the property to be proven; at Step 2* in the negative story, you recall a relation of negative pervasion between the two. At Step 3 in the positive story, you undergo what we may call a positive subsumptive judgment (*anvaya-parāmarśa*), i.e., a judgment that the subject possesses the reason which is pervaded by the property to be proven; at Step 3* in the negative story, you undergo what we may call a negative subsumptive judgment (*vyatireka-parāmarśa*), i.e., a judgment that the subject possesses the reason which is the counterpositive of an absence that is pervaded by the absence of the property to be proven.

In both early and later Nyāya, the negative story about *arthāpatti* seems to have been popular. In his *Flowers of Reasoning* (*Nyāya-mañjarī*, NM), Jayanta supports a version of the negative story.⁸ Udayana (at least according to his commentators) partially supports the negative story, while Gaṅgeśa mentions it.⁹ In his *Collection of Verses* (*Kārikāvalī*, KA), Viśvanātha says, “*Arthāpatti* is not in fact taken to be a distinct means of knowing. For it is successful [in generating knowledge] in virtue of an awareness of negative pervasion.”¹⁰ What explains this? First of all, it is sometimes assumed that *anumānas* of the negative-only variety involve an awareness of negative pervasion, presumably because an agent can only apprehend a relation of negative pervasion between the reason and the property to be proven by observing the correlation between their absences. (We will discuss this point in the next section, but for a representative passage, see the Viśvanātha passage in footnote 30.) Second, some Nyāya writers, including Jayanta and possibly Udayana, thought that the awareness of incongruity-otherwise (*anyathānupapatti*) involved in an *arthāpatti* could be construed as an awareness of negative pervasion. In **Absent Devadatta**, you

⁸ See Graheli in this volume, p. xxx. NM, 107: *api ca tena vinā nōpapadyata iti kalpanam arthāpattiḥ. tena vinā nōpapadyata iti ca vyatireka-bhaṅgītir iyam. vyatirekaś ca apratītaḥ tasmīn saty upapadyate ity anvayam ākṣipati. anvaya-vyatirekau ca gamakasya liṅgasya dharma iti katham arthāpattiḥ nānumānam kevala-vyatirekī hetur anvaya-mūla eva gamaka iti vakṣyāmaḥ.*

⁹ For a translation of the Udayana passage, see Das in this volume, p. xxx. NKA, 419: *sthitir evāsyā tena vinā na syādityasya svabhāva iti cet. evaṃ tarhi tan-niyata-svabhāva evāsau. vyāpte reva vyatireka-mukha-nirūpyāś tathā-vyapadeśāt.* For a translation of the Gaṅgeśa passage, see Phillips in this volume, p. xxx. TCM, 676–7: *atha upapādakābhāvavaty upapādyābhāva-niyamo anupapattir na tv abhāva-mātram atiprasaṅgāt. evaṃ ca vyatireka-vyāptimata upapādyād vyatireky-anumāna-mudrayā eva sādhyā-siddheḥ kim arthāpattiyā. tathā hi devadatto bahiḥ san jīvitve sati grhāsattvāt yan na evaṃ tan na evaṃ yathā mṛto grha-sthito vā.*

¹⁰ KA, 144: *arthāpattis tu naiveha pramāṇāntaram iṣyate | vyatireka-vyāpti-buddhyā caritārthā hi sā yataḥ ||.*

conclude that Devadatta is outside his home, because you judge that if Devadatta weren't outside, his property of being alive but absent from home would be incongruous. For he would either be dead or at home. This judgment, at least on one interpretation, is simply an awareness of a relation of negative pervasion between the property of being alive but absent from home and the property of being outside one's home.

So far, we've seen two things. The first is that Nyāya reductionists about *arthâpatti* treat at least some putative cases of *arthâpatti* as *anumānas* of the negative-only variety. The second is that, historically, some Nyāya reductionists about *arthâpatti* have thought that putative cases of *arthâpatti* are *anumānas* that proceed from an awareness of negative pervasion. In the next section, we'll look at Gaṅgeśa's discussion of the view that no putative negative-only *anumāna* can give rise to an *anumiti*, because any such inference proceeds from an awareness of negative pervasion. If this view were true, the agent's reasoning in cases like **Present Devadatta** couldn't be treated as an *anumāna*. That would be bad news for Nyāya reductionists about *arthâpatti*. Gaṅgeśa's refutation of this view will be useful for understanding Raghunātha's strategy for resisting reductionism about *arthâpatti*.

2. GAṆGEŚA ON NEGATIVE-ONLY ANUMĀNAS

In the section on negative-only *anumānas* (i.e., the *Kevala-vyatireki-prakarana*) in *The Jewel of Reflection on Truth*, Gaṅgeśa first defines the notion of a negative-only *anumāna*.

[The proponent:] That which is negative-only does not have a similar subject (*sapakṣa*), so that the relation of pervasion involved in it is apprehended on the basis of negative correlation.¹¹

A similar subject is an observed place other than the subject, where the property to be proven is present. In a negative-only *anumāna* of the form "Earth differs from other substances, because it has ~~smells~~," there is no observed place (other than the subject, i.e., earth) where the property to be proven is present. So, there is no similar subject. As a result, the agent must apprehend the relevant relation of pervasion solely by observing negative correlation between the reason and the property to be proven.

However, Gaṅgeśa's opponent takes this to be problem: she thinks that an inference where the relevant relation of pervasion is apprehended solely by observing negative correlation cannot yield an *anumiti*. In the rest of this section, I will explain this objection, and then discuss two responses that Gaṅgeśa offers to it.

2.1. An argument against negative-only *anumānas*

The objection is stated as follows.

[The opponent:] Well, that which is negative-only is not an *anumāna*. For an *anumāna* is caused by an awareness of a pervaded entity as the property of the

¹¹ TCM, 582: kevala-vyatirekī tv asat-sapakṣo yatra vyatireka-sahacāreṇa vyāpti-grahaḥ.

subject (*vyāpta-pakṣa-dharmatā-jñāna*). In this case, a relation of pervasion is apprehended there on the basis of negative correlation, whereas a positive entity is the property of the subject.¹²

If we follow the commentator Mathurānātha's explanation of the argument, the claim is that an awareness of pervasion that arises from an agent's observation of negative correlation cannot cause an *anumiti*. This is because an *anumiti* has to be caused by a *positive* subsumptive judgment, i.e., a judgment that the reason, which is pervaded by the property to be proven, resides in the subject. However, in a subsumptive judgment that is based solely on an agent's observation of negative correlation, the relevant relation of pervasion is a negative one, i.e., it holds between two absences, but a positive entity, i.e., the reason, appears as the property of the subject.¹³ The argument can be reconstructed as follows.

P1. In any putative negative-only *anumāna*, whatever relation of pervasion the agent may apprehend, she does so by only observing instances of negative correlation between the reason and the property to be proven.

¹² TCM, 582–4: *nanu vyatirekī nānumānam vyāpta-pakṣa-dharmatā-jñānasya tat-kāraṇatvāt atra vyatireka-sahacārāt vyāptih tatra anvayasya pakṣa-dharmatā*. The printed text has “vyāpti-pakṣa-dharmatā-jñānasya” instead of “vyāpta-pakṣa-dharmatā-jñānasya”; following Mathurānātha's commentary, I have corrected it. A parallel argument, offered in the voice of a Bhāṭṭa opponent, which occurs in the section on *arthāpatti* (*arthāpatti-prakarāṇa*), also confirms my preferred reading. See Phillips in this volume, p. xxx. Sanskrit: TCM, 678: *atra hi vyatireka-vyāptir anvayasya pakṣa-dharmatvam iti vyāpti-dhī-janyam api bahis-sattva-jñānam nānumitih tasyā vyāpta-pakṣa-dharmatā-jñāna-janyatā-niyamāt. na ca sādhyābhāva-vyāpakābhāva-pratīyogitvena pakṣa-dharmasya jñānam anumiti-prayojakam tac ca iha apy astīti vācyam. kevalānvayīni tad-asambhāvāt tad-apekṣayā sādhyā-vyāpyatva-jñānasya laghutvāc ca.*

¹³ TCM, 587–8: “That which is negative-only’ stands for an apprehension of pervasion that results from the awareness of negative correlation. ‘It is not an *anumāna*’: it is not an instrument that gives rise to an *anumiti*. ‘The awareness of the pervaded,’ etc.: an awareness of something as a property of the subject, where that thing is qualified by positive pervasion, i.e., the relation of being co-located with a property to be proven that pervades the reason. ‘In this case’: in a subsumptive judgment produced by an awareness of negative correlation. ‘On the basis of negative correlation’: on the basis of the correlation between the absence of the property to be proven and the absence of the reason. ‘There’: between the absence of the property to be proven and the absence of the reason. ‘Pervasion’: the property of being a pervader. ‘A positive entity’: the reason. Before ‘a property of the subject’ insert ‘is what appears as.’ The thought is that, since a subsumptive judgment involving negative pervasion (*vyatireka-vyāpti-parāmarśa*), which is caused by an awareness of negative correlation, isn’t a cause of any *anumiti*, an awareness of the relevant sort of pervasion cannot be a cause of any *anumiti*” (*vyatirekī vyatireka-sahacāra-janya-vyāpti-grahaḥ, ‘nānumānam’ nānumiti-kāraṇam, ‘vyapt’eti hetu-vyāpaka-sādhyā-sāmānādhikarāṇya-rūpānvaya-vyāpti-prakāraka-pakṣa-dharmatā-jñānasyeti arthaḥ, ‘atra’ vyatireka-sahacāra-jñāna-janya-parāmarśe ‘vyatireka-sahacārāt’ sādhyābhāva-hetu-abhāvayor sahadhāra-jñānāt, ‘tatra’ sādhyābhāva-hetu-abhāvayor iti yāvāt, ‘vyāptih’ vyāpakatvam, ‘anvayasya’ hetoḥ pakṣa-dharmatēti bhāsata iti śeṣaḥ. vyatireka-sahacāra-jñāna-janya-vyatireka-vyāpti-parāmarśasya anumity-ajananakatayā tādṛśa-vyāpti-jñānasya nānumiti-kāraṇatvam iti bhāvaḥ.*) Mahādeva Puṇatāmakara paraphrases the same objection in the same way. See *Nyāya-kaustubha* (NK, 245): “Well, that which is negative-only is not an *anumāna*. The cause of an *anumiti* is the awareness of that which is characterized by pervasion as a property of the subject. But in the relevant case, a relation of pervasion is apprehended on the basis of negative correlation in the absence of the property to be proven with respect to the absence of the reason. And the reason is apprehended as a property of the subject. Therefore, an *anumiti* cannot arise, given that its cause is missing” (*atha kevala-vyatirekī nānumānam vyāpti-viśiṣṭe pakṣa-dharmatā-jñānam evānumiti-hetuḥ, prakṛte ca vyatireka-sahacāreṇa sādhyābhāve hetu-abhāva-vyāptir grhyate hetau ca pakṣa-dharmatā-graha ity anumiti-kāraṇābhāvenānumiter asambhāvāt iti*).

P2. By only observing instances of negative correlation between the reason and the property to be proven, an agent can only learn that the absence of the property to be proven is pervaded by the absence of the reason.

P3. An *anumiti* can only be produced by a positive subsumptive judgment, i.e., an awareness of the reason as pervaded by the property to be proven and as present in the subject.

P4. An agent's awareness of negative pervasion between a reason and a property to be proven can only produce a negative subsumptive judgment, not a positive subsumptive judgment.

C. From a putative negative-only *anumāna*, an *anumiti* cannot arise.

If sound, this argument would count against Nyāya reductionism about *arthâpatti*. . But why are the premises true? P1 is obvious: it follows from our definition of a negative-only *anumāna*. In his elaboration of the argument, Gaṅgeśa focuses on P3 and P4. However, P2 can be motivated in light of a remark that Mathurānātha makes.

Suppose we reject P2 and say that by solely observing negative correlation between a reason and a property to be proven, the agent can learn that the reason bears a relation of positive pervasion to the property to be proven. But to learn this is to learn that the reason is co-located with the property to be proven, which, in turn, pervades it. Wouldn't this view lead to a problem of overgeneration? As Mathurānātha explains the worry, "Well, how does the awareness of the correlation between absences give rise to an apprehension of a relation of pervasion between the counterpositives? For there would be a problem of overgeneration if the awareness of the correlation that resides in two things were to cause an apprehension of a relation of pervasion that resides in two other things."¹⁴ Here's a way of putting the point (perhaps anachronistically) with reference to the more contemporary paradox of ravens. Suppose perceiving the correlation between the absence of blackness and the absence of raven-ness in things like a white chalk, a red car, a grey house, etc., can help us learn, or can give us evidence for, the hypothesis that all ravens are black. But intuitively, these things seem *irrelevant* to the hypothesis. So, if the observation of these things could provide evidence for the hypothesis in question, couldn't we learn or gain evidence for just about any such generalization by perceiving correlations between completely unrelated entities? That is the problem of overgeneration that Mathurānātha is talking about.

What about P3 and P4? Gaṅgeśa notes that someone who wishes to reject P3 may claim that a negative subsumptive judgment (produced by an awareness of negative pervasion) can be a promoter (*prayojaka*) of *anumiti*.¹⁵ What is a promoter? A promoter of some effect X is an object that either directly or indirectly causes X.¹⁶ So, the proposal under discussion is this:

¹⁴ TCM, 592: athâbhāvayoḥ sahaçāra-jñānāt katham tat-pratīyoginor vyāpti-grahāṇī eka-niṣṭha-sahaçāra-jñānenānya-niṣṭha-vyāpti-jñāna-janane'ti-prasaṅgād iti. It's quite clear that, in this passage, the term "vyāpti" refers to positive pervasion, since the objection it answers is directed at Gaṅgeśa's view that an awareness of negative correlation suffices to produce an apprehension of a relation of positive pervasion.

¹⁵ TCM, 588. For a parallel passage, see Phillips in this volume, p. xxx. Sanskrit: TCM, 678: na ca sādhyābhāva-vyāpakābhāva-pratīyogitvena pakṣa-dharmasya jñānam anumiti-prayojakam tac ca iha apy astīti vācyam. kevalānvayini tad-asambhavāt tad-apekṣayā sādhyā-vyāpyatva-jñānasya laghutvāc ca.

¹⁶ The notion of *prayojaka* is characterized in different ways across different texts. For detailed discussion, see Guha (1979: 67ff.).

OPTION 0. A negative subsumptive judgment is a causally necessary condition for any *anumiti*.

If Option 0 is correct, then P3 is false. However, as Gaṅgeśa notes on behalf of an opponent, this proposal is unnecessarily complex and is in tension with another commitment of the Naiyāyikas. In positive-only *anumānas* like “The tree is nameable (*abhidheya*), since it is knowable (*prameya*),” the property to be proven (i.e., nameability) is present everywhere. So, its absence (insofar as it doesn’t exist) cannot be pervaded by the absence of the reason. In such cases, the reason doesn’t bear a relation of negative pervasion to the property to be proven. Therefore, a true negative subsumptive judgment cannot arise in such cases. So, a negative subsumptive judgment cannot be a causally necessary condition for every *anumiti*.

In the section on negative-only *anumānas*, Gaṅgeśa explains (on behalf of the Mīmāṃsaka opponent) why other proposals that seek to reject P3 cannot easily succeed.¹⁷ Here are some options.

Option 1. The presence of a uniform or non-disjunctive property that characterizes both positive and negative subsumptive judgments—e.g., the property of being an awareness that the subject of the inference possesses a property that is connected to the property to be proven by some relation of pervasion—is a causally necessary condition for any *anumiti*.

Option 2. The presence of either a positive or a negative subsumptive judgment is a causally necessary condition for any *anumiti*.

Option 3. In some cases, the presence of a positive subsumptive judgment is what causes an *anumiti*; in other cases, the negative subsumptive judgment serves as a cause; in some other cases, it is both.

Gaṅgeśa’s opponent rules out all these options.¹⁸ Option 1 is ruled out on the grounds that there is no non-disjunctive or uniform property that is shared by both positive and negative subsumptive judgments. Option 2 is dismissed on the grounds that if a disjunctive property could be a necessary condition for an awareness to be instance of a certain epistemic kind, then we could collapse all the different kinds of knowledge—perceptual, inferential, testimonial—into one kind of knowledge by creating a disjunction of the different causal conditions that give rise to these different kinds of knowledge. Option 3 also doesn’t work. In this dispute, it is not common ground between both parties that an awareness-event which is based on an awareness of negative pervasion counts as an *anumiti*. This is because a well-established cause of instances of *anumiti*—namely, a positive subsumptive judgment—that both parties agree on goes missing in this case. So, unless there is some further intuitive pressure for us to treat an inferential awareness based on an awareness of negative pervasion as an *anumiti*, Option 3 seems fairly *ad hoc*. This shows that rejecting P3 in the previous argument will be difficult for the Naiyāyikas.

So far, we have only been discussing strategies for rejecting P3. However, a friend of Nyāya reductionism could also try to reject P4; she could argue that an agent’s

¹⁷ TCM, 585ff.

¹⁸ TCM, 585ff.

awareness of negative pervasion can produce a positive subsumptive judgment, e.g., by producing an awareness of positive pervasion. However, Gaṅgeśa's imagined opponent gives an argument against this view.

Suppose you say: "From the fact that something is a counterpositive of an absence that pervades the absence of the property to be proven, it is known by *anumāna* that that thing is pervaded by the property to be proven. What we call an *anumāna* of the negative-only variety just involves a scenario where an *anumiti* arises on the basis of an *anumāna* from negative to positive pervasion."

[We reply:] If a relation of positive pervasion is what yields an awareness of the property to be proven, then mentioning the relation of negative pervasion (while stating the *anumāna* aloud for others) will suffer from the fault of irrelevance (*arthāntaratā*). Alternatively, if the relation of negative pervasion is mentioned as something that is conducive to [the awareness of] the relation of positive pervasion, then there will be a fault of inappropriate occasion (*aprāptakālatva*) when the relation of positive pervasion goes unmentioned.¹⁹

On the view under discussion, there is no *anumāna* of the negative-only variety where an agent makes an inference of the form:

The Simple Inference

- P1*. H is absent wherever S is absent.
- P2*. The object p possesses H.
- C*. The object p possesses S.

Rather, the agent's inference must involve two extra steps:

The Complex Inference

- P1*. H is absent wherever S is absent.
- P1***. For any two X and Y, if X is absent wherever Y is absent, then X is only present somewhere if Y is present there.
- P1***. H is only present somewhere if S is present there.
- P2*. The object p possesses H.
- C*. The object p possesses S.

Now, the response that Gaṅgeśa offers on behalf of the opponent is this. Sometimes, we state out loud an *anumāna* that is based on our awareness of negative pervasion. In many such cases, we only mention the relation of negative pervasion between the reason and the property to be proven, not the positive pervasion between them. In other words, we don't mention anything like P1** or P1***. But if the positive pervasion is doing all the work in explaining how an *anumiti* arises in such cases, mentioning just the negative pervasion in an explicit statement of the inference would be pragmatically defective. On the one hand, if the positive pervasion is also mentioned, mentioning the negative pervasion is tantamount to providing extra,

¹⁹ TCM, 588–91: atha sādhyābhāva-vyāpakābhāva-pratīyogitvena sādhyavyāpyatvam anumīyate. evaṃ vyatireka-vyāptyā'nvaya-vyāptim anumāya yatra anumitiḥ sa eva vyatirekīty ucyata iti. tan na. anvaya-vyāpter gamakatve vyatireka-vyāpty-upanyāsasya arthāntaratāpatteḥ anvaya-vyāpty-anukūlatayā ca tad-upanyāse 'nvaya-vyāptim anupanyasya tad-upanyāsasya aprāpta-kālatvād iti.

irrelevant information. On the other hand, if the positive pervasion isn't mentioned, mentioning the negative pervasion is inappropriate (insofar as it is misleading with respect to the true structure of the inference). But intuitively, there is no such pragmatic defect. Hence, the proposal cannot be right.

Ultimately, Gaṅgeśa doesn't think that the objection we have been discussing succeeds. He outlines two responses to it: the first involving rejecting P2, while the second involves rejecting P3.

2.2. Gaṅgeśa's first response: rejecting P2

P2 says that by observing instances of negative correlation between the reason and the property to be proven, an agent can only learn that the absence of the property to be proven is pervaded by the absence of the reason. Gaṅgeśa denies this:

On the basis of negative correlation that is free from inferential undercutting conditions (*upādhi*), one apprehends just a relation of positive pervasion (*anvaya-vyāptir eva*). For the relation between the counterpositive (*pratiyogin*) and its absence (*anuyogin*) regulates the relevant awareness, just as in the case of a positive-and-negative *anumāna*.²⁰

The first claim of the passage is that by observing instances of negative correlation in cases where there is no inferential undercutting condition (i.e., roughly, any condition that guarantees that the property to be proven may be absent from a place where the reason is present),²¹ the agent apprehends just a relation of positive pervasion between the reason and the property of property. So, P2 is false. Thus, all cases of negative-only *anumāna* can in fact be based on an awareness of positive pervasion. However, this faces the problem of overgeneration that Mathurānātha highlights: if we reject P2, we may have to countenance cases where an agent apprehends a relation of pervasion between two properties by perceiving the correlation between two completely unrelated properties! The second part of passage answers this worry: "For the relation between counterpositives (*pratiyogin*) and their absences (*anuyogin*) regulates the relevant awareness, just as in the case of a negative-and-positive *anumāna*."

Here's how I understand this reply. Consider a version of **Smoke and Fire**, where the agent only observes that the absence of fire is always accompanied by the absence of smoke. In this awareness of correlation, the absence of fire has fire as its counterpositive, and the absence of smoke has smoke as its counterpositive. Since fire functions as the counterpositive of its absence in virtue of having firehood, firehood is the property that restricts the role of the counterpositive to all and only fires. In that sense, firehood is the delimitor (*avacchedaka*) of the counterpositiveness

²⁰ TCM, 591: ucyate. nirupādhi-vyatireka-sahacāreṇa anvaya-vyāptir eva grhyate pratiyogy-anuyogi-bhāvaśya niyāmakatvāt anvaya-vyatirekavat.

²¹ Gaṅgeśa's definition of an inferential undercutting condition is given in TCM, 336: "An inferential undercutting condition is that, due to a deviation from which, the reason deviates from the property to be proven. It is defined as a property that pervades the determined (*paryavasita*) property to be proven, but doesn't pervade the reason" (yad-vyabhicāritvena sādhanasya sādhya-vyabhicāritvaṃ sa upādhiḥ, lakṣaṇaṃ tu paryavasita-sādhya-vyāpakatve sati sādhanāvypakatvam).

(*pratiyogitā*) determined by the relevant absence. Similarly, since smoke appears in that awareness as the counterpositive of its absence in virtue of being characterized by smokehood, the counterpositiveness that resides in smoke is delimited by smokehood. According to Gaṅgeśa, by observing the correlation between two absences where the delimiters of counterpositiveness are firehood and smokehood respectively, the agent can learn that the locus of smokehood, i.e., smoke, is pervaded by the locus of firehood, i.e., fire. That is how the relation between a counterpositive and its absence regulates the awareness of pervasion. Gaṅgeśa's commentator, Mathurānātha, explains:

The meaning is this. There is no problem of overgeneration. For the awareness of the correlation between two absences, which are delimited by two specific properties and are grasped as absences delimited by those two specific properties, causes an apprehension of pervasion between the loci of those specific properties, where those properties are grasped as those two properties.²²

This avoids the problem of overgeneration, because the rule mentioned by Mathurānātha only applies to cases where the apprehended relation of pervasion holds between the loci of the properties that delimit (the counterpositiveness relevant to) the observed absences. This rule, according to Gaṅgeśa, is already quite plausible, since it explains why in positive and negative *anumānas*, the agent's observation of both positive and negative correlations can help us learn that the reason is pervaded by the property to be proven.

2.3. Gaṅgeśa's second response: rejecting P3

Later, Gaṅgeśa goes on to outline an alternative response that involves rejecting P3, i.e., the premise that a negative subsumptive judgment cannot produce an *anumiti*. Unlike the previous response, this reply leaves open the possibility that observing solely negative correlation between a reason and a property to be proven cannot cause an awareness of positive pervasion between the two. But the reply involves the further claim that an awareness of negative pervasion, and therefore a negative subsumptive judgment that arises from it, can give rise to an *anumiti*. Gaṅgeśa says:

Alternatively, a relation of negative pervasion can be an indicator (*gamaka*) of a positive entity [i.e., the property to be proven]. Since the reason is just the absence of the absence of a property which pervades the absence of the property to be proven, it can establish the presence of the property to be proven which is just the absence of the absence of the property to be proven.²³

²² TCM, 336: tat-tad-dharmāvacchinābhāvatvena tat-tad-dharmāvacchinābhāvayoḥ saḥacāra-jñānasya tat-tad-dharma-rūpeṇa tat-tad-dharmāśryayayor vyāpti-grahaṃ prati janakatvān nātiprasaṅga ity arthaḥ. Once again, it's quite clear that, in this passage, the term *vyāpti* refers to positive pervasion, since the objection it answers is directed at Gaṅgeśa's view that an awareness of negative correlation suffices to produce an apprehension of a relation of positive pervasion.

²³ TCM, 593: yad vā vyatireka-vyāpter eva anvayena gamya-gamaka-bhāvaḥ sādhyābhāva-vyāpaka-sādhanaḥ sādhyābhāva-sādhanena pakṣe sādhyābhāvābhāvāsya sādhyasya sādhanāt. vyāpakābhāvena vyāpyābhāvāvaśyam-bhāvāt. In my interpretation of this passage, I am relying on Mathurānātha who takes the term *anvaya* to refer to the property to be proven.

The proposal here crucially depends on a principle about the ontology of absence.

In later Nyāya-Vaiśeṣika ontology, absences are a separate category of entities, distinct from a positive entity (*bhāva-padārtha*), i.e., substance (*dravya*), trope or quality (*guṇa*), motion (*kriyā*), natural kind property (*jāti*), differentiator (*viśeṣa*), and the relation of inherence (*samavāya*) by which the last four kinds of properties reside in substances.²⁴ Absences are taken to be of two kinds: relational absence (*saṃsargābhāva*) and mutual absence (*anyonyābhāva*). A mutual absence of an entity X is an absence of identity with X, so it consists in being different from X. A relational absence of an entity X (though often defined as a kind of absence that is distinct from mutual absence) is basically the absence of X in another entity Y. So, when I say, “There is no bottle on this table,” I am ascribing to the table a relational absence, but when I say, “This table is not that one,” I am ascribing to this table a mutual absence. Relational absences fall into three categories: prior absence (*prāg-abbāva*), posterior absence or destruction (*dhvaṃsa*), and absolute absence (*atyantābhāva*). The prior absence of a thing is its absence before it is produced. The destruction of a thing is its absence after it has been destroyed. Finally, the absolute absence of a thing from a place is an absence that is located in that place at all the three times, i.e., past, present, and future. Constructions of the form “The bottle is not on the table” are supposed to illustrate this last kind of relational absence.²⁵

Focus now on just absolute absences and mutual absences. Following Udayana,²⁶ Gaṅgeśa thinks that the absolute absence of the absolute absence of an entity X is identical to X, while the absolute absence of a mutual absence of X is identical to a distinctive property of X.

The absolute absence of an absolute absence is just the counterpositive, while the absence of a mutual absence is a distinctive property (*asādhāraṇa-dharma*) that resides in the counterpositive.²⁷

²⁴ Vācaspati Mīśra was possibly the first Naiyāyika to lay out the classification of different absences given below in his NVTṬ on NS 2.2.12. On the Vaiśeṣika side, Śivāditya Mīśra was possibly the first to treat absence as a separate ontological category (*padārtha*) in his *Sapta-padārthī*.

²⁵ This is somewhat puzzling, since we might think that even if the bottle isn’t on the table now, it may be later on the table. At that later time, we don’t apprehend the absolute absence of the bottle on the table. However, the standard solution is that the relation by which any absolute absence resides at its locus is a self-linking relation (*svarūpa-sambandha*). This relation is qualified by a certain time, i.e., the time at which the counterpositive of the absence isn’t present in the locus. This is supposed to explain why, at a time when the counterpositive present in the relevant locus, the absolute absence cannot be apprehended.

²⁶ NKA 3.2cd, 329: “The counterpositive-ness of an object is the property of being the absence of an absence” (*abhāva-virahātmatvaṃ vastumaḥ pratiyogitā*). Udayana doesn’t specify what kind of absence he is talking about. I have not seen any decisive support for the Principle of Iterated Absence amongst pre-Udayana Nyāya philosophers, though related issues are discussed in both Uddyotakara’s NV 1.1.34 and 2.2.10 and Vācaspati Mīśra’s NVTṬ on it. However, Karl Potter claims (unfortunately without reference) that Vācaspati Mīśra endorses the view that the counterpositive of an absence is identical to the absence of that absence; see Potter (1977: 145).

²⁷ TCM, 565-6: *atyantābhāvātyantābhāvaḥ pratiyogy eva anyonyābhāvātyantābhāvas tu pratiyogi-vṛttir asādhāraṇa-dharmaḥ*. Elsewhere, Gaṅgeśa explicitly defends this principle again, in the context of giving an alternative definition of counterpositive-ness (*pratiyogitā*) at TCM, 77–8: “Counterpositive-ness doesn’t consist in being something that conflicts [with the absence], which is defined as the property of regularly not obtaining together with something else. For the properties of cow-hood and horse-hood aren’t counterpositives of each other, and this property of regularly not obtaining together [with the absence]

While commenting on this passage, Raghunātha points out that the distinctive property that Gaṅgeśa refers to is the delimitor of counterpositiveness.²⁸ Therefore, a pot, which is the counterpositive of an absolute absence of that pot, is identical to the absolute absence of that absence. Similarly, pothood, which is the delimitor of the counterpositiveness that is determined by the mutual absence of a pot, is identical to the absolute absence of that mutual absence. Why does this make sense? Raghunātha and Mathurānātha suggest that the view is motivated by a principle of property individuation: for any two properties P and P*, if P and P* are apprehended in (or ordinarily ascribed to) exactly the same places, then P must be regarded as identical to P*. Since we observe that the absolute absence of the absolute absence of a pot resides in all and only those places where that pot resides, the pot and the absolute absence of its absolute absence are treated as identical. Analogously, since we observe that the absolute absence of a mutual absence of a pot (i.e., the absolute absence of a difference from a pot) resides in all and only instances of pothood (since only that pot isn't different from itself), the absolute absence of a mutual absence of the pot is regarded as identical to pothood.²⁹

From this discussion, we get:

Gaṅgeśa's Principle of Iterated Absence. For any entity X, the absolute absence of the absolute absence of X is X itself.

If this is true, when someone learns about the presence of smoke on the hill by perception, she thereby learns that there is an absolute absence of the absolute absence of smoke on the hill. Similarly, if she learns that there is an absolute absence of the absolute absence of fire on the hill, she thereby learns that there is fire on the hill. Henceforth, whenever I say “absence,” I will mean absolute absence unless I specify otherwise.

doesn't exist in the counterpositive of a difference. Rather, just as there is a particular self-linking relation between an absence and its locus, so also counterpositive-ness and subjunct-ness (*anuyogitva*) are self-linking relations. Alternatively, counterpositiveness is the property of being the absence of an absence” (pratiyogitvam na virodhitvam sahānavasthāna-niyama-lakṣaṇaṃ gotvāśvatvayor atathātvāt, anyōnyābhāva-pratiyoginy asattvāc ca. kintu yathā'bhāvādhikaraṇayor svarūpa-viśeṣaḥ sambandhaḥ tathā pratiyogitvam anuyogitvam api. abhāva-virahātmatvam vā). For relevant discussion of the Gaṅgeśa passage, see Matilal (1968: 54–5).

²⁸ GA, 1351: asādhāraṇa iti. pratiyogitvācchedaka iti tu tattvam.

²⁹ For Raghunātha's argument, see GA, 1353: “It is posited that a positive entity is identical to the absence of its absence, solely because, at a place where a positive entity resides, the absence of its absence is apprehended” (bhāva-vati tad-abhāvābhāva-pratītyā hi bhāvasya svābhāvābhāvatvam kalpyate). For Mathurānātha's argument, see R, 33: “This theory is not reasonable, because of the following. When a property of possessing a pot delimited by pot-hood is apprehended, the absolute absence of a pot is not apprehended, so the absence of the absolute absence of a pot is ascribed. Therefore, the absence of the absolute absence of a pot is identical to the pot. Similarly, when the property of possessing the difference from a pot is apprehended, the absolute absence of a difference from a pot is not apprehended, so the absence of the absolute absence of the difference from a pot is ascribed. Therefore, the difference from a pot is just the absence that is delimited by the property of being the absolute absence of the difference from a pot (yathā hi ghatatvāvacchinna-ghatavattā-grahe ghatātyantābhāvasyāgrahād ghatātyantābhāvābhāva-vyavahārc ca ghatātyantābhāvābhāvo ghata-svarūpas tathā ghata-bhedavattā-grahe ghata-bhedātyantābhāvāgrahād ghata-bhedātyantābhāvābhāva-vyavahārc ca ghata-bheda eva tad-atyantābhāvatvāvacchinna-pratiyogikābhava iti tat-siddhānto na yukti-saha). For discussion, see Ingalls (1951: 68–9, 102–3).

Now, consider a variant of **Smoke and Fire**, where you know (on the basis of the negative correlation between smoke and fire) that the absence of smoke pervades the absence of fire. According to a simplified version of Gaṅgeśa's definition of pervasion,

Pervasion. For any two entities H and S, S pervades H if and only if two conditions hold:

Co-instantiation Condition. There are some places where both H and S are present together.

Non-deviation Condition. S is not the counterpositive of an absolute absence which resides at a place where H is present.³⁰

So, if you know that the absence of smoke pervades the absence of fire, you know that

(7) The absence of smoke is not the counterpositive of an absence which resides at a place where the absence of fire is present.

This is equivalent to:

(8) If the absence of the absence of smoke is present at a place, then the absence of fire is absent from that place.

If you also know that the absence of the absence of smoke is present on the hill, then, by (8), you can infer the absence of the absence of fire on the hill. By Gaṅgeśa's Principle of Iterated Absence, that is simply identical to fire. So, you know that there is fire on the hill. Hence, an awareness of a ~~relation of~~ negative pervasion can indeed produce an *anumiti* in this case.

As Gaṅgeśa goes on to explain, the opponent's earlier worries about whether a negative subsumptive judgment can produce an *anumiti* are unjustified.

Suppose one says, "Well, that [i.e., an awareness that is based on a negative subsumptive judgment] isn't an *anumiti*. For a well-established cause of an *anumiti* goes missing. If things were otherwise [i.e., if a property common to both kinds of subsumptive judgment were to cause an *anumiti*], there would be a problem of non-uniformity."

[We reply:] No. With respect to any *anumiti*, the awareness of pervasion serves as the promoter. This view doesn't result in any problem of overgeneration. Even when the general causal conditions necessary for an *anumiti* are present, a specific kind of *anumiti* doesn't arise unless the specific causal conditions necessary for that kind of *anumiti* obtain. For the general conditions can only produce the relevant effects with the help of the specific conditions. There is simply no

³⁰ TCM, 100: "Pervasion [of x by y] is the co-location of x with y such that y is not the counterpositive of an absolute absence which is co-located with x but not co-located with its own absence" (pratiyogy-asamānādhikaraṇa-yat-samānādhikaraṇāntābhāva-pratiyogī yan na bhavati tena saha tasya sāmānādhikaraṇyaṃ vyāptiḥ).

collection of causal conditions that includes the specific causal conditions required for both positive-only and negative-only *anumiti*.³¹

Gaṅgeśa here endorses what we earlier called Option 3: namely, that some *anumitis* are caused by positive subsumptive judgments, while others are caused by negative subsumptive judgments. On this view, any *anumiti* is produced by a general necessary condition: an awareness of pervasion. Since this is what unifies all instances of an *anumiti*, there is no problem of non-uniformity. But, at the same time, this general necessary condition can only produce specific kinds of *anumiti* through the mediation of specific causal conditions. In the case of a positive-only *anumāna*, the specific causal condition is a positive subsumptive judgment. In the case of a negative-only *anumāna*, it is a negative subsumptive judgment. Finally, there is also no problem of overgeneration due to the simultaneous presence of the causal conditions necessary for both positive-only and negative-only *anumānas*. For those conditions cannot be present together. So, P3 is false.

The lesson is this. Gaṅgeśa thinks that even if (some or all) so-called negative-only *anumānas* involve an awareness of negative pervasion, that doesn't prevent them from giving rise to *anumitis*. Thus, this entire discussion gives us two distinct views about the nature of negative-only *anumānas*. On one view, a negative-only *anumāna* may involve (or perhaps always involves) an awareness of positive pervasion which is based solely on the observation of negative correlation. On the other view, a negative-only *anumāna* involves an awareness of negative pervasion. These two views are reported quite frequently in primers of later Nyāya.³² The first view is regularly attributed to Udayana, while some later Naiyāyikas, e.g., Mahādeva Puṇatāmakara (seventeenth century CE), suggest that the latter is the view that Gaṅgeśa favors.³³

3. RAGHUNĀTHA ON GAṅGEŚA'S PRINCIPLE OF ITERATED ABSENCE

In the last section we reconstructed Gaṅgeśa's account of how an awareness of negative pervasion between a reason and a property to be proven can be the basis of

³¹ TCM, 593: atha evaṃ na sānumitih kṛpta-tad-dhetu-līṅga-parāmarśābhāvāt, anyathānanugama iti cen, na. anumiti-mātre vyāpti-jñānasya prayojakatvāt. na ca evam ati-prasaṅgaḥ, anumiti-sāmānya-sāmagryāṃ satyāṃ apy anumiti-viśeṣa-sāmagrī-virahād anumity-anutpatteḥ viśeṣa-sāmagrī-sāpekṣāyā eva sāmānya-sāmagryā janakatvāt. anvayī-vyatireki-viśeṣa-dvaya-sāmagrī ca nāsty eva.

³² A representative statement comes from Viśvanātha: "Amongst those [three kinds of *anumāna*], the awareness of a relation of negative pervasion serves as a cause in a negative-only *anumāna* . . . The apprehension of a relation of negative pervasion is caused by the awareness of negative correlation. However, some say, 'On the basis of negative correlation, only a relation of positive pervasion is apprehended. Therefore, the awareness of a relation of negative pervasion doesn't additionally have to be a cause in a negative-only *anumāna*; an *anumāna* in which the relation of pervasion is apprehended on the basis of negative correlation is called negative-only . . .'" tatra hi vyatirekiṇi vyatireka-vyāpti-jñānaṃ kāraṇaṃ . . . vyatireka-vyāpti-grahe vyatireka-sahacāra-jñānaṃ kāraṇaṃ. kecit tu vyatireka-sahacāra-jñānenānvaya-vyāptir eva gṛhyate na tu vyatireka-vyāpti-jñānaṃ api kāraṇaṃ yatra vyatireka-sahacārād vyāpti-grahas tatra vyatirekīty ucyate . . . iti vadanti. *Siddhānta-muktāvalī* (SMA), 499–501. According to Viśvanātha's commentator, Dinakara Bhaṭṭa, Udayana subscribes to the second view (KA, 501). Also, see Jānakīnātha's *Nyāya-siddhānta-mañjarī* (NSM), 112–17, and Puṇatāmakara's NK, 244–5.

³³ NK: 244–5.

an *anumiti* about that property to be proven. A crucial assumption of this account is Gaṅgeśa's Principle of Iterated Absence. In *A Determination of the True Nature of the Categories (Padārtha-tattva-nirūpaṇa)*, Raghunātha rejects this principle:³⁴

Thus, the absence of the absence of a pot, etc. is also a distinct entity indeed. For there is an unrebutted awareness of absencehood in the form "The absence of a pot, etc., doesn't exist" with respect to a place that contains a pot. It is also not the case that, if this view is true, there is a regress. For there is no contradiction in claiming that a single absence of a pot is identical to the absence of its own absence.³⁵

While explaining this passage, Raghudeva claims that Raghunātha is speaking not only about the absolute absence of an absolute absence, but also about the absolute absence of a mutual absence.³⁶ On this interpretation, contra Gaṅgeśa, Raghunātha is saying that the absolute absence of an absolute absence is not identical to the counterpositive of the latter, and the absolute absence of a mutual absence is not identical to any distinctive property that resides only in the counterpositive of the latter. Both are in fact distinct entities, i.e., separate absences. A part of Raghunātha's reason for rejecting Gaṅgeśa's claims might be that he rejects the principle of property individuation mentioned earlier. For Raghunātha, even though two properties may be seen to reside in all the same things, they could still be distinct. Let me unpack Raghunātha's reasoning.

Suppose you are looking at something before you, and you judge:

(9) This is a pot (*ayaṃ ghataḥ*).

Awareness-events of this kind present an object (or some objects) as characterized by some feature. In this example, for instance, the awareness-event ascribes the property of pothood to the thing before you. Later Naiyāyikas take such awareness-events to have three kinds of object: the qualificand (*viśeṣya*), the qualifier (*viśeṣaṇa* or *prakāra*), and the qualifying relation (*samsarga*).

³⁴ Raghunātha discusses and/or rejects similar principles in at least two other places in his commentary *Splendour on The Jewel*: in the *Vyāpti-pūrva-pakṣa-prakaraṇa* and the *Kevalānvayi-prakaraṇa* in GA, 281–2; 1351–4). It's unclear whether there are any post-Gaṅgeśa writers before Raghunātha who reject the Principle of Iterated Absence: Raghunātha himself mentions and refutes a view (which Jagadīśa ascribes to some Mīśra, possibly Pakṣadhara), according to which the Principle of Iterated Absence is false, since the absolute absence of a mutual or absolute absence is identical to the relation that delimits the counterpositiveness (*pratiyogitāvacchedaka-sambandha*) determined by the relevant mutual or absolute absence. Even after Raghunātha, his views were not popular: Mathuranātha and Jagadīśa defend the Principle of Iterated Absence in their commentaries on *The Jewel*, while Raghunātha's own commentators report extant views that preserve it. For Mathuranātha's passage, see footnote 29; for Jagadīśa's comments, see TCMM, 42–3; for the commentaries on Raghunātha's passage, see PATN2, 108–12. Matilal claims that the Principle of Iterated Absence is almost universally accepted among later Naiyāyikas; see his, "Double Negation in Navya-Nyāya" in M. Nagatomi, B. K. Matilal, J. M. Masson, and E. C. Dimock (1979: 4).

³⁵ PATN1, 55.1–4: evaṃ abhāvasyāpy abhāvo'tirikta evaṃ ghaṭādimati tad-abhāvo nāstīty abādhitābhāvavratrayayāt. na caivam anavasthā ekasyaiva svābhāvābhāva-rūpatve virodhābhāvāt.

³⁶ Raghudeva's PATN2, 109: ghaṭādy-abhāvēti. ghaṭātyantābhāvānyōnyābhāvātyantābhāva ity arthaḥ.

(i) The object to which the relevant property is ascribed is the qualificand (*viśeṣya*). In this example, the thing before you is the qualificand. The property which is ascribed to the qualificand is the qualifier (*viśeṣaṇa* or *prakāra*). In this case, it is pothood.

(iii) The relation in virtue of which the qualifier characterizes the qualificand is the qualifying relation. In this example, the qualifying relation is inherence (*samavāya*), i.e., a relation in virtue of which pothood resides in pots.

Moreover, in any such awareness-event, the qualificand, the qualifier, and the relation between the two are presented under certain modes of thought.³⁷ These modes of thought are not exactly Fregean senses, but rather properties in virtue of which the agent is able to think about the qualificand, the qualifier, and the qualifying relation. These modes of thought are what the Naiyāyikas call delimiters (*avacchedakas*), i.e., they delimit exactly which things play which object-role with respect to which awareness-event. In the previous example, the pot is the qualificand, but the mode of thought under which the agent thinks about it is this-ness (*idantva*) or the property of being in front of the agent (*puro-varṭtitva*). This is what the Naiyāyikas would call a delimiter of qualificandhood (*viśeṣyatāvacchedaka*). The mode under which the agent thinks about the qualifier, i.e., the property of pothood, is pothood-hood (*ghaṭatvatva*). This is the delimiter of qualifierhood (*viśeṣaṇatāvacchedaka* or *prakāratāvacchedaka*). Finally, the mode under which the agent thinks about the qualifying relation, i.e., inherence, is inherencehood (*samavāyatva*). This is the delimiter of relationhood (*samsargatāvacchedaka*).

Consider now an awareness-event that can be expressed as:

(10) The absence of a pot doesn't exist on the floor (*bhū-tale ghaṭābhavo nāsti*).

This awareness-event may be true in a case where there indeed is a pot on the relevant floor. Here, the qualificand is the (absolute) absence of the pot (*ghaṭābhāva*). The qualifier is non-existence or absence on the floor (*bhū-tala-vṛṭty-abhāva*). This, too, is an absolute absence. Finally, the qualifying relation is counterpositiveness (*abhāvīya-pratīyogitva*). For, since the absence of a pot is the counterpositive of an absence (i.e., the absence of the absence of a pot) that resides on the floor (because it is a place where a pot exists), the absence of a pot is connected to the latter absence by a relation of counterpositiveness. The important thing to note here is that there are two properties which together constitute the mode of thought under which the agent thinks about the qualifier in this example: the property of residing on the floor (*bhū-tala-vṛṭtitva*), and absencehood (*abhāvatva*). Both these properties serve as delimiters of qualifierhood.

Raghunātha's argument against Gaṅgeśa's Principle of Iterated Absence is this: In an awareness-event that is verbalizable as (10), the absence of a pot is taken to be the counterpositive of something that possesses absencehood (*abhāvatva*). Absencehood is not a property that we ordinarily take a positive entity like a pot to possess; in fact,

³⁷ For the connection between the late Nyāya theory of delimiters (*avacchedaka*) and the theory of modes of presentations in Fregean and neo-Fregean theories of content, see Ganeri (1999), chap. 5.

absencehood is often defined as the property of being distinct from a positive entity (*bhāva-bhinnatva*). So, we should think that, in this awareness-event, the absence of the pot appears as the counterpositive of something that possesses absencehood, and therefore is distinct from a positive entity like the pot. And, since the awareness-event in question may not be rebutted by any other means of knowing, we will have to assume that its content is true. Therefore, if the absence of a pot is a counterpositive of an entity X, then X must be distinct from the pot itself. But note that the absolute absence of a pot is the counterpositive of the absolute absence of the absolute absence of the pot. Hence, the absolute absence of the absolute absence of a pot is distinct from the pot. This means that Gaṅgeśa's Principle of Iterated Absence is false. A similar argument can be run against the principle that the absolute absence of the mutual absence of a pot is identical to a distinctive property that resides only in the pot; we only have to consider an awareness-event of the form "The mutual absence of a pot doesn't reside in that pot" (*ghaṭe ghaṭa-bhedo na asti*).³⁸

An immediate objection against Raghunātha's argument might be that for any positive entity X, it forces us to posit an infinite hierarchy of distinct entities, i.e., X's absolute absence, the absolute absence of X's absolute absence, and so on. So, there will be an infinite regress. In the last sentence of the quoted passage, Raghunātha explains why he doesn't think this is a problem. He says that if we want to avoid the regress, we can just assume that any absence is identical to the absence of its absence. This would mean that there are only three levels in the relevant hierarchy: positive entities, their absolute absences, and the absolute absences of their absolute absences.

Raghunātha's commentators, Rāmabhadra and Raghudeva, consider another salient objection.³⁹ Raghunātha's claim basically is that if the absolute absence of an absolute absence of a pot were identical to the pot, then it would not appear, in an awareness-event of this sort, as characterized by absencehood. However, this argument works only if absencehood is construed as a property that doesn't reside in positive entities. Raghunātha's opponent could avoid this problem by positing a property of absencehood (or a property of being an absolute absence), which can reside not only in absences proper (which are distinct from positive entities) but also in positive entities. The response that Rāmabhadra offers on behalf of Raghunātha is that it is simpler just to reject Gaṅgeśa's Principle of Iterated Absence. After all, if we take absencehood to reside in both positive entities and absences proper, how would we distinguish positive entities from absences proper? This view would blur the distinction between positive entities and absences proper.

³⁸ Raghunātha explicitly rejects two similar principles of iteration about prior absences and posterior absences: the first says that the posterior absence of a prior absence is identical to the counterpositive of the prior absence, and the second says that the prior absence of a posterior absence is identical to the counterpositive of the posterior absence. See PATN1, 56.2–57.1. Interestingly, however, Raghunātha claims that the mutual absence of a mutual absence doesn't have to be a distinct absence; see PATN1, 55.5–56.2.

³⁹ Rāmabhadra's PATN2, 108: na ca bhāvābhāva-sādhāraṇam abhāvatvam akhaṇḍōpādhir ity uktau nāyaṃ doṣa iti vācyam. evaṃ sati lāghavād eva ghaṭābhāvābhāvāsyātiriktatva-siddheḥ lāghavānādare'bhāvā-mātrasyānatiriktatva-prasaṅgād ity ādikam avadheyam. Raghudeva's *Padārtha-tattva-vivecana-prakāśa* in PATN2, 109: pare tu nāsti' iti pratyayo abhāvatvam ālambate param akhaṇḍam atyantābhāvatvaṃ tac ca bhāvābhāva-sādhāraṇam abhyupeyatām kṛtam atiriktair abhāvābhāvaiḥ. 'ghaṭābhāvātyantābhāvo na bhāva' iti ca pratyaya na lokānām iti vadanti.

If Raghunātha's argument succeeds, then Gaṅgeśa's account of how an awareness of negative pervasion gives rise to an *anumiti* must fail. For Gaṅgeśa cannot explain why learning that there is smoke on the hill amounts to learning that there is an absence of the absence of smoke on the hill, or why learning that there is an absence of the absence of fire on the hill amounts to learning that there is fire on the hill. So, Gaṅgeśa hasn't shown us that a relation of negative pervasion between a reason and a property to be proven can, by itself, give rise to an *anumiti* about the property to be proven.⁴⁰

4. RAGHUNĀTHA'S ARGUMENT

Perhaps this shows that Gaṅgeśa's argument in §2.3 doesn't succeed. But this doesn't rule out the possibility that a relation of negative pervasion between a reason and a property to be proven can, by itself, give rise to an *anumiti* about the property to be proven. In his commentary on the section of *The Jewel* on positive-only *anumānas* (the *Kevalānvayi-prakarana*), Raghunātha denies precisely this. He argues for:

Raghunātha's Thesis. An agent's awareness of ~~the relation of~~ negative pervasion between a reason and a property to be proven cannot *by itself* (i.e., without the mediation of any awareness of ~~a relation of~~ positive pervasion) give rise to an *anumiti* about that property to be proven.

Here, I explain his argument for this thesis.

4.1. Three assumptions

In his argument, Raghunātha presupposes three principles.

Raghunātha's Principle of Iterated Absence. For any positive entity X, the property of being the absolute absence of the absolute absence of X is distinct from the property of being X.

The Principle of Deviation. An agent can acquire knowledge by *anumāna* only if she does not antecedently judge or suspect that the reason *deviates* from the property to be proven (i.e., is present at some place where the property to be proven is absent).

⁴⁰ In response, someone like Gaṅgeśa might concede that the absolute absence of an absolute absence is distinct from the counterpositive of the latter absence, but could claim that an agent who understands how the relation between absences and their counterpositives work should know the following principle: *Weak Principle of Iterated Absence.* For any entity X, the absolute absence of the absolute absence of X is present at a place if and only if X is also present at that place.

So, on observing smoke on hill, such an agent can infer that there is an absence of the absence of smoke on the hill. Similarly, after inferring that there is an absence of the absence of fire on the hill, the agent can infer that there is fire on the hill. However, note that within the Nyāya framework, an agent can only come to know a generalization like ~~the Weak Principle of Iterated Absence~~ by some kind of empirical investigation (which will involve observing correlations between things and the absence of their absences). An agent who doesn't engage in such empirical investigation won't be able to learn this principle. Such an agent won't be able to make the inferences that she is required to make on this revised view.

The Principle of Conflict. Suppose an awareness-event A1 ascribes a property P to an object o1, and an awareness-event A2 ascribes the absence of P to o2. Then, A2 conflicts with A1 only if, in both awareness-events, o1 and o2 are presented under the same mode of thought.

Let me motivate these principles one by one.

Take Raghunātha's Principle of Iterated Absence. If Raghunātha's previous argument against Gaṅgeśa's Principle of Iterated Absence succeeds, then we can show that, for any positive entity X, X isn't identical to the absolute absence of the absolute absence of X. If that is right, then for any positive entity X, the property of being X can't be the same as the property of being the absolute absence of the absolute absence of X. For the first property is instantiated by things that are distinct from the things that instantiate the second. So, this principle follows straightforwardly from what he says against Gaṅgeśa's Principle of Iterated Absence. Moreover, as Jagadīśa notes, we can defend this principle even if Gaṅgeśa's Principle of Iterated Absence is true. If that principle is non-trivially true, we can informatively assert sentences like "The pot is the absolute absence of its absolute absence" (*ghaṭo ghatātyantābhāvātyantābhāvah*). But an assertion of such a sentence wouldn't be informative (or wouldn't produce a testimonial awareness) unless the delimiter of qualificandhood, i.e., pothood (*ghaṭatva*), were distinct from the delimiter of qualifierhood, i.e., the property of being an absolute absence of the absolute absence of that pot (*ghatātyantābhāvātyantābhāvatva*). According to a popular principle in later Nyāya, an assertion of the sentence, "The pot is the pot," cannot generate any awareness. For if it did, the delimiter of qualificandhood would be the same as the delimiter of qualifierhood.⁴¹ So, Raghunātha's Principle of Iterated Absence comes out true.

The Principle of Deviation is widely accepted among later Nyāya philosophers.⁴² In **Smoke and Fire**, when you infer the presence of fire on the hill after observing smoke on the hill, you are antecedently certain that smoke doesn't deviate from fire, i.e., is never present at a place where fire is absent. In other words, you are antecedently certain that you couldn't have the kind of evidence that forms the basis of your inference unless the conclusion of *hetu* inference were true. This is what distinguishes an *anumiti* from other forms of indirect (i.e., non-perceptual) knowledge. For example, in the case of testimonial knowledge, an agent could come

⁴¹ The principle is explicitly defended by Gadādhara in his *Vyutpatti-vāda* (VV): "The convention is that an awareness where two objects are semantically combined by a relation of identity can arise only if they are presented differently. For, in the case of sentences like 'The pot is the pot,' 'The stick-bearer,' 'He cooks the cooking,' etc., there aren't any awareness-events in which objects that are delimited by pot-hood, stick-bearer-hood, cooking-hood, etc. are semantically combined by a relation of identity with things that are delimited by those very same properties" (abhedānvaya-bodhaś ca virūposthitayor eva iti vyutpattiḥ. "ghaṭo ghaṭaḥ," "daṇḍa-vān daṇḍa-vān," "pākaṃ pacati" ity ādau ghaṭatva-daṇḍavattva-pākatvādy-avacchinne tat-tad-ṛūpāvaccchinnaśya tathā-vidhānvaya-bodhānudayāt) (VV, 136). The principle is implicit in many places in *The Jewel*, e.g., Gaṅgeśa's discussion of memory demonstratives in the section on qualificative perception (*śavikalpaka-vāda*).

⁴² For these later Nyāya philosophers, deviation is a defect of a reason (*hetv-ābhāsa*), called *common-ness* (*sādhāraṇatva*). A defect of a reason is some property of the reason the awareness of which prevents an *anumiti* from arising. For definitions of a defect of a reason and common-ness, see TCM, 763–4 and 823.

to judge the content of an utterance to be true, even though she may not have antecedently ruled out the possibility that the sentence in question is never uttered by a certain speaker in a scenario where its content is false.⁴³

The Principle of Conflict needs some further motivation.⁴⁴ Let's say that an awareness-event *conflicts* with another just in case that, as a matter of rule, the agent never undergoes the two awareness-events at the same time, either because (i) it is psychologically impossible for the agent to undergo both awareness-events at the same time, or (ii) the presence of one awareness-event prevents the other awareness-event from arising or persisting.⁴⁵ Suppose an awareness-event A1 ascribes a property P to an object o1, and an awareness-event A2 ascribes the absence of P to o2. According to the principle of conflict, in a normal agent, A2 conflicts with A1 only if, in both awareness-events, o1 and o2 are presented under the same mode of thought. Here's a quick way of seeing why this is plausible. Suppose you know that Caitra is a person. But, then, you see Caitra at a distance, but can't tell that it is Caitra. In fact, the object you see seems a bit like a tree stump to you, so you wonder, "Is that a person, or not?" (*saḥ puruso na vā*) or, perhaps, you judge, "That's not a person" (*so na puruṣaḥ*). Here, your judgment or suspicion that the object isn't a person doesn't conflict with your judgment that Caitra is a person even though the qualificand is the same in both cases. The only explanation is that the delimiter of qualificandhood, i.e., the mode under which you think about the qualificand, is different in the two cases: in one case, it is Caitrahood (perhaps, all the properties that distinguish Devadatta from other things), and in the other case, it's the indexical property of *thatness* (*tattā*). This supports the Principle of Conflict.

4.2. *The argument*

Now, we are in a position to state Raghunātha's argument for his thesis. In his commentary on the section of *The Jewel* on inferences of the positive-only variety, Raghunātha says:

In this way, the reason's being the counterpositive of an absence that pervades the absence of the property to be proven is not conducive to an *anumiti*. For this property is complex and doesn't conflict with any awareness of deviation. An awareness-event of the form "The absence of smoke is the counterpositive of an absence that is co-located with the absence of fire" can only sometimes conflict with the awareness of the absence of smoke as co-located with the absence of fire,

⁴³ The later Naiyāyika, Gadādhara, says; "The thought is this. If the set of causal conditions which includes an awareness of deviation can promote an *anumiti*, then testimony, etc., cannot be treated as independent means of knowledge; for the set of causal conditions such as the awareness of expectation (*ākāṅkṣā*), etc., [which bring about testimonial knowledge] can also involve such awareness of deviation" (vyabhicāra-jñāna-ghaṭita-sāmagryā anumiti-prayojakatve ākāṅkṣādi-jñāna-ghaṭita-sāmagryā api tathātvābhāvena śabdādīnām api svatantra-pramāṇatā-bhaṅga-prasaṅga iti bhāvaḥ). *Gadādhara on Dīdhiti on Kevalānvayi-prakarāna of Tattva-cintā-maṇi in CA, 1381.*

⁴⁴ My explanation here just follows Guha (1979: 208–9).

⁴⁵ This relevant notion of conflict or *virodha*—as regularly not obtaining together (*niyata-sahānavasthāna*)—is discussed by Gaṅgeśa in his discussion of counterpositiveness. See the passage quoted in footnote 23.

in virtue of attributing the property of being the absence of the absence of smoke but not in virtue of attributing smokehood. For it involves a different qualifier (*prakāra*).⁴⁶

The argument in this passage is this. An agent’s awareness of negative pervasion cannot give rise to an *anumiti* for two reasons. First, the relation of negative pervasion is quite complex. Second, this awareness doesn’t conflict with any awareness of deviation, i.e., any suspicion or judgment that the reason deviates from the property to be proven. Let’s ignore the first worry: as Raghunātha’s commentator Jagadīśa notes, there might be a simpler way of stating the relation of negative pervasion (on which a reason is connected to a property to be proven by a relation of negative pervasion if and only if it doesn’t reside in anything that lacks the property to be proven (*sādhyābhāvavad-avṛttitva*)).

The second worry is the interesting one. When an agent comes to know that smoke is connected to fire by a relation of negative pervasion, she knows that the absence of smoke pervades the absence of fire. So, by the definition of pervasion, she knows that:

(11) The absence of smoke is not the counterpositive of an absence which resides at a place where the absence of fire is present (*dhūmābhāvo vahny-abhāvādhikaraṇa-vṛtty-abhāvāpratiyogī*).

This is what Raghunātha refers to by the term “the awareness of the absence of smoke as co-located with the absence of fire.” This implies:

(12) The absence of the absence of smoke is absent from any place where the absence of fire resides (*dhūmābhāvābhāvo vahny-abhāvādhikaraṇe na asti*).

In (12), the absence of the absence of smoke is the qualificand, while the absence from any place where the absence of fire resides is the qualifier. The content of this awareness conflicts with:

(13) The absence of the absence of smoke resides at some place where the absence of fire resides (*dhūmābhāvābhāvo vahny-abhāvādhikaraṇa-vṛttiḥ*).

In (13), the absence of the absence of smoke is the qualificand, while the property of residing at a place where the absence of fire resides is the qualifier. Now, notice two things. Here, the qualifiers of the two awareness-events cannot be instantiated together. Moreover, in both cases the qualificand—the absence of the absence of smoke—is presented under the same mode of thought, i.e., the property of being the absence of the absence of smoke (*dhūmābhāvābhāvatva*). So, according to the Principle of Conflict, an awareness-event with the content expressed by (13) can indeed conflict with an awareness-event with the content expressed by (12).

⁴⁶ GA, 1380: evaṃ sādhyābhāva-vyāpakābhāva-pratiyogitvam api na anumityaupayikam, gauravād vyabhiçāra-jñānā-virodhitvāc ca. vahny-abhāva-samānādhikaraṇābhāva-pratiyogī dhūmābhāva itī jñānaṃ dhūmābhāvābhāvatvena tatra vahny-abhāva-samānādhikaraṇa-buddhiṃ kadācid virundhyāt, na tu dhūmatvena, bhinna-prakāratvāt.

However, according to Raghunātha, an awareness-event with a content expressed by (12) cannot conflict with an awareness-event with the content expressed by (14):

(14) Smoke resides at some place where the absence of fire resides (*dhūmo vahny-abhāva-vrttib*).

In (14), smoke is the qualificand of the relevant awareness, while the property of residing in something that possesses the absence of fire is the qualifier. Here, the delimitor of qualificandhood is smokehood (*dhūmatva*). According to Raghunātha's Principle of Iterated Absence, even if smoke is identical to the absence of the absence of smoke, smokehood and the property of being the absence of the absence of smoke are distinct properties. This, in turn, means that the modes of thought under which the qualificand is presented in (12) and (14) are different. It is this in sense that the two awareness-events involve different *qualifiers* (since the delimitor of the qualificandhood is a qualifier of the qualificand). Here, the principle of conflict entails that the awareness-event with the content expressed by (12) cannot conflict with any awareness-event with the content expressed by (14).

If this argument works, an agent can indeed judge that smoke bears a relation of negative pervasion to fire *and* judge or suspect that smoke deviates from fire. If the agent nevertheless infers the presence of the property to be proven in the subject directly on the basis of her awareness of negative pervasion, then, according to the Principle of Deviation, the knowledge of the property to be proven that the agent gains in such a scenario is not an *anumiti*. This supports Raghunātha's Thesis, i.e., the view that an agent's awareness of negative pervasion cannot generate an *anumiti* by itself.

5. RAGHUNĀTHA'S ANTI-REDUCTIONISM

In response to this argument, someone like Gaṅgeśa might claim that the general causal condition for any *anumiti* is the agent's awareness of *some* relation of pervasion between the reason and the property to be proven. However, an *anumiti* based on an agent's awareness of positive pervasion differs from one based on an awareness of negative pervasion insofar as they are brought about by different *specific* causal conditions (either by a positive subsumptive judgment or by a negative subsumptive judgment). Thus, even though different *anumitis* together form a unified epistemic kind, they can be brought about by different sets of causal conditions. Raghunātha addresses this view.

An awareness-event that arises out of an agent's apprehension of negative pervasion is not an *anumiti*. For it isn't experienced as such, and it is not preceded by one of the well-established causes of an *anumiti*. Moreover, it is permissible to posit that different causal conditions produce awareness-events of the same kind only if these awareness-events are experienced in the same way.⁴⁷

Raghunātha's response proceeds from a principle.

⁴⁷ GA, 1380: vyatireka-vyāpti-grahādhīnā dhīr nānumitis tattvenānanubhavāt. kṛpta-kāraṇābhāvāt, sāmagrī-bheda-kalpanāyāś cānubhavaikādhīnatvāt.

Criterion for Individuating Epistemic Kinds. Suppose paradigmatic instances of an epistemic kind *K* are produced by a collection of causal conditions *S*. Then, awareness-events that are not produced by *S* can belong to *K* only if they are systematically experienced (in introspection) as instances of *K*.

The underlying idea is that unless there is independent reason derived from introspection (or elsewhere), we shouldn't classify awareness-events produced by different causal conditions as instances of the same epistemic kind. Now, suppose all *anumitis* form a unified epistemic kind. According to the Criterion for Individuating Epistemic Kinds, we should treat an awareness-event produced by a positive subsumptive judgment and an awareness-event produced by a negative subsumptive judgment as *anumitis* only if there is independent introspective (or any other kind of) evidence for treating them alike. However, according to Raghunātha, when an agent infers a property to be proven by appealing to a relation of negative pervasion between a reason and that property to be proven, two things happen. On the one hand, one of the well-established causes of *anumitis*—namely, the positive subsumptive judgment—goes missing. On the other hand, she isn't introspectively aware of her final inferential awareness-event as an *anumiti*. Therefore, by the Criterion for Individuating Epistemic Kinds, such awareness-events shouldn't be classified as *anumitis*.

Raghunātha suggests that such awareness-events belong to a distinct epistemic kind.

Rather, it [i.e., the awareness-event which arises out of an agent's apprehension of negative pervasion] is different in kind from an *anumiti*. *Arthāpatti* is the instrument by means of which it arises.⁴⁸

This is Raghunātha's anti-reductionist view about *arthāpatti*: the awareness-events that are derived solely from an agent's awareness of negative pervasion are produced not by *anumāna* but by *arthāpatti*. His commentator, Jagadīśa, notes that there is in fact introspective evidence in favor of treating these two types of awareness-events as instances of two distinct epistemic kinds: "That there is a distinction in kind is established by means of an (introspective) experience of the form 'I am performing an *arthāpatti*, not making an *anumāna*.'"⁴⁹ The lesson: Raghunātha and his commentators seem to think that his argument leads to anti-reductionism about *arthāpatti*.

Raghunātha considers a response to his view. A Naiyāyika could argue that, while an awareness of negative pervasion cannot by itself block a suspicion or judgment that the reason deviates from the property to be proven, the awareness of the

⁴⁸ GA, 1380: kintu vijātīyā. tat-karaṇam arthāpattir eva. Raghunātha goes on to point out that in a case where an agent undergoes two subsumptive judgments, positive as well as negative, the resulting awareness will either end up being an *anumiti* or an instance of *arthāpatti*-based knowledge, but not both. This is because, in a case where all the causal conditions necessary for two different kinds of knowledge are present, the causal conditions necessary for one block the production of the other. Things won't be different in this case. He says (GA, 1380): "Moreover, the simultaneous integration of positive and negative properties [with respect to the same reason] is compatible with what happens when two well-established epistemic instruments assemble together" (kṛpta-pramāṇa-dvaya-samāhāra-samaśīlaṅ ca yugapad-anvavyavyatireki-dharma-pratisandhānam).

⁴⁹ JD, 276: vaijātyam arthāpāyāmi nānuminomy anubhavād eva siddham.

property to be proven that arises from that awareness of negative pervasion may have some other feature that allows us to classify that awareness as an *anumiti*. Note that this move involves rejecting the Principle of Deviation, so it may be costly from the Naiyāyika's perspective. But even if it isn't costly, the Naiyāyika owes us an account of why inferential awareness-events that are based on an awareness of negative pervasion should be treated as *anumitis*. The answer that Raghunātha explicitly considers is that such inferential awareness-events are caused by *subjecthood* (*pakṣatā*). Let me explain.

In *Smoke and Fire*, the hill is the subject of the inference. What makes it an appropriate subject of that inference? According to earlier Naiyāyikas, it's because the relevant agent is in doubt about whether the property to be proven, i.e., the fire, is present in the hill. So, subjecthood on this view boils down to *having as a property an uncertain property to be proven* (*sandigdha-sādhya-dharmatva*). This was taken to be a necessary causal condition for any *anumiti*. However, later Naiyāyikas like Gaṅgeśa pointed out that there are contexts in which an agent may arrive at an *anumiti* despite having previously learnt (either by an *anumāna* or by some other epistemic instrument) that the property to be proven is present in the subject. In such cases, an *anumiti* is possible because the relevant agent has the desire to establish the presence of the property to be proven in the subject. So, Gaṅgeśa revises the definition of subjecthood: for him, it is the absence of an epistemic instrument which establishes the property to be proven in the subject, such that this instrument is accompanied by an absence of a desire to establish the property to be proven in the subject (*siṣādbhayiṣā-viraha-sahakṛta-sādhaka-pramāṇābhāva*).⁵⁰ More simply, an object, e.g., the hill in *Smoke and Fire*, possesses subjecthood if and only if either (i) the reason to be proven hasn't been shown by an epistemic instrument to be present in that object, or (ii) the relevant agent still desires to establish that it exists in that object. Gaṅgeśa and many other later Naiyāyikas think that subjecthood is a necessary causal condition for any *anumiti*.

The rationale behind the objection that Raghunātha considers is that any inferential awareness-event that is derived from an awareness of negative pervasion is produced by the relevant sort of subjecthood, so, such an awareness-event had better be an *anumiti*.

Suppose you say, "Well, with respect to that which has been ascertained, there arises no *arthāpatti*-based awareness without a desire to establish it. Given that it too is produced by subjecthood, such knowledge is also an *anumiti*. This is because, for reasons of simplicity, the property of being produced by subjecthood is the only promoter of *anumiti*hood . . ." ⁵¹

⁵⁰ See TCM, 431–2.

⁵¹ GA, 1383: atha nirṇīte vina siddhīcchām arthāpatter anutpādāt pakṣatā-janyatvāt sā'py anumitir lāghavena pakṣatā-janyatvasyaivānumititve prayojakatvāt. The opponent goes on to explain why the view doesn't lead to any undesirable consequences at GA, 280–3: "It is not the case that if this view is true, a perceptual awareness of subjecthood would end up being an *anumiti*. For subjecthood is imperceptible. It has a counterpositive that involves the imperceptible property of being present at a particular time (*ekakālīnatva*) among other things, since the desire to prove—even when it is present—is absent at other times and other places" (na caivaṃ pakṣatā-pratyakṣasyāpi tathātvāpattiḥ, icchā-sattve'pi kālāntare deśāntare vā tad-viraha-sattvenaika-kālīnatvādy-atīndriya-ghaṭita-pratīyogitvena tasyā atīndriyatvād).

Here, given the context, the term “*arthāpatti*-based awareness” just refers to any inferential awareness-event that is based on an awareness of negative pervasion. So, the claim that since being produced by subjecthood is a promoter of *anumiti*hood, any such awareness-event must also be an *anumiti*.

Elsewhere in his commentary on *The Jewel*, Raghunātha expresses that there is no uniform (*anugata*) property of subjecthood that can be treated as a cause of *anumitis*.⁵² He repeats that point.

[We reply:] No. For we have indeed repudiated the view that subjecthood is the cause of any *anumiti*. For subjecthood is non-uniform due to the variation of reasons to be proven, etc., and the property of being produced by subjecthood isn't a promoter of *anumiti*hood. Promoterhood is neither the property of being a cause, because that is impossible, nor the property of being pervaded by that which it promotes, because there is no evidence for this. This view has been stated more than once. Thus, we also refute the view that the property of being produced by an awareness of pervasion is a promoter of *anumiti*hood.⁵³

Here, Raghunātha wants to deny that subjecthood is a cause of every *anumiti*. He offers two reasons for this.

First of all, the claim is that subjecthood will vary from one case to another, depending on what the relevant property to be proven is. This makes it non-uniform. In other words, it is a long disjunction of different conditions rather than a condition that is uniformly present in every case of *anumiti*. Since such disjunctive entities cannot be treated as a cause, subjecthood cannot be treated as a cause of *anumiti*. Raghunātha's commentator, Jagadīśa, sharpens this point in a different way. Raghunātha's opponent intends to give the following argument: “Any awareness that is produced by an awareness of negative pervasion is an *anumiti*, because it is produced by subjecthood, just like an *anumiti* that is produced by an awareness of positive pervasion” (*vyatireka-vyāpti-jñāna-janya-jñānam anumitih pakṣatā-janyatvāt, anvaya-vyāpti-jñāna-janyānumitivat*). The subject of this *anumāna* is any awareness that is produced by an awareness of negative pervasion. The property to be proven is *anumiti*hood. The reason is the property of being produced by subjecthood. The confirming instance (*drṣṭānta*), which provides evidence for the relation of pervasion between the reason and the property to be proven, is an *anumiti* that is produced by an awareness of positive pervasion. Jagadīśa poses a dilemma for Raghunātha's opponent.⁵⁴ The notion of subjecthood at play in the

⁵² See the discussion in GA, 1159.

⁵³ D, 1159: na. anumitāv eva pakṣatāyā hetutvasya nirastatvāt, sādhyādi-bhedenānanugatavāt taj-janyatvasyāprayojakatvāt. prayojakatvañ ca na janakatvam asambhavāt na vyāpyatvaṃ mānābhāvād ityāder asakṛd āveditatvāc ca. etena vyāpti-jñānādi-janyatvam anumitive prayojakam ity apī parāstam.

⁵⁴ JD, 284–5: “Therefore, the thought is this. Just as subjecthood varies depending on the property to be proven, etc., so also does it vary depending on whether the relevant desire to establish the property to be proven has, as its qualifier, *anumiti*hood or the property of being *arthāpatti*-based knowledge. If the promoter of *anumiti*hood is the property of being produced by a kind of subjecthood which involves the absence of a desire that has *anumiti*hood its qualifier, then there will be a fault of being unestablished by nature due to the absence of the reason from cases of *arthāpatti*-based knowledge. If the promoter of *anumiti*hood is the property of being produced by a kind of subjecthood which involves the absence of a

opponent's argument is ambiguous: subjecthood could involve either the absence of a desire to establish the property to be proven by *anumāna* or the absence of a desire to establish it by *arthâpatti*. If it is the former, then the reason of the inference will be absent from the subject, because the subject may be some case of *arthâpatti*-based knowledge which is produced by the agent's desire to establish something by *arthâpatti*. The reason therefore will suffer from the defect of being unestablished by nature (*svarūpāsiddhi*). If it is the latter, then the reason won't be present in the example that the opponent cites, namely an *anumiti* which is produced by an awareness of positive pervasion. For such an *anumiti* is caused by the kind of subjecthood that involves the absence of a desire to establish the property to be proven by *anumāna* (and not *arthâpatti*). This gives rise to the fault of being unestablished in the confirming instance (*dr̥ṣṭântāsiddhi*).

Raghunātha's second argument is that the notion of a promoter or *prayojaka* that his opponent invokes is somewhat murky. The property of being caused by subjecthood cannot be a promoter of *anumiti*hood in the strong sense of being a cause of *anumiti*hood. For that is impossible: *anumiti*hood, for the Nyāya philosopher, is a natural kind ~~of~~ property (*jāti*), and natural kinds ~~of~~ properties (in virtue of being eternal) don't have causes. Moreover, the property of being caused by subjecthood cannot be a promoter of *anumiti*hood in the weaker sense of being pervaded by *anumiti*hood. For there is no evidence for it. The reason presumably is that Raghunātha's opponent cannot rule out the possibility that the property of being caused by subjecthood deviates from *anumiti*hood. This is because an anti-reductionist about *arthâpatti* could argue that instances of *arthâpatti* are produced by a distinctive kind of subjecthood which involves the absence of a desire to establish the property to be proven by *arthâpatti*. Since such subjecthood doesn't cause prototypical *anumitis*, Raghunātha's opponent cannot appeal to prototypical *anumitis* in order to rule out the possibility that the property of being caused by subjecthood isn't present in inferential awareness-events other than *anumitis*. So, given that Raghunātha's opponent cannot rule out the possibility that the property of being caused by subjecthood deviates from *anumiti*hood, she hasn't shown us that *anumiti*hood pervades the property of being caused by subjecthood.

Raghunātha ends by noting that his strategy generalizes. For example, if an opponent argues that the promoter of *anumiti*hood is just the property of being produced by an awareness of either positive or negative pervasion, the same arguments from non-uniformity, etc., could be marshaled in favor of Raghunātha's view.

Despite these arguments, Raghunātha's conclusion might seem too hasty: it's not clear that his argument succeeds in dismantling all possible reductionist views about *arthâpatti*. Raghunātha himself seems to recognize this.

desire that has the property of being *arthâpatti*-based knowledge, etc. as its qualifier, then there will be a fault of being unestablished in the confirming instance, i.e., the *anumiti*" (tathā ca sādhyādi-bhedād iva anumitivr̥thâpattitvādi-prakāraka-siṣādhayaṣyā bhedād api pakṣatā-bhedāt anumititvādi-prakārakécchā-viraha-ghaṭita-pakṣatā-janyatvaṃ yadi prayojakaṃ tadā hetv-abhāvād arthâpattau svarūpāsiddhiḥ, arthâpattitvādi-prakārakécchā-viraha-ghaṭita-janyatvasya prayojakatve ca anumitau dr̥ṣṭântāsiddhir iti bhāvaḥ).

Some also say that when the relevant property to be proven is already known, an *anumiti* arises on the basis of another *anumāna* that proceeds from the fact that *the reason is a property which is the counterpositive of an absence that pervades the absence of the property to be proven* to the conclusion that *the reason is pervaded by the property to be proven*.⁵⁵ (italics mine)

This proposal is in effect a version of the view (rejected earlier by Gaṅgeśa) that an agent's awareness of negative pervasion can produce an *anumiti* through the mediation of an awareness of positive pervasion. As Jagadīśa points out, Raghunatha doesn't like this view, though he doesn't explain why. However, we may be able to supply a reason. In this view, in order to move from an awareness of negative pervasion to an awareness of positive pervasion, the agent would have to know the further generalization that any two entities X and Y that are connected by a relation of negative pervasion are also connected by a relation of positive pervasion. On the Nyāya view, learning such a generalization will require further empirical investigation. An agent who hasn't engaged in any such empirical investigation won't be able to make any inference on the basis of her awareness of negative pervasion. However, it seems intuitively plausible that an agent who doesn't know such a generalization can still make the inference that we see in **Absent Devadatta**. This puts some pressure on us to reject this story.

In fact, a general challenge for the Nyāya reductionist about *arthāpatti* emerges from this discussion. If such reductionism is true, many instances of *arthāpatti*-based knowledge must be based on negative-only *anumānas*, i.e., *anumānas* where the relevant subject apprehends the relation of pervasion by only observing instances of negative correlation. Either such *anumānas* always involve an awareness of positive pervasion or they don't. Now, to say that such *anumānas* always involve an awareness of positive pervasion is to say that there are no *anumānas* that take the form of the **Simple Inference** in §2.1. This seems like a psychological generalization that requires much more evidence than the Nyāya reductionist has given us. Without evidence, it is implausible. So, consider the other option: sometimes, in putative negative-only *anumānas*, people arrive at their conclusions simply on the basis of their awareness of negative pervasion. Raghunātha has argued that such reasoning cannot yield any *anumiti*; in fact, it is a distinct source of knowledge, namely *arthāpatti*. This supports anti-reductionism about *arthāpatti*.

6. CONCLUSION

In this chapter, I have reconstructed Raghunātha's argument for anti-reductionism about *arthāpatti*. If Raghunātha is right, once we have accepted Raghunātha's Principle of Iterated Absence, Nyāya reductionism about *arthāpatti* is straightforwardly in tension with certain commitments that most later Naiyāyikas share. It remains mysterious, to me at least, how these Naiyāyikas could embrace reductionism about *arthāpatti* without either rejecting the Raghunātha's Principle of Iterated Absence or jettisoning some of their commitments.

⁵⁵ GA, 1383: sādhyābhava-vyāpakābhāva-pratīyogī-dharmatvena sādhyā-vyāpyatvānumāmāt prasiddha-sādhyakaivānumitir ity api kecit.

ABBREVIATIONS AND REFERENCES

- D *Dīdhitī* in GA
- GA *Gādādharī* of Raghunātha Śiromaṇi in *The Gādādharī: A Commentary on Dīdhitī, the Commentary by Śrī Raghunātha Śiromaṇi on the Tattvacintāmaṇi of Śrī Gaṅgeśa Upādhyāya (with texts)*, ed. V.P. Divivedī et al, vols. 1 and 2, Varanasi: Chowkhamba Sanskrit Series Office, 1970.
- KA *Kārikāvalī* of Viśvanātha in *Kārikāvalī of Viśvanātha Nyāyapañcānana Bhaṭṭacārya: With the Commentaries Siddhāntamuktāvalī, Dinakarī, Rāmarudrī*, ed. A. Jere, New Delhi: Rashtriya Sanskrit Sansthan, 2002.
- NBh *Nyāya-bhāṣya* of Vātsyāyana in ND
- NK *Nyāya-kaustubhaḥ* of Mahādeva Puṇatāmakara in *Mahādevapuṇatāmakaraviracito Nyāyakaustubhaḥ: Anumāna-khaṇḍātma dvitīyo bhāga*, ed. D. Gosvāmī, Varanasi: Vārāṇaseya Saṃskṛta Viśva-vidyālaya, 1967.
- NKA *Nyāya-kusumāñjali* of Udayana in *The Nyāyakusumāñjali of Śrī Udayanācārya with Four Commentaries: The Bodhinī, Prakāśa, Prakāśikā (Jalada) and Makaranda by Varadarāja, Vardhamānopādhyāya, Mecha Thakkura and Rucidattopādhyāya and with Notes by Śrī Dharmadatta (Bachchā Jhā)*, eds. P. Upādhyāya and D. Śāstri, Varanasi: Chowkhamba Sanskrit Series, 1957.
- NM *Nyāya-mañjarī* of Jayanta Bhaṭṭa in *Nyāyamañjarī of Jayanta Bhaṭṭa with Ṭippanī- Nyāyasaubha of the Editor*, Ed. K.S. Varadacharya, vol. 1, Mysore: Oriental Research Institute, 1969.
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- NVTṬ *Nyāya-vārttika-tātparya-ṭīkā* of Vācaspati Miśra in ND
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