

On Dharmakīrti's Proposal to Solve the Induction Problem

Ernst Steinkellner

At the 2nd International Dharmakīrti Conference in 1989, Brendan Gillon not only pointed to the fact that the problem of induction¹ was known to classical Indian philosophy, but also demonstrated that “Dharmakīrti's solution” to the problem by formulating a method for ascertaining a causal relation “can be seen not to work.”²

Gillon's critique, it is true, seems to be valid as far as I can see in regard to Dharmakīrti's statement as it was interpreted until now by all who tried their mind on it, including myself. I have no intention, therefore, to pick on Gillon's blaming Dharmakīrti. Rather I intend to show what I believe that Dharmakīrti was actually saying, because I just could not imagine him to have committed such an evident fallacy as the one he was charged with or that he didn't see the dangers involved in the method he allegedly proposed.

Dharmakīrti presented the formulation at stake in his *Pramāṇavārttikavṛtti* or—as I prefer to call it with Frauwallner—**Hetuprakaraṇa* (abbr. PVSV). This is his very first work in which he offers a new theory of the logical reason (*hetu*) in the garb of an interpretation of Dignāga's theorem of the reason with three characteristics (*trilakṣaṇo hetu*). Since I think I was able to show in a recent study (Steinkellner 2013: II. 185-210) that the central point of Gillon's critique can, possibly, be dissolved in regard to this first presentation of the method

¹ In conceiving an “induction” and a “problem of induction” in connection with interpreting an Indian philosopher we best follow the classical definition of induction, which has been current since Francis Bacon's *Novum Organum* of 1620 until the middle of the 19th century (John Stewart Mills). “Induction”, today usually known as “enumerative induction” is the inference of a general law or principle on account of the observation of particular cases. The “induction-problem” in its simplest form, then, consists in the fact that through observation of particular cases nothing more can be gained than probability, but never certainty. For certainty would presuppose the knowledge of all single cases, knowledge impossible in default of omniscience.

² Gillon 1991, p. 57. The present paper is owed to his observations. They instigated me to probe their validity, and even at the point where I shall have to stop they will hopefully still elicit more interpretational energy from research in the future. I also take this occasion to acknowledge my pleasure in two long related discussions enjoyed with Brendan Gillon at Lumbini.

(PVSV 22,2-4)³, to begin with, I will first present my new translation and a short summary of my understanding.

Dharmakīrti formulates a method for ascertaining the relation of causation in three sentences that together amount to a proof: "1. That (entity) (*tat*) which (*yat*) as unperceived (at first), although (on principle) perceptible, is perceived on the perception of which (other entities present) (*yeṣām*), (and again) is not perceived when even a single (entity) among these (other entities) (*tatra*) is absent, is the effect of this (single other entity that is absent). 2. And this [fact of being conditionally⁴ known through perceptions and non-perceptions] does occur in the case of smoke. 3. From being observed in this way even once (something, such as smoke) is established as that which is to be effected (*kāryaḥ*) (by something else, such as fire); for, were it not (that which is) to be effected (by this), it would not occur even once on account of that which is not (its) cause."⁵

In terms of mere translating this new translation is roughly the same as earlier ones, such as indicated exemplarily in note 5. My understanding, however, is different from earlier ones, mainly in the following respects:

³ It is almost identical with the presentation in the *Pramāṇaviniścaya* (PVin 2. 85,6-8).

⁴ "Conditionally" means given the fact of presence or absence.

⁵ PVSV 22,2-4+6f: 1. *yeṣām upalambhe tallakṣaṇam anupalabdhāṃ yad upalabhyate, tatraikābhāve 'pi nopalabhyate, tat tasya kāryam*. 2. *tac ca dhūme 'sti*. 3. *sakṛd api tathādarśanāt kāryaḥ siddhaḥ, akāryatve 'kāraṇāt sakṛd apy abhāvāt*. Underlining indicates where my interpretation is different from earlier ones. Samples of earlier translations are: "If a thing (E) which, having perceptible characteristics, was not perceived, is perceived when other things (Cs) have been perceived, and if, when even one thing (C) among these has disappeared E is not perceived, then E is the effect of C [...]" (Kajiya 1963, pp. 2f.)

"If a previously unperceived thing defined as perceptible is later perceived when other things are perceived, and if that thing is not perceived when one among those other things is absent, then it is the effect of that thing. That kind of definition of an effect applies to smoke." (Dunne 2004, p. 335)

"That which, not having been apprehended, is apprehended, when its conditions have been apprehended, [but] is not apprehended, when even one of them is absent, is [ascertained] to be their effect. [...] An effect is established because of being observed even once in that way, because, if it were not an effect, it would not arise even once from what is not its cause." Gillon/Hayes 2008, p. 353 and 398.

1. While, except for Horst Lasic,⁶ hitherto, everyone assumed the pronoun *yeṣām* referred to the many different single causes that together constitute a single causal complex, I consider the plural pronoun, in the light of Dharmakīrti's concept of "cause" which always means a causal complex, to refer to different causal complexes and not to different causes within a single causal complex.⁷

2. The process of cognition described consists of perceptions and non-perceptions under certain conditions, namely presence and absence of another entity, and is focussed on a single examined case of two different entities. In order to generalize the cognition that is gained from a single case, Dharmakīrti uses a *reductio ad absurdum* argument, a *prasaṅga*, when he says: "Were (something, say smoke) not to be effected (by another, say fire), it (could) not even once occur on account of that which is not (its) cause."⁸ This second step indicates an unwarranted consequence should the truth of the cognition gained by observing a concrete case not be accepted. It thereby provides for this cognition the qualities of necessity and general validity. In other words, the *prasaṅga* transforms, so to speak, the formulation into one of a necessary concomitance (*vyāpti*), and in this function of justifying a specific common presence and absence as necessary in general it is an integral part of the method proposed.

3. The three cited sentences belong together; and together they make for a veritable proof formula (*prayoga*): The first sentence states a specific cognition of the common presence and common absence (*anvayavyatireka*) of the property "being conditionally perceived and non-perceived" as the logical reason (*hetu*) with the property to be established (*sādhya*) "being the effect of a certain other entity". This cognition is transformed into a general *vyāpti* by the third sentence, the *prasaṅga*, and the second sentence states the presence of the reason ("being conditionally perceived and non-perceived") in the locus of smoke (*pakṣadharmatā*).

I think that Dharmakīrti tried to overcome the problem of always incomplete induction in this way, and I consider the complementing of his concomitance

⁶ Already in Lasic 1999, pp. 237 and 238, Horst Lasic clearly excluded an interpretation of *yeṣām* as referring to the constituents of a single causal complex when he paraphrased "a perception of everything present at the place of observation." Cf. also Lasic to appear. In my note of Steinkellner 2013: II. 354, I overlooked his paraphrase. 75a

⁷ For Dharmakīrti's concept of cause as causal complex cf. various passages in HB § b.1221 with Steinkellner 1967, pp. 44–55 (see also Shah 1967, pp. 45–59), Steinkellner 1971, pp. 184–188, and Dunne 2004, pp. 161–169. Cf. also the collection of excerpts from the VNT in the appendix.

⁸ PVSV 22,6f: *akāryatve 'kāraṇāt sakṛd apy abhāvāt*.

formulation by means of a *prasaṅga* with the function of justifying it⁹ to be a veritable stroke of genius. A judgement on whether he really succeeded in this task or only shifted the problem to yet another level is beyond my scope and, for the time being, I prefer to stop at this point and pass this judgement on to colleagues who are better equipped than I am.¹⁰

Dharmakīrti, it is true, actually changed his early formulations in his later works, the *Hetubindu* and the *Vādanyāya*.¹¹ In these, the *prasaṅga* argument either does not occur, as in the *Hetubindu*'s first passage (HB § 3.32) which is focused on the form of inference and proof, or it is present in a more elaborate form, as in the *Hetubindu*'s second passage (HB § 4.22) and in the *Vādanyāya*. It is, however, in particular, the formula given in the first passage of the *Hetubindu* that was adopted as the authoritative Dharmakīrtian statement on the issue throughout the later tradition, and the first formulae in the **Hetuprakaraṇa* and *Pramāṇaviniścaya* were seen in the light of the latter.

At this point it seems to be appropriate to examine whether the problem in these formulae was recognized and dealt with in the Dharmakīrtian tradition. As far as I see, there are a few texts that show some or a definite awareness of the problem: In Dharmottara's commentary on the *Pramāṇaviniścaya*, there is a digression that I edited and translated in Appendix II of my study (PVinT_{2Ms} 102b4-103b7 on PVin 2. 85,6-8; PVinT_{2t} P 5727, 309a4-310a8).¹² In addition,

⁹ This has the same function as is provided by what he later designed as the *viparyaye bādhakapramāṇa* (cf. Tani 1991: 335; Steinkellner 1991, p. 313; Watanabe 2004, p. 58; Sakai 2012, pp. 6–8).

¹⁰ On a different approach (in Steinkellner 2013: II. 204-210) I propose a “linguistic turn” for Dharmakīrti's formulation: The method presented by Dharmakīrti for the determination of different entities as “cause” or “effect” respectively is to the benefit of only those who use these concepts or words (*vyavaharī*), but it is not meant to enhance our knowledge about actual reality. He only states under which conditions such words or concepts should be correctly applied. Yet, even if his formulation does not have the purpose of describing a cognitional process pertinent to a causal relation in reality, I assume that the problem as such lingers on within the frame of this “linguistic turn” as well. It will not be dissolved, as I said in my study (*ibid.*, p. 209), merely by substituting an inductive cognition of causal relation with linguistic usage.

¹¹ For the differences of these formulations from the earlier ones cf. Steinkellner 2013: II. 193-198 (but see also note 34 below), and for a synoptic survey of the formulations see *ibid.*, p. 197.

¹² Since I am not too certain that I was able to understand all of it correctly, and since Dharmottara seems to understand Dharmakīrti's early formulation in the light of the latter, it will be necessary to give this digression a further close look before we can be

his teacher Arcaṭa's explanation of the *anvayaniścaya* in case of a *kāryahetu* (HBT 45,11-50,7) has still to be examined for relevant traces. In Karṇakagomin's digression of PVSVT 96,26-99,28, the problem is also felt in the background, but is only definitely addressed in PVSVT 99,6-16. There is, however, a slightly earlier text, a digression in Śāntarakṣita's *Vādanyāyaṅikā*, which offers a clear presentation of both, the problem and its solution. And this brings us back to Dharmakīrti's *Vādanyāya* in a moment.

Yet first we should have a look at Gillon's critique,¹³ which is directed against Dharmakīrti's earliest formulation quoted above.¹⁴ Gillon, in this paper,¹⁵ does not offer a translation of his own, but summarizes his analysis and critique on the basis of Kajiyama's translation.¹⁶ Gillon's essential point was made particularly clear by Tillemans: "The root of the problem of determining causality is that people just have no way of knowing definitely when they have correctly isolated the true cause from the myriad of other background things. Using Mill's method or that of Dharmakīrti, there can always be the doubt that, in spite of something being thought to be the cause, the presence of *that* circumstance was not in fact what was actually responsible for the effect and *its* absence was not what brought about an absence of the effect – some other hidden factor that we didn't know about, didn't think about and perhaps didn't see at all was first present and then absent at the key stages of our tests." (Tillemans 2004: note 25).¹⁷

Śāntarakṣita's digression is embedded in his commentary on VN 4,2-10, which consists of two parts: One is Dharmakīrti's last formulation, in VN 4,2f, of the content that is to be ascertained, a causal relation; the other is his answer to an

sure how exactly he approaches the induction problem involved, if he really saw it at all which I think he did.

¹³ Gillon 1991, p. 58.

¹⁴ See p. 147 above with note 5.

¹⁵ But see Gillon/Hayes 2008, p. 453, cited in note 5.

¹⁶ "[...] Dharmakīrti seems to believe that a sequence of five simple non-relational observations results in relational knowledge. [...] [...] The problem is that this sequence cannot discriminate between genuine causes and spurious correlations. [...] [...] Moreover, further observations will never eliminate the possibility of spurious correlation. But this is just the induction problem again." (Gillon 1991, p. 58).

¹⁷ Gillon's observations were, in two papers by Horst Lasic, later improved by a better analysis of the method (1999), and interpreted with another aim (2003), but the existence of an induction problem remained unquestioned, and was finally also affirmed by John Dunne (2004, pp. 191–192) and Tom Tillemans (2004, note 25 as quoted).

alternative (*anyat tatra samartham*. VN 4,6f), which clearly reveals Dharmakīrti's awareness of the problem of induction involved.

The formulation in the *Vādanyāya* is: "This (entity) comes to be, when that (other entity) is present, (and) even if the (various) causes of this (entity) which are different from that entity (and) capable (for producing its perception) are present, (this entity) does not come about in the absence of that (entity)." ¹⁸

In this formulation a form was chosen which has a proximity to the Venerable's description of a causal relation in the short formula at the beginning of the *pratītyasamutpāda* that is obvious and seemingly intended. ¹⁹ Dharmakīrti's preceding statement also makes it clear that this formulation specifies only the content to be known on account of the cognitions that establish presence and absence respectively in a specific case. ²⁰ Thus, the problem seen in respect to Dharmakīrti's earlier formulation is also present in this last one.

Already in the **Hetuprakaraṇa* (PVSV 22,10-23,6 with PV 1.35), Dharmakīrti deals with the issue that an effect, say smoke, does not deviate from fire as its cause (*avyabhicāra*) by parrying the idea that it may have "another cause", ²¹ such as a termite hill. ²² In his answer, he operates with the category of being "such" (*tādṛśa*) and says that something as smoke is "such" because it is the product of something that is "such", namely, being capable to produce smoke. ²³ "Suchness", Dharmakīrti states, is not similarity, as meant in the opening

¹⁸ *idam asmin sati bhavati, tatsv api tadanyeṣu samartheṣu taddhetuṣu tadabhāve na bhavātīti.* (VN 4,2f.)

¹⁹ For the *ādi*-formula of the *pratītyasamutpāda*: *asmin satīdaṃ bhavati, asyotpādād idam utpadyate.* ("If that is present, this comes to be; on account of the arising of that this arises.") cf. La Vallée Poussin 1913, pp. 49–51.

²⁰ VN 3,19-4,2: *tasya tena saha kāryakāraṇabhāvaprasādhanam bhāvābhāvasādhanapramāṇābhyām.*

²¹ PVSV 22,10: *anyahetukatvān nāhetukatvam iti cet.*

²² Cf. PVT, 60a7 = PVSVT 100,12. In summarizing his argument, Dharmakīrti refers to the termite hill (*śakramūrdhan*) again by saying: "If a termite-hill is of fiery nature, it is surely fire. If it is not of fiery nature, how can there smoke come about?" (*agnisvabhāvaḥ śakrasya mūrdhā yady agnir eva saḥ / athāgnisvabhāvo 'sau dhūmas tatra katham bhavet // PV 1.36*).

²³ PVSV 22,14f: *tādṛśād dhi bhavan sa tādṛśaḥ syāt.* And *tādṛśa* is "something with that nature which comes about through nothing but its own cause", as he will say later in the *Hetubindu* (*yo yatsvabhāvaḥ, sa svahetor evotpadyamānas tādṛśo bhavati.* HB 8,9f).

sentence of this paragraph (PVSV 22,10), where some vapour²⁴ is understood as being similar to ordinary smoke. And thus, the consequence of smoke's causelessness if it is not caused by fire (PV 1.34cd) cannot be avoided by the option that vapour, a simulacrum of smoke, arises without fire.

In the *Vādanyāya*, however, where Dharmakīrti demonstrates how "effect" as a means of proof (*sāadhanāṅga*) is justified (*samartha-*), the notion of "another cause" is given another, more to the point meaning. Here, Dharmakīrti no longer brings into play "another cause" as before in order to deny the consequence for an effect such as smoke to be without a cause by presenting another candidate for causing the effect smoke, or rather something that is smoke-like—a proposal easily refuted by perception which recognizes this smoke-like entity as vapour. Now, in the *Vādanyāya*, the option is of "another cause" of smoke as such.²⁵ For, after presenting the formulation quoted above, Dharmakīrti says in conclusion that "in this way the fact is justified (*samarthita*), that this (effect) is doubtlessly an effect of that (cause)."²⁶

Then, in order to indicate the unwarranted consequence should the above justification not be acknowledged, he adds: "Otherwise, (i.e.) if only (the proposition) '(this) is not present in the absence of that' were communicated, the (causal) capacity of the latter would be in doubt, since also another (entity) is absent there (where the latter is absent). Another (entity, then) could be capable in regard to (the production of) this (effect), (and) because that (other entity) is absent, this (effect) has not come about. (In this case) moreover, the

²⁴ Cf., for example, PVSVṬ 101,9: *yas tv anagner utpannah so 'nyādrśa eva, bāṣpādivat*, and particularly PVSVṬ 101,12: *na hy bāṣpādīnāṃ tādrśatvādhyavasāye 'pi tādrśatvam bhavati*.

Lacking myself *in situ* experience of observing something smoke-like arising from termite hills, I can gratefully offer a purely physical explanation of convincing plausibility for understanding this example of the termite hill that I received from the entomologist Dominique Zimmermann at the Museum of Natural Science, Vienna: "Temperature and humidity in termite structures are kept constant by means of a system of ventilation (with the temperature exactly around 1 degree). The air that escapes through the central chimney can be up to 15 degrees warmer and also more humid than the surrounding air. Given appropriate conditions, the escaping air, through effects of condensation, should become visible as vapour. She could not find any references to this phenomenon in scientific publications, possibly, in her mind, due to the fact that biologically it is irrelevant whether the escaping air is visible as vapour or not. But with termite hills being plentiful around in India the phenomenon seems to have been sufficiently well known to serve as an example.

²⁵ VN 4,6f: *anyat tatra samartham, tadabhāvāt tan na bhūtam*.

²⁶ VN 4,3f: *evam hy asyāsandigdham tatkāryatvaṃ samarthitam bhavati*.

absence (of the effect) in the absence of that (cause) would be (nothing but) a fortuitous conformity (*yādṛcchāsaṃvāda*), just like the absence of a date palm that grows in regions where mother marriage is customary in the absence of mother marriage in other regions.”²⁷

What Dharmakīrti says in this paragraph is that mere common absence cannot restrict the relation between a cause and an effect. For anything²⁸ can be absent in the absence of an effect. It is necessary, therefore, to add the condition “even if causes of this (effect) that are different from that (specific cause) and²⁹ (also) capable are present.”³⁰

These different capable causes are all those “other things”, such as firewood, wind, and so on, that necessarily have to be together and in proximity to a fire continuum (i.e. atoms of heat) to constitute the causal complex that can be called “fire” and causes smoke. “Other entities”, then, can be the various ingredients of this causal complex, when they are not in the state of proximity, as well as anything that is completely different from this complex, such as other complexes like a cow, a horse, or an ass. Examples of this kind are not offered by Dharmakīrti, but it seems acceptable to follow Śāntarakṣita in this respect (a cow, a horse and so on, in VNṬ 15,22), or Dharmottara (an ass, in PVinṬ_{Ms} 103a3f).³¹

There are two statements in this paragraph that attest to Dharmakīrti's awareness of the induction problem. First, by saying that the mere formulation “this is not present in the absence of that” leaves the assumed cause's capacity in doubt and allows for the option of another thing to be the cause.³² Secondly, Dharmakīrti adds here a further argument, and that is based on the *prasaṅga* stated in PVSV 22,6 “Were (smoke) not to be effected (by fire), it (could) not even once occur

²⁷ VN 4,5-10: *anyathā kevalaṃ tadabhāve na bhavatīty upadarśane 'nyasyāpi tatrābhāve sandigdham asya sāmāthyam. anyat tatra samartham, tadabhāvāt tan na bhūtam. etannivṛttau punar nivṛttir yādṛcchāsaṃvādaḥ, māṭṛvivāhocitadeśajanmanaḥ piṇḍakharjūrasya deśāntareṣu māṭṛvivāhābhāve 'bhāvavat.*

²⁸ Śāntarakṣita exemplifies by cow, horse, as well as firewood and so on (VNṬ 15,22f).

²⁹ VNṬ 14,10f: *cakāraś cātra luptanirdiṣṭaḥ pratipattavyaḥ – samartheṣu ceti.*

³⁰ VN 4,2f: *satsv api tadanyeṣu samartheṣu taddhetuṣu [...]*

³¹ When Śāntarakṣita also mentions firewood and other constituents of the causal complex called “fire”, he seems to think of these constituents as separate factors not being in proximity to the other factors of the complex.

³² Cf. the last sentence of Tilleman's summary above, which amounts to the same as Dharmakīrti's own words.

on account of that which is not its cause.”³³ For he says no less than that by only admitting the absence of this in the absence of that as being sufficient for establishing a causal relation, even the absence of smoke in the absence of fire would be nothing but fortuitous.

This paragraph of VN 4,5-10 is, then, to be taken as an elaboration of the *prasaṅga* in PVSV 22,6, insofar as it indicates further implications of this *prasaṅga* in order to strengthen its proving force.³⁴

That is also the case when, in the following, Dharmakīrti explains the case of non-justification (*asamarthana*) of a means of proof (*sādhanāṅga*) which amounts to the speaker's defeat (VN 4,14-19). Here, Dharmakīrti makes his point even clearer when he says: “For, if this (relation of cause and effect) is not justified (in the way explained above), the matter that one started (to establish) [namely that a certain entity is the effect of a certain cause] is not established (at all), because that (fact of being the effect of this cause) has not been communicated, even if actually an effect is employed (as logical reason). (This is so) because the presence of that (cause, such as fire) is not necessary in the presence of another entity (such as smoke) the nature of which is not (invariably) related to the presence of that (cause, such as fire) on account of the fact that its being the effect (of that) is not established.”³⁵

³³ See note 8.

³⁴ This elaboration of the *prasaṅga* can be compared to a like elaboration in the *Hetubindu* (HB 20,4-16). My earlier statement that this *prasaṅga* neither occurs in the *Hetubindu* nor in the *Vādanyāya* (Steinkellner 2013: II. 194,196) was overhasty and needs to be modified. It is, indeed, absent in the *Hetubindu*'s first description of the ascertainment of common presence (*anvayaniścaya*) in the case of effect as reason (HB § 3.32), but in HB § 4.22 Dharmakīrti explains in detail why an effect as reason does not deviate from a cause and elaborates on the *prasaṅga* introduced as an integrate part of the proof in the **Hetuprakaraṇa* (cf. Steinkellner 1967, pp. 58f). Also the arguments in VN 4,5-10 and 4,15-19 are evidently taking the *prasaṅga* of PVSV 22,6 into account, since they further extract its implications.

Thus, my description of the contextual conditions of the formulations in Dharmakīrti's late works (*ibid.*: II. 194f), as well as my hypothetical judgement of the lacking of a *prasaṅga* as indicating a setback (*ibid.*: II. 204) need to be revised. I now hold that Dharmakīrti did not (!) change his conception of ascertaining a causal relation, but rather elaborated on the original formulation in his later works in the direction of strengthening this *prasaṅga*.

³⁵ VN 4,15-19: *asamarthite tasmin kāryatvāsiddher arthāntarasya tadbhāvāpratibaddhasvabhāvasya bhāve tadbhāvanīyamābhāvād ārabdhārthāsiddheḥ, vastutaḥ kāryasyāpy upādāne tadapratipādanāt.*

Compared with Dharmakīrti's earlier formulations in the **Hetuprakaraṇa* and the *Pramāṇaviniścaya*, the presentation in the *Vādanyāya* differs only because the context required different presentations.³⁶ In the **Hetuprakaraṇa*, his first work, and in the *Pramāṇaviniścaya*, the formulae answer the question of how one can know that the effect smoke does not deviate from the cause fire.³⁷ In both texts, Dharmakīrti provides a complete proof formulation with a concomitance (*vyāpti*) justified by a *prasaṅga*. In the *Vādanyāya*, Dharmakīrti demonstrates how "effect" as a means of proof (*sādhanāṅga*) is justified. To that purpose he offers the formula quoted above³⁸ as the object or content of the knowledge attained by conditioned perceptions and non-perceptions. Something's being an effect of a certain cause is thereby made certain without doubt.

And both passages of the *Vādanyāya* cited above have been added in elaboration of the original *prasaṅga* in order to strengthen the certainty of the proposed concomitance. Different from the original formulation in the **Hetuprakaraṇa*, they are separately offered because here the original process has also been referred to as separated from the content of the knowledge attained.

To conclude: If there is an oversight in Dharmakīrti's attempt to ascertain a causal relation, such that his assumed solution for the induction problem turns out to be a failure, it has to be admitted that this accusation was built on sand, for the simple reason that the incriminated sentence has to be seen with a view to Dharmakīrti's systemic conception of causality in general, and is, therefore, certainly in need of a different translation.

Even if you may not be convinced by the new interpretation presented, I hope that I was able to convince you at least of the fact that if, on a certain understanding, a statement in Dharmakīrti turns out to be fallacious, the fault may not lie in the interpreted object, but in the interpreter's perception. Methodically speaking, such a case of disconcertion should usually be the first motive for examining the object once again. This is what I did, and this

³⁶ This is also true of the first presentation in the *Hetubindu* (HB 4,7-14 and 4,17-5,1) where the focus is on the ascertainment of common presence (*anvayaniścaya*) and common absence (*vyatirekaniścaya*) respectively, and not primarily on the ascertainment of a causal relation, while the second passage (HB 20,2-17) clearly corresponds to the **Hetuprakaraṇa*-passage in its purpose and, now more elaborated, content.

³⁷ PVSV 21,25f: *katham dhūmo 'gniṃ na vyabhicarātī gamyate*. PVin 2. 85,4: *katham idaṃ gamyate – na dhūmo 'gniṃ vyabhicarātī*. Cf. HB 20,2f: *kasyacit kadācit kutaścīd bhāve 'pi sarvas tādrśas tathāvidhajanmeti kuto 'vasitam*.

³⁸ Note 18.

reconsideration it also shows that there is a lot more to be done by the historian in clarifying Dharmakīrti's thought.

Induction in a modern sense (cf. note 1) is a method to acquire knowledge. This is certainly true for Dharmakīrti as well. There is, however, a certain limitation to drawing induction and the problem into comparison due to the fact that Dharmakīrti deals with it only in connection with the need, within Dignāga's logic, to ascertain the knowledge of the common absence of two properties (*vyatireka*). The problem was already seen by his teacher Īśvarasena who was motivated thereby to increase the number of characteristics of a good logical reason to six instead of the three as asked for by Dignāga.³⁹ By introducing the *prasaṅga* with the purpose of establishing the features of necessity and universality for the concomitance recognized in a specific case, Dharmakīrti seems to have solved for his purpose and historical context the notorious problem of induction which was found to exist in the need to know the common absence of reason and consequent as one of the characteristics of a good logical reason with certainty.

Whether Dharmakīrti also succeeded in working out a solution of the induction problem as such, and if not, where exactly he failed even under the new interpretation presented, are important and certainly interesting remaining questions. But I will roll back this ball with much pleasure and curiosity to the philosophers.



Appendix

Not as a proof for the new interpretation of Dharmakīrti's method presented above, but as supporting evidence from Dharmakīrti's tradition, two aspects in Śāntarakṣita's commentary⁴⁰ on the *Vādanāyāya* may be indicated in addition. I would like to publish a complete translation of this interesting commentary with digressions on a future occasion.

³⁹ On Īśvarasena's *śaḍlakṣaṇo hetu* cf. HB 28,21-35,3 and Steinkellner 1967, pp. 70–78.

⁴⁰ Since the edition by Rāhula Sāṅkṛtyāyana is encumbered with a considerable number of reading and other mistakes, I collated his edition with the copies of the unique Kundeling manuscripts from Patna and Beijing (Steinkellner 2014). With the help of this collation the edition can, hopefully, more easily be read in default a highly desirable critical edition.

The first is of relevance because it definitely reveals Śāntarakṣita's awareness of the induction problem, and the second because it clearly supports my interpretation of the plural *yeṣām* in Dharmakīrti's formula as implying different causal complexes rather than different causes within a single complex.

First of all, Śāntarakṣita is aware of the induction problem. After his explanation of VN 3,18-4,3 which ends with Dharmakīrti's formula (VNT 13,22-14,12), Śāntarakṣita says that this sentence, besides in its meaning, is also engaged in an exclusion (*vyavaccheda*) (VNT 14,12): "It is negated by this (sentence), therefore, that cows, horses and so on, which are also near in place and time to this (fire), are a cause in regard to the production of smoke. For if these, a cow, a horse and so on, were a cause of this (smoke), it would follow that smoke would arise even when fire is gone, since these (cow and so on) are (still) near."⁴¹

Subsequently, Śāntarakṣita refutes additional variations of this option: cows produce smoke in dependence on other causes, such as firewood (VNT 14,15-19), or fire may produce smoke, but cows as well (VNT 14,19-27), or smoke deviates from fire, since it occurs in sleeping rooms in the absence of fire (VNT 14,27-15,18). And Śāntarakṣita concludes this section by stating that a cow, a horse and so on are not the cause of smoke because they have no common absence with it (*vyatirekābhāvataṣyā*) (VNT 15,18).

Moreover, the option that some other entity could be the cause of smoke (VN 4,6f)⁴² is refuted by Śāntarakṣita on two grounds: the absence of smoke in the absence of fire would only be fortuitous (VNT 16,3-14), an argument garbed in his explanation of the same by Dharmakīrti in VN 4,7-10; and a second, that smoke would occur even before any proximity of a fire-complex (VNT 16,15-29).

Secondly, my interpretation of the plural *yeṣām* in Dharmakīrti's initial formula as referring to a plurality of complexes rather than to a plurality of causes within a single complex is also supported in the *Vādanyāyaṭikā* commenting on VN 4,5-8 (words from the VN are bolded):⁴³

⁴¹ VNT 14,12-15: *tad anena gavāśvādīnāṃ taddeśakālasannihitānām api dhūmajananaṃ prati kāraṇatvaṃ niṣiddham. yato yadi te gavāśvādayas tasya kāraṇam bhaveyuh, tadā vyatīte 'py agnau teṣāṃ sannihitavād dhūmotpattiprasaṅgaḥ.*

⁴² NV 4,6f: *anyat tatra samarthanam. tadabhāvāt tan na bhūtam.* This idea reflects PVSV 22,10: *anyahetukatvān nāhetukatvam iti cet.*

⁴³ Except for the first item, all these references are to a section of the VNT where an alternative explanation of VN 4, 2-8 is introduced. I think that Śāntarakṣita has Arcaṭa's understanding of the smoke's cause as agnīndhanādisāmagrī here in mind.

indhanādisāmagrī (VNT 15,16), *agnīndhanādikāraṇakalāpa* (VNT 16,15f), *tadanyeṣu punas tasmād agnyādikāraṇakalāpe* (VNT 16,17f), and *anyeṣu gavāśvādiṣu samartheṣu taddhetuṣv asyāgnyādikāraṇakalāpasyābhāve na bhavati* (VNT 16,18f). *tatkalāpasannidheḥ prāg api* (VNT 16,20), *yathā 'pagateṣv api sarveṣu teṣu tasmīn kalāpe sati bhavaty eva tasya sambhava iti* (VNT 16,24f), *anyathā tasya kalāpasyābhāve na bhavatīty upadarṣane tasyāpi gavāśvādes tatrābhāve sati sandigdham asya kalāpasya sāmāthyam bhavet. yato 'nyad gavāśvādi tatra śaktam, tadabhāvāt tan na bhūtam. etasya kalāpasya nivṛttau nivṛttir yadrchāsāṃvādaḥ* (VNT 16,26-29).

Last not least, already Dharmakīrti speaks of an *agnyādisāmagrī* in several phrases as the cause of smoke in HB § 4.22, and states in conclusion:

tasmāt so 'gnyādisāmagrīviśeṣo yo dhūmajanakah; sa dhūmo yo 'gnyādisāmagrīviśeṣajanita iti (HB 29,6-7).

This is clearly at the basis of the latter's comments on HB 5,9f in HB 45,12-13 and on HB 28,12-29,9 in HB 153,16-160, 12. All this post-Dharmakīrtian development of the analysis and discussion of Dharmakīrti's seminal ideas on how to determine causality remains a task for future research. Except for the Japanese translation by Noriyama Satoru of HB 153,16-160,12 (Noriyama 2004) not much work to my knowledge has been done so far.

Bibliography

Abbreviations, general

AASP	Austrian Academy of Sciences Press (=VÖAW)
ATBS	Arbeitskreis für tibetische und buddhistische Studien, Universität Wien
BKGA	Beiträge zur Kultur- und Geistesgeschichte Asiens
CTPH	China Tibetology Publishing House
CTRC	China Tibetology Research Center
GOS	Gaekwad's Oriental Series
<i>SBET</i>	<i>Studies in the Buddhist Epistemological Tradition</i> . Ernst Steinkellner (ed.). (BKGA 8) VÖAW: Wien 1991
STTAR	Sanskrit Texts from the Tibetan Autonomous Region
VKSKS	Veröffentlichungen der Kommission für Sprachen und Kulturen Südasiens
VÖAW	Verlag der Österreichischen Akademie der Wissenschaften
WSTB	Wiener Studien zur Tibetologie und Buddhismuskunde

Abbreviations, Literature

J	Jñānaśrīmitranibandhāvali (Jñānaśrīmitra) – <i>Jñānaśrīmitranibandhāvali (Buddhist Philosophical Works of Jñānaśrīmitra)</i> . Ed. Anantalal Thakur. (TSWS 5) Patna: Kashi Prasad Jayaswal Research Institute, 1959.
PVSV	Raniero Gnoli, <i>The Pramāṇavārttikam of Dharmakīrti. The first Chapter with the Autocommentary. Text and Critical Notes</i> . Roma: IsMEO 1960.
PVṬ ₁	Pramāṇavārttikaṭīkā (Śākyabuddhi), Kapitel 1 – P 5718, Je 1b-348a8, Ñe 1b-85b2.

- PVSVṬ Pramāṇavārttika(śva)vṛttiṅkā (Kaṛṇakagomin) – Rāhula Sāṅkṛtyāyana, *Ācārya-Dharmakīrteḥ Pramāṇavārttikam (svārthānumānaparicchedaḥ) svopajñāvṛtṭyā, Kaṛṇakagomiviracitayā taṭṭīkayā ca sahitam*. Ilāhābād: Kitāb Mahal, 1943.
- PVin 2 *Dharmakīrti's Pramāṇaviniścaya. Chapters 1 and 2*. Critically ed. Ernst Steinkellner. (STTAR 2) Beijing: CTPH-AASP 2007.
- PVinṬ 2_{Ms} Pramāṇaviniścayaṭīkā (Dharmottara), chapter 2 – photostat copy of the incomplete Sanskrit manuscript in the library of CTRC, Box 1091.
- PVinṬ 2_t Pramāṇaviniścayaṭīkā (Dharmottara), Kapitel 2 – P5727, Dze 196b2-347a8.
- VN Michael Torsten Much, *Dharmakīrtis Vādanyāyaḥ. Teil I. Sanskrit-Text*. (VKSKS 25) Wien: VÖAW, 1991.
- VNṬ *Dharmakīrti's Vādanyāya. With the Commentary of Śāntaraḥṣita*. Ed. Rāhula Sāṅkṛtyāyana. Patna: (Appendix to JBORS 21 and 22), 1935–1936. /r
- VNṬ_{Ms} Copy of the glass negatives at the Bihar Research Society kept at the Niedersächsische Staats- und Universitätsbibliothek in Göttingen (Xc 14/88).
- VNṬ_{MsC} Copy in the library of the China Tibetology Research Center (Box 43/2).
- HB Ernst Steinkellner, *Dharmakīrti's Hetubinduḥ. Teil I. Tibetischer Text und rekonstruierter Sanskrittext*. (VKSKSO 4) Wien: Herrman Böhlau Nachf. 1967.
- HB¹ Hetubinduṭīkā (Arcaṭa) – *Hetubinduṭīkā of Bhaṭṭa Arcaṭa with the sub-commentary entitled Āloka of Durveka Miśra*. Ed. Sukhlalji Sanghavi and Muni Shri Jinavijayaji. (GOS 113) Baroda: Oriental Institute, 1949. /Ṭ

Studies

- Dunne 2004 John D. Dunne, *Foundations of Dharmakīrti's Philosophy*. Boston: Wisdom Publications.
- Gillon 1991 Brendan S. Gillon, Dharmakīrti and the Problem of Induction. In: *SBET*, pp. 53–58.
- Gillon/Hayes 2008 Brendan S. Gillon & Richard P. Hayes, Dharmakīrti on the role of causation in inference as presented in *Pramāṇavārttika Svopajñāvr̥tti* 11-38, *JIPh* 36, pp. 335–404.
- Kajiyama 1963 Yūichi Kajiyama, Trikapañcakacintā. Development of the Buddhist Theory on the Determination of Causality. *Miscellanea Indologica Kiotiensia* 4-5, 1-15.
- La Vallée Poussin 1913 Louis de La Vallée Poussin, *Théorie des douze causes*. Recueil de l'Université de Gand 40.
- Lasic 1999 Horst Lasic, Dharmakīrti and His Successors on the Determination of Causality. In: Shoryu Katsura (ed.), *Dharmakīrti's Thought and Its Impact on Indian and Tibetan Philosophy. Proceedings of the Third International Dharmakīrti Conference Hiroshima, November 4-6, 1997*. (BKGA 32) Wien: VÖAW, pp. 233–242.
- Lasic 2003 Horst Lasic, On the Utilisation of Causality as a Basis of Inference. Dharmakīrti's Statements and Their Interpretation. *JIPh* 31, pp. 185–197.
- Lasic to appear Horst Lasic, What is the effect of what and how can one determine it? In: *Proceedings of the Fifth International Dharmakīrti Conference, Heidelberg, August 25–29, 2014*.
- Noriyama 2004 Satoru Noriyama, Ronkyoitteki ronchū – shosa inshō no kenkyū (2) – Hetubinduṭīkā wayaku kenkyū (pp. 153,15-160,12) (A Study of the kāryahetunirūpaṇa of Hetubinduṭīkā (2) – An Annotated Translation). In: *Studies on Indian Philosophy and Buddhist Thoughts. Volume in Honor of Professor Esho Mikogami*. Kyoto: Nagata-bunsho-do, pp. 493–511.

- Sakai 2012 Masamichi Sakai, Dharmakīrti's Interpretation of the Causlessness of Destruction. *WZKS* 54, 2011–2012, pp. 187–202.
- Stcherbatsky 1930–1932 F. Th. Stcherbatsky, *Buddhist Logic*. 2 vols, (Bibliotheca Buddhica 26) Leningrad [Nachdruck New York: Diver Publications, 1962].
- Steinkellner 1967 Dharmakīrti's Hetubinduḥ. Teil II. Übersetzung und Anmerkungen. (VKSOSO 4) Wien: Hermann Böhlau Nachf.
- Steinkellner 1991 Ernst Steinkellner, The Logic of the *svabhāvahetu* in Dharmakīrti's Vādanyāya. In: *SBET*, pp. 311–324.
- Steinkellner 2013 Ernst Steinkellner, *Dharmakīrtis frühe Logik. Annotierte Übersetzung der logischen Teile von Pramāṇavārttika 1 mit der Vṛtti*. 2 Vols. (Studia Philologica Buddhica, Monograph Series xxix) Tokyo: The International Institute for Buddhist Studies.
- Steinkellner 2014 Ernst Steinkellner, *The Edition of Śāntarakṣita's Vādanyāyaṭīkā Collated with the Kundeling Manuscript*. (WSTB 82) Wien: ATBS.
- Tani 1991 Tadashi Tani, Logic and Time-ness in Dharmakīrti's Philosophy – Hypothetical Negative Reasoning (*prasaṅga*) and Momentary Existence (*kṣaṇikatva*). In: *SBET*, pp. 325–401.
- Tillemans 2004 Tom J. F. Tillemans, Inductiveness, Deductiveness and Examples in Buddhist Logic. In: Shoryu Katsura & Ernst Steinkellner (eds), *The Role of the Example (dṛṣṭānta) in Classical Indian Logic*. (WSTB 58) Wien: ATBS, pp. 251–275.
- Watanabe 2004 Toshikazu Watanabe, On the Problem of the Determination of Causality: *bādhakapramāṇa* and *bheda*. *Hikaku Ronrigaku Kenkyū* 2, pp. 57–61.

LIRI Seminar
Proceedings Series

Edited by

LUMBINI INTERNATIONAL
RESEARCH INSTITUTE

Volume 7



**Logic in Buddhist Scholasticism
From Philosophical, Philological, Historical
and Comparative Perspectives**

Edited by
Gregor Paul

Lumbini International Research Institute
Lumbini 2015