Nothing but Gold. Complexities in Terms of Non-difference and Identity. Part 3. Permanence, Properties Plexuses and Subtleties in Mutual Exclusion

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Abstract This paper investigates Vācaspati Miśra's remarkably complex argumentative architecture in support of non-difference by means of a microsimulation model, the classical gold-crown case. A full range of positions, including instantaneism, transformative continuum, indeterminate common basis reference, difference and non-difference coordination, etc., is put under the scrutiny of the Vācaspati Miśra's dialectic effort. The possibility of coexistence of multiple properties with a single referent is then formally explored. The analysis is carried out in compliance with the 'Navya-Nyāya Formal Language' extensional set-based approach and its non-predicative, and variables free, relational syntax. Repeatable modules and structures of reasoning are identified and designed in the form of hypothesis frameworks, axioms and theorems to allow more accurate inferences, in particular regarding transformation and permanence, together with possible or impossible plexuses of properties. Identity and difference qua mutual absence are thoroughly defined with the aid of these formal tools, which conjointly might cast new light on the heuristic and expressive power of Navya-Nyāya logic, as well as on the theoretical potentialities of the non-dualistic account.

Keywords Transformation · Permanence · Existence · Co-existence · Difference · Non-difference

In the first two parts of the present project (P1&P2), in compliance with 'Navya-Nyāya Formal Language' (NL; cf. Anrò 2022), the necessary logical foundations have been laid down in order to carry out the analysis of the section of Vācaspati Miśra's (VM) *Bhāmātī* (VM-B) that Bhāskaraṛāya, in his *Prakāśa* auto-commentary

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to *Varivasyārahasya*, calls *hātaka-makuṭa-grantha* (‘The golden crown section’; cf. P1. fn.1, 10; and VVR-P 3, 2000, p. 5). The pivotal role played by the notion of coreferentiality (*sāmānādhikarānya*; *N*) in defining the relation of non-difference (*abheda*; $\geq$) has been also shown. This latter, in turn, can never be reduced to equivalence (*tulyatva*; *E*), equality (*samaniyatatva*; *Q*), or identity (*I*), *sensu stricto*. In this third part the issue concerning permanence, transformation and difference is tackled. A new translation of VM-B is proposed and framed with the intention of highlighting its argumentative structure, expanding the logical and onto-gnoseological aspects there implied. NL formulae, for their part, could be considered as a form of translation themselves. The numbering of these formulae will refer to the first two parts of this project. Regarding, on the one hand, the relation between Navya-Nyāya (NN) and NL as hermeneutical devices, and, on the other, the relation between NL and VM’s *vedāntin* account as object of the former, refer to P1 & P2 and (Anrò 2022).

Existence and Temporality (1)

VM opens his reasoning with the claim that there is talk of “two kinds of permanence (*nityatā*): immutable (*kūṭastha*) one and permanence of ‘what transforms’ (*pariṇāmin*)”, just to immediately state that this latter cannot be said to be ultimately real (*pāramārthika*). How and why does VM come to this conclusion? Most importantly, what is its overall purport? VM’s strategy is sharp and lucid. In the hypothesis, he first asks, transformation would take place:

“in which manner [would it do]? In whole (*sarvātman*) or in part (*ekadeśa*)?
[a] In the case of a transformation *in toto*, how [could] it not [generate a] contradiction (*vyāhātī*) with ‘what [this transforming whole is supposed] to be’ (*tattva*) (cf. §2.1)? [b] [Otherwise], in the case of a partial transformation [only], is [this evolving] part distinct (*bhinna*) or non-distinct (*abhinna*) from that [which, on the contrary, *in toto* does not evolve]? If there would be a distinction, how [could] the transformation of that [subject which *in toto* does not evolve and which is distinct from what evolves, be possibly conceived]? When [something] distinct (*anya*) is transforming, [everything else, qua] other (*anya*) [from the former, undoubtedly] does not transform, lest [an undue] ‘over-application’ (*atiprasaṅga*) [of the concept of transformation be erroneously performed] (cf. §2.2.1). Or, given the case of non-distinction, how [to avoid falling back into the situation of] a transformation in whole (cf. [a] and § 2.2.2)?¹

¹ VM-B (2018, p. 72): *pare hi dvayīm nityatām āhuḥ kūṭasthanityatā-pariṇāminityatām ca | [...] pariṇāminityatā hi na pāramārthikī |. [...] tathā hi tatsarvātmanā vā pariṇāmate ekadeśena vā? sarvātmanā pariṇāme katham na tattvavyāhātīḥ? ekadeśapariṇāme vā sa ekadeśas tato bhinno vā abhinno vā? bhinnas cet katham tasya pariṇāmaḥ? na hy anyasmin pariṇāmamāne 'nyaḥ pariṇāmati, atiprasaṅgāt | abhede vā katham na sarvātmanā pariṇāmaḥ?*

For the purpose of clarification of VM's implicit premises, let us first consider the primitive property, *sattā* (*Being*; s_t) as the most comprehensive *genus* (*jāti*).² By the Axiom of Possession (TvN, *Tad-vattva-Nyāya*; cf. P1.§3), 'What is' is forcefully an occurrence of *sattā*, since 'What is not' is conversely different from 'What is [generically] in possession of *Being*': *asat sattāvadbhinna* (NK, p. 102). This perspective assumes tonality of more complexity in considering *existence* (*astitva*) as the relation between *sattā* and temporality (*kālatva*; t_t). Indeed, *what exists* is an occurrence of the *Being* property in relation to time (*kālatvāvacchinna-sattā*: $t_t \neg s_t$), whereas *what does not exist* has no relation with time (*kālatvānavacchinna-sattā*: $\neg (t_t \neg s_t)$). Consequently, a particular qualified cognition (*viśiṣṭa-jñāna*, *V*; P1.§§3-4) such as the following will be generated: $t^1 \neg s^1$, i.e., 'A generic being s^1 (for $s^1 \in |s_t|$ = S) is limited by a particular temporal coordinate t^1 (for $t^1 \in |t_t|$ = T)'. This assertion is assumed to be true due to the fact that s^1 is said to be actually in relation to time t^1 .³ Conversely, the analogous assertion $*t^2 \neg s^1$ is false (*), because s^1 , existing at

² VM himself makes explicit use of the notion of *sattā* a little further on: cf. VM-B (2018, p. 73) and P4.§3. According to VM (cf. *infra* fn. 33) a proper occurrence of *sattā* is *vastu*, 'a being' (cf. also fn. 4), and interestingly also 'a knowable' (cf. NK, p. 728: *vastutvaṃ prameyatvaṃ*). In the Nyāya-Vaiśeṣika theoretical framework, regarding the universal (*jāti*) *sattā* (*Being*) as the most comprehensive generality (*parasamānya*) occurring by inherence (*samavāya*) in substances (*dravya*), qualities (*guṇa*), and actions (*karman*), cf. NK, pp. 944–945: *sattā—dravyaguṇakarmasamavēṭa | iyaṃ ca vaiśeṣikamate parasattā parasamānyam vā ity ucyate dravyaguṇakarma-vṛttiś ceti bodhyam | [...] dravyādi-trika-vartinī sattākhyā jātiḥ iti* |. Regarding the equivalence between *sattā* and *sattva*, cf. NK, p. 946: *sattvam—sattāśabdavadasyārtho 'nusaṃdheyah* |. Cf. also KŚ (1951, p. 18): "Generality is of two kinds—the more comprehensive and the less comprehensive [...]. In common speech *sāmānya* means a common feature; but, in the technical language of Nyāya, it is equivalent to *jāti* and is understood to stand for a generic feature which inheres in all the individuals constituting a class [...]. NK: 1009–1012: *sāmānya*; Potter (1977, pp. 133–135): "[*sāmānya*] universal". Grimes (1996, p. 271): "*sāmānya*—generality; class; universal feature; concept; *genus*". Cf. VS 1.2.7–10 (1923, pp. 43–46). Regarding *jāti*, cf. NK, pp. 291–293; Jha (2001, p. 302): "generic character/universal"; Phillips (2012, p. 165): "universal, natural kind, a property occurring in more than a single instance or locus"; Potter (1977, p. 134): "natural kind"; Ingalls (1951, p. 40): "generic character". In the meaning of 'natural kind' and 'generic character', I adopt here the Latin term '*genus*', for the sake of clarity and brevity.

³ NK: 109: *astitvam—kālasaṃbandhitvam* |; NK, p. 100: *as—(dhatuḥ) kālasaṃbandhaviśeṣah* |; NK, p. 102: *asat—yat kālasāmānyāsaṃbandhi tat* |. Matilal (1968, p. 72 and fn. 4): "The notion of *locus* is extended in later Nyāya to include temporal *locus* as well. A physical body is considered in Navya-Nyāya as having a temporal stretch just as it has a spatial stretch. [...] The portion of time covered by the duration of some physical body may be regarded as 'time' in a secondary sense (*kālopādhi*). [...] Such time segments constitute the temporal span of ordinary objects. Thus, a mango may be green at time t_1 and red at time t_2 , when it is ripe. [...] 'x [the mango] as limited by time t_1 is a locus of y [green colour]' [...] 'x as limited by time t_2 is a locus of $\sim y$ ' [absence of green colour]"; "[...] *utpattikālāvacchinno ghaṭo gandhābhāvavān* ('A pot as limited by its production has no smell'). Also sentences like '*idānīm parvate vahnir nāsti*' ('There is fire at this time on the mountain') are analysed as *etatkālavacchinnaḥ parvate vahnirabhāvavān* ('The mountain as limited by this moment has no fire')". Matilal (1968, p. 43 and fn. 34): "The postulate of temporal *svatva* relation can be justified by the following empirical considerations. Everything occurs in time. Time has thus been conceived as the *locus* of everything in the universe. [...] Our usual practice is to refer to the imposed divisions or calibrations (*upādhi*) of Time, and to connect an entity to one calibration or another", "*janyānām janakaḥ kālo jagatām āśraya mataḥ*, Viśvanātha, *Bhāṣāpariccheda*, verse 45b". TrS (1951, pp. 70–71): "The common-sense view of men connects the concepts of *now* (*idānīm*) with the sun's motion (*sūryaparispanda*), brought into relation with the thing denoted by the word collocated with *idānīm* in expressions like *idānīm ghaṭah*. The sun's motion is directly related only with the sun, such direct relation being *inherence* (*samavāya*) in this case. A jar can be related with the sun's motion only through some indirect relation. [...] The simplest form of indirect relation that may be conceived of in this case is 'contact with the thing which is in contact with

time t^1 , does not exist any longer at time t^2 (i.e., s^1 has no relationship with t^2).⁴ Conceived as proper cases of determined cognition, the reciprocal articulations of these terms may thus give rise to five fundamental alternatives.

First Configuration: A Temporal Being in a Potentially Empty Time (1.1)

According to this first hypothesis, every instance of the Being property (*sattā*) would always occur in time, which, however, does not always concern beings. Therefore, in this case, *sattām kālatvaṃ vyāpnoti*, or ‘Temporality pervades Being’.

*[35] $s_t \neg V^{-1} \perp t_t$

yā sattāvacchedakāvacchinna-viśeṣyatā sā kālatva-nirūpitā; ‘The relational abstract *qualified-ness*, conditioned by *temporality*, is limited by *Being*’; whose purport (*tātparya*, ⁽¹⁾) is: ⁽¹⁾‘*Being* is always qualified by *temporality*; yet, there is a *temporality* independent from *Being*; that is, a sort of empty time’. Iff $|s_t| \subset |V^{-1} \perp t_t|$; i.e., ‘The set Being ($|s_t|=S$) is a subset of What temporality ($|t_t|=T$) qualifies (V)’; in standard notation (s.n.) ($\sim \forall x, \forall y \mid \sim Tx, Sy$) ($\langle x, y \rangle \in V$). Regarding the reasons for its falsity (*), as well as of * [36], *[37] and *[38], see *infra* §2.

Second Configuration: A Temporal Being in a Never-Empty Time (1.2)

In this case, every being is necessarily in time. In parallel, temporality makes sense only if applied to beings. In other words, all beings (here, strictly speaking, existences) are always described in terms of temporality, and time is, likewise, always defined by events concerning those same existences. Indeed, what distinguishes instant t^1 from t^2 ? The fact that in t^1 the state of affairs s^1 is given,

Footnote 3 continued

the intimate substratum of the motion—viz., the sun’ (*svasamavāyisaṃyuktasamyoga*). In this chain of indirect relation, the two extreme ends are the two relata—viz., motion on the one side and jar on the other. [Time is] this intermediate substance that bridges over the gulf between the sun and the jar”. The fact that time (*kāla*) itself is one of the nine substances (*dravya*) of the Nyāya-Vaiśeṣika system, and thus another proper occurrence of the property *sattā*, must not be overlooked; cf., NK, pp. 230–233; TrS (1930, p. 11); Potter (1977, pp. 91–93). Regarding the notion of existence and temporality, see also Halbfass (1992, pp. 205–228).

⁴ Regarding $s^1 \in |s_t|$, note that s_t is the property of ‘Being’, in the meaning of the Greek *ēnai* or the Latin *esse*; s^1 accounts for a ‘being’, respectively *to on* and *ens*, in Greek and Latin. Cf. also the analogous distinction in German between *Sein* (Being) and *Seinden* (being), Heidegger (1977, pp. 7–19). Regarding the definition of *niyatva*, cf. comm. *Padakṛtya* in TrS (2007, p. 21): *dvamsāpratiyogitvaṃ prāgabdhāvāpratiyogitvaṃ vā nityatvaṃ*; ‘permanence is [defined as] not being the counterpositive either of a destruction or of a pre-absence’, that is, beginningless and endless. Nevertheless, I choose here to conduct a more articulate analysis via the different possible relations between *sattā* and *kālatva*. Regarding persistent cognition (*dhārāvāhika-buddhi*; Jha (2001, p. 210): “series of knowledge”; cf. also, TCM, p. 379) of a pot in a time slot according to the *vedāntin* account, and about the perceptibility of time, cf. Dharmarāja (1942, p. 4): *nirūpasyāpi kālasya indriyavedyatvābhyupagamena dhārāvāhikabuddher api pūrvapūrvajñānāviśaya-tattatkaṣaṇa-viśeṣa-viśiṣṭaviśayakatvena na tatrāvṛtyāptiḥ | kiṃ ca siddhānte dhārāvāhikabuddhisthale na jñānabhedah; kiṃ tu yāvat ghaṭasphuraṇaṃ tavad ghaṭākār-āntahkaraṇavṛttir ekaiva, na tu nānā, vṛtteḥ svavirodhivṛtityutpattiparyantaṃ sthāyitvābhyupagamāt | tathā ca tatpratiphalitacaitanyarūpaṃ ghaṭādijñānam api tatra tāvat kālīkam ekam eveti nāvṛtyāptiśaṅkā ’pi |*.

while s^2 is given in t^2 . If time and events are mutually dependent, then nothing permanent exists, since everything is in time; in parallel, there is time only in relation to beings. In this case, there would be a mutual pervasion (*samavyāpti*) between *Being* and *Temporality*: *sattākālatvayoḥ samavyāptiḥ*. Thereby:

*[36] $t_t \Vdash V_{Ls_t}$
yathā yā kālatva-avacchedakāvacchinna-viśeṣaṇatā sā sattā-nirūpitā, tathā yā sattā-avacchedakāvacchinna-viśeṣyatā sā kālatva-nirūpitā; ‘Just like the relational abstract *qualifier-ness*, conditioned by *Being*, is limited by *temporality*’, so the relational abstract *qualified-ness*, conditioned by *temporality*, is limited by *Being*; that is, ⁽¹⁾‘Temporality qualifies some occurrences of *Being*’ and ‘*Being* is qualified by certain temporal determinations’; iff $(t_t \Vdash V_{Ls_t}) \wedge (s_t \Vdash V^{-1}_{Ls_t})$, i.e., $(|t_t| \subseteq |V_{Ls_t}|) \wedge (|s_t| \subseteq |V^{-1}_{Ls_t}|)$; therefore, $(|t_t| = |V_{Ls_t}|) \wedge (|s_t| = |V^{-1}_{Ls_t}|)$, since in general if $A \subseteq B$ and $B \subseteq A$, then $A = B$. In other words, ‘The set *Temporality* is coextensive with What qualifies *Being*’ and ‘The set *Being* is coextensive with What temporality qualifies’. In n.s. $(\forall x, \forall y \mid Tx, Sy) (\langle x, y \rangle \in V)$.

Third Configuration: A Potentially Atemporal Being in Relation with a Potentially Empty Time (1.3)

In this case, combining and widening the first two configurations, there would be existences in time, beings out of time, as well as an empty time without events.

*[37] $t \Vdash V_{Ls_t}$
yathā yā tat-kāla-niṣṭha-viśeṣaṇatā sā sattā-nirūpitā, tathā yā tad-vastu-viśeṣa-niṣṭha-viśeṣyatā sā kālatva-nirūpitā; ‘Just like the relational abstract *qualifier-ness*, conditioned by *Being*, is limited at least by one temporal determination, so the relational abstract *qualified-ness*, conditioned by *temporality*, is limited at least by one occurrence of *Being*’; that is, ⁽¹⁾‘Some temporal determinations qualify some *beings*’; iff $(t \Vdash V_{Ls_t}) \wedge (s \Vdash V^{-1}_{Ls_t})$; i.e., $t \in |V_{Ls_t}| \wedge s \in |V^{-1}_{Ls_t}|$; ergo: $|t_t| \cap |V_{Ls_t}| \neq \emptyset \wedge |s_t| \cap |V^{-1}_{Ls_t}| \neq \emptyset$, ‘The intersection between *Temporality* and *What qualifies Being* is not empty, because there is at least one temporal determination qualifying at least one instance of *Being*’; in parallel, ‘The intersection between *Being* and *What is qualified by temporality* is not empty, since there is at least one *specimen* of *Being* qualified by *temporality*’; in s.n. $(\sim \forall x, \sim \forall y \mid \sim Tx, \sim Sy) (\langle x, y \rangle \in V)$. Regarding the term *vastu*, cf. *supra* fn. 2.

Fourth Configuration: An Atemporal Being and an Always Empty Time (1.4)

The inevitable consequence of a third hypothesis, according to which the two properties *Being* and *temporality* never coincide, would be beings never marked by time and an absurd empty temporality which never concerns ‘what is’, but only ‘what is not’.

*[38] $t_t \Rightarrow \mathfrak{A}^{-1}\mathbf{L}(V_{\mathbf{L}S_t})$

yā atyantābhāvīya-pratīyogitā kālatvāvacchinnā sā viśeṣaṇatā-nirūpitā, saiva viśeṣaṇatā sattā-nirūpitā, tadviparyayaṇa ca; ‘Constant absentee-hood, limited by temporality, is conditioned by qualifier-ness, in turn conditioned by Being’, and vice versa (&vv); iff $|t_t| \cap |V_{\mathbf{L}S_t}| = \emptyset$, ‘The intersection of *Temporality* and *What qualifies Being* is empty’; in s.n. $(\forall x, \forall y \mid Tx, Sy) (\langle x, y \rangle \notin V)$.

Fifth Configuration: A Potentially Atemporal Being in a Never Empty Time (1.5)

In this case, beings qualified and beings not qualified by time are equally possible; conversely, *kālatva* is unavoidably a qualification of *sattā*.

[39] $t_t \neg V_{\mathbf{L}S_t}$

yā kālatvāvacchedakāvacchinna-viśeṣaṇatā sā sattā-nirūpitā; ‘The relational abstract *qualifier-ness*, limited by *temporality*, is conditioned by *Being*’, that is, ⁽ⁱ⁾‘Every occurrence of temporality qualifies some, but not all, beings’; iff $|t_t| \subset |V_{\mathbf{L}S_t}|$, ‘*Temporality* is a subset of *What qualifies Being*’; in s.n. $(\forall x, \sim \forall y \mid Tx, \sim Sy) (\langle x, y \rangle \in V)$.

Defining Permanence (2)

In order to decide which of these mutually exclusive configurations is adequate, the notion of permanence, as the starting point of VM’s reasoning, will be questioned. If a generic being s^l is said to be marked by temporality when it is limited or qualified by time t^l ($t^l \neg s^l$ or $t^l \neg V_{\mathbf{L}S^l}$), then the expression of its permanence must consist, as a first step, in the negation of this assertion; that is, ‘ s^l is not qualified by t^l ’. The target of this negation clearly cannot cover only t^l , but every possible temporal determination; that is, the whole temporal domain (i.e., $(t^1, t^2, \dots, t^n) \in (|t_t| = T)$, or $(\forall x \mid Tx)$). Consequently, the permanence to which VM is alluding has to be assumed as an indefectible being in the three times (*trikāla*; past, present, future). To properly express this quantification in NL, *temporality* (t_t) must therefore appear in *anuyogin* position with respect to the relational abstract *qualifier-ness* (V). The following provisional formula, limited to s^l only, will be then obtained:

[40] $s^l \cdot \mathfrak{A}^{-1}\mathbf{L}(t_t \neg V)$

yā atyantābhāvīya-pratīyogitā tattad-vastu-viśeṣa-niṣṭhā sā viśeṣaṇatā-nirūpitā, saiva viśeṣaṇatā kālatvāvacchinnā; ‘Constant absentee-hood, conditioned by *qualifier-ness*, in turn limited by *temporality*, occurs in an instance of *Being*’; that is, ⁽ⁱ⁾‘A certain being is not qualified or determined by temporality’; iff $|t_t| \cap |V_{\mathbf{L}S^l}| = \emptyset$, since, $s^l \notin |t_t \neg V|$, ‘The intersection between *Temporality* and *What qualifies s^l* is empty’, since, ‘ s^l does not belong to the set *What temporality qualifies*’; in s.n. $(\forall x, \exists y \mid Tx, Sy) (\langle x, y \rangle \notin V)$.

Provisional formula [40] is visibly compatible with *[38], for $(\forall x, \forall y \mid Tx, Sy) (\langle x, y \rangle \notin V)$. Does this compatibility imply that VM straightforwardly means *[38]

here? Not quite. Although at this stage it is still not evident which truth conditions should be accepted, it is crystal clear that hypothesis *[38], expressing a radical separation between the domains Being and Temporality, is far more demanding than [40]. If it is still questionable whether there is a being out of time or faultlessly present in *trikāla*, it is beyond any doubt that innumerable existences are related to *trikāla* in a non-indefectible manner. Therefore, the intersection Being-Temporality cannot be said to be empty; *ergo*, *[38] is false. VM's issue would not even arise without admitting this entanglement, since it exactly faces the puzzling evidence of beings that, in time, appear and disappear, just because they were not, are, and will not be. This opens up two alternative options: it is possible to accept this appearance, while assuming an Instantaneist Hypothesis (I-Hy); or, along the lines of VM's analysis, to opt for the opposite account, claiming that no being may simply appear out of the blue, but it always owes its existence to something else which somehow already exists.⁵ Once the latter alternative is accepted, either an endless causal chain is supposed—what I call C-Hy, Hypothesis of *Continuum*—or a perfectly independent and fully indefectible existence has to be admitted, acknowledging a causal infinite regress as a logical fallacy. I call this latter plexus of basic assumptions, the Hypothesis of Permanence (P-Hy). P-Hy describes permanency in its strongest sense as 'immutability' (*kūṭastha-nityatā*). C-Hy, claiming a 'permanency in transformation' or the 'permanency of what transforms' (*pariṇāmi-nityatā*), implies instead a form of continuity somehow metaphysically lighter and less committing. Nonetheless, every form of instantaneism (I-Hy), conceived as complete absence of continuity, is dismissed by virtue of C-Hy and P-Hy. This implies that only C-Hy and P-Hy will be considered in VM's analysis.

Hypothesis of Continuum. Total Transformation (2.1)

How then to decide between C-Hy and P-Hy? Let the first assumption be the hypothesis of continuity or permanence in transformation (C-Hy). This transformation might concern, in a first case, what transforms in its entirety (*sarvātman*);

⁵ Cf. *Chānd. Up.* 6.2.1-2 (1998, p. 247): 1. «In the beginning, son, this world was simply what is existent [...]. Now, on this point some do say: 'In the beginning this world was simply what is nonexistent [...]. And from what is nonexistent was born what is existent'». 2. «But, son, how can that possibly be?». Regarding, instead, a possible origin from non-Being in the *Upaniṣads*, cf. Halbfass (1992, p. 41 fn. 18), quoting: *Chānd. Up.* 3.19.1; *Br. Up.* 1.2.1; *Tai. Up.* 2.7. For a brief survey of Ratnakīrti's list of attempts to define Being, in the broader context of the philosophical issue regarding Being (cf. fn. 4) in India and not only, see Id. (1992, pp. 24–25). In compliance with the said doxography, in these pages, use will be made of the following definitions of Being, depending on the context: 1) "inherence of (the universal) reality" (*satātmasamāyā*); 2) "being subject to origination, decay and stability" (*utpādavyayadhrāvvyayo-gitva*), 3) "being the domain (and condition) of valid cognition (*pramāṇaviśayatva*)". See also BSBh 1.1.2 (2018, p. 47): *vastuvṛttam api, janmanā labdhasattakasya dharmiṇaḥ sthitipralayaśaṃbhavāt | asyeti pratyakṣādisaṃnidhāpitasya dharmiṇa idamā nirdeśaḥ | śaṣṭhī janmādidharmasāmbandhārthā | yata iti kāraṇanirdeśaḥ*; "The fact as it is, is that it is only when a thing possessing attributes has attained the condition of existence, that preservation and dissolution of the same are possible. The word '*asya*' (in the *sūtra*) indicates the thing possessing attributes, which is established by direct means of knowledge etc. as —this is it. The genitive case (of *asya*) is for showing the relation with the origin, etc. The word '*yataḥ*' indicates by the ablative case the cause (of the origin)", as trans. by Apte in BSBh (1960, p. 10); cf. also: Śāstrī-Raja, in VM-B (1933, p. 121). The dismissal of I-Hy is far from easy; regarding its defence by, e.g., Ratnakīrti, see McDermott (1969, pp. 41–43, 71–72).

that is, completely and without residue. The consequence, VM argues, will inevitably be a contradiction (*vyāhāti*) with “what [this transforming whole is supposed] to be” (*tattva*). Indeed, if s^1 completely transforms into s^2 , the following conditions are necessarily required:

- A. $(s^1, s^2) \in |s_t|$; ‘beings s^1 and s^2 belong to the set *Occurrences of Being* (*sattā*)’, since both are something and not nothing, such as a hare’s horn (*śaśaśṛṅga*);
- B. $(t^1 \Vdash_{\mathcal{L}} s^1) \wedge (t^2 \nVdash_{\mathcal{L}} (V_{\mathcal{L}} s^1))$; because, $s^1 \in |V_{\mathcal{L}} t^1|$, but $s^1 \notin |V_{\mathcal{L}} t^2|$ (i.e., s^1 is qualified by t^1 , but not by t^2 ; in t^2 , s^1 is no more, having fully transformed into s^2);
- C. $(t^2 \Vdash_{\mathcal{L}} s^2) \wedge (t^1 \nVdash_{\mathcal{L}} (V_{\mathcal{L}} s^2))$; because, $s^2 \in |V_{\mathcal{L}} t^2|$, but $s^2 \notin |V_{\mathcal{L}} t^1|$ (i.e., s^2 is qualified by t^2 , but not by t^1 ; in t^1 , s^2 is not yet, s^1 not having transformed into s^2);
- D. $s^1 \neq s^2$; because s^1 has fully transformed, without residue, into s^2 .

Condition D is nonetheless in glaring contradiction with both condition A and, on a more general level, TvN. For a transformation without residue to come about, each and every property must transform, none excluded. Now, s^1 is said, at a minimum, to be (for $s^1 \in |s_t|$). Clearly, the transformation would not be total if this property too would not fully undergo this transformation. It follows that $*s^2$ must not be a being’ (for $*s^2 \notin |s_t|$), which is utterly false, not only because ‘ s^2 is a being’ (for TvN), but also on the transformative account itself, which otherwise would not accomplish the purpose for which it has been invoked, that is, explaining how a being could convert into another one, e.g., how milk may turn into curd. Undermining the continuity linkage, a transformation of the *sarvātman* type violates the very basis of C-Hy and reveals itself as a form of unintentional instantaneism. *Sarvātmapariṇāma* not only allows, but imposes the awkward passage from milk to hare’s horn: *tattvavyāhāti*, in VM’s words (cf. fn. 1). In order to avoid this contradiction, at least the property *sattā* has thus to be maintained throughout the process (condition A: $(s^1, s^2) \in |s_t|$). Therefore, the impossible idea of a transformation *in toto*, without any residue, must be abandoned. Furthermore, also the exclusion of the hypothesis expressed *sub* * [35] and * [36] inevitably follows. Since this first variant of C-Hy is inadmissible, a sort of continuity has to be admitted; thus, it is false that every specimen of *sattā* is always and in every aspect determined by *kālatva*. It is now clearer what the provisional formula [40] has already expressed: $|t_t| \cap |V_{\mathcal{L}} s^1| = \emptyset$, or $(\forall x, \exists y \mid Tx, Sy) (\langle x, y \rangle \notin V)$, which is clearly incompatible with * [35], for $(\sim \forall x, \forall y \mid \sim Tx, Sy) (\langle x, y \rangle \in V)$, and * [36], for $(\forall x, \forall y \mid Tx, Sy) (\langle x, y \rangle \in V)$, because there is at least an instance of *sattā* which is not limited by time.

For the time being, formulae * [37] and [39] are the last two hypothesis still standing. Nevertheless, * [37] $t \Vdash_{\mathcal{L}} V_{\mathcal{L}} s_t$ simultaneously suggests that there is at least one instance of *sattā* free from time determinations, as well as a *temporality* without reference to *Being*. It follows that:

$$* [37_a] \quad t \Vdash_{\mathcal{L}} V_{\mathcal{L}} \bar{s}_t$$

yathā yā tat-kāla-niṣṭha-viśeṣaṇatā sā asattā-nirūpitā, tathā yā tad-avastu-viśeṣa-niṣṭha-viśeṣyatā sā kālatva-nirūpitā; ‘Just as the relational abstract *qualifier-ness*, conditioned by *non-Being* ($\bar{s}_t$), is limited at least by one

temporal determination, so the relational abstract *qualified-ness*, conditioned by *temporality*, is limited at least by one occurrence of *non-Being*'; that is, ⁽¹⁾'Some temporal determinations qualify some *non-beings*'; iff $|t_t| \cap |V_{\overline{L} \overline{s}_t}| \neq \emptyset \wedge |\overline{s}_t| \cap |V^{-1}_{\overline{L} t_t}| \neq \emptyset$ ('The intersection between the extension of the property *temporality* and the set *Qualifiers of non-Being* is not empty, since there is at least one temporal determination qualifying *non-Being*; in parallel, 'The intersection between the extension of the property *non-Being* and the set *What temporality qualifies* is not empty, since there is at least one specimen of *non-Being* qualified by *temporality*); in s.n. ($\sim \forall x, \sim \forall y \mid \sim Tx, \sim \overline{S}y$) ($\langle x, y \rangle \in V$). Regarding the term *avastu*, cf. *supra* fn. 2.

Assertion *[37_a] must necessarily result from *[37]; if not—that is, if temporality would not qualify any specimen of *non-Being* (for $|t_t| \cap |V_{\overline{L} \overline{s}_t}| = \emptyset$)—formula *[37] would then be reducible to [39], for $|t_t| \subseteq |V_{\overline{L} s_t}|$ —that is, there are specimen of *Being* not qualified by *temporality*, but any temporal coordinates of what is not. Consequently, asserting *[37] would necessarily imply, according to its corollary *[37_a], that:

- A. $t^I \supset s^I$, for $s^I \in |s_t|$; i.e., ' s^I is limited by time t^I ';
- B. $t^2 \supset s^2$, for $s^2 \in |\overline{s}_t|$; that is 'A non-being (such as a hare's horn), occurrence of *What is not*, is determined by a temporal coordinate'.

Yet, condition B is a flat nonsense, since at time t^2 there is no such hare's horn that could possibly be qualified by it. *Ergo*, *[37_a] is false because it is false that $|t_t| \cap |V_{\overline{L} \overline{s}_t}| \neq \emptyset$, since only $|t_t| \cap |V_{\overline{L} \overline{s}_t}| = \emptyset$ can be true. It follows that *[37] cannot be true. Consequently, *kālatvaṃ sattā vyāpnoti* (cf. *supra*), as expressed in [39], has proven to be the only option not yet contradicted.

Hypothesis of Continuum. Partial Transformation with Distinction (2.2.1)

If transformation cannot be total (cf. § 2.1), VM suggests, it might be only partial. This means that, once transformation *in toto* has been ruled out, according to the hypothesis of partial transformation (*ekadeśa-pariṇāma*), a single aspect, at the very least, must persist throughout the process. Now, in the case of partial transformation, VM wonders, is the part in evolution distinct or not distinct from the part that, on the contrary, does not evolve? If there is distinction (*bhinnatva*) between the part in transformation and the non-evolving part of that subject in partial transformation, which *in toto* does not evolve, can it be argued that it is that very same non-evolving subject to evolve and not another, since what transforms has been explicitly defined as distinct from what does not?⁶

⁶ Cf. Larson (1988, pp. 164–165): "The term *satkārya* literally means 'existent effect', but in classical Sāṃkhya it implies much more than this literal meaning. The term *satkārya* appears in *Kārikā* IX, and five reasons [*hetu*] are given to explain the phenomenon. (1) Because of the non-productivity of non-being; (2) because of the need for an (appropriate) material cause; (3) because of the impossibility of all things coming from all things; (4) because something can only produce what it is capable of producing; (5) because of the nature of the cause (or, because the effect is non-different from the cause)"; *asadakaraṇād upādānagrahaṇāt sarvasambhavābhāvāt | śaktasya śakyakaraṇāt kāraṇabhāvāc ca satkāryam* || SK 9 (1934, p. 42) ||. Cf. also SK 3, 15, 16 (1934, pp. 14, 71, 76). See also Larson (1988, p. 50): "the sixty

The hypothesis under examination imposes that s^I possesses at least two aspects or parts, say $s^{I(A)}$ and $s^{I(B)}$. Of this two parts, $s^{I(A)}$ does not evolve, whereas $s^{I(B)}$ is the evolving aspect. The unchanging part $s^{I(A)}$ will remain, by definition, at time t^2 identical to what it was at time t^1 . In NL:

$$[41] (t^2 \gamma s^{I(A)}) \cdot I \perp (t^1 \gamma s^I)$$

yā tat-kāla-avacchinna-tadvastv-ekadeśa-niṣṭha-tādātmyatā pūrva-kāla-avacchinna-tad-vastu-nirūpitā; ‘Identity occurs in a single part of a particular being, limited by this particular temporal coordinate and is conditioned by the very same particular being limited by a temporal coordinate preceding the former’; iff $t^1 \neq t^2$ and $(t^2 \gamma s^{I(A)}) \in |I \perp (t^1 \gamma s^I)|$; i.e., $\langle s^I, s^{I(A)} \rangle \in I$ (s^I is identical to $s^{I(A)}$).

The two aspects of s^I , $s^{I(A)}$ and $s^{I(B)}$ have been defined to be distinct (*bhinna*) qua opposite—since, respectively, non-evolving and evolving. How to conceive this distinction? In the light of what precedes (cf. P2.§9), *bheda* might be usefully reinterpreted, *salva veritate*, as a generic negation of the relation of coreferentiality (*sāmānādhikaraṇya*, N). The distinction between $s^{I(A)}$ and $s^{I(B)}$ can therefore be expressed in NL as:

$$[42] (t^2 \gamma s^{I(A)}) \cdot \mathfrak{A}^{-1} \perp (N \perp (t^2 \gamma s^{I(B)}))$$

yā tat-kāla-avacchinna-tad-vastv-ekadeśa-niṣṭha-atyantābhāvīya-pratīyogitā sāmānādhikaraṇyatā-nirūpitā, saiva sāmānādhikaraṇyatā tat-kāla-avacchinna-tad-vastv-ekadeśa-nirūpitā; ‘Constant absentee-hood, conditioned by coreferentiality in turn conditioned by this single part ($s^{I(B)}$) of a particular being (s^I) limited by that temporal coordinate (t^2), occurs in that single part ($s^{I(A)}$) of the [very same] particular being (s^I) limited by the [very same] temporal coordinate (t^2); that is, ⁽ⁱ⁾‘Qua parts of being s^I , $s^{I(A)}$ and $s^{I(B)}$ are, at time t^2 , distinct’; iff $(t^2 \gamma s^{I(A)}) \notin |N \perp (t^2 \gamma s^{I(B)})|$ (i.e., ‘At time t^2 , part $s^{I(A)}$ of being s^I does not belong to the set What is coreferential to part $s^{I(B)}$ of being s^I at time t^2 ’).

Nevertheless, considering both [41] and [42], it necessarily follows:

$$[43] (t^2 \gamma s^I) \cdot \mathfrak{A}^{-1} \perp (N \perp (t^2 \gamma s^{I(B)}))$$

yā tat-kāla-avacchinna-tad-vastu-niṣṭha-atyantābhāvīya-pratīyogitā sāmānādhikaraṇyatā-nirūpitā, saiva sāmānādhikaraṇyatā tat-kāla-avacchinna-tad-vastv-ekadeśa-nirūpitā; ‘Constant absentee-hood, conditioned by coreferentiality, in turn conditioned by this single part ($s^{I(B)}$) of a particular being (s^I) limited by that temporal coordinate (t^2), occurs in that [very same] particular being (s^I) limited by the [very same] temporal coordinate (t^2); that is, ⁽ⁱ⁾‘Being s^I and its own part $s^{I(B)}$ are, at time t^2 , distinct, qua non-coreferential’.

Footnote 6 continued

topics (*śaṣṭhāntra*) [cf. SK 72] which include the ten basic principles dealing with the nature of *puruṣa* and *prakṛti* [...]. Regarding the aforesaid sixties and their first ten, as “radical categories” (*maulīkārthāḥ smṛtā daśa*) (Larson 1988, pp. 135–138), cf. their enumeration by VM himself (VM-T 1896, pp. 113–114).

The reason is that, if $\langle s^I, s^{I(A)} \rangle \in I$ (i.e., s^I and $s^{I(A)}$ are identical; cf. [41]) and $\langle t^2 \neg s^{I(A)} \rangle \notin \mathcal{NL}(t^2 \neg s^{I(B)})$ (i.e., $s^{I(A)}$ and $s^{I(B)}$ are distinct at time t^2 ; cf. [42]), then $\langle t^2 \neg \langle s^I, s^{I(A)} \rangle \in I \rangle \notin \mathcal{NL}(t^2 \neg s^{I(B)})$ (i.e., s^I and its part $s^{I(A)}$ are both distinct, qua identical, from $s^{I(B)}$ at time t^2). Therefore, the transforming part $s^{I(B)}$ turns out to be different, by absence of coreferentiality, from the being which is supposed to transform (i.e., s^I). If the transforming being is a distinct being, then the subject of transformation is not transforming, since another thing is been transformed. VM labels this fallacy as ‘over-application’ (*atiprasaṅga*)⁷ of the concept of transformation, according to which it is first and foremost the subject of transformation to be supposed to transform and not other. It is this clay which may eventually transform into a pot, surely not that horse. By virtue of formulas [41]–[43] the hypothesis of the partial transformation of a distinct aspect also has to be discarded.

Hypothesis of Continuum. Partial Transformation Without Distinction (2.2.2)

Once transformation *in toto* and partial transformation with distinction have both been excluded, it might be the case of a partial transformation without distinction (*abhinna*). Yet, if the evolving and non-evolving parts are non-distinct, how to distinguish one from another? The issue is straightforward and the VM’s discussion the most concise. Either there is a distinction between evolving and non-evolving parts, or there is not. If there is a distinction, then there is nothing but partial transformation with distinction (cf. §2.2.1); if there is no distinction, this new solution simply falls back into the previous case of the transformation *in toto* (cf. §2.1).

Hypothesis of Continuum. Conclusive Refutation (2.3)

VM opens his analysis by laying down the radical alternative between ‘permanency as immutability’ (*kūṭastha-nityatā*; P-Hy) and ‘permanency in transformation’ (*pariṇāmi-nityatā*; C-Hy). The third possibility, impermanency *tout court* (I-Hy), is simply expunged: what is not permanent either is not and never will be, or it owes its existence to what is permanent. In other words, the contrast between permanency and impermanency is only apparent and it has been reduced to the most fundamental one between different forms of permanency. Nevertheless, since permanency in transformation inevitably generates contradictions, all that remains is permanency as immutability of that which, indefectible, never changes.

⁷ NK, p. 7: *atiprasaṅgaḥ*—[1] *ativyāptiḥ* | [2] *prakṛtād anyatra prasaṅganam*. TrS *Dīpikā*, 4 (1951, p. 12): *avyāptiḥ* [...] | *ativyāptiḥ* [...] | [...] *asambhavaḥ* | *etaddūṣaṇatrayarahito dharmo lakṣaṇam* | *sa evāsādhāraṇadharmā ity ucyate* | *lakṣyatāvaccchedakasamanīyatatvam asādhāraṇatvam* |; “A *lakṣaṇa* is a specific feature or *asādhāraṇadharmā*. The term *asādhāraṇadharmā* means that which is free from the three faults of a definition—viz.: over-applicability (*ativyāpti*), partial inapplicability (*avyāpti*) and total inapplicability (*asambhava*)”. Jha (2001, pp. 3, 339): “[*ativyāpti*] The fault called over-application, i.e. existing in the definiendum (*lakṣya*) and also in other than the *definiendum*”. Cf. also NK, pp. 695–698.

Difference and Non-difference. The Accepted Assumptions (3)

Since the possibilities of transformation in whole (§2.1) and in part, with (§2.2.1) or without (§2.2.2) distinction, have been definitely excluded, the subject in transformation paradoxically appears to be at once distinct and non-distinct from itself, according to the perspective from which it is observed (cf. *infra*). Simultaneously, the curd is no more and yet still milk, as well as a bracelet is and is not just gold. In P2 has been argued how, in the case of a golden bracelet, the gold of which the bracelet is made cannot in any manner whatsoever be said equivalent (*E*), equal (*Q*) or identical (*I*) to the bracelet itself. Nonetheless, it is no less true that this specimen of gold and this bracelet, coreferential (*samānādhikaraṇa*) to the former, are nothing but the very same object. This is the reason why they are said to be, *stricto sensu*, non-different (*abhinna*). Reshaping the definition of ‘unit’ as advanced by Gadādhara (1929, p. 167; *eka* as *kaivalya*), non-difference (*abheda*) has been defined in P2.§5 as ‘not being the counterpositive of a difference occurring in another coreferential property’. Regarding the case of a golden bracelet, formula P2.[27] $h.2 \perp m$, by virtue of that counterpositive structure (cf. P2.[34]), will therefore appear as:

$$[44] (((h \cdot N \perp b) \Rightarrow \mathfrak{A}^{-1} \perp (\mathfrak{F}^{-1} \perp b)) \neg N \perp (I))$$

yad atyantābhāvīyapratīyogitā-avacchedakāvacchinna-paryāptitvaṃ tad ekatva-nirūpitam; tatra yaiva atyantābhāvīyapratīyogitā hātaka-niṣṭha-kaṭaka-nirūpitā-sāmānādhikaraṇyatā-avacchedakāvacchinna sā anyonyābhāvīyapratīyogitā-nirūpitā, eṣaiva anyonyābhāvīyapratīyogitā kaṭaka-nirūpitā; tadviparyayeṇa ca; ‘The relational abstract *constant absentee-hood* ($\mathfrak{A}^{-1}$), limited by *coreference-ness* (N), in turn conditioned by a bracelet (b) and occurring in a specimen of gold (h), is conditioned by *mutual absentee-hood* conditioned by the same bracelet, &vv; for a cardinality equal to one’; iff $|h \cdot N \perp b| \notin |\mathfrak{F}^{-1} \perp b|$ (i.e., ‘A specimen of gold coreferential to a bracelet does not belong to the set *What is different from that bracelet*’); that is, $(h \in |N \perp b|) \wedge (|N \perp b| \not\subseteq |\mathfrak{F}^{-1} \perp b|)$ (i.e., ‘A specimen of gold belongs to the set *What is coreferential to a bracelet*’ and ‘The set *What is coreferential to a bracelet* is not a subset of *What is different from that bracelet*’), for $\text{card}\{h, b\} = 1$ (‘The cardinality of the set containing a specimen of gold and a bracelet is equal to one’), and clearly, as a general premise, $h \in (|h| = H), b \in (|b| = B), H \cap B \neq \emptyset$ (respectively: ‘A specimen of gold belongs to the set *What is gold*, extension of the property *gold-ness*’, ‘A bracelet belongs to the set *Bracelets*, extension of the property *bracelet-hood*’, ‘The intersection of the sets *What is gold* and *Bracelets* is not empty’, since at least one golden bracelet exists). Cf. *infra* §8, for a further discussion.

In the words of VM:

Whether that [subject, which is supposed to be in transformation, and which can yet transform neither in whole nor in part] is [said to be, consequently] distinct and non-distinct (*a/bhinna*), then, this will be non-distinct qua cause, and distinct qua effect; just as in the case of bracelets (*kaṭaka*) or other

artifacts (*ādi*), which are non-distinct qua gold, but distinct qua bracelets or other artifacts. Nor [is it correct to say that], by contradiction (*virodha*) between difference and non-difference, it is not [possible] a relation of inherence (*samavāya*) in the very same *locus* (*ekatra*) [of these two aspects—that is, cause and effect, or gold and bracelet].⁸

Indeed, inherence (*samavāya*)—reason for the contextual perception (*pratyaya-hetu*) of coreferential properties—is defined as the relation which occurs between an *inherent* (*samaveta*) and an *inhered* (*samavāyin*) qua indivisible (*ayutasiddha*), as in the examples of the quality and the qualified (a blue pot), the whole and its parts (a pot and its halves), the general kind and the individual (potness and pot), etc.⁹ VM points here to the fact that the peculiar opposition of two distinct properties does not exclude their coreferentiality in singularity (*ekatra*) via inherence. Following VM, if the relation standing between gold and bracelet cannot unquestionably be reduced to reflexive identity *stricto sensu* (*I*; cf. P2 §3), for the time being it stands to reason that it can be described as ‘resembling’ ($\cong$; cf. P2 §4 and fn. 44) with ‘inherence’, as well as somehow consequently admitting a distinctive, structural, although dangerously paradoxical, ‘compatibility with difference’ (*bhedasahiṣṇutva*; cf. P2 fn. 58). And yet, one could ask, how is this bizarre juxtaposition conceivable? And where does it originate from?

Difference and Sources of Knowledge (4)

For our part, where [should] the right conception (*saṃpratyaya*), regarding the opposition (*viruddha*) [between different properties referring to the very same thing, be retraced]? This [opposition] occurs by reason of the [inevitable] ‘obversion’ (*viparyaya*) [operated] by the sources of knowledge (*pramāṇa*). Indeed, just as something is [correctly] understood by means of the [relative] source of knowledge, so is its [proper] condition (*bhāva*), [and not another].

⁸ VM-B (2018, p. 72): *bhinnābhinnam tad iti cet, tathā hi tad eva kāraṇātmanābhinnam, bhinnam ca kāryātmanā, kaṭakādāya ivābhinnā hāṭakātmanā bhinnās ca kaṭakādāyātmanā | na ca bhedābhedayor virodhān naikatra samavāya iti yuktam |*.

⁹ NK, pp. 959–962: *ihedam iti yataḥ kāryakāraṇayoḥ sa samavāyaḥ | tadarthaś ca kāryakāraṇayor avayavāvayavinor yataḥ saṃbandhāt ihedam iti pratyayaḥ sa samavāyaḥ | ayutasiddhānām ādhār-yādhārābhūtānām yaḥ saṃbandhaḥ iha pratyayahetuḥ sa samavāyaḥ iti* (cf. Praśastapāda 1994, p. 86) | [...] *sa ca yathā avayavāvayavinoḥ guṇaguṇinoḥ kriyākriyāvatoḥ jātivyaktyoḥ viśeṣanīyadravyayoś ca saṃbandhaḥ* (cf. TrS 2007, p. 169) | *yathā ghaṭakapālayoḥ saṃbandhaḥ samavāyaḥ | evam anyatrāpi ūhyam | taduktam ghaṭādīnāṃ kapālādau dravyeṣu guṇakarmanōḥ | teṣu jāteś ca saṃbandhaḥ samavāyaḥ prakīrtitaḥ ||* (cf. NSM 1988, p. 130) *iti* | Cf. Matilal (1968, p. 39): “It has been conceived as a permanent relation in the sense that it connects the adjunct to the subjunct in such a way that the adjunct can never occur or exist as separated from the subjunct. It may be noted in this connection that the subjunct of an inherence relation can, however, continue to exist even when the adjunct ceases to exist, i.e., ceases to occur in the subjunct by inherence”. See also, NK, p. 963: *samavāyitvam—samavāyānuuyogitvam | yathā kapāle ghaṭasamavāyitvam guṇakriyayoś ca samavāyitvam dravye* |; NK, p. 963: *samavetam—kasmimścit dravyaguṇakarmātmake vastuni samavāyasambandhena vidhyamānam | yathā mṛdā samavāyēnotpādyam ghaṭātmakam kāryam kapāle samavetam bhavati* |. Thus, $\langle \langle \text{colour, pot} \rangle \in S \rangle = \langle \langle \text{pot, colour} \rangle \in S^{-1} \rangle$; for *samavāya* (‘inherence’, *S*), *samavetatva* (‘inherent-hood’, *S*), *samavāyitva* (‘inhered-hood’, *S*⁻¹).

[Let us consider, for instance, the cognition], ‘This earring is gold’: in [that distinctive] cognitive evidence (*pratyaya*) [which is said at once] syntactical homogeneity and coreferentiality (*sāmānādhikaraṇya*, *N*), both difference and non-difference clearly appear.¹⁰

About what opposition (*viruddha*) is VM talking? Clearly, about the opposition between the properties gold-ness and bracelet-hood, which are certainly not one and the same. Nonetheless, in case of a golden bracelet, there is but one single being, yet considered from different perspectives. The opposition, that is, distinction, between the aforesaid properties is not a cause for contradiction about their coreferentiality. Therefore, to what does VM ascribe this irreducible opposition which, nonetheless, does not apparently generate any contradiction with respect to coreferentiality? To the epistemic process itself, answers VM. Is he possibly alluding to a knowing subject who mistakes mother-of-pearl for silver or a rope for a snake? Not at all. The subject correctly recognises here both the bracelet and the gold of which the former is made. Indeed, this bracelet can be worn, as well as the gold melted and reshaped. On the contrary, the mother-of-pearl mistaken for silver cannot ever be melted, just like a rope cannot bite or produce any effect different from those proper to a rope, such as tying or being mistaken for a snake. Gold and bracelet are here properly known and their presence or condition of existence (*bhāva*) is correctly defined as the result of the knowing processes (*pramāṇa*) of which they are objects (*viśaya*).¹¹

¹⁰ VM-B (2018, p. 72): *viruddham iti naḥ kva saṃpratyayaḥ? yat pramāṇaviparyayaṇa vartate | yat tu yathā pramāṇenāvagamyaṇa tasya tathā bhāva eva | ‘kuṇḍalam idaṃ suvarṇam’ iti sāmānādhikarāṇyapratyaye vyaktam bhedābhedau cakāstaḥ* |. VM here quotes verbatim the Maṇḍana Miśra’s following passage (1937, p. 63): *viruddham iti naḥ kva saṃpratyayaḥ? yat pramāṇaviparyayaṇa vartate | yat tu yathā pramāṇenāvagamyaṇa tasya tathā bhāve viruddhatvābhidhāne kaṃ batāyam āśrītya hetuṃ viruddhatvāviruddhatve vyavasthāpayet? pramāṇaṃ caikasya sāmānyaviśeṣātmakatām avagamayati, vyāvṛtitanuvṛttibhyāṃ prakhyārūpabhedāt aikādhikaraṇyāvagamāc ca (sāmānādhikaraṇyāvagamāc ca; Maṇḍana Miśra—G) | tad idaṃ asāṃpratam, yato nedrśaṃ vipratīṣiddhārthajñānānāṃ pramāṇyaṃ eva yujyate saṃśayañjānavat | anyathā saṃśayaṇiśayo ‘pi dvyaṭmā syāt, dvyaḥbhāsatvāt tasya sāmānādhikarāṇyāc ca tadavabhāsayoḥ* |. Cf. also VM-TS (2006, pp. 92–98). The peculiar lexical choice for *viparyaya* as ‘inversion’ and then ‘obversion’ will be discussed in detail in P4.

¹¹ Cf. BSBh 1.1.2 (2018, p. 47). Regarding the notion of worldly (*vyāvahārika*) truth or veridicality (*pramā*) and pragmatic success (*arthakriyāsāmarthyā*), also in the *vivaraṇa* framework, cf. Prakāśātman (1892, p. 31). According to NN, practical behaviour cannot constitute a proper criterion of definition of *pramā*, but only a logically subsequent verification tool: TCM (2009, p. 220): *na api samartha-pravṛtti-janakānubhavaṭvam | upekṣā-pramāyām avyāpteh | tad-yogyatāyāḥ pramā-nirūpyatvāt* |; “Nor ‘awareness that leads to successful activity’. This would not include those veridical awareness which result in an attitude of indifference (that are not acted upon). Furthermore (this characterization exhibits the fault of ‘self-dependence’ in that) the potentiality here (for successful activity) presupposes veridical awareness”; cf. also Mohanty in TCM (2006, p. 35). It should also be noted that, despite the fact that “Nyāya philosophers [undoubtedly] embrace the correspondence theory of truth or veridicality, [...] [that is], ‘as the object, so the cognition’ [*yathārthatva*]” (Phillips 2012, p. 6), Gaṅgeśa’s account is far more polished: TCM (2009, p. 236): *yatra yad asti tatra tasya anubhavaḥ pramā | tadvati tat-prakāṛakānubhavo vā | yatra yan na asti tatra tasya jñānaṃ tad-a-bhāvavati tat-prakāṛaka-jñānaṃ vā apramā* |; “Veridical awareness is ‘awareness of something there where it is’. Or, ‘awareness with ϕ [*tat*] as predication content about an object that is ϕ . [...] Another translation: veridical awareness is ‘an awareness that ϕ only if ϕ ’, in other words, an awareness that an object is ϕ only if it is indeed ϕ ”. Cf. also Phillips in TCM (2009, p. 237). Regarding the notion of *bhāvavacana*, cf.: MW (p. 754, 3): “signifying a state or action, denoting the abstract notion of a verb”. B (IV, p. 262): “einen Zustand, eine Thätigkeit, den abstracten Verbalbegriff bezeichnend”. Renou (1957, pp. 243–244): “Etat: définissant chez P. [Pāṇ.] V I 119 la

According to TvN, “what possesses the property of being that, is that” (*tadvattvaṃ tad eva*). Consequently, to be the bracelet that it is, a bracelet (*b*) has to be cognized as possessing that particular property which makes it a bracelet and not something else; that is, bracelet-hood (*b_i*). Otherwise, no bracelet would be cognized and the issue raised by VM would have never risen. *Idem* for gold. The determined cognition by means of which bracelet and gold are correctly cognized inevitably and simultaneously opposes them. It is not a matter of perceptual illusion or epistemic dysfunction, since the point is here far more serious. Placing itself to the opposing end of the knowing process and not being possible to grasp it otherwise, in which manner an object (*prameya*) is known via the respective source of knowledge (*pramāṇa*) so it is (*bhāva*). In other terms, the *prameya*’s ontological *status* appears to inevitably depend on the means of knowledge by which the former is known. Therefore, what is correctly known always relies on what I call a ‘refined definition’ (*parīṣkāra-lakṣaṇa*) supplied by a well-conducted knowing process; that is, a definition which thus turns out to be obstinately recurring regardless of how many times the analysis might be repeated. Here, then, is the opposition to which VM alludes. A consolidated epistemological triptych secures the ordered succession of *uddeśa* (the preliminary enunciation or denomination of what has to be known, the *prameya*); *lakṣaṇa* (the definition of the *prameya* by means of a peculiar feature, capable of distinguishing it, *vyāvṛtti*, from all the rest—*tattvavyavacchedaka* or *tattvapariṣchedaka*); and the *parīkṣā* (the examination or assessment, by means of the relative knowledge source or *pramāṇa*, of the appropriateness of the advanced definition to the object under scrutiny).¹² In compliance with this triptych, *lakṣaṇa* cannot but precede the use of knowledge sources, since this use is committed to the endorsement of the former. On the contrary, I here intend to refer to this sort of ‘refined definition’ (*parīṣkāra-lakṣaṇa*), polished, validated, and therefore, having passed the test of *parīkṣā*, somehow conclusive. In this sense, *parīṣkāra-lakṣaṇa* necessarily follows the intervention of *pramāṇas*. At the end of the process of knowing, the *prameya* is revealed to be just what the *pramāṇas* have reported it to be. In the case of the golden bracelet correctly known, the sources of knowledge themselves unify and oppose two distinct properties in the very same *locus*. Therefore: *etat kim?* (‘What’s this?’); *idaṃ kaṭakam* (‘This is a bracelet’); *idaṃ hāṭakam* (‘This is gold’); *idaṃ hāṭaka-kaṭakam* (‘This is a golden bracelet’).

Footnote 11 continued

valeur des suffixes -*va-* *tā-* [...]. Ce qui exprime un état”. Cf. Pāṇ. 5.1.119 (1999, p. 504): *tasya bhāvas tva-tālau*, “The *taddhita* affixes *tva* and *tā* occur to denote *bhāva*, ‘characteristic state’, after a syntactically related nominal stem which ends in *śaṣṭhī*, ‘genitive’ ”.

¹² Cf. Vatsyāyana’s commentary *ad* NS 1.1.3 (2009, p. 266): *trividhā cāśya sātrasya pravṛttiḥ – uddeśo lakṣaṇam parīkṣā ceti | tatra nāmadheyena padārthamātrasya abhidhānam uddeśaḥ | tatra uddiṣṭasya tattvavyavacchedako dharmo lakṣaṇam | lakṣitasya yathālakṣaṇam upapadyate na veti pramāṇair avadharanam parīkṣā |*; “La mise en œuvre du traité a un triple objectif: désigner, caractériser, examiner. L’*uddeśa* ‘désignation’ ou ‘énonciation’ consiste à se référer à la chose simplement par son nom. Le *lakṣaṇa* ‘définition’ ou ‘caractérisation’, c’est le fait de dire la propriété qui distingue l’essence de la chose désignée. La *parīkṣā* ‘investigation’ ou ‘examen’ c’est le fait de déterminer avec les moyens-de-connaissances-droite si, oui ou non, l’entité définie est conforme à sa définition”. Cf. also NK, pp. 155, 488, 695; Jha 2001, pp. 110–111, 262, 339. See also *supra* fn. 7.

Reflexiveness, Mutual Absence and Locus Sharing (5)

In the light of the above, the terms of the question are at once plainly clear and utterly paradoxical. VM does emphasise their puzzling effect by juxtaposing both the extremes of the spectrum in a single comprehensive passage. The formal tools acquired in P1&P2 have fulfilled all the necessary conditions for the detailed analysis of the following passage, while definitely demonstrating the unviability of the evoked, more nuanced, partial solutions.

In case of an absolute (*ātyantika*) non-difference, the undesired outcome (*prasaṅga*) of a double occurrence (*dviravabhāsa*) [is inevitably determined] (cf. §5.1); [whether] an absolute distinction [is instead supposed, then there will be] no coreferentiality (*sāmānādhikaraṇya*) at all, as between a cow and a horse (cf. §5.2). [Moreover], no coreferentiality [can be given in the context of] a relation of *substratum-superstratum* (*ādhāra-ādheya-bhāva*; cf. §5.3.1), or of ‘residing in one locus’ (*ekāśrayatva*; cf. §5.3.2). [Nobody would say that] ‘A jujube (*Ziziphus Jujuba*) is the bowl’, [only on the grounds that the jujube is in that bowl]; as well as, regarding [the two friends] Caitra and Maitra, [who are sitting] on the same bench, that ‘Caitra is Maitra’.¹³

Absolute Reflexive Non-difference (5.1)

VM starts his analysis facing the case of a possible absolute non-difference (*ātyantika-abheda*) ruling the relation between gold and bracelet. Yet, if the relation of absolute non-difference is interpreted as the complete impossibility of distinguishing between the two properties, then this entails their reduction to one and the consequent collapse of *abheda* into a tautological reflexive relation; that is, in the VM’s words, the ‘undesired event of a double appearance’ (*dviravabhāsa-prasaṅga*; cf. P1.§2). Therefore, the cognition ‘*suvarṇam idaṃ kuṇḍalam*’ (‘This earring is gold’) will turn into ‘*kuṇḍalam idaṃ kuṇḍalam*’ or ‘*suvarṇam idaṃ suvarṇam*’ (‘This earring is an earring’ or ‘This gold is gold’). The issue is straightforward: once any possibility of distinguishing between the relata has been negated by hypothesis, ST (Substitutivity Test), LL (Leibniz’s Law), and PII (Principle of Identity of Indiscernibles, although controversial) will find a proper application, and the relation will collapse into identity *tout court*. The impossible reduction of non-difference to identity—discussed in depth in P2.§4—finds here further confirmation.¹⁴ Hereafter, in order to avoid any external reference to the NN

¹³ VM-B (2018, p. 72): *tathā hi ātyantike 'bhede 'nyatarasya dviravabhāsaprasaṅgaḥ | bhede cātyantike na sāmānādhikaraṇyaṃ gavāśvavat | ādhārādheyabhāve ekāśrayatve vā na sāmānādhikaraṇyam, na hi bhavati kuṇḍaṃ badaram iti | nāpy ekāsanasthayoś caitramaitrayoś caitro maitra iti* l. A little further along, VM reaffirms the same concept; VM-B (2018, p. 73): *katham tarhi hema kuṇḍalam iti sāmānādhikaraṇyam iti cet, na hy ādhārādheyabhāve samānāśrayatve vā sāmānādhikaraṇyam ity uktam* l.

¹⁴ Accordingly, it is strictly speaking false that: *‘A bracelet is identical to a specimen of gold’. It follows that only its negation can be true: $h \Rightarrow \neg \mathbf{I}_L(\mathbf{I}^1 Lb)$, that is, *yā hāṭaka-niṣṭha-ātyantābhāvīyapratyogitā sā tādātmyatā-nirūpitā, saiva tādātmyatā kaṭaka-nirūpitā, tadviparyayeṇa ca* ⁽¹⁾ ‘A specimen of gold is the limiter of the constant absence of identity with respect to a bracelet’, or ⁽²⁾ ‘Gold and bracelet are not identical’; iff: a) ($'h \neq b' \wedge (h \neq b)$) (i.e., ‘The terms ‘gold’ and ‘bracelet’ are different and so are

framework, I propose to express a logical function roughly analogous to the one performed by LL through what I call *tādātmīya-kāraṇa-naya* (TKN) or the Identity Reduction Rule: *tādātmye sati satataṃ samānyatatva-ātyantikābhedaṃ anubhātāḥ* ('Given identity, equality and perfect non-difference [in every respect] necessarily follow'). Let *taddharmavattva* (td_t) and *etaddharmavattva* (ed_t) be the generic properties, *being that* and *being this*, for $t \in |td_t|$ and $e \in |ed_t|$ (i.e., ' t , is a specimen of *being that*, and belongs to the set What is that'; the same applies for ed_t). Thereby, it could be stated that:

$$\begin{aligned} &[\text{TKN}] \quad e \cdot N \sqsubset t \\ & \quad (e \cdot ed_t \Rightarrow I \sqsubset t \cdot td_t) \supset \mathbb{N} \sqsubset (I_t) \\ & \quad \therefore ((e \cdot \neg \dot{S} \sqsubset ed_t) \Rightarrow Q \sqsubset (t \cdot \neg \dot{S} \sqsubset td_t)) \wedge (ed_t \Rightarrow \mathbb{A}^{-1} \sqsubset (\mathbb{F}^{-1} \sqsubset td_t)) \end{aligned}$$

*tad etad (bhavati) ity uktvā, tan-niṣṭha-taddharmavattvaitan-niṣṭhaitaddharmavattvayor tādātmyaikatve sati, taddharmavattvaitaddharmavattve samānyata ity taddharmavattvaitaddharmavattve 'bhinna iti cānuvartate'*¹⁵; whose purport is: ⁽¹⁾'If *that* (t) is (N) *this* (e), in the meaning of a relation of identity (I), for a cardinality equal to one [since *that* and *this* are the very same object], then perfect equality (Q) and non-difference ($\mathbb{Z} = \mathbb{A}(t)$), between the property *being that* (td_t) and *being this* (ed_t) occurring in *that* (t) and *this* (e), necessarily follow'; iff:

- A. $\text{card}(N) = 1$; i.e., relation N involves one single object;
- B. $e \in |ed_t| \wedge t \in |td_t|$, for TvN ; viz., *this* and *that* are proper occurrences of the generic properties *being this* and *being that*, lest they be not what they are;
- C. $\langle e, t \rangle \in I$; that is, '*This* and *that* are identical';
- D. ' $e = t$ ', for $(|ed_t| = \text{ED}) = (|td_t| = \text{TD})$; i.e., the generic properties *being that* and *being this* are coextensive or, in other words, the same property (as in the case of: *sāsnādimatī gauḥ*, 'A cow or the [animal] possessing dewlap, etc.>'; cf. P2.§2); therefore, the terms by means of which these coextensive properties are expressed are reciprocally interchangeable (e.g., *sāsnādimatī gauḥ* or *gaur gauḥ*);

Footnote 14 continued

their denotations'; b) $h \in (|h_t| = H) \wedge b \in (|b_t| = B) \wedge H \neq B$ (respectively: 'A specimen of gold belongs to the set Gold'; 'A bracelet belongs to the set Bracelets'; 'Gold and Bracelets are not the same set'); c) $\langle h, b \rangle \notin I$ (i.e., ' h and b are not identical', consequently they cannot pass the ST).

¹⁵ It should be noted here that, in general, I is Q *arthataḥ*, while Q is I *śabdataḥ* (respectively, 'from an extensional' and 'from a linguistic point of view'; cf. P2.§2-3), and $I \sqsubset \mathbb{Z}$. In the above formulae, $\dot{S}$ stands for *śakyatā* ('primary meaningfulness'; cf. P2.§2). Moreover, for the sake of simplicity, the TKN formulation is visibly read in short form. Its complete Sanskrit reading would instead reads as follows: *yadi yā etanniṣṭha-sāmānādhikaraṇyatā sā tannirūpitā, yadi ca yat tādātmyatā-avacchedakāvacchinna-paryāptitvaṃ tad ekatva-nirūpitam, saivaitanniṣṭhaitaddharmavattva-avacchedakāvacchinna-tādātmyatā tanniṣṭha-taddharmavattva-nirūpitā, tadviparyayeṇa ca, tarhi yad etat-pada-avacchinna-taddharmavattva-nirūpitā-śakyatā-avacchedakāvacchinna-samānyatatvaṃ tat tat-pada-avacchinna-śakyatā-nirūpitam, eṣaiva śakyatā taddharmavattva-nirūpitā, tadviparyayeṇa ca, punaś ca yaitaddharmavattva-avacchedakāvacchinna-ātyantābhāvīya-pratīyogitā sā anyonyābhāvīyapratīyogitā-nirūpitā, saiva anyonyābhāvīyapratīyogitā taddharmavattva-nirūpitā, tadviparyayeṇa ca.*

- E. *dviravabhāsa-prasaṅgābhavaḥ*; that is, ‘The undesired event of a double appearance does not occur’; in standard logic terms, all the expressions pass the Substitutivity Test, since the said double occurrence of a term does not affect the expression’s truth values and its overall meaning.¹⁶

If it is true that the bracelet is gold or non-different from gold (cf. [44]), TKN definitely shows, on the contrary, how it is utterly false to say that the bracelet is *stricto sensu* identical to gold, since bracelet-hood and gold-ness are beyond any doubt not coextensive. The proper expression of the relation standing between these properties is, instead, a formula conveying the non-empty intersection between two sets (cf. *infra*, §5.2, [45_a] and fn. 17).

Mutual Exclusion and Coreference Rule (DSN) (5.2)

As a second step, VM excludes by contradiction the hypothesis of difference (*bheda*) qua ‘mutual exclusion’ (*anyonyābhāva*; 𑂔) between properties reciprocally distinct (*bhinna*). If there were mutual exclusion, there would not be any coreferentiality between *gold-ness* and *bracelet-hood*, just as in the case of *cow-hood* and *horse-hood*. Yet, this is clearly not the case. Formula [44]—true for $h \in \mathcal{N}_{\text{Lb}}$; i.e., ‘A specimen of gold belongs to the set *What is coreferential to a bracelet*’—asserts that *gold-ness* and *bracelet-hood* are coreferential, at least in one case: the golden bracelet under exam. In general terms and via *reductio ad absurdum*, let us prove by means of what I call *Dharma-Sāmānādhikaraṇya-Naya* (DSN; Properties Coreference Rule) that if two properties are coreferential at least in one case, they cannot be said to be mutually absent.

In the assertion ‘*tad etad bhavati*’ (i.e., ‘That is this’ or ‘*t* is *e*’), a single case of coreference (*N*) is premised:

[45] $t \cdot \mathcal{N}_{\text{L}} e$

yā tan-niṣṭha-sāmānādhikaraṇyatā saitad-nirūpitā; that is, ⁽¹⁾‘*t* and *e* are coreferential’; iff:

- A. $e \in (|ed_t| = \text{ED})$; for TvN , ‘*e* belongs to set ED, extension of the property ed_t (lest *e* not be *e*)’. Ergo: $e = e \cdot ed_t$; that is, *etanniṣṭham etaddharmavattvam* (‘Property *e*-hood occurs in *e*’).
- B. Regarding *t*, ditto;
- C. $t \in |\mathcal{N}_{\text{L}}e|$, i.e., ‘That (*t*) belongs to set *What is coreferential to this (e)*’.

Let us now analyse, in compliance with the truth conditions of [45] which only imposes at least one case of coreferentiality, the least onerous possible relation standing between the properties td_t and ed_t through the application of the operator ‘*yathā-tathā*’ (‘just like-so’, 𑂔; cf. Anrò 2022: §4.3), capable of expressing a non-empty intersection between two sets:

¹⁶ Alternatively, by *modus ponens* and with reference to P2.§4-5: $((I \rightarrow Q) \subseteq (\exists \subseteq \mathcal{N})) \wedge I \vdash (Q \subseteq (\exists \subseteq \mathcal{N}))$; that is, whether ‘If Identity (*I*) then Equality (*Q*), since *I* is *Q arthataḥ*, while *Q* is *I śabdataḥ* (P2.§2-3. [22]-[26]), and *I* and *Q* are particular cases of Non-difference ($\exists$), which is a particular case of coreference (*N*)’ and ‘There is Identity’, then ‘There are Equality and Non-difference’. In general: $a \in A \wedge A \subseteq B \vdash a \in B$.

[45_a] $t \Downarrow N \sqsubset ed_t$

yathā yā sāmānādhikaraṇyatā tanniṣṭhā saitaddharmavattva-nirūpitā, tathā yā viparīta-sāmānādhikaraṇyataitanniṣṭhā sā taddharmavattva-nirūpitā; that is, ⁽ⁱ⁾‘Just like at least one occurrence of the property td_t is coreferential to ed_t , so at least one occurrence of the property td_t is coreferential to ed_t ’; iff $(t.N \sqsubset ed_t) \wedge (e.N^{-1} \sqsubset td_t)$; i.e., $t \in |N \sqsubset ed_t| \wedge e \in |N^{-1} \sqsubset td_t|$; ergo: $(|td_t| \cap |N \sqsubset ed_t| \neq \emptyset) \wedge (|ed_t| \cap |N^{-1} \sqsubset td_t| \neq \emptyset)$; i.e., ‘The intersection of the sets $|td_t|$ and *What is coreferential to the property ed_t* is not empty’ or, roughly speaking, ‘There is at least one t which is e ’; moreover, ‘The intersection of the sets $|ed_t|$ and *What is inversely coreferential to the property td_t* is not empty’; that is, ‘There is at least one e which is t ’; or $T \cap E \neq \emptyset$ (for $|td_t|=T$ and $|ed_t|=E$); in s.n. $(\sim \forall x, \sim \forall y \mid \sim TDx, \sim EDy) (\langle x, y \rangle \in N)$.

For instance, there are undoubtedly golden bracelets, yet not every bracelet is golden and gold is not always a bracelet.¹⁷ Despite the above, the mutual absence (*anyonyābhāva*, †; here again expressed as: $\mathfrak{A}^{-1} \sqsubset \Gamma^{-1}$, cf. P2.§3) between the properties td_t and ed_t be forcibly imposed:

*[45_b] $td_t \rightleftharpoons \mathfrak{A}^{-1} \sqsubset (\Gamma^{-1} \sqsubset ed_t)$

yā taddharmavattva-avacchedakāvacchinna-atyantābhāvīya-pratiyogitā sā tādātmyatā-nirūpitā, saiva tādātmyatāitaddharmavattva-nirūpitā, tad-viparyayeṇa ca; ‘Constant absentee-hood, limited by the property *being that*, is conditioned by mutual absentee-hood, in turn conditioned by the property *being this*, &vv’; that is, ⁽ⁱ⁾‘Properties td_t and ed_t are completely distinct or mutually exclusive, since where there is the former, the latter is always absent, &vv’; iff $|td_t| \cap |\Gamma^{-1} \sqsubset ed_t| = \emptyset$, in other words, $TD \cap ED = \emptyset$ (i.e., the intersection between the sets *Extension of property td_t* and *Extension of property ed_t* is empty); in s.n. $(\forall x, \forall y \mid TDx, EDy) (\langle x, y \rangle \notin N)$ (for $I \sqsubset N$, cf. P2.§5).

According to the NL syntax rules (cf. Anrò 2022, §5), a complex ‘consideration’ (*parāmarśa*; Bhattacharyya, 1987, pp. 178–182) can now be built by substitution, combining *[45_b] with [45_a]:

*[45_c] $(t \Downarrow N \sqsubset ed_t) \rightleftharpoons \mathfrak{A}^{-1} \sqsubset (\Gamma^{-1} \sqsubset (t \Downarrow N \sqsubset ed_t))$

whose purport is ⁽ⁱ⁾*‘Property td_t , which in its occurrence t is coreferential to ed_t , is completely distinct or mutually absent with respect to property ed_t , which in its occurrence e is coreferential to td_t ’; iff $TD \cap ED \neq \emptyset$ (for [45_a]) and $TD \cap ED = \emptyset$ (for *[46_b]); that is, *‘The intersection between the sets *Extension of property td_t* and *Extension of property ed_t* is both not empty and empty’.

¹⁷ Formally: $h \Downarrow |N \sqsubset b_t| yathā yā hāṭaka-niṣṭha-sāmānādhikaraṇyatā sā kaṭakatva-nirūpitā, tathā yā kaṭaka-niṣṭha-viparīta-sāmānādhikaraṇyatā sā hāṭakatva-nirūpitā$; ⁽ⁱ⁾‘Just as at least one bracelet is golden, so at least one specimen of gold is a bracelet’; iff: $(h.N \sqsubset b_t) \wedge (b.N^{-1} \sqsubset h_t) \leftrightarrow h \in (|h_t|=H) \wedge b \in (|b_t|=B) \wedge h \in |N \sqsubset b_t| \wedge b \in |N^{-1} \sqsubset h_t|$ (i.e., ‘A specimen of gold belongs to the set *What is coreferential to certain bracelets*’, as well as ‘A bracelet belongs to the set *What is coreferential to certain specimen of gold*’) $\div (|h_t| \cap |N \sqsubset b_t| \neq \emptyset \wedge |b_t| \cap |N^{-1} \sqsubset h_t| \neq \emptyset) = ((H \cap B) \neq \emptyset)$ (it follows that the intersection between the extensions of the properties gold-ness and bracelet-hood is not empty); in s.n., $(\sim \forall x, \sim \forall y \mid \sim Hx, \sim By) (\langle x, y \rangle \in N)$.

Formula *[45_c] is a downright contradiction in terms, violating the reciprocal semantical compatibility (*yogvatā*) of its own components; therefore, *[45_c] is always false ($\perp$).¹⁸ In general, it can now be stated:

$$\text{DSN } (t \cdot N \perp e) \wedge (td_t \Rightarrow \bar{A}^{-1} \perp (I^{-1} \perp ed_t)) \rightarrow \perp \\ \therefore td_t \Rightarrow \bar{A}^{-1} \perp (\bar{A}^{-1} \perp (I^{-1} \perp ed_t))$$

tan-niṣṭha-sāmānādhikaraṇyatāyām etan-nirūpitāyām satyām yadi yā taddharmavattva-avacchedakāvacchinna-atyantābhāvīya-pratīyogitā sā tādātmyatā-nirūpitā, saiva tādātmyatāitaddharmavattva-nirūpitā tadviparyayeṇa ca, tarhi virodhaḥ sambhavati; tataḥ pratīyogitā-a-bhāvaḥ; whose purport is: ^(t)‘Given the coreference between *this* and *that*, the mutual absence between the relative properties is no more possible and its assertion is always false ($\perp$). Therefore ($\therefore$), only the negation of this negation can be true’.¹⁹

In conclusion, by virtue of DSN, whenever the coreferentiality between two occurrences of non-coextensive properties is premised, then it is always impossible to interpret the mutual distinction between these properties qua constant mutual absence (*atyanta-anyonyābhāva*).

The Fruit is Not the Bowl and the Bench of Caitra and Maitra (5.3.1)

Having excluded both the interpretations of coreferentiality (*N*) as identity (*I*; cf. §5.1) and mutual absence (*z*; cf. §5.2), VM now clears the ground from possible misinterpretations in terms of *ādhāra-ādheya-bhāva* (*L*). I call it ‘Hypothesis of *substratum-superstratum*’ (*L-Hy*). Let us first consider the classical relational paradigm of *substratum-superstratum* (*L*)—‘A pot (*p*) on the ground (*g*)’, as clearly distinct objects connected by contact:

[46] ($g \cdot L \perp p$)²⁰ $\text{NL}(2)$
yad āśrayatā-avacchedakāvacchinna-paryāptitvaṃ tad dvitva-nirūpitam; yaiva bhūtala-niṣṭha-āśrayatā sā ghaṭa-nirūpitā; ‘The relational abstract *locus-hood*, limited by the ground, is conditioned by a pot, for $\text{card}(L) = 2$ ’; iff $g \in |L \perp p| \wedge G \cap P \neq \emptyset \wedge \text{card}(L) = 2$ (respectively, ‘A certain ground belongs to the set *Loci of a pot*’; ‘The intersection between the sets *Grounds* and *Pots* is empty’, since grounds which are also pots do not exist; for the same reason, their cardinality is equal to two; that is, that ground plus one pot); in s.n. ($\exists x, \exists y \mid Gx, Py$) ($\langle x, y \rangle \in L$).

¹⁸ Cf. NK, p. 675; Jha (2001, pp. 331–332): “compatibility, one of the factors facilitating understanding of sentence meaning”; Phillips (2012: 90–91, 103): “semantic fitness”.

¹⁹ Regarding *reductio ad absurdum*, see Whitehead–Russell (1910, p. 104): “2.01. $\vdash: p \supset \sim p. \therefore \sim p$ This proposition states that, if *p* implies its own falsehood, then *p* is false”; Lee (1973, p. 385, n. 1): “Briefly, the technique is that where $\sim q$ is the conclusion to be derived, one assumes $\sim q$, derives $r \cdot \sim r$ from $\sim q$ and the premises, and then derives *q* from $r \cdot \sim r$ [...]”. Cf. also Phillips (2012, p. 167): “*prasaṅga*: dialectical difficulty, [...] such as contradiction or infinite regress”. On double negation in Nyāya, see Guha (1979, pp. 207–208) and Shaw (1987). Note the introduction of the second level relational abstract ‘ $\bar{A}^{-1}$ ’; for the relative discussion, see fn. 23.

Yet, premise [44] $((h.N \subseteq b) \Rightarrow \neg \mathbb{N} \subseteq (F^1 \subseteq b)) \neg \mathbb{N} \subseteq (I)$ must be reaffirmed, for $h \in \mathbb{N} \subseteq b$, $\mathbb{N} \cap h \neq \emptyset$, and $\text{card}\{h, b\} = 1$ (i.e., ‘A specimen of gold belongs to the set *What is coreferential to a bracelet*’; ‘The intersection of the sets *What is gold* and *Bracelets* is not empty’; ‘The cardinality of the set containing a specimen of gold and a bracelet is equal to one’). It clearly follows that $\mathbb{N} \neq L$; that is, ‘The relation of coreferentiality is completely different from the relation of *substratum-superstratum*, since they do not share any common pairs’ (cf. P2.§4 and fn. 44). Therefore, L is never a valid interpretation of $\mathbb{N}$, being a special case of *contact* (*saṃyoga-sambandha*; M): for $(\mathbb{N} \neq (L \subseteq M)) \subseteq V$. If ‘There is a pot on the ground’ (*bhūtaḥ ghaṭaḥ*; $L^{(M)}$ or L qua M), that does not imply that ‘The pot is the ground’ (**bhūtaḥ ghaṭaḥ*; $\mathbb{N}$), just as, if there is a jujube in a bowl, it does not follow that the jujube is the bowl.²⁰ Also appealing to a possible ‘relation of sharing by contact the same basis’ (*ekāśraya-saṃyoga-sambandha*; ${}_IL^{(M)}$) for a cardinality greater than one ($\text{card}({}_IL^{(M)}) \geq 2$) will be of no avail in this regard. In the words of VM, if Caitra and Maitra sit on the same bench (for $\text{card}({}_IL^{(M)})=3$), this does not either turn Caitra into Maitra, or even less the two friends into their bench.²¹

Mysterious Indeterminate Variables (5.3.2)

A second variant of this last hypothesis is subtler. Indeed, it could be objected that distinct properties might possibly share a single *locus* (*eka-āśraya*) not via contact (*saṃyoga*) and for an imposed cardinality equal to one ($\text{card}({}_IL) = 1$), solving in this manner the contradiction between their utter distinction and their joint manifestation. I call it, ‘Hypothesis of sharing a sole *locus*’ (1L-Hy). For instance, properties *gold-ness* and *bracelet-hood*, properly conceived in their distinctions and prerogatives, might occur in a further basis, *locus*, receptacle, or *sub-ject* (etymologically). This formulation, not unintentionally, displays many similarities with that which is commonly expressed in standard notation: $(\exists x \mid Hx \wedge Bx)$; that is,

²⁰ Cf. P1.§2 and fn. 14. Regarding the relation of contact (*saṃyoga*), cf. NK, p. 924; TrS (1951, p. 94): *saṃyuktavyavahārahetuḥ saṃyogaḥ | sarvadravyavyavṛttiḥ ||*; “Contact is the special cause of expressions such as ‘these are in contact with each other’. It is found in all the substances”; Guha (1979, pp. 43–44): “*Saṃyoga* or contact is an occurrence-exacting relation. It is a quality (*guṇa*) and it is supposed to exist in more than one substance (*dravya*) through the relation of inherence (*samavāya*)”; italics are mine.

²¹ Therefore, the ‘relation of sharing by contact the same basis’ (*ekāśraya-saṃyoga-sambandha*; ${}_IL^{(M)}$, for $\text{card}({}_IL) \geq 2$), is indistinguishable from the relation of ‘*substratum-superstratum*’ (*ādhāra-ādheya-bhāva*; L); that is, ${}_IL^{(M)} \subseteq L$. Moreover, relation ${}_IL^{(M)}$, qua contact and for $\text{card}({}_IL^{(M)})=3$ (e.g., Caitra, Maitra, and the bench), is also a clear case of *avyāpya-vṛtti*, or “non pervaded occurrence” (Jha 2001, p. 68). Cf. NK, p. 99: *avyāpyavṛttitvaṃ svātyantābhāva-samānādhikaraṇam*; Ingalls (1951, pp. 73–74): “A relation is said to be of incomplete occurrence (*avyāpya-vṛtti*) if it is a relation such that x occurs in only part of y . Contact, and the absence of an entity by contact, are the only relations of this sort that will concern us”; Guha (1979, p. 43): “[Contact or *saṃyoga*] is generally known as a relation of incomplete occurrence (*avyāpya-vṛtti*), because when a contact takes place between two substances (*dravya*), it occurs only in a part of them, if of course, the two substances have parts”. For instance, a monkey can only sit on a portion of a branch, and not on the whole tree: *eka-śākhā-avacchedena kapi-vṛkṣa-saṃyogaḥ*; regarding definition and example cf., among the many, NK, p. 84: [*ga*]—*avacchedakatva*; and Ingalls (1951, p. 74): “The *naiyāyikas* recognize that ‘limitor’ here has a different sense [...]. They gloss it by ‘*sīmā-paricchedaka*’—delimitor of the (physical) boundary. In this sense, the locus (e.g., branch) of a locus (e.g., tree) of an entity (e.g., contact with monkey) may limit that entity”.

there is an unspecified variable x , acting in the capacity of *sub-ject* or ontological basis, able to collect a series of distinct properties, such as *being gold* and *being a bracelet*. Despite the Nāgārjuna's *ante litteram* confutations, the general strategy is thus, first, to summon up a “bare particular” in order to subsequently attribute to it a collection of properties in coordination.²² On that premise, VM asks, how to interpret this attribution of properties to a generic common basis?

Let us suppose the intervention of a common indeterminate basis ‘ a ’ (*anirñīta-sādhārana-āśraya*) being the middle term between two distinct *relata* (here, *being gold* and *being bracelet*) via the ‘relation of sharing the same basis’ (*ekāśraya-sambandha*; ${}_1L$):

[47_a] $a \cdot {}_1L \sqsubset h_t$
 $yā \text{ ekāśrayatā } anirñīta-sādhārana-āśraya-niṣṭhā \text{ sā } hāṭakatva-nirūpitā;$
⁽ⁱ⁾ ‘Gold-ness occurs on/in a sole, common, indeterminate basis or *sub-ject*’;
 iff $a \in |{}_1L \sqsubset h_t|$ (i.e., ‘The indeterminate, single, basis a belongs to the set *What on/in which, qua sole basis, at least one instance of gold-ness occurs*).

In parallel, being a , the common indeterminate sole basis of a bracelet too, according to 1L-Hy it must similarly be affirmed that:

[47_b] $a \cdot {}_1L \sqsubset b_t$
 $yā \text{ ekāśrayatā } anirñīta-sādhārana-āśraya-niṣṭhā \text{ sā } kaṭakatva-nirūpitā;$
⁽ⁱ⁾ ‘Bracelet-hood occurs on/in a sole, common, indeterminate basis or *sub-ject*’; iff $a \in |{}_1L \sqsubset b_t|$ (i.e., ‘The one and only indeterminate basis a belongs to the set *What on/in which, qua sole basis, at least one instance of bracelet-hood occurs*).

Composing, by substitution, [47_a] and [47_b] in a complex judgment (*parāmarśa*), the result would then be:

[47_c] $(a \cdot {}_1L_t \sqsubset h_t)^\top {}_1L \sqsubset b_t$
 $yā \text{ ekāśrayatātvā-avacchedakāvacchinna-ekāśrayatā } sā \text{ kaṭakatva-nirūpitā;}$
 $tad \text{ evaikaśrayatātvam } anirñīta-sādhārana-āśraya-niṣṭham \text{ hāṭakatva-nirūpi-}$
 $taṃ \text{ ca;}$ ‘The relational abstract *being a common locus* (${}_1L$), conditioned by bracelet-hood (b_t), is limited by the [same] relational abstract *being a common locus*, conditioned by gold-ness (h_t), which in turn occurs on/in a sole, common, indeterminate basis or *sub-ject* (a)’; that is, ⁽ⁱ⁾ ‘Bracelet-hood occurs on/in an indeterminate single basis, which is the very same basis on/in which also gold-ness occurs’; iff $(a \in |{}_1L_t \sqsubset h_t|) \subseteq (|{}_1L \sqsubset b_t|)$ (i.e., ‘The basis a belongs to the set *What on/in which, qua sole basis, at least one instance of gold-ness occurs*; the latter is in turn a subset of *What on/in which, qua sole basis, at least one instance of bracelet-hood occurs*’).²³

²² Nāgārjuna (1999, p. 119): 2.3. *gamyamānasya gamanaṃ katham nāmopapatsyate | gamyamānaṃ hy agamaṇaṃ yadā naivopapadyate*; “How is it possible the movement of the moving? Since the non-movement of the moving is not possible” (trans. is mine). I follow here Phillips (1997, p. 19).

²³ The introduction of the relational abstract *ekāśrayatātvā* (${}_1L_t$)—a second level abstract, derived from *ekāśrayatā* (${}_1L$)—is to be noted. Regarding the *naiyāyika* technique of double abstraction, cf. Ingalls (1951, p. 45): “A double abstraction [...], e.g. *father-ness-ness*”. The double abstract—preventing the

Now, which truth values should be attributed to [47_c]? As the sole alternative (cf. §.5.3.1), the cardinality of the relation of ‘sharing the same basis’ (${}_IL$) has to be hypothesized as strictly equal to one ($\text{card}({}_IL) = 1$):

$$[47_a] ((a \cdot {}_IL_i \sqsubset h)^\top {}_IL \sqsubset b) \neg \mathbb{N}_L(I_i)$$

yat paryāptitvam ekāśrayatā-avacchedakāvacchinnaṃ tad ekatva-nirūpitam; saivaikāśrayatā-avacchedakāvacchinnaikāśrayatā hāṭaka-nirūpitā; tad eva avacchedakaikāśrayatāṇām anirṇīta-sādhārana-āśraya-niṣṭhaṃ hāṭaka-nirūpitam ca; iff:

- A. $(\text{card}({}_IL) = 1) \wedge (a \in |{}_IL_i \sqsubset h|) \rightarrow (|{}_IL_i \sqsubset h| = \{a\}) \div (a = h)$; i.e., if the cardinality of relation of ‘sharing the same basis’ (${}_IL$) is equal to one and ($\wedge$) the one and only indeterminate basis a belongs to the set *What on/in which, qua sole basis, a specimen of gold occurs*, then ($\rightarrow$) the set *What on/in which, qua sole basis, a specimen of gold occurs* must possess the basis a qua its sole element; therefore ($\div$), the basis a and the specimen of gold h are nothing but the same element.
- B. $(\text{card}({}_IL) = 1) \wedge (a \in |{}_IL \sqsubset b|) \rightarrow (|{}_IL \sqsubset b| = \{a\}) \div (a = b)$; i.e., if the cardinality of relation of ‘sharing the same basis’ (${}_IL$) is equal to one and ($\wedge$) the one and only indeterminate basis a belongs to the set *What on/in which, qua sole basis, a bracelet occurs*, then ($\rightarrow$) the set *What on/in which, qua sole basis, a bracelet occurs* must possess the basis a qua its sole element; therefore ($\div$), the basis a and the bracelet b are nothing but the same element.
- C. $A \wedge B \div (a = h = b)$, for $\text{card}({}_IL) = 1$; i.e., given conditions A and B, it follows that the basis a , the specimen of gold h , and the bracelet b are one and the same.

Truth conditions analysis reveals that this first interpretation of *ekāśraya-sambandha* (${}_IL$), for $\text{card}({}_IL) = 1$, is reducible to coreferentiality (*sāmānādhikarānya*; $\mathbb{N}$) between three terms.

$$[47_e] ((a \cdot \mathbb{N}_i^{(IL)} \sqsubset h)^\top \mathbb{N}^{(IL)} \sqsubset b) \neg \mathbb{N}_L(I_i)$$

yat paryāptitvaṃ sāmānādhikaraṇyatā-avacchedakāvacchinnaṃ tad ekatva-nirūpitam; saiva sāmānādhikaraṇyatā-avacchedakāvacchinna-sāmānādhikaraṇyatā

Footnote 23 continued

very same property from simultaneously being the limitor and the limited (i.e., *avacchedaka* and *avacchinna*), through the generation of a further property of different degree (*upādhi*)—avoids the fallacy called *anavasthā* or *regressus ad infinitum* (cf. NK, pp. 19–20; Pellegrini 2016, p. 81). In other terms, the indeterminate base a , belonging to the set *What on/in which, qua sole basis, at least one instance of gold-ness occurs*, is the base of an occurrence of gold. Nevertheless, this latter set is included in Basis of at least one instance of bracelet-hood. It follows that the indeterminate base a is an element of Basis of bracelet-hood too, according to the general rule: $(x \in A) \wedge (A \subseteq B) \rightarrow (x \in B)$. The relational abstract *bracelet-hood-sole-basis-hood* (of which the set $|{}_IL \sqsubset b|$, Sole basis of at least an instance of bracelet-hood, is the extension) operates at a more fundamental level than its dependent relational abstract of higher degree ‘*being gold-ness-sole-basis-hood*’ (of which the set $|{}_IL_i \sqsubset h|$, Being the sole basis of at least one instance of gold-ness, subset of the former, is the extension); its relative defining relational abstract must be ‘*Being sole-basis-hood*’ (${}_IL$), since ‘*Sole-basis-hood*’ (${}_IL$) has already defined the superset Basis of at least one instance of bracelet-hood. Despite the evident cumbersomeness of the expression when translated into natural language, NN technicalities and its formalization in NL thus prove capable of conveying the hierarchy of relations and reference sets with no ambiguities or reflexive drifts.

hāṭaka-nirūpitā; saiva avacchedaka-sāmānādhikaranyatātvam anirñīta-sādhārana-āśraya-niṣṭhaṃ hāṭaka-nirūpitaṃ ca; whose purport is ^(t)‘A specimen of gold is the indeterminate basis *a*, by coreferentiality; a bracelet also is that very basis, since there is but a single object, for $\text{card}(\bar{N})=1$ ’.

This interpretation ($N^{(IL)}$), i.e., N as ${}_1L$, for $\text{card}(N^{(IL)}) = 1$) correctly insists on the unity of the referent. Therefore, this common undefined basis which has been here summoned up—i.e., this ‘existing *x*’, according to the s.n. $(\exists x \mid Hx \wedge Bx)$ —is revealed to be a third linguistic device (*vācārambhaṇa* or *vāgāmbana*) distinguishing what *de facto* is not distinct at all. An additional element of distinction (viz., an undefined basis or *x*) is introduced in an attempt to explain the radical unity of two properties. In other words, 1L-Hy, as a strategy to circumvent the conundrum about gold and bracelet, plays out a scenario which is even worse than the previous one, displaying three elements (instead of two) and two relations in coordination (instead of one). Worse still is the consequent proliferation (*anavasthā*) of relations. How, indeed, to connect the first property to its basis if not through another *medium*, and so on? Thus, 1L-Hy, in this last variation, turns out to be if not utterly faulty at least pointless, since the still intact issue of distinction in unity is merely shifted by one step back, *ad infinitum*. In broader terms, two distinct concurrent logical paradigms are here at stake. According to Nyāya, presuming that an undetermined *x*, qua basis of successive predications or qualifications, is a more primitive notion than an always qualified ‘dummy singular term’ (Matilal, 1968, p. 23) from which to extract the derived notion of ‘undetermined basis’, is entirely unjustified. Accordingly, the *naiyāyika* account requires a single relation only, instead of two, and no abstract particulars (i.e., variables), since only dummy singular terms are postulated, which *de facto* operate as restricted variables.²⁴

Transitional Considerations (6)

The following passage can be considered as a junction point in the much broader context of VM’s rigorous argumentative architecture. Despite all the conceptual difficulties which have been set out so far, a golden bracelet still appears to be a bracelet not less than gold. The relation of coreferentiality thus imposes itself as a primitive and ineliminable notion, both logical and linguistic, a foundational, inescapable, and cognitively irreducible gnoseological framework.²⁵ The open

²⁴ Regarding restricted variables in NL, cf. Anrò (2022, § 4.2). Regarding the paradox of relations and Bradley’s regress in the *naiyāyika* framework, cf. Id. (2022, fn. 12). Consider also: Plato, *Parmenides*, 132 a-b, about the issue of connecting ‘what is large’ (*mégas*) with the general property (lit., idea, *eidos*) of ‘largeness’ (*mégēthos*); and Aristotle’s equivalent third man argument *ad Metaphysics*, A.9.990b.15-17, A.9.991a.2-5, Z.6.1032a.2-4, Z.13.1039a.2-3, M.4.1079a.11-13, and *Sophistic Refutations*, XXII.178b36-179a 110. Regarding *anavasthā* cf. fn. 20.

²⁵ Clearly, a primitive notion cannot receive any justification in the context of the logical foundation of a system; on the contrary, it acts as the instrument of demonstration, justification and definition of all the other derived, that is, non-primitive, notions. In this regard, see the analogous primitive concept of ‘togetherness’ (‘W’ or ‘with’) in Goodman (1977, p. 144): “We need, then, a primitive relation that will enable us to differentiate systematically between those classes of qualia that form concreta and those that do not. [...] The basic concreting relation is a symmetric relation of togetherness among qualia. Such a

distinction of multiple properties in the unity of the referent cannot apparently be sublated. VM chooses to quote, at this crucial turning point, a passage from *Brahma-sūtra-bhāṣkāra-bhāṣya*. Yet let us not be deceived: this is not VM's last word on the issue, but its reaffirmation in ever closer spiral movements.

It is this incontrovertible (*abādhitā*), indubitable (*asaṃdigdha*), and universal (*sarvajanīna*), epistemic evidence (*pratyaya*) of coreferentiality which establishes difference and non-difference between cause and effect. Thereby, since the effects [possess] the same nature (*ātman*) as their causes, as well as [every] cause always and in every case persists as existent, there is non-difference of the effect—[that is], the phenomenal manifestation—with respect to the reality [of the cause], [not less than] difference [when the former] is considered as effect, such as '[being] a cow, or a pot, etc.' Indeed, it has been said: "Multiplicity qua effect, non-difference qua cause; just as there is non-difference with respect to the gold, but distinction (*bhidā*) with respect to the earring, and so on".²⁶

Definition of Difference (7)

In this respect, it might be said anew: what is this, which is termed difference and should occur in the very same *locus* (*ekatra*) together with non-difference? If it [were conceived as] mutual absence (*parasparābhāva*), would it stand between effect and cause; that is, between bracelet and gold, or would it not? If not, then there would be simple singularity (*ekatva*), and no difference [at all] (§7.1). [On the contrary], in case of [mutual absence between bracelet and gold], there would be [full] difference and any [form of] non-difference. Moreover, there would be a [flagrant] contradiction (*virodha*) between presence and absence: [once that bracelet and gold have been declared as

Footnote 25 continued

relation obtains, for example, between a color and a time or place at which the color occurs: likewise between a place and a time at which the place is presented. In general, it obtains between any two atomic qualia belonging to some one concrement". Regarding the process ofgnoseological justification, performed by means of successive increments, from *jñāna* ("cognition"), via *pramā* ("raw knowledge"), to *nirṇaya* and *siddhānta* ("knowledge self-consciously certified"), see Phillips (2012, pp. 4–5).

²⁶ VM-B (2018, pp. 72–73): *so 'yam abādhitō 'saṃdigdhaḥ sarvajanīnaḥ sāmānādhikaraṇyapratyaya eva kāryakāraṇayor bhedaḥbhedaḥ vyavasthāpayati | tathā ca kāryāṇāṃ kāraṇātmavāt, kāraṇasya ca sadrūpasya sarvatrānugamāt, sadrūpeṇābhedaḥ kāryasya jagataḥ, bhedaḥ kāryarūpeṇa goghaṭādineti | yathāhuḥ kāryarūpeṇa nānātvam abhedaḥ kāraṇātmānā | hemātmānā yathābhedaḥ kuṇḍalādyātmānā bhidā || iti 1. Śāstrī&Raja (VM-B 1933, pp. 176) opportunely translate *pratyaya* as 'appositional cognition'. Nevertheless, in order to avoid any possible suspicion of superimposition or false attribution (*adhyāsa*), I prefer to discard this term. Regarding 'apposition', see Partridge (1966, p. 2507) and Glare (1968, pp. 1401–1402): "*pōno, pōnere* [...] to place [...], to put in position [...], to lay [...], to put or cast [...]" I propose instead the locution 'epistemic evidence', according to its Latin etymology; cf. Partridge (1966, pp. 1008, 3694) and Glare (1968, p. 626): "*ēvidentia*, [...] the quality of being manifest [...], obviousness" and "*ēuidens*, [...] perceptible [...], clear [...], open, unconcealed [...]" Regarding the passage quoted by VM, cf. BSBhB (1991, p. 18): *kāryarūpeṇa nānātvam abhedaḥ kāraṇātmānā | hemātmānā yathābhedaḥ kuṇḍalādyātmānā bhidā || iti | vedāntanipūṇammanya kaścīd āha |* Cf. Agrawal-Potter (2013, pp. 33–36, 42–46, 113–172); Dasgupta (1961, p. 329).*

mutually excluding, their] co-presence (*saha-avasthāna*) is [clearly] impossible (*asambhava*) (§7.2.1). Alternatively, in the case [the co-presence of mutually exclusive properties were said to be] possible, the undesired consequence (*prasaṅga*) of an *in rem* (*tattva*) non-difference between a bracelet and a *vardhamāna* [would inevitably follow], due to the lack of contradiction between difference and non-difference (§7.2.2).²⁷

VM here examines in detail the features of difference (*bheda*) as mutual absence (*parasparābhāva* or *anyonyābhāva*, $\bar{I}$). A pot, for instance, is mutually absent with respect to a cloth simply because where there is a pot there is not a cloth, and vice versa (for $G \cap P = \emptyset$, i.e., ‘the intersection between Pots and Cloths is empty). Now, VM sharply asks, does this mutual absence—which is reducible, *salva veritate*, to the constant or absolute absence of identity (*tādātmya-atyantābhāva*, $\bar{A}(I)$; cf. P2. §3. [19]–[21])—also occur between non-identical coreferential properties, such as gold-ness and bracelet-hood?

Absence of Difference as Mutual Exclusion (7.1)

In a first case, VM suggests, difference qua mutual absence (*anyonyābhāva*) might be straightforwardly negated; that is, declared as absolutely absent (*atyantābhāva*). Provided that *hāṭakaṃ kaṭakam* (‘The bracelet is gold’), its negation should in turn be negated, i.e., *hāṭakaṃ na kaṭakam ity na* (‘It is false that a bracelet is not gold’):

[48_a] $h \Rightarrow \bar{A}^{-1} \bar{L}(\bar{A}^{-1} \bar{L}(I^{-1} Lb))$

yā hāṭaka-niṣṭha-atyantābhāvīya-pratīyogitā sā atyantābhāvīya-pratīyogitāva-nirūpitā, saiva atyantābhāvīya-pratīyogitātvam tādātmyatā-nirūpitam, saiva tādātmyatā kaṭaka-nirūpitā, tadviparyayeṇa ca; ‘Constant absentee-hood, conditioned by being constant absentee-hood in turn conditioned by identity conditioned by a bracelet, occurs in a specimen of gold, &vv’; that is, ⁽ⁱ⁾ ‘A bracelet is not not-gold’; iff $h \notin |\bar{A}^{-1} \bar{L}(I^{-1} Lb)| \wedge b \notin |\bar{A}^{-1} \bar{L}(I^{-1} Lh)|$; i.e. ‘A specimen of gold does not belong to the set *What is absent with respect to identity with a bracelet*, &vv’.

²⁷ VM-B (2018, p. 73): *atrocyate kaḥ punar ayaṃ bhedo nāma, yaḥ sahābhedenaikatra bhavet | parasparābhāva iti cet, kim ayaṃ kāryakāraṇayoḥ kaṭakahāṭakayor asti na vā | na cet, ekatvam evāsti, na ca bhedaḥ | asti ced bheda eva nābhedaḥ | na ca bhāvābhāvayor avirodhaḥ, sahāvasthānāsambhavāt* ^(#) *sambhave vā kaṭakavardhamānayoḥ* ^(°) *api tattvenābhedaprasaṅgaḥ, bhedasyābhedāvirodhāt* ^(#) *].* Double negation; lit.: “there is not (*na ca*) a non-contradiction (*a-virodha*) between presence and absence”; ergo, “there is a contradiction”. ^(°) Śāstrī&Raja (VM-B 1933, p. 286, fn. 118) suggest that a “*vardhamāna* would appear to have been a gold ornament in the form of a *svastikā*”; Ranganath (1999, p. 325) follows this interpretation. In his commentary to VM-B, Amalānanda (1895, pp. 70–71) makes no mention of it. In MW (926, 1) and B (VI, 36), the only compatible definitions with Śāstrī&Raja’s suggestion are respectively: “a kind of mystical figure or diagram” (if a golden one) and “eine Schlüssel von best” (a bowl or dish, if golden). The first among the incompatible meanings is instead, *Ricinus Communis* or castor-oil plant. Yet, the overall message is clear: the first case implies a *sāmānādhikarāṇya* relation—since, whatever it is, a *vardhamāna* is nothing but a golden artifact; the second case is fully reducible to a simple relation of *atyantābheda*, whose meaning parallels the utter difference between a cow and a horse (cf. *supra*, §5).

In a second step, provided that $\#(I) = I$ (i.e., *tādātmyātyantābhāva* = *any-onyābhāva*; cf. *supra*), by means of the transition formula [48_b] $h = \#^{-1} \perp (\#^{-1} \perp b)$, the counterfactual formula is then newly obtained and reconfirmed, expressing the relation of non-difference between gold and bracelet: [44] $((h.N.b) \Rightarrow \#^{-1} \perp (\#^{-1} \perp b)) \neg \# \perp (I)$, i.e., ^(t)‘A specimen of gold is not the counterpositive of a difference with regard to a bracelet, being the former coreferential to the latter, for a cardinality equal to one’—clearly matching the model of Gadādhara’s definition of unity (*ekatva*; cf. P2 f.[22]–[24], [34]). Let us deepen further the analysis of its truth conditions:

- A. $h \notin \#^{-1} \perp b \mid \wedge b \notin \#^{-1} \perp h$, i.e., ‘A specimen of gold does not belong to the set *What is different from a bracelet*, &vv’; ergo: $h \notin \overline{B'}$ (for $\#^{-1} \perp b \mid = \overline{B'}$); that is, ‘*h* does not belong to the complement of *B'* (for *B'* = {*b*}); the singleton ‘A certain bracelet’ containing *b* only’; in parallel, $b \notin \overline{H'}$ (for $\#^{-1} \perp h \mid = \overline{H'}$) ‘*b* does not belong to the complement of *H'* (for *H'* = {*h*}); the singleton ‘A certain specimen of gold’ containing *h* only’; therefore, the linguistically divergent expressions ‘*h*’ and ‘*b*’ refer to the same referent or singular extension ($h = b$, according to the distinction *arthataḥ* and *śabdataḥ*, or *names* vs. *mentions*; cf. P2.§3), for $(h, b) \in B'$ and $\text{card}(B') = 1$, or $(h, b) \in H'$ and $\text{card}(H') = 1$.
- B. If condition A, then: $h \in B'$ (for *B'* = {*b*}) $\wedge b \in H'$ (for *H'* = {*h*}); i.e., ‘*h* belongs to the singleton containing *b* only’, as well as ‘*b* belongs to the singleton containing *h* only’. Conditions A and B clearly show that [44] is indeed a perfect case of *sāmānādhikarāṇya*, for $\text{card}(N) = 1$ and $V^{(N)}: B \mapsto V^{(N)}[B]$ and $V^{(N)}[B] \subseteq B$, in virtue of SVN (cf. P1.§4, P2.§4).
- C. Nevertheless: $(\langle 'h', 'b' \rangle \notin Q) \wedge (\langle h, b \rangle \notin I)$; that is, the terms ‘*h*’ and ‘*b*’ as mentions are linguistically divergent, being expressions of distinct (i.e., not coextensive) properties (for $H \neq B$, and $H \cap B \neq \emptyset$) (cf. P2.[28]). Thus, by the application of TKN (cf. §5.1), the occurrences *h* and *b* of the properties $|h_t| = H$ and $|b_t| = B$ cannot be said *stricto sensu* to be identical (since the plexus of properties, in case of identity, must appear indiscernible). Indeed, [44] is neither ruled by LL (Leibniz’s Law), nor can pass the ST (substitutivity Test) (cf. P2.§4).

The first hypothesis analysed by VM, i.e., the negation of difference qua reciprocal absence, turns out to be an attestation of unity (*ekatva*) between the *relata*. It should also be noted how VM cautiously and subtly employs the term ‘unity’ and avoids awkwardly evoking here the term ‘identity’ (*tādātmya*; cf. P2.§4).

Difference as Mutual Exclusion (7.2.1)

The discussion of the second possibility is far easier. As it has already been said, if there is mere mutual exclusion between bracelet (*b*) and gold (*h*), there will be simple difference between them; in other words, any form of non-difference, just as in the case of *cow-hood* and *horse-hood* (cf. §5). On the model of P2.[21], a relation of mutual exclusion regarding *b* and *h*—highlighting its cardinality and again

interpreting difference as absence of identity ($\neq = \bar{\#}(I)$) qua case of coreferentiality ($N^{(I)}$; i.e., N as I , for $I \subseteq N$)—can be expressed in NL as:

$$*[49_a] (h \cdot \bar{\#}^{-1} \mathbf{L}(N^{(I)} \mathbf{L} b)) \neg \mathbf{NL}(2_t)$$

yat paryāptitvaṃ atyantābhāvīya-pratīyogitā-avacchedakāvacchinnaṃ tad dvitva-nirūpitam, saiva hātaka-niṣṭha-atyantābhāvīya-pratīyogitā sāmānādhikaraṇyatā-nirūpitā, saiva sāmānādhikaraṇyatā kaṭaka-nirūpitā; whose purport is ^(t)‘A specimen of gold (h) and a bracelet (b) are different, namely, non-coreferential, since they are two distinct objects’; iff $h \in (|h_t| = H) \wedge b \in (|b_t| = B)$; $h \notin |N_t \mathbf{L} b|$ (i.e., ‘ h does not belong to the set *What is coreferential to b* ’); card $(\{h, b\}) = 2$ (i.e., ‘The set containing h and b as its elements has a cardinality equal to two’); in s.n. $(\exists x, \exists y | Hx, By)$; that is, ‘There is a specimen of gold, as well as, there is a bracelet’.

Nevertheless, formula $*[49_a]$ is utterly false, since in plain contradiction with the adopted premise (cf. [44]) according to which a golden bracelet is a radically single object. In the words of VM, whether golden bracelet and gold were conceived as mutually excluding, “there would be a [flagrant] contradiction between presence and absence”, since their co-presence (*saha-avasthāna*) would be simultaneously possible and impossible. In sum, if it is false that $\langle h, b \rangle \in \bar{\#}$ (i.e., ‘ h and b do not constitute an ordered pair of mutual absence relation’); yet, *salva veritate*, it is true that: $\bar{\#}(I) = \bar{\#}(\bar{\#}(I)) = \bar{\#}$ (i.e., ‘The relation of absence of mutual absence shares the same ordered pairs with the relation of absence of absence of identity; that is, non-difference’). Therefore: $\langle h, b \rangle \in \bar{\#}$ ($\bar{\#}(I) = \bar{\#}(\bar{\#}(I)) = \bar{\#}$) (i.e., ‘ h and b constitute an ordered pair of the relation of absence of mutual absence, or absence of absence of identity, or non-difference’).

Coexistence in Difference as Mutual Absence (7.2.2)

VM then introduces a further slight change of perspective according to which the properties *gold-ness* and *bracelet-hood* are said to be forcefully coexistent (*sahāvasthāna*), i.e., coreferential (N), despite the fact that they have been here considered as reciprocally absent by hypothesis (cf. §7.2.1). In other words, VM argues, it could still be argued that these two properties might somehow be forced to coexist despite their neat reciprocal distinction.²⁸ In a complementary manner, this line of argumentation is premised on the assumption that the supposedly coreferential properties *gold-ness* and *bracelet-hood* could appear, nevertheless, as mutually absent. Thus, generalizing $*[49_a]$, the following universal assertion will first be obtained:

$$*[49_b] h_t \Rightarrow \bar{\#}^{-1} \mathbf{L}(\bar{\Gamma}^{-1} \mathbf{L} b_t)$$

yā hātakatva-avacchedakāvacchinna-atyantābhāvīya-pratīyogitā sā tādātmyatā-nirūpitā, saiva tādātmyatā kaṭakatva-nirūpitā, tadviparyayeṇa ca; that is, ^(t)‘Every specimen of gold and every bracelet is mutually absent’; iff $*((|$

²⁸ It is clear that my choice to interpret, as already declared, co-existence qua coreference has no alternative. All weaker possible solutions—such as, the relations of *substratum-superstratum* or ‘residing on the very same basis’—have already been excluded (cf. *supra* §5).

$h_i \cap |b_i| = *(H \cap B) = \emptyset$ ('The intersection between *Gold* and *Bracelets* is empty'); in s.n.: $(\exists x, \exists y \mid Hx, By)$ ('There is a specimen of gold and a bracelet').

In the same manner, let us now consider the relation standing between the properties *bracelet-hood* (b_i) and *being a vardhamāna* (*vardhamānatva*, v_i). Whatever a *vardhamāna* is—whether it is a golden ornament or a completely different thing, such as a castor-oil plant (cf. fn. 27)—it must be said to be distinct from a bracelet beyond any doubt, since there is no bracelet which is also a *vardhamāna* and vice versa. Therefore:

$$[49_c] \quad v_i \Leftrightarrow \neg \mathbf{I}^{-1} \mathbf{L}(\mathbf{I}^{-1} b_i)$$

yā vardhamānatva-avacchedakāvacchinna-atyantābhāvīya-pratīyogitā sā tādātmyatā-nirūpitā, saiva tādātmyatā kaṭakatva-nirūpitā, tadviparyayeṇa ca; that is, ⁽ⁱ⁾'Bracelets and *vardhamānas* (v) are always mutually absent'; iff $b \in (|b_i| = B) \wedge v \in (|v_i| = V) \wedge (B \cap V = \emptyset)$ ('The intersection between *Bracelets* and *Vardhamānas* is empty'); in s.n.: $(\exists x, \exists y \mid Bx, Vy)$ (i.e., 'There is a bracelet and there is a *vardhamāna*').

Under this hypothesis it must, in parallel, be admitted that gold and bracelet are forcefully coexistent (*sahāvasthāna*). That means that coreferentiality (N) must stand between them as an imposed condition. As already expressed in [44] $((h, N, b) \Rightarrow \neg \mathbf{I}^{-1} \mathbf{L}(\mathbf{I}^{-1} b)) \neg N, (I_i)$, it must be admitted that: $h \in |N, b|$ ('A specimen of gold belongs to the set *What is coreferential to a bracelet*'), $h \in (|h_i| = H)$, $b \in (|b_i| = B)$, and $H \cap B \neq \emptyset$. Now, following VM here, the patent contradiction between the respective truth conditions (viz., $*[49_b]$ for $H \cap B = \emptyset$ and [44] for $H \cap B \neq \emptyset$) be momentarily left aside, to firstly focus on the fact that $*[49_b] \quad h_i \Rightarrow \neg \mathbf{I}^{-1} \mathbf{L}(\mathbf{I}^{-1} b_i)$ and $[49_c] \quad v_i \Rightarrow \neg \mathbf{I}^{-1} \mathbf{L}(\mathbf{I}^{-1} b_i)$ are formally identical. Therefore, once it has been accepted that gold and bracelet can be said to be forcefully coexistent (*sahāvasthāna*, via N ; in compliance with [44]) despite the fact that their respective properties are mutually absent (in compliance with $*[49_b]$), how then might it be possible to prevent that a bracelet and a *vardhamāna* could also be coreferential in the same manner, although it is patently absurd (as stated in [49_c]) that a bracelet could also be a *vardhamāna*, and vice versa? To put it another way, if $*[49_b] \quad h_i \Rightarrow \neg \mathbf{I}^{-1} \mathbf{L}(\mathbf{I}^{-1} b_i)$, and nevertheless $h \in |N, b|$ (as in [44]) then also $*b \in |N, v|$, for $B \cap V \neq \emptyset$, despite the fact that $[49_c] \quad v_i \Rightarrow \neg \mathbf{I}^{-1} \mathbf{L}(\mathbf{I}^{-1} b_i)$, for $B \cap V = \emptyset$. As expected, VM says the hypothesis under §7.2.2 cannot but lead to the "undesired consequence of an *in rem* (*tattva*) non-difference between a bracelet and a *vardhamāna*". In other words, if the principle is accepted according to which difference qua mutual absence can be compatible, no matter how, with non-difference qua coreferentiality, nothing could then prevent the application of this very same relation to any other property. Each property might thus be said to be coexistent with every other. Therefore, if *gold-ness* and *bracelet-hood* are clearly distinct properties, their manner of not being equal and identical (i.e., coextensive, cf. P2) is never reducible to that existing between *bracelet-hood* and *vardhamānatva* (i.e., *anyonyābhāva*); or, roughly speaking, a bracelet differs from the gold of which it is made in a different way from the manner a pot differs from a horse. VM definitely shows that an imposed compatibility,

coordination, or coexistence in mutual absence cannot apply to *abheda*, since this latter would then be jeopardized by the definitional flaw of over-application (*ativyāpti-doṣa-lakṣaṇa*; cf. fn. 7). This unreflecting form of irenic non-contradiction between difference and non-difference, according to which mutually exclusive properties can supposedly coexist, being applicable to every case of difference, cannot but generate an unstoppable general escalation of “undesired consequences”. Since coexistence occurs only under certain conditions (e.g., between pot and clay, but never between lake and fire) the alleged solution of an unspecified coexistence of *bhedābheda*—‘*bheda* together with *abheda*’, respectively conceived as mutual absence and negation of mutual absence—is unavoidably dismissed.²⁹

The Undesired Obliteration of Every Concurrent Property (8)

Moreover, in [the hypothesis where] a bracelet is not different from the gold [of which it is made, not being the former the counterpositive of a mutual absence with respect to the latter], [also all other golden] bracelets, crowns, earrings, etc., should not be distinguishable from gold. In the same manner, they could never be distinguished from [that first] bracelet, [as well as one from another], by virtue of their [acknowledged] non-difference from gold. Consequently, [according to this hypothesis], gold only [could be properly assessed as the unquestionable] reality of [all those] beings (*vastu-sat*), [and surely] not [their ‘being’ bracelets], and so on, [that we are instead forced to acknowledge as gold solely]. [This is simply] because difference, [so conceived], would not appear [in any form between gold and golden artifacts, as well as between golden artifact and golden artifact]. It follows that, [along these lines, we are once again brought back to the starting point]: there is non-difference only with respect to the gold, [but] not with respect to the bracelet—since this latter is [undoubtedly] different from an earring, etc.³⁰

In this passage VM has again slightly changed his perspective through the introduction of a multiplicity of distinct specimens of gold. A first strand of objections has been completely exhausted. Indeed, since the mutual absence between gold and bracelet, as well as the coexistence of their mutual absence with their coreferentiality, have both been dismissed, it only remains to accept their non-difference; that is, the negation of their mutual absence (*anyonyābhāva-atyantābhāva*; ३(६); cf. §7). Thus, it is here no longer a matter of distinguishing

²⁹ The ambiguity regarding the translation of the term ‘*vardhamāna*’, which at first glance might be seen as a flaw, reveals itself to be an unexpected advantage (cf. fn. 27), providing us with a simultaneous double reading. In the case a *vardhamāna* were a golden artifact then it would be utterly analogous to the bracelet instance, for $H \cap V \neq \emptyset$, but $B \cap V = \emptyset$. In contrast, if a *vardhamāna* were something completely different from gold, e.g., a castor-oil plant, then it would be another image of absolute distinction, as in the case of gold and cows, for $H \cap V = \emptyset$, as well as $B \cap V = \emptyset$.

³⁰ VM-B (2018, p. 73): *api ca kaṭakasya hātakād abhede yathā hātakātmanā kaṭakamukṣaṇḍalādayo na bhidyante evaṃ kaṭakātmanāpi na bhidyeraṇ, kaṭakasya hātakād abhedāt | tathā ca hātakam eva vastusat na kaṭakādayaḥ, bhedasyāpratibhāsanāt | atha hātakatvenaivābhedo na kaṭakatvena, tena tu bheda eva kuṇḍalādeḥ |*.

the bracelet from the gold of which it is made, but of possibly differentiating one golden artifact from another one, in consideration of the fact that they are all nothing but gold. In the light of the fact that the gold is neither identical nor mutually absent with regard to the bracelet, what is the relation between a golden bracelet and a golden crown?

In order to answer this question, let us first consider in more detail the truth values of formula P2.[44] $((h.N \perp b) \Rightarrow \mathcal{F}^{-1} \perp (\mathcal{F}^{-1} \perp b)) \neg \mathbb{N} \perp (I_i)$, ⁽ⁱ⁾ ‘A bracelet (b) is non-different from a specimen of gold (h)’:

- A. $h \notin \overline{B}$; i.e., ‘A specimen of gold does not belong to the complement of the singleton *A certain bracelet*’, for $\overline{B} = |\mathcal{F}^{-1} \perp b|$; i.e., ‘The complement of the singleton *A certain bracelet* = *What is not identical to a certain bracelet*’;
- B. $h \notin \overline{B} \rightarrow h \in B'$, for $\text{card}(B') = 1$, since $B' = \{b\}$; that is, ‘If condition A, then a specimen of gold belongs to the singleton *A certain bracelet*, for cardinality equal to one, since the singleton *A certain bracelet* possesses only a certain bracelet as its element’;
- C. $\ast \langle h, b \rangle \in I \wedge (h, b) \in B'$, for $\text{card}(B') = 1$; i.e., ‘A specimen of gold and a bracelet do not satisfy the relation of identity; nevertheless, being the very same object, they both belong to the same singleton’.

Nonetheless, it is likewise true that other gold artifacts do exist indeed, such as crowns (m). It will be thus symmetrically obtained:

$$[50_a] (((h' . N \perp m) \Rightarrow \mathcal{F}^{-1} \perp (\mathcal{F}^{-1} \perp m)) \neg \mathbb{N} \perp (I_i))$$

yad atyantābhāvīyapratīyogitā-avacchedakāvacchinna-paryāptitvaṃ tad ekatva-nirūpitam; tatra yaiva atyantābhāvīyapratīyogitā hāṭaka-niṣṭha-mukṣa-nirūpita-sāmānādhikaraṇyatā-avacchedakāvacchinnā sā anyonyābhāvīyapratīyogitā-nirūpitā, eṣaiva anyonyābhāvīyapratīyogitā mukṣa-nirūpitā, tadviparyayeṇa ca;
⁽ⁱ⁾ ‘A crown (m) is not the counterpositive of a difference with respect to a specimen of gold’; iff:

- A. $h' \in (|h_i| = H) \wedge m \in (|m_i| = M)$, for TvN; that is, ‘A specimen of gold belongs to the set Gold’, and ‘A crown belongs to the set Crowns’;
- B. $h' \notin \overline{M}$; i.e., ‘A specimen of gold does not belong to the complement of the singleton *A certain crown*’ (for $\overline{M} = |\mathcal{F}^{-1} \perp m|$, ‘The complement of the singleton *A certain crown* = *What is not identical to a certain crown*’);
- C. $h' \notin \overline{M} \rightarrow h' \in M'$, for $\text{card}(M') = 1$, since $M' = \{m\}$; that is, ‘If condition B, then a specimen of gold belongs to the singleton *A certain crown*, for cardinality equal to one, since the singleton *A certain crown* possesses only a certain crown as its element’;
- D. $\ast \langle h', m \rangle \in I \wedge (h', m) \in M'$; i.e., ‘A specimen of gold and a crown do not satisfy the relation of identity; nevertheless, being the very same object, they both belong to singleton *A certain crown*’.

In order to make all the features of this new perspective explicit, along with all its related difficulties, the notion of cardinality of a relation will once again prove helpful. At its simplest, the key point regarding the preceding provisional premises—[44] and [50_a—is that two alternative scenarios are here at stake: ultimately, either it comes down to the admission that there is only one indistinguishable occurrence of gold (i.e., $h = h^I$), which is nonsensical, or that there are distinct and distinguishable ones (i.e., $h \neq h^I$).

‘This Very Same Thing’ (8.1)

In a first possibility, let us assume that the gold—which is non-different from the crown, being the latter nothing but gold—is also not-differentiable from a bracelet, which is equally made of gold. Thereby, nothing less and nothing more than an instance of gold, not further specified, is here referred to. According to this first configuration, through the combination of [44] and [50_a] truth values, the following will be obtained:

- A. (*) $h = h^I$; in the meaning of: $\langle h, h^I \rangle \in I$, that is, ‘ h and h^I are identical, being the very same specimen of gold’, since no other property is here available in order to make a further distinction;
- B. (*) $h \notin \overline{B'}$ (for $|F^I \perp b| = \overline{B'}$) $\wedge$ $h^I \notin \overline{M'}$ (for $|F^I \perp m| = \overline{M'}$); respectively: ‘A specimen of gold does not belong to the complement of the singleton *A certain bracelet*’ (for: complement of singleton *A certain bracelet* = *What is not identical to a certain bracelet*); in parallel, ‘A specimen of gold does not belong to the complement of the singleton *A certain crown*’ (for: complement of singleton *A certain crown* = *What is not identical to a certain crown*);
- C. (*) $(h \notin \overline{B'} \wedge h^I \notin \overline{M'}) \rightarrow (h \in B' \wedge h^I \in M')$ (for: $\text{card}(B') = 1$, $B' = \{b\}$; and $\text{card}(M') = 1$, $M' = \{m\}$); i.e., if condition B, then ‘A specimen of gold belongs to the singleton *A certain bracelet*’ (for a cardinality equal to one, since this singleton contains only one bracelet); in parallel, ‘A specimen of gold belongs to the singleton *A certain crown*’ (for a cardinality equal to one, since this singleton contains only one crown);
- D. (*) $(h \in B' \wedge h^I \in M') \rightarrow ((h, b) \in B' \wedge (h^I, m) \in M')$; that is, if condition C, then ‘A specimen of gold and a certain bracelet belong to the same singleton *A certain bracelet*’; in parallel, ‘A specimen of gold and a certain crown belong to the same singleton *A certain crown*’;
- E. (*) $(h = h^I) \wedge ((h, b) \in B' \wedge (h^I, m) \in M') \rightarrow ((h = h^I), b, m) \in (M' = B')$; i.e., if condition A and condition D, then ‘A specimen of gold, a bracelet and a crown belong to the singleton *A certain crown*, which coincides with the singleton *A certain bracelet*’.

In other words, if the specimen of gold which is not the counterpositive of a difference with respect to a bracelet (since, according to N , it is the same single object) is indistinguishable from the specimen of gold which in turn is not the counterpositive of a difference with respect to a crown, then nothing can prevent that the bracelet and crown themselves turn out to be one and the same:

$*m \Rightarrow \neg \mathbf{A}^{-1} \mathbf{L} (\mathbf{F}^{-1} \mathbf{L} b)$; that is, $*\text{'A bracelet is not the counterpositive of a difference with respect to a crown'}$. Thereby, *mukutaṃ kaṭakam* ($*m.N \mathbf{L} b$, or $*\text{'A bracelet is a crown'}$), which is plainly absurd. As expected, under this hypothesis, every relatum collapses into the identity of a single object. If that were the case, the state of affairs termed as 'double occurrence' (cf. §5.1) would reappear in a possibly even more arguable version: so to speak, in a sort of 'double double occurrence' or *dvidviravabhāsa*. In point of fact, the only acknowledgeable difference would be here the introduction of a third element, the crown, qua relational medium between gold and bracelet. Thus, according to the pattern of a repeated double occurrence: if $*\langle h, b \rangle \in I$, then $\langle h, h \rangle \in I$; if $*\langle h, m \rangle \in I$, then $\langle h, h \rangle \in I$; ergo, $*\langle b, m \rangle \in I$, since anew $\langle h, h \rangle \in I$. That is: [a] a bracelet is non-different from a specimen of gold, it is thus $*\text{'identical to that specimen of gold'}$; therefore, a specimen of gold is identical to a specimen of gold; [b] a crown is non-different from a specimen of gold, it is thus $*\text{'identical to that specimen of gold'}$; thereby, a specimen of gold is thus identical to itself; [c] starting from these premises, it follows that $*\text{'A bracelet is identical to a crown'}$, by virtue of the fact that $\text{'A specimen of gold is identical to itself'}$. Nevertheless, as with the options already discarded, there is no more room for any supposed substitutivity between indiscernibles or for a generic application of transitivity (cf. TKN; § 5.1).

Distinct Specimens of Gold (8.2)

In a second possibility, that gold which is non-different from the bracelet is more suitably said not to be the very same gold of which the crown is made. Since two distinct specimens of gold are here at stake, the cardinality of the relata under exam consequently increases to two. It follows that:

- A. $h \neq h'$; i.e., h and h' , in formulae [44] and [50_a], are distinct specimens of gold;
- B. $h \notin \overline{B'}$ (for $|\mathbf{F}^{-1} \mathbf{L} b| = \overline{B'}$) $\wedge$ $h' \notin \overline{M'}$ (for $|\mathbf{F}^{-1} \mathbf{L} b| = \overline{M'}$) (cf. § 8.1, condition B);
- C. $(h \notin \overline{B'} \wedge h' \notin \overline{M'}) \rightarrow (h \in B' \wedge h' \in M')$; for: $\text{card}(B') = 1$, $B' = \{b\}$, and $\text{card}(M') = 1$, $M' = \{m\}$ (cf. § 8.1, condition C);
- D. $(h \neq h') \wedge (h \in B' \wedge h' \in M') \rightarrow (b \in B') \neq (m \in M')$; that is, if h and h' are distinct specimens of gold which respectively belong to the singletons *A certain bracelet* and *A certain crown*, then the bracelet which belongs to the singleton *A certain bracelet* is different from the crown which belongs to the singleton *A certain crown*;
- E. $(b \in B') \neq (m \in M') \rightarrow \langle b, m \rangle \notin N$; that is, if the bracelet which belongs to the singleton *A certain bracelet* is different from the crown which belongs to the singleton *A certain crown*, then the bracelet and the crown are not coreferential;
- F. $\langle b, m \rangle \notin N \rightarrow \text{card}(B', M') = 2$; that is, the bracelet and the crown are not coreferential, the cardinality of the singletons *A certain bracelet* and *A certain crown* is equal to two.

In the case where the bracelet and the crown appear as distinct occurrences of the property *gold-ness*, then those very bracelet and crown, which in themselves are nothing but instances of gold, turn out to be two distinct objects, reciprocally disjunct and not coreferential at all. This condition, in point of fact, opens a new scenario. Although not mutually coreferential, both the bracelet and the crown are not to be considered the counterpositive of a difference with respect to the property *gold-ness* (cf. [44] and [50_a]). From this, it might be provisionally deduced that only gold is what exists here (*vastusat*), by reason of the obliteration or “lack of manifestation” (*a-pratibhāsana*) of every other concurrent qualification, with respect to the two occurrences of *gold-ness* which are here at stake. In consideration of the fact that solely the property *gold-ness* is involved for the time being, the following state of affairs clearly emerges: $(b \in (lh_l = H)) \wedge (m \in (lh_l = H))$, for $H = \{m, b, h^3, \dots, h^n\}$; that is, ‘A crown (*m*) and a bracelet (*b*) both belong to the set Gold, qua proper occurrences of the property *gold-ness*, along with many others ($h^3, \dots, h^n$)’. It should be noted that the proper elements *m* and *b* of the set Gold are first exclusively defined by their own sole property which is here described; that is, *gold-ness*, and not otherwise. Crown and bracelet are consequently only proper names of two elements of the set Gold, this latter being here the sole reality (*vastusat*). Under this perspective—according to which *m* and *b* are nothing but gold, although not the very same specimen of gold—the crown and the bracelet, along with all the other elements of the set Gold, turn out to be *stricto sensu* equivalent (*E*, *tulyatva*) occurrences of the same property, *hāṭakatva*. On the model of P2.§2, formulae [8]–[11], it might thus be stated that:

$$[50_b] (b \cdot h_l \vdash E \perp (m \cdot h_l)) \vdash \mathbb{N} \perp (\geq 2_l)$$

yat paryāptitvaṃ tulyatvāvachchinnaṃ tad dvitvādi-nirūpitam, etad eva tulyatvaṃ ca kaṭaka-niṣṭha-hāṭakatva-avachchinnaṃ mukuṭa-niṣṭha-hāṭakatva-nirūpitam ca; ⁽ⁱ⁾ ‘A bracelet and a crown are equivalent occurrences of the property *gold-ness*’; iff $(m \neq b) \wedge ((m, b) \in (lh_l = H)) \wedge \text{card}(H) \geq 2$; that is, ‘A bracelet and a crown are distinct occurrences of *gold-ness*, thereby they both belong to the set Gold, which in turn must have a cardinality at least equal to two’.

The hypothesis under consideration—while aiming at expanding the provisional result according to which there is no difference, that is, mutual exclusion, between bracelet and crown, since only gold is real (*vastusat*)—entails, as an unintended consequence (*prasaṅga*), the obliteration (*a-pratibhāsana*) of every concurrent property. Thereby, every occurrence of *gold-ness* ends up with being merely equivalent (*E*) and consequently indistinguishable (“*na bhidyeraṇ*”) from one another. Assertion [50_b] is undoubtedly true: indeed, a gold bracelet and a gold crown, along with all the other proper elements of the set Gold, are equivalent with respect to the property *gold-ness*. Nevertheless, once [50_b] has been accepted, it does not allow any further distinction within those true occurrences of gold as sole reality. The said occurrences might be then melted, sold or exchanged, observed as incorruptible or resistant to chemical reactions, etc., according to what can be broadly done with gold in its indeterminate aspect. Yet, how could it be possible to identify any different functions or properties of these gold occurrences, such as

being an artifact, and not a nugget, designed to be put upon the head, and not worn on the wrist? Even though it is an established fact that assertion [50_b] is not false in any respect, it remains no less true that it discards a considerable amount of crucial information. As a rule, in order for a bracelet to be worn as indeed it is, the property bracelet-hood must not be ignored—lest also an ingot be worn on the wrist. Indeed, if the property bracelet-hood never appeared, every possible effect of gold-ness would collapse into the indistinguishableness of the common cause qua sole reality. Consequently, VM notes, we are again pushed back to the original starting point: if there is non-difference with respect to the cause—that is, the gold—yet difference still appears to stand regarding the effects—such as crowns or bracelets. Apropos, VM sharply remarks that:

“in reason of the recurrence (*anuvṛtti*) of the property *Being* (*sattā*), which [necessarily] occurs (*anugam*) in every single existent (*sarvavastu*)³¹, [if that property were considered solely], there would not be [any possibility] of distinction (*vibhāga*) [by means of assertions such as] ‘This one here, not that one; [or] ‘This [appears] in such a manner, not that’³², due to the absence of every discriminative (*viveka*) prover (*hetu*) concerning any object, anywhere, any time, in any way. In the same manner, in case gold were recognized from

³¹ In other words, VM proposes here a tautological assertion by virtue of the semantic fitness (*yogyatā*) of the implied terms. For a discussion regarding *sattā*, *sat* and *śas*, cf. *supra* fn. 2-4. Cf. respectively, Quine (1961, p. 23): “No bachelor is married”; Descartes (2011, pp. 61, 68 *et passim*): “substance corporelle ou étendue”, “les choses corporelles ou étendues”; Kant (1998, A7/B11, p. 141): “All bodies are extended [*Alle Körper sind ausgedehnt*]”. Cf. also Heidegger (2014, p. 1; 1990, p. 3): “Why are there beings at all instead of nothing? [Warum ist überhaupt Seiendes und nicht vielmehr Nichts?]”.

³² Cf. Dharmakīrti (1993, pp. 26–27): 21. *naiva kaścit kvacit kathañcidanupalabdho 'pyasadyavahāraviśaya itī cet | sarvasya sarvarūpāṇām sarvādānīvṛtteḥ sarvaṃ sarvatra sarvādā samupayujyeta | idam ca na syāt—'idam ataḥ', 'nāta idam', 'ihedaṃ', 'iha nedam', 'idānīm idam', 'idānīm nedam', 'idam evam', 'idam naivam' itī; kasyacid api rūpasya kathañcit kvacit kadācid viviktahetor abhāvāt | ananvayavyatirekaṃ viśvaṃ syāt, bhedābhāvāt | avasthānīvṛttipravṛttibhede bhyo vyavastheti cet | nanvata eva sarvaviśayasyāsadvyavahārasyābhāvānna te sambhavanti, yatāste bhyo vyavasthā syāt | kvacid viśaye 'sadyavahāropagame sa kuta itī vaktavyam | na hy anupalambhādānyo vyavacchedahetur asti; vidhipratishedhābhyāṃ vyavacchede sarvādānupalambhasyaiva sādhanatvāt | anupalambhād eva tadabhyupagame, sa yatraivāsti sarvo 'sadyavahāraviśaya itī vaktavyam, viśeṣābhāvāt |*; “[A possible objection by a Sāṅkhya opponent] Nothing is an object of the practice of ‘non-existence’, whatever it may be and wherever and in whatever way it may remain non-apprehended. [Answer] In that case everything will be applicable everywhere all the time, because every form of everything will remain incessant all the time. Moreover, the following (situations) will not occur—‘This (is) out of this’; ‘This (is) not out of this’; ‘This (is) here’; ‘This (is) not here’; ‘This (exists) now’; ‘This (does) not (exist) now’; ‘This (is) of this kind’; ‘This (is) not of this kind’. Because there will not be any distinct cause of any (particular) form of any object in any way, anywhere, any time. The universe will be without co-existence and co-absences because there will not be any distinction. [A possible objection:] There will be order (in the universe) on the basis of the distinctions between disappearance and appearance of states (= *avasthā*) (of things). [Answer:] These distinctions themselves are not possible in your system, on the basis of which there will be order; because the practice of non-existence of anything is untenable (according to you). If you accept the linguistic practice of non-existence in the case of some objects, then you will have to tell how that is tenable. Because there is no probans proving non-existence except non-apprehension. When non-existence is proved either on the basis of positive evidence or negative evidence, non-apprehension is always the *probans*. If one accepts the thesis that it (= the practice of non-existence) is on the basis of non-apprehension only, then one has to say that everything is the object of the practice of non-existence, wherever that (= non-apprehension) is there. Because there is no difference among these cases (in so far as they are cases of non-apprehension).”

a distance [qua gold solely], then its [possible further] particularizations (*viśeṣa*)—such as earrings, etc.—would not be the object of any desire of knowledge, by reason of their non-difference from gold, which [instead, has already been fully] known”.³³

Just like ‘Bachelors are unmarried men’ and ‘All bodies are extended’, so *sattayā sarvavastūni*, or ‘By [reason of] Being, every being is [something rather than nothing]’. The property *sattā* allows us to conclusively identify real beings from unreal ones, such as a hare’s horn, but never to distinguish any element within the domain of real, due to the obliteration of every further distinctive property. It follows that defining a golden crown solely as an occurrence of the property *sattā* constitutes, once more, a clear instance of *ativyāpti*; that is, over-application: ‘What is a crown?’, *‘Something existent’. In parallel, with respect to a golden crown qua gold solely, it could be thus improperly concluded that: **hātaka-mukūṭasya hātakatvavattvam eva asādhāraṇadharmam iti, ato hātaka-mukūṭasya ākaraja-tejo-dravyavattvam eva asādhāraṇadharmam iti ativyāpti-doṣa-lakṣaṇam*; *‘Goldness, is the peculiar property defining a golden crown, that is, being a substance of the mineral fire kind; [yet], this is a loose definition, for over-application’.³⁴

In the Manner of a Conclusion (9)

Making use of the tools which have been refined in P1&P2, some significant results have been highlighted here and secured by VM’s dialectical spiral movements. Whereas there is no possibility, in VM’s view, of instantaneous apparitions (I-Hy) and transformational continua (C-Hy), only permanence *tout court* (P-Hy) still stands its ground. NN logic has then proved able to escape in its expressions from the conceptual trap of the structural reference to a ‘third man’ and to be a valid alternative to the standard contemporary logic. Moreover, TKN and DSN have definitively excluded the appeal both to identity and difference—along with all their compromise variations, mediations, coordinations, and juxtapositions—as viable strategies to give an account of the golden crown microsimulation model. As SVN imposes (cf. P1.§4, P2.§4), when we are talking about a golden crown, we are talking about crowns. Everything else is just contradictory. The introduction of the additional label of ‘refined definition’ (*pariṣkāra-lakṣaṇa*) in epistemological taxonomy secures the now inescapable truth value of qualified cognition regarding that crown. Therefore, whilst acknowledging that bracelets and crowns have to be correctly known to be properly worn, it can thus be concluded that—in compliance

³³ VM-B (2018, p. 73): *sattānūvṛtīyā ca sarvavastvanugame “idam iha nedam, idam evaṃ nedam” iti vibhāgo na syāt | “kasyacit kvacit kadācit kathañcid vivekahetor abhāvāt” | api ca dūrāt kanakam ity avagata na tasya kuṇḍalādayo viśeṣā jīṇhāsyeran, kanakād abhedāt teṣām, tasya ca jñātatvāt* l. Cf. Phillips (2012, p. 165): “prover” (*hetu*).

³⁴ Regarding *ativyāpti*, cf. *supra* fn. 7. Regarding the definition of gold as substance and ‘mineral fire’, cf. TrS 3, 12 (1951, pp. 8, 54): *tatra dravyāṇi pṛthivyaptejovāyāvākāśakālādīgātmanāṃsi navaiva*; “Of them (the seven categories), the Substances are only nine—viz.: earth, water, light [or fire], air, ether, time, space, soul and mind”; *ākarajaṃ suvarṇādi*; “Gold and such other lustrous metals form the variety [of the objects made of fire] which is dug out of a mine”.

with the counterfactual definition of non-difference as expressed in P2.[34]—whenever a further property is correctly known as coreferential to another one, although to different levels of generality, the former can no longer be illegitimately obliterated, lest a considerable amount of information become lost and contradictions be generated. This outcome calls for a redefinition of causality and opens new possibilities of complex considerations in which plexuses of properties are involved in the most rigorous non-difference—which will cast new light on the heuristic potential non-dualistic accounts. This is a crucial issue that will need to be handled with great clarity in the last section of this project.

Declarations

Conflict of interest The author states that there is no conflict of interest.

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Notation and Abbreviations

a	primitive term (lowercase italics)
$_t$	abstraction functor, expressing the Sanskrit suffix <i>-tva</i> or <i>-tā</i> (e.g., $a_t = a$ -hood)
A	set A (capital)
$ a_t $	extension of an abstract; $ a_t = A$
R	relation R (capital italics)
$\mathbf{R}$	relational abstract (bold capital italics)
$R^{(R')}$	relation R' interpreted as R , <i>salva veritate</i>
$R[A]$	the relation R set of destination; for $R: A \mapsto B$, $\text{dom}R \subseteq A$, $\text{ran}R \subseteq B$, and $R[A] = B$
$\top$	<i>avacchedaka</i> operator; identifying the <i>limitor</i> of a relational abstract
$\sqsubset$	<i>nirūpaka</i> operator; identifying the <i>conditioner</i> of a relational abstract
$\cdot$	<i>niṣṭha</i> operator; connecting an abstract to a primitive term
$\Rightarrow$	<i>tadviparyayeṇa</i> operator ('vice versa'); expressing a symmetrical relation
$\updownarrow$	<i>yathā-tathā</i> operator ('just like-so'); capable of expressing the coordination of a relation with its inverse ($R \wedge R^{-1}$). It always preserves the distinction between abstract properties and primitives terms of the <i>anuyogin</i> and <i>pratiyogin</i> positions
$*\varphi$	'It is false that φ '
$^{(t)}$ '...'	<i>tātparya</i> (purport of an expression)
DSN	<i>Dharma-Sāmānādhikarāṇya-Naya</i> ('Properties Coreference Rule')

- SVN *Samānādhikaraṇa-Viśiṣṭatva-Nyāya* ('Principle of Coreferential Qualification')
- TKN *Tādātmīya-Kāraṇa-Naya* ('Identity Reduction Rule')
- TvN *Tadvattva-Nyāya* ('Axiom of Possession')

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