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TWO-PATH ESCHATOLOGICAL DOCTRINE BETWEEN ANCIENT INDIA AND ANCIENT GREECE: SHARED TRADITIONS OF USING MODELS OF ANNUAL SOLAR MOVEMENT IN MAPPING THE OTHERWORLD

Corresponding eschatological doctrines involving solar movement, zodiacal constellations, tropical signs and the Galaxy appear both in the ancient Indian and ancient Greek tradition. The shared concept is referred to as the two-path doctrine, reflecting the fact that its main feature is the recognition of two ways or paths, one for the ascent and another for descent of various entities, including gods and (im)mortal souls. In India its kernel is discernible already in the (late) Vedic period, while it was elaborated in the succeeding periods. In Greece, some elements of the doctrine are recognizable already in the 6th c. BC, but it reached its fullest form in the 2nd c. AD in the form of Neopythagorean and Neoplatonic exegeses of classical myths. Any connection between these two similar – but not identical – sets of doctrines cannot be demonstrated due to a number of obstacles preventing the creation of a model that would account for the doctrine's development and potential dissemination through a cross-cultural interaction.

Key-words: two-path doctrine, eschatology, ancient Greece, ancient India, solar movement, solstices, tropical signs, Galaxy, otherworld, Numenius

Cross-cultural interactions are among the most contentious subjects in modern scholarly discourse on the development and dissemination of ideas, belief systems, cultural production, myth, literature etc.¹ The appearance of comparable utilisation of models of annual solar movement in mapping of eschatological landscape in ancient India and ancient Greece is a case in point: an apparently related concept is arguably shared by these two traditions, but no straightforward connection between them is readily available.² Recently, a

1 I would like to dedicate this paper to Professor Marina Milićević Bradač, who inspired me, initially by her extraordinary lectures and later also in engaging conversations, to pursue the study of myth, cult and classical literature.

2 For an exploitation of the analogical relation between the annual solar movement and human life-cycle, with special emphasis on eschatology and solstices, in antiquity, see Gee 2020: 125, 168–170, 186, 248 (she refers to this phenomenon as the “tropic” notion of existence). Gee’s book as a whole discusses the incorporation of contemporary scientific tenets, in the first place cosmological, in eschatological discourse (see especially Gee 2020: 4–5, 7, 11, 131, 137, 151, 155, 190, 235, 275–276). In this essay I use the term “eschatology” in the usual manner of classical scholars, i.e., to refer to the end of life of individuals, rather than in the meaning “the end of the world” (Ciampa 2021: 131); this was misunderstood in an otherwise positive review of my book (Bilić 2021) in Van der Sluijs 2022: 300.

comprehensive comparison of Greek and Indian philosophy focusing on the period ca. 600–326 BC appeared (Seaford 2020) – at one point touching specifically upon the subject treated in this essay³ – which offers a convenient frame for discussing ideas shared by these two ancient traditions. However, the situation is complicated by, among various other difficulties, the uncertainties in the chronology of Indian texts, both absolute (more) and relative (less). In order to circumvent this obstacle, wherever possible, I will try to offer a standard scholarly estimate of the date of the Indian text being studied. Another significant difficulty is the late appearance of unambiguous references to the two-path eschatological doctrine readily comparable to its Indian counterpart in classical sources. Such references only appear in Neopythagorean and Neoplatonic allegoresis, which does not overlap chronologically with the attestations of the doctrine in India. However, an attempt can be made to recognize the presence of elements or variants of the two-path eschatological doctrine in earlier periods of Greek history, much closer in time to its Indian counterparts. At the same time, this recognition is hardly enough to establish any type of secure connection between the two attestations of similar doctrines, since the Indian iteration of the concept, as far as it is possible to broadly date it, still remains earlier, while there is no specific evidence for any kind of interaction between the two traditions on this particular subject other than the similarities between the content of the doctrine themselves.

In this essay I will offer an overview of certain Indian models of the annual solar movement, principally and specifically those relating to the notions also present in Neopythagorean and Neoplatonic allegoresis – namely, those involving solstitial gates characterised by certain eschatological resonances and/or paths or ways of mortals and immortals interpreted in terms of the annual solar movement. In general, a strong connection of eschatology and solar movement was current in Indian tradition. This is exemplified in the concepts surrounding the solar deity Pūṣan, who was involved in the journey of the deceased from sunset to sunrise following the nocturnal course of the sun, as well as in another solar deity, Savitṛ, who served as a psychopomp to Yama's realm; finally, Yama himself, the first person to experience death, followed the solar path, accompanied by other deceased.⁴ Thus the specific elements of the two-path doctrine shared by the Indian and Neopythagorean/Neoplatonic traditions can be plausibly contextualised within the wider Indian tradition of eschatological speculation. At the same time, a similar claim can be easily advanced with respect to the Greco-Roman tradition, where solar eschatology is often indistinguishable from its wider astral context.⁵

3 Thus Seaford (2020: 180, n. 67, 226–227, 290, 292–293) associates the Indian two-path doctrine with that found in gold leaves. I will not pursue this particular correspondence, but will rather focus on the similarities of the Indian doctrine with the Neopythagorean and Neoplatonic allegoresis.

4 More detail in Bilić 2021: 121, with sources and earlier literature; on the solar eschatology in the *Upanishads* see Bilić 2020: 88 and in the continuation of the text.

5 See an overview in Bilić 2020.

Ancient Indian tradition

Two eschatological “paths” or “ways” are often encountered in ancient Indian speculations on the afterlife. Thus the Ṛg-*Veda* distinguishes between the Way of the Fathers (*pitṛyāna*) and the Way of the Gods (*devayāna*).⁶ Their mutual relation is defined in ṚV 10.88.15, where, according to the Fathers themselves, the two Ways are that of the Gods and of the mortals (Geldner 1951; Jamison & Brereton 2014: 1534).⁷ It seems that Yama discovered – and at the same time opened – the Way of the Fathers for men to follow after death (ṚV 10.14.1–2; cf. AV 18.1.50). The existence of two “Ways” is evocative of the Neopythagorean/Neoplatonic exegeses on the Homeric Cave of the Nymphs that will be examined in the next section (cf. Mander 1999: 94–95, 104). Moreover, just as in the latter, the Vedic Ways are associated with the solar movement. Thus in ṚV 9.113.7–10 the abode of the *pitṛ*, the realm of Yama, where the sun is placed and eternal light rules, is the highest point of the sun.⁸ It is not easy to interpret what this phrase means in particular, but in terms of the diurnal solar movement it could only mean noon (indeed, Yama was said to have travelled on the diurnal solar path to the realm of the *pitṛ*, ṚV 10.14.1), and, in terms of the annual solar movement, the summer solstice.

According to a later – still Vedic – tradition, the World of the Fathers is situated in the south, while the World of the Gods is situated in the north (*Śatapatha Brāhmaṇa* 12.7.3.7).⁹ The gate of the World of the Fathers – thus probably the entrance to the corresponding Way – is to be found in the south-east (cf. ŚB 13.8.1.5), while the gate of the World of Heaven – probably to be equated with the World of the Gods and at the same time the entrance to the corresponding Way – is to be found in the north-east (ŚB 6.6.2.4; MacDonell 1897: 171). This

6 *Pitṛyāna*: ṚV 10.2.7, 14.7, 16.1–2; cf. AV 8.10.19, 12.2.10, 18.4.1; *devayāna*: ṚV 7.76.2, 10.2.3, 18.1, 98.11; cf. AV 12.2.10, 18.4.2; MacDonell 1897: 171; MacDonell & Keith 1912: i.529. The Ṛg-*Veda*, the earliest of the *Vedas*, was composed in its current form at the beginning of the 1st millennium BC, with the 10th book being the latest (Seaford 2020: 65). The reader will notice that almost all citations from the Ṛg-*Veda* in this paper are precisely from the 10th book, which perhaps indicates that the concepts studied here are probably of a somewhat later date than the bulk of the Ṛg-*Veda* and thus nearer in time to the earliest attestations of the corresponding Greek evidence.

7 According to Griffith 1897: ii.514, cf. MacDonell 1897: 171, the two ways are that of the Fathers and of the Gods and mortals. Wilson (1888: vi.244) is non-committal. Seaford 2020: 168 argues that the two paths are essentially indistinguishable in the ṚV, and that only in the AV they became distinct.

8 Thus Müller 1891: i.36; Geldner 1951; Kuiper 1983: 81–83; Nagy 1990: 96, 118 (for l. 10 cf. Wilson 1888: v.414: “the region of the sun”; Griffith 1897: ii.382: “the region of the radiant Moon” (but see his note on l. 10); Jamison & Brereton 2014: 1366: “the upper surface of the coppery one [=Sun and soma?]”).

9 The *Śatapatha Brāhmaṇa* is among the latest *Brahmanas* (ca. 800–600 BC) (Seaford 2020: 21); they in general date from the 10th to 7th c. BC (Seaford 2020: 20). The ruler of the world of Fathers is Yama (ṚV 10.14.7–9; AV 18.2.25, 46), and it is placed in the south (ṚV 10.15.6, 17.9). For Yama’s realm in the south see further *Taittirīya Saṃhita* 1.8.7, *Bṛihadāraṇyaka Upaniṣad* 3.9.21 (the *Yājñavalkyakanda*, the section of the *Bṛihadāraṇyaka Upaniṣad* encompassing its chs. 3–4, is dated to the early 5th c. BC, Seaford 2020: 128, 130) and *Mahābhārata* 3.42.16 (Lincoln 1981: 226), as well as *Bhāratiya Nāṭyaśāstra* 5.95ff (Kuiper 1983: 245).

could be a reference to the “solar” or seasonal nature of the entrance-points to the Ways.

Later tradition, as testified in the *Upanishads*, interpreted the Ways in its own manner, providing them with more overt solar and seasonal characteristics, explicitly introducing the notion of solstitial points into the two-path doctrine. Thus the *Chāndoyga Upaniṣad* (among the earliest *Upanishads*)¹⁰ describes the parting of the Ways of the Fathers and Gods; the Way of the Gods leads through the six months of the northern path of the Sun (*uttarāyana*, from the winter to the summer solstice) to “the year”, while the Way of the Fathers leads through the six months of the southern path of the Sun (*dakṣiṇāyana*, from the summer to the winter solstice) to the World of the Fathers (Williams 1872: 150 col. i.77–80, 397 col. iii.3–6).¹¹ The first Way facilitates the escape from the cycle of metempsychosis, while the second Way leads to rebirth (*ChU* 5.3.2, 10.1–8, Hume 1921: 230, 232–233).¹² This is the reason why the hero Bhishma, mortally wounded at a time when the sun was on its southern course (*dakṣiṇāyana* = *pitṛyāna*), waited for the winter solstice in order to pass away during the northern course of the Sun (*uttarāyana* = *devayāna*) (*Mahabharata* 6.120, 122, Ganguli 1883–1896: iii.304–305, 308).

The description suggests that the entrance to the *devayāna* is the same as the entrance to the *uttarāyana*, that is, the point of the winter solstice.¹³ Also, the entrance to the *pitṛyāna* is the same as the entrance to the *dakṣiṇāyana*, that is, the point of the summer solstice. According to the *Śatapatha Brāhmaṇa*,

10 The earliest *Upanishads*, including the *Chāndoyga* and the previously mentioned *Bṛihadāraṇyaka Upaniṣad*, possibly date from the 7th–6th c. BC, but perhaps from the 5th c. BC or even later (Seaford 2020: 21). The latter is perhaps the earliest of all *Upanishads*, being the final section of the *Śatapatha Brāhmaṇa* (Seaford 2020: 114).

11 *Dakṣiṇāyana* is an equivalent of *Yāmyāyana* (Williams 1872: 816 col. i.69–71), and the *Taittirīya Brāhmaṇa* (1.5.2.6–7) divides the nakṣatras into the northern ones, those of the Gods (*Deva-nakṣatra*) and the southern ones, those of Yama (*Yama-nakṣatra*) (Oldenberg 1894: 631; Jacoby 1895: 220–221, 1910: 463; MacDonell & Keith 1912: i.375, 421, 530, who reverse the character of the two groups; compare also the much later *Sūrya Siddhānta* 12.45–46, 48, 51, 55–58, 61, 63–64, 66–69 (Burgess 1860: 248–250 = 1858–1860: 392–394), with its hemispheres of Devas and Asuras; but here the dividing points are the equinoxes, although in 51, 61 and 68–69 the author shows he is familiar with the solstice-to-solstice section of the Sun’s path). For the six-months’ southern and the six-months’ northern course of the Sun see also *Taittirīya Saṃhita* 6.5.3 (an early text, Keith 1914: 540), *Kauṣītaki Brāhmaṇa* 19.3, 25.1 (Keith 1920: 452, 486, also rather early), *Sūrya Siddhānta* 14.9 (Burgess 1860: 267 = 1858–1860: 411, a much later text) etc.

12 The report given in the *Bṛihadāraṇyaka Upaniṣad* 6.2.2, 15–16 (Hume 1921: 161, 163) is almost identical, except here the traveller reaches the World of the Gods after finishing his voyage on the *uttarāyana*, instead of *ChU*’s “year”, repeated in *ChU* 4.15.5–6 (Hume 1921: 224) (on these passages see the discussion, with a different emphasis, in Seaford 2020: 172–178). An abridged version, mentioning explicitly only the *devayāna* and the realm of the *pitṛ* and without an account of the solar movement, is given in *Kauṣītaki Upaniṣad* 1.2–3 (Hume 1921: 303–304; West 1971: 63–64; the *Kauṣītaki Upaniṣad* belongs to the five earliest *Upanishads*, together with the already mentioned *BṛU*, *ChU* and *Taittirīya* and *Aitareya Upaniṣad*, Seaford 2020: 151); another abridged account, mentioning *dakṣiṇāyana* = *pitṛyāna* and *uttarāyana* is given in the *Praśna Upaniṣad* 1.9–10 (Hume 1921: 379); a brief account of *uttarāyana* and *dakṣiṇāyana*, very similar to the one in *ChU*, is given in the *Bhagavad Gita* 23–26 (Swarupananda 1909: 191–195).

13 For the winter solstice as the beginning of *devayāna* see Kuiper 1983[1947]: 7.

these entrances are called “gates”. This is another clear parallel to Neopythagorean/Neoplatonic concepts as will be adduced in the next section, and it connects nicely with the concept of “ways” in both respective traditions.

There are variants of this concept in other Indian texts. According to the *Praśna Upaniṣad* there are two Ways to “the year”, *uttarāyana* and *dakṣiṇāyana* (PU 1.9–10, Hume 1921: 379), which contradicts the *ChU*, but the rest of the description is the same, with *uttarāyana* leading to immortality and the *dakṣiṇāyana* to regeneration through the Way of the Fathers, “which is matter”. The *Maitri Upaniṣad* adds that the *uttarāyana* leads to “the opening of the door here in this world” – “the door of the Sun” – and “the farther shore of this darkness” (MU 6.30, Hume 1921: 443–444). Yet this solar door is a passage through the midst of the Sun into the extra-mundane Land of Bliss, not a solstitial gateway.¹⁴ On the other hand, according to the *Jaiminīya Upaniṣad Brāhmaṇa*, also among the earlier *Upanishads*, the heaven and earth embrace at the end of the sky (JUB 1.5.5, Oertel 1896: 85); there, beyond the earth-encircling ocean is an extremely narrow gap (BrU 3.3.2, Hume 1921: 111); the sun is born every day in the East from “the boundary-line” (*sīman*) (ŚB 7.4.1.14, Eggeling 1894: iii.366, n. 1), and the *Aitareya Upaniṣad* – one of the five earliest *Upanishads* – knows of a door named “the cleft” created by cleaving asunder the *sīman* (AU 3.12, Hume 1921: 297). This seems to be a description of a point on the horizon between heaven and earth, associated with the rising sun, where the gates of the sun are located. This concept does not seem to be associated with solstitial gates as such. But in the *Śatapatha Brāhmaṇa* he who “knows its doors” “gains the year”, the doors being – perhaps somewhat unsymmetrically – spring and winter (ŚB 1.6.1.19).¹⁵ Through the “door of the heavenly world” one can enter arriving at (either?) “end of the year” (JUB 4.15.2, 4, 14.7, Oertel 1896: 214), and some claim there are two doors of the sun (JUB 1.30.3, Oertel 1896: 107). This seems to be a description of the solstitial gates identified both with the year’s ends and its two gates – on a spatial level, placed at the horizon – through which one can ascend to the heavenly world.¹⁶

14 Cf. *ChU* 8.6.5 (Hume 1921: 267); *BrU* 5.10 (Hume 1921: 153); *Muṇḍaka Upaniṣad* 1.2.11 (Hume 1921: 369); *Jaiminīya Upaniṣad Brāhmaṇa* 1.3.5–6, 3.21.3 (Oertel 1896: 83, 182). West (1971: 90, n. 3) adduces the parallels from the Manichaean *Kephalaia* (158.31), where the sun is described as the “gate of going-out of the soul”, and the sun-doors in the *Mithras Liturgy* (PMag. iv.584, 625–626).

15 Cf. JUB 1.35.7 (Oertel 1896: 112–113), where spring and winter are the “ends of the year”.

16 According to the *Taittirīya Saṃhita* (7.4.8, Keith 1914: 607) the “mouth (*mukham*) of the year” is identified with its beginning (Tilak 1893: 46–47; Sengupta 1947: 168), while the *Kauṣītaki Brāhmaṇa* 5.1 (Keith 1920: 370–371, cf. 4.4, Keith 1920: 366) describes the “two ends of the year” merged at the beginning of the year (cf. ŚB 6.2.2.18 and the references in MacDonell & Keith 1912: i.424, n. 39). Cf. again TS 6.5.3 (Keith 1914: 540): “The season-vessel has mouths on both sides, for who knows where is the mouth of the seasons?” (I cannot determine whether this applies to two solstice points – if the season-vessel represents the year – or to twelve season-cups, representing months – it is said there were twelve of both – or to the beginning and end of a two-month season). Thus both the beginning and the end of the year converged at its mouth and this point (the winter solstice) could be called by any of these three terms (beginning, end, mouth). A similar concept is poorly attested in classical tradition; thus in Rome the door of the year (*anni janua*) is opened by Janus (*Myth. Vat.* 3.4.9, p. 170 Bode), who guards, together with Horae, the *fores caeli* (Ov. *Fas.* 1.125), being also the *caelestis ianitor aulae* (1.139); furthermore, it is said that the month of January opens “the doors of the solar year” (*Anth. Gr.* 9.384.1: εἰς ἐμῆθεν λυκάβαντος ὑπὸ ἡλίου τοῦ θύρετρα).

As will presently become clear, this Indian concept is very similar to at least the Neopythagorean/Neoplatonic exegeses of Homer's description of the Cave of the Nymphs and some other passages (see the next section), if not the passages from the *Odyssey* themselves. However, as already noted, due to various important obstacles one cannot draw any definite inferences on either the development or dissemination of this particular doctrine from these similarities.¹⁷ It is thus not possible to create a plausible model which would allow following the dispersion of these concepts both spatially and temporally. At the same time, the notions of the Way of the Gods and the Way of the Fathers (mortals?), corresponding to the northern and southern section of the sun's course, whose beginnings are defined as winter and summer solstice, respectively (the words *uttarāyana* and *dakṣiṇāyana* also denote the solstices),¹⁸ and identified as the entrance-gates of the Ways, that is, in terms of classical tradition, the tropical signs Cancer and Capricorn, represent a concept parallel to classical exegeses of the Homeric Cave of the Nymphs.¹⁹

The tradition of allegoresis

If any passage in Homeric poems begs for a hermeneutic elaboration, it is the verses in the *Odyssey* where the poet described the Ithacan Cave of the Nymphs. The Neopythagorean and Neoplatonic tradition of allegoresis was heavily focused, at least as far as textual evidence allows us to assume, precisely on this passage, and I will discuss it here as a significant parallel to the Indian tradition studied in the previous section. The exegetes of the Middle and Neoplatonic "schools" have utilised the concept of the sun's voyage, its

17 Mander 1999: 95, n. 7 comments on the cross-cultural transmission of specifically the concept of solstitial gates between India and Greece as "possible, but undocumentable" (presumably "incapable of being documented").

18 The localization of these gates in the *Śatapatha Brāhmaṇa* contradicts this orderly concept in that it places the gate of the World of the Fathers in the south-east ("Capricorn") and the gate of the World of the Gods in the north-east ("Cancer"), when it should be the other way around. Cf. Mander 1999: 95 with n. 8, who attempts to solve the difficulty, at the same time claiming that the solstitial gates are called *devayāna* and *pitryāna*.

19 According to the later *Viṣṇu Purāṇa* (2.8, Wilson 1840: 223, cf. 220) the northern course of the sun commences with it entering Capricorn, and its southern course when it enters Cancer (cf. Varāhamira's *Bṛhat Samhitā* 3.1–2, Iyer 1884: 12). The *Kauṣītaki Brāhmaṇa* 19.3 claims that the Sun turns northwards in the month of Magha (Keith 1920: 452; perhaps also, implicitly, *Taittirīya Saṃhitā* 7.4.8 (Keith 1914: 607 with n. 3), see the interpretation in Tilak 1893: 48–50, 53–54, cf. MacDonell and Keith 1912: i.426, Sengupta 1947: 169–170), while the astronomical work *Vedāṅga Jyotiṣa* (Ṛg-Veda-VJ 5–6, *Yajur-Veda-VJ* 6–7) also speaks of the commencement of the sun's northward course in the same month (Sastry 1984: 45; cf. the verses of astronomer Garga quoted in the much later commentary of Somakara on the *VJ* 9 ("wenn beim Beginn von des *māgha* weißer Hälfte den Gang nach Nord", Weber 1862: 34, and a passage in the *Baudāyana Śrauta Sūtra* cited in MacDonell & Keith 1912: i.422, n. 126; also *Artha-śāstra* 2.20.42, Kangle 1972: ii.140; Ōhashi 1993: 208, cf. 2.20.61–62, Kangle 1972: ii.141, Ōhashi 1993: 200; similarly, the Buddhist Sanskrit work *Śārdūlakarṇāvadāna*, Ōhashi 1993: 201). Since the month's epithet is *Pitrya* (Williams 1872: 574 col. iii.80; cf. Al Biruni, *India* 37, Sachau 1910: i.358), the "gate of Capricorn" must have been associated with the Way of the Fathers, as in the *ŚB*.

“gates” and “turnings”, and its association with the *genesis* of souls in their cosmological and eschatological speculations. The most convenient way to present their ideas on these subjects, dictated by the preserved textual evidence, is through the analysis of their allegorical interpretations of the Homeric Cave of the Nymphs, since in their allegoreses of this passage they offered their ideas on the annual movement of the sun and its eschatological resonances.²⁰

According to the poet of the *Odyssey*, the Cave of the Nymphs is located at the head of a harbour, next to an olive-tree; within it are stone vessels into which the bees store honey and stone looms on which the nymphs weave. Moreover, the water flows unceasingly through the cave. Finally, it has two θύραι: the northern one is used by men to descend, while the divine (θεώτεραι) southern one is a path (ὁδός) reserved for the immortals; men are explicitly forbidden to enter through them (*Od.* 13.102–112).²¹ The passage raises many questions; it certainly appears enigmatic to the modern reader, and it seems reasonable to try to explain it in some way. For example, some of the questions raised by the nature of the cave’s gates are if men descend (καταβαταί) through the northern gate, which way do they ascend? And through which gate? They are explicitly forbidden to enter through the southern gate, but can they exit this way? Or, to put it in another way, can they exit unchanged? Moreover, are the ἄθᾶνatoi only gods, or any immortal being, such as, as understood by some, human soul? Here a somewhat reduced variant of the principle of charity should certainly be applied and allow the poet a reasonable level of coherency, rationality and common sense (Lloyd 1990: 18; Buxton 2009: 58–61, 250–251; Bilić 2016: 216). But no reasonable application of the principle of charity could result in the Neopythagorean/Neoplatonic exegeses as we have them.

On the contrary, precisely an extremely generous application of the principle of charity is recognizable in the tradition of allegoresis focused on this passage. The scholiast on the *Odyssey* thus read “cave” as world, “nymphs” and “bees” as souls, “men” as bodies, northern gate, “the exit of bodies, i.e. *genesis*”, and southern gate “the entrance of [immortal] souls”, forbidden for all of corporeal nature (Σ B *Od.* 13.103, Erbse ii.562; cited in Lambertson 1986: 321). In whichever way we chose to interpret this passage,²² it is certain that the scholiast, whether influenced by Cronius and/or Numenius, Porphyry or someone else (see immediately below), accepted the concept of allegorical interpretation of the Cave of the Nymphs as a sublunar region into which the immortal souls descend at birth and from which they ascend towards their real home, the heavens, at the moment of death. The *Odyssey*’s two gates are taken as the entrance and exit points of this process.

A similar line of interpretation is discernible in Porphyry’s essay specifically dedicated to the interpretation of the Homeric Cave of the Nymphs. Here

20 What follows is a slightly revised version of the discussion in Bilić 2020: 85–86.

21 Mander (1999: 95) understands by “immortals” both the released souls of men and the “*avatāras*” of the gods visiting the world of humans.

22 See the discussion and earlier literature in Lambertson 1986: 322–324.

the Phoenician-born Platonist associated certain notions of the 6th-c. BC mythographer and cosmologist Pherecydes,²³ involving, among others, “caves” and “gates”, with the descent and ascent of the souls (Pherecyd. fr. 88 Schibli with Porph. *De antro nymph.* 31.7–9). He further considered a cave as the symbol of the world, both this particular cave, on the authority of Numenius and Cronius, but also caves in general (*De antro nymph.* 5.1–8, 6.4, 20, 9.1–2, 4–7, 12.7–9; Numen. fr. 31.1–2 Des Places; Cron. in *De antro nymph.* 21.3–4 Arethusa ed.).²⁴ He further claimed that both the Pythagoreans and Plato made a cave the symbol of the world, as well as Empedocles,²⁵ and that the Naiads, honey and bees symbolise the souls and their descent and generation (*De antro nymph.* 12.1–2, 14.2–5, 17.2, 18.1–3, 9–11, 19.1–3, 8–10). Concerning the double entrance of the cave, Porphyry is more explicit than the scholiast, while his discussion is probably derived from the mid-2nd c. philosopher Numenius (Numen. frs. 31–32 Des Places = Porph. *De antro nymph.* 21.3–24.4, 28.1–10). First, he explains the concept of two tropics and tropical signs, Cancer and Capricorn; next, he claims that these signs are the two πύλαι, identical to Plato’s στόμια of the *Republic*, which he probably equates with two χάσματα mentioned in the same work (*De antro nymph.* 21.4–7, 22.6–8; Pl. *Resp.* 10.614CD, 615DE).²⁶ Finally, he explains how through the northern gate, that of Cancer, the souls descend, while through the southern one, that of Capricorn, the souls ascend to heaven (*De antro nymph.* 22.8–10; cf. 24.8–9, 26.1–2).²⁷

23 These are his professional designations in *BNP* s.v. *Pherecydes* 1 (L. Käppel, K. Meister). Lately, Lamberton has raised the question of the separation of the material taken over by Porphyry from Cronius and/or Numenius from his own contributions and argued that the two Neopythagorean authors – especially Cronius – might have been the actual voice(s) behind much of Porphyry’s discussion, including the references to earlier sources (Lamberton 2022: 391, 393, 399, 402, 404). Akçay 2019, a comprehensive study of Porphyry’s essay, which includes an extensive (mostly philosophical) commentary on the text of the treatise, rather focuses on Porphyry as the dominant presence in the text of *De antro nymphaeum*.

24 Compare the 11th-century summary of Porphyry’s work by Michael Psellus, *Opusc. Log. Phys. Alleg.* 45 (ed. Duffy).

25 The former: *De antro nymph.* 8.11–12, cf. Plot. *Enn.* 4.8.1 for Plato; the latter: *De antro nymph.* 8.12–14 = 31B120 D–K, cf. Plot. *Enn.* 4.8.1. Akçay 2019: 81 argues that here Porphyry understood Empedocles as a Pythagorean. With respect to the Presocratic philosopher, Porphyry’s claim is in line with the contested interpretation according to which Empedocles’ cave in the *Katharmoi* represents the above-ground Earth (Wright 1981: 280; Trépanier 2017: 148, 171, 174; Akçay 2019: 83), although this naturally does not mean that Empedocles had the Homeric cave in mind. For a thorough criticism of the idea that Empedocles’ cave had anything to do with the sublunar but above-ground region of the world see Kingsley 1995: 36–40, who, however, had an axe to grind.

26 Cf. *De antro nymph.* 29.11–14 and 31.6, where Porphyry reports how Plato described two στόμια, one for the ascent of souls, the other for descent; he also reports how the theologians make the Sun and Moon “gates of the souls” (on which see Akçay 2019: 145–152), which corresponds to the testimony in Firm. Mat. *Math.* 1.5.9, where the descent through the sun and the ascent through the moon are described (cf. Gersh 1986: ii.733); for Plutarch’s account see below.

27 See also [Bede] *De Mundi Coel. Terres.* PL 90.900B and William of Conches’ commentary (Nauta 1996: 18). Cf. frs. 323–324 Smith, where Porphyry writes of the path(s) of the blessed (ὁδὸς or ὁδοὶ μακάρων, also ἀταρπτοί) entered through gates (πυλεῶνες), to which he also refers as a path to the gods (πρὸς θεοὺς ὁδὸς) (Johnson 2013: 106–107, 338–339; Akçay 2019: 145, n. 17).

This is the reason why Homer does not explicit the southern entrance as the path of the gods, but rather immortals, since the souls are also immortal (*De antro nymph.* 23.1–6; on a more precise interpretation of the categories of souls associated with south and north in the context of Porphyry's thought see Akçay 2019: 98, 102). Next Porphyry mentions that Parmenides also had those portals in mind when he had mentioned two gates (Parm. T133 Coxon = Numen. fr. 31 Des Places *ap.* Porph. *De antr. nymph.* 23.6–7).²⁸ He then proceeds in associating Homer's gates of the Sun with Cancer and Capricorn, for the sun advances as far as these signs, "when it descends from the north wind to the south; and from there ascends to the northern parts" (*De antro nymph.* 28.1–3 with *Od.* 24.12). Thus he interprets Homer's concept as applying to the annual movements of the Sun, rather than diurnal. After this, Numenius/Porphyry places the tropical signs Cancer and Capricorn in the Milky Way, situated at its northern and southern πέρατα (*De antro nymph.* 28.3–5 = Numen. fr. 32.4–6 Des Places).²⁹ In the end, Numenius/Porphyry cites the opinion of Pythagoras concerning the people of dreams, who interpreted them as souls collected in the Milky Way (*De antro nymph.* 28.5–7 with *Od.* 24.12).³⁰

The last two remarks in Porphyry's text, both referring to the Galaxy, deserve a more detailed discussion.³¹ The former will be discussed here, while I will postpone the analysis of the latter to a more appropriate point in the text. The northern junction of the zodiac and the Galaxy is properly in the constellations Scorpius-Sagittarius, and the southern in Gemini-Taurus.³² The inter-

28 How much of this is Numenius' and Cronius' interpretation (quoted by Porphyry as sources on this point), and how much actually comes from Parmenides, who was active in the late 6th and the early 5th c. BC (thus I. Bodnár in *BNP* s.v.), is a moot point. Lambertson 2022: 401 confidently states that "virtually all material – from astrology to Parmenides – comes from the Pythagoreans". On this issue see further below.

29 Occasionally, the πέρατα could be equated with τροπαί, i.e. the solstice points. In the same vein, Numenius/Porphyry describes the tropics as two ἄκρα in the heavens (Numen. fr. 31.2–4 = *De antro nymph.* 21.4–6), employing a term used interchangeably with πέρατα and ἑσχατα. Furthermore, Numenius/Porphyry describes the tropics as two ἄκρα in the heavens (Numen. fr. 31.2–4 = *De antro nymph.* 21.4–6). On these interchangeable terms see Bilić 2013: 262–269; 2021: 42.

30 With regards to the people of dreams, suggestive parallels can be found in Homer's land of dreams located at the gates of the Sun (*Od.* 24.11–12), as well as Vergil's twin gates of Sleep – also modelled on the *Odyssey* (*Od.* 19.562–567) – at the entrance to Hades (*Aen.* 6. 283–284, 893, cf. 898).

31 What follows is a slightly revised version of the discussion in Bilić 2020: 84–85.

32 Numenius'/Porphyry's assertion (placing Cancer and Capricorn in the Milky Way) was repeated by Macr. *Somn. Scip.* 1.12.1, cf. 4–5; Isidore of Seville, according to the Laon glosses of the *DNR* 18 (MS Berlin Phillipps 1832, f. 5^r, Eastwood 2007: 70, n. 78), although there is no such mistake in Isidore's extant works; perhaps in the anonymous astronomical poem in Paris MS 12117, f. 138^r and Leiden MS Voss. Lat. 8° 15, f. 61 (*Anth. lat.* ii.244, no. 761.34–35 Riese), although no constellation names are mentioned here. In his turn, Macrobius was explicitly (*Bridef. Ram. glossae ad Beda De Natura Rerum* 18 (PL 90.234D); according to Stahl 1990[1952]: 45, also by St Bonaventura in his *Commentarii in quatuor libros Sententiarum Petri Lombardi*, but I was unable to trace this particular reference) and implicitly (MS Paris 13955, f. 56^r ad *Somn.* 1.12.1, Eastwood 2007: 69, 316 with n. 11) corrected, while elsewhere his intersections are contrasted

section was thus placed in Gemini and Sagittarius by a number of classical authors and those working in classical tradition.³³ During the first centuries of the new era the solstice points moved from the *constellations* of Cancer and Capricorn into Gemini and Sagittarius; although the latter are indeed “Galactic” constellations (meaning that part of these constellations is in the Galaxy), the points themselves were still a long way from the Galaxy itself (obviously a small matter to whoever originated this assertion and those who repeated it). The solstitial *signs*, however, would still be called Cancer and Capricorn, respectively, even though Gemini and Sagittarius would now be the new tropical *constellations* (cf. Reiche 1993: 165).

Some resonances of Numenian doctrine were recognized in the so-called apotheosis diptych, which most probably depicts Julian the Apostate and should be dated to the early 5th c. Here the wing of one of the genii carrying the emperor towards heavens transects the arch of the zodiac in Capricorn (its actual depiction between Sagittarius and Aries is missing) (St. Clair 1964: 207). The diptych certainly reflects a much more ancient concept of soul’s path, in accordance with the fact that its creator used the iconography of the Antonine period, contemporary with Numenius’ *floruit*. At the same time, it was argued that Julian’s description of the ascent of souls through Helios – after the sun passed the vernal equinox and approached the northern hemisphere – and the increase in the force of upward attraction of its rays shows a certain resemblance to Porphyry’s concept (*Or.* 5.172A–D; Mau 1907: 106–107; Pack 1946: 153). However, I do not recognize here any specific connection with the ascent

with the “correct” ones (Gemini/Sagittarius) in Aratus (Glasgow, University Library, MS Hamilton 11, f. 14ra (Caiazza 2002: 83), commentary of Macrobius’ *Commentary* ad 1.12.1; Cologne glosses, commentary ad *Somn. Scip.* 1.12.1 (Caiazza 2002: 143, 209–210); the glosses excerpted from MS Hamilton 11 found in MS København, Det. Kongelige Bibl., Gl. Kgl. S. 1910 4^o, f. 54^v, Caiazza 2002: 283).

33 E.g., Manil. *Astron.* 1.690–691, 695–696; Hyg. *Astron.* 3.26, 4.7; *HN* 18.281; Ptol. *Syntax.* 8.2, ii.1.172, 176 Heiberg (cf. Dekker 2013: 77–78); perhaps the disk from Brindisi (*LIMC* 8.1.492, 2.320 s.v. *Zodiacus* 6; Burkert 1972: 367, n. 91); Philop. In *Arist. Meteo.* 1.8, pp. 102.14, 114.17–18, 115.11, 117.1–3 Hayduck; Olympiod. In *Arist. Meteo.*, p. 75.11–14, 37, 76.3 Stüve; Mart. Cap. 8.835; Σ MDΔUA Arat. 474; Anon. II Arat. Lat. *Recensio interpolata* ad 469–476, p. 277 Maass = Σ *Sangermanensia Aratus latinus* p. 230 Breysig; Anon. III *Excerpt. de astrol. Arati*, pp. 310–311 Maass; Bede, *De natura rerum* 18 (PL 90.233A); the Mainz globe (Dekker 2013: 70–71, Figs. 2.11–13, 74, Fig. 2.15, 78, Tab. 2.2, 110–111); the medieval planispheres from MS München, Clm. 210, f. 113^v (Savage-Smith 1992: 17, Fig. 2.4; Dekker 2013: 151, Fig. 3.19), MS Bern, 88, f. 11^v (Verkerk 1980: 268, Fig. 9b; Dekker 2013: 148, Fig. 3.15), MS Boulogne-sur-Meer, 188, f. 20^r (Dekker 2013: 148, Fig. 3.16), London MS Harley 647, f. 21^v (Dekker 2013: 150, Fig. 3.18), Vatican MS Reg. lat. 123, f. 205^r (Dekker 2013: 152, Fig. 3.20), and perhaps from MS Berlin, lat. 129 (Phill. 1830), f. 11^v–12^r (Dekker 2013: 146–147, Fig. 3.14 and 3.14a); the medieval depiction of northern and southern hemispheres in MS Darmstadt, Landesbibliothek, 1020, f. 61^r (Dekker 2013: 182, Fig. 3.25); al-Bīrūnī, *Kitāb al-taḥfih li-avḥ’el óinḥ’at al-tanjēm* 167 (Wright 1934: 87); Mich. Psell. *Opusc. Log. Phys. Alleg.* 24.58–60, 64–65 Duffy; the depiction of the northern hemisphere in MS Vienna, Österreichische Nationalbibliothek 5415, f. 168^r (Dekker 2013: 368, Fig. 5.18); the globes of Dorn and Stöffler (Dekker 2013: 394, Fig. 5.31, 407, Fig. 5.44); Schöner’s globe gores (Dekker 2007: 144–145, Fig. 6.6); Dürer’s map *Imagines coeli septentrionales...* (<https://www.rijksmuseum.nl/en/collection/RP-P-OB-1493>), etc. (see <http://www.atlascoelestis.com/index.htm> with numerous other examples).

through the souls' gate in Capricorn – if anything, the ascent through Cancer is rather implied here. That said, Julian's concept certainly belongs to the same general class of eschatological speculation to which the Numenian doctrine also owes its allegiance.

As already emphasised, almost every point raised by Porphyry, as abbreviated above, is derived from Numenius (Lamberton 1986: 55, 63–64, 66, 70–71, 74, 126, 128; 2022: 391, 393, 399, 402, 404).³⁴ Together with Porphyry and, as will be shown immediately below, Macrobius, another source for Numenius' ideas is Proclus' commentary on Plato's *Republic* (fr. 35 Des Places *ap.* Procl. *In Remp.* ii.128.26–130.14, 131.8–14 Kroll; cited and translated in Lamberton 1986: 66–68, cf. 1992: 124).³⁵ Here Numenius similarly describes two $\chi\acute{\alpha}\sigma\mu\alpha\tau\alpha$ in the sphere of the fixed stars, Cancer and Capricorn, one for descent and the other for ascent of the souls (Procl. *In Remp.* ii.129.4–6). He further equates these two portals with two gates of the Ithacan cave, and defines the $\alpha\theta\acute{\alpha}\nu\alpha\tau\circ\iota$ in *Od.* 13.112 as immortal souls. Moreover, he explicitly equates the gates of the sun in *Od.* 24.12 with two tropical signs (Procl. *In Remp.* ii.129.13–24). Then he explains Homer's people of dreams from *Od.* 24.12 as the Milky Way, and adds that it was called "Hades" and "place of souls" by Pythagoras (Procl. *In Remp.* ii.129.24–26). Repeating the notion that Plato's $\chi\acute{\alpha}\sigma\mu\alpha\tau\alpha$ represent the zodiacal portals, he further equates the light that bonds the heaven and earth from *Pl. Resp.* 10.616B with the Milky Way (Procl. *In Remp.* ii.130.2–4).³⁶ Numenius' notions are nicely summarised in Proclus' following words: "He claims the signs of the Tropics [Cancer and Capricorn], the double $\chi\acute{\alpha}\sigma\mu\alpha\tau\alpha$ and the two $\pi\acute{\upsilon}\lambda\alpha\iota$ are different only in name, and again that the Milky Way, the 'light like a rainbow' and the people of dreams are all one" (Procl. *In Remp.* ii.130.9–12, citing *Pl. Resp.* 10.614CD, *Od.* 24.12/13.109–111, *Pl. Resp.* 10.616B and *Od.* 24.12, in that order). Thus, according to Numenius, the souls gather in the Milky Way, descend towards the earth by Cancer, and ascend to heaven by Capricorn.

Finally, the chief source for the concept as elaborated by Macrobius, an antiquarian author of late antiquity, is most probably once again Numenius, but this time through Porphyry.³⁷ Macrobius starts with a description of the crossroads of the zodiac with the Galaxy, which he, as already noted, locates in Cancer and Capricorn. He further claims that these tropical signs are called the *solis portas*, explaining the sun's path with reference to the solstices (*Macr. Somn. Scip.* 1.12.1).³⁸ Through these portals the souls descend (Cancer, the por-

34 What follows is a slightly revised version of the discussion in Bilić 2020: 86–87.

35 Incidentally, Lamberton does not correctly translate precisely the part of the text concerning the tropics and equator (noticed also by Beck 2006: 130, n. 36).

36 This is further claimed by Numenius (?), among others, in Procl. *In Remp.* ii.194.19–20 Kroll; cf. *Cic. Resp.* 6.16 = *Somn. Scip.* 3.6.

37 See Stahl 1990[1952]: 29–36, Gersh 1986: ii.516–518, 590–592 and Lamberton 1986: 319–320, with earlier literature. What follows is a slightly revised version of the discussion in Bilić 2020: 84–85.

38 Cf. *Macr. Sat.* 1.17.63; *Myth. Vat.* 3.8.13 (p. 207.37–42 Bode); Helpericus of Auxerre, *De computo* 2 (PL 137.25A) (Stahl 1990[1952]: 133, n. 2).

tal of men) and ascend (Capricorn, the portal of gods) (*Somn. Scip.* 1.12.2).³⁹ Macrobius/Numenius equated those portals with the gates of the Homeric cave, adding that Pythagoras believed that from the Milky Way begins the region of Dis, extending downwards, since the souls falling away from the Galaxy are perceived thenceforth to have departed from above (*Somn. Scip.* 1.12.3 = Num. fr. 34 Des Places). The soul on its descent remains in the company of the gods while still in Cancer, but when it leaves this sign and the Milky Way it begins its final downfall (*Somn. Scip.* 1.12.4).

After this review of Numenian evidence, which is naturally associated with the mid-2nd c. *floruit* of its author, it is worth considering how far back some of its tenets can be traced.

It seems likely that Parmenides, at the turn of the 6th/5th c. BC, had some knowledge of the gates used for the descent of the soul into birth and its ascent to the gods at death. This particular doctrine was thus probably current at this early period of Greek intellectual development. Parmenides' two gates mentioned by Numenius/Porphry were—or, rather, one of the pair was—arguably described in the part of his poem usually called the *Doxa* as the gate of ascent for the souls (Coxon 2009: 14, 275–276, 360–371). Furthermore, Simplicius' testimony, according to which Parmenides declared that the goddess transfers souls between visible and invisible realms can be associated with Numenius' remark on the two gates identified by Numenius and Porphry (but surely not by Parmenides) with Cancer and Capricorn, used for the descent of the soul into birth and its ascent to the gods, respectively (Simpl. *In Phys.* ix.39.19–20 Diels = Parm. T 207 Coxon, D-K 28B13; Coxon 2009: 240, cf. 276, 370–371; Tor 2017, 233–235, 239, 242–243, 247–248, 348–349, 358 and 2020: 62–63, 65–66, 69, 72–77, further cited at Mansfeld 2021: 221, n. 65). These interpretations rely on the credibility of Numenius and Cronius with respect to T133 Coxon, as well as on the amount of trust we put in Simplicius' testimony. It is fair to say that this particular interpretation is in general not accepted by the majority of scholars, although its more nuanced version has lately begun to gain some ground. On this interpretation, Parmenides' gates, which can be considered comparable with his “gates of the paths of night and day” from the proemium of the poem (Parm. 28B1.11 D-K), were indeed used for the souls' journeys (Coxon 2009: 276, cf. 371; Tor 2017: 255–256, 259, 272; 2020: 78). It can be further suggested that the gates stand on the border of the human world – the true Hades/Tartarus – and the aetherial region of the gods (Coxon 2009: 276–277; Tor 2017: 349, 355; 2020: 73). According to this interpretation, (one of) Parmenides' gates would represent the gate of ascent (later placed in the tropical sign Capricorn), through which the souls pass on their way towards the gods, escaping the cycle of genesis.⁴⁰ This would

39 This passage is further cited in Albertus Magnus, *Summa theologiae* 2.xii.q.72.m.4.art.3 (Stahl 1990[1952]: 134, n. 3).

40 For another association of the entrance to the aetherial divine region with the tropics see Coxon's (2009: 369) interpretation of Parm. 28B10.1–2 D-K, T61 Coxon = 28A37 D-K, T61a Coxon, cf. T54 Coxon = 28A37 D-K (aether) and 28B12.3 D-K = Simpl. *In Phys.* ix.31.14, 39.16 Diels (divinity).

push back the origin of this concept, even if it remains unclear which details were involved at such an early period (certainly not the zodiacal signs), to the turn of the 6th/5th c. BC. But some elements of Numenian doctrine might be even slightly – a generation or two – earlier. Thus, Edwards (1990: 260 with n. 11) has suggested attributing the reference to “a cave of the nymphs” in *BNJ* 3F16a to Pherecydes of Syros (rather than his later Athenian namesake, the mythographer), somewhat unpersuasively associating it with Numenius’/Porphyry’ account. But the reference is almost certainly unrelated to the Syrian Pherecydes, since it is offered by the scholiast on Apollonius in the context of Heracles’ search for the golden apples of the Hesperides; the scholia is explaining Apollonius’ reference to this particular task of Heracles, and the scholiast or commentator would certainly turn at this juncture to the well-known mythographer he cited so often (see Wendel’s index on p. 340 of his edition of the Apollonius’ scholia). More persuasively, the same author hesitantly accepted Celsus’ (Orig. CC 6.42, ii.112.24–27 Koetschau), as well as postulated Numenius’, interpretation of Pherecydes’ fr. 83 Schibli as referring to the identification of Tartarus with the sublunar or sub-ouranian region (Edwards 1990: 261–262); to this he is led especially by Porphyry’s already mentioned reference to certain features of Pherecydes’ cosmology (fr. 88 Schibli) which the Neoplatonist interpreted as referring to “becomings and deceases of souls” (Porph. *De antro nymph.* 31.7–9), which is an interpretation in general accepted by most modern authors (West 1963: 169; 1971: 25 with n. 3; Kirk *et al.* 1983: 59; Seaford 1986: 13; Schibli 1990: 118, n. 32, 119, n. 34; Granger 2007: 138; Purves 2010: 107). If one or both of these readings are accepted (the former seeming less likely than the latter), then at least some elements – once, again which particular ones remains unclear, but “caves” and “gates” seem certain – of Numenian allegoresis might go as far back as the 6th-c. BC Pherecydes (his *floruit* is apparently the mid-6th c., Schibli 1990: 13). Thus the elements of the doctrine concocted by Numenius apparently have a more distinguished pedigree, but it remains unclear at what point between Pherecydes and Parmenides on one side, and the Syrian philosopher on the other, the specific reference to the tropical signs entered the tradition. It appears that in the time of Heraclides Ponticus, i.e. the mid-4th c. BC, these entrance/exit-points were not yet fixed in their Numenian positions (see below).

The introduction of Cancer and Capricorn into eschatological speculation can be traced back to different sources. Previous scholarship has offered various solutions to this question of origin, of which none is completely satisfactory. The origin of the concept of the descent of souls through the northern gate of Cancer, and the ascent through the southern one of Capricorn, was thus attributed to Mithraic mysteries, but based on rather feeble archaeological evidence (Beck 2006: 111–112, cf. 86, 129–130, 213; Akçay 2019: 140, relying heavily on Beck’s studies).⁴¹ Thus the two niches placed in the centre of lat-

41 What follows is a slightly revised version of the discussion in Bilić 2020: 87.

eral benches in the mithrea would plausibly represent the solstices (cf. Gordon 1976: 133).⁴² But any connection of these solstitial niches with the concept of souls' gates is almost non-existent;⁴³ the association of solstitial signs with souls' gates is similarly scarce (CIMRM 390 with Miletic 1996–1997: 210, 985 with Beck 1979: 40–41 with fig. 3).⁴⁴ These examples hardly represent a solid body of evidence, although the concept itself should not have been unfamiliar to individual practitioners of Mithras' cult. Thus Porphyry suggests that the teaching of the path of descent and ascent of souls is an important part of Mithraic doctrine (*De antro nymph.* 6.8–10; cf. Akçay 2019: 68), although from Origen's testimony it would seem that the descent/ascent of souls was more likely associated with planetary spheres (CC 6.22; cf. Akçay 2019: 69). Naturally, the "eighth gates" are certainly somewhere in the sphere of the fixed stars, perhaps in one of the solstitial signs.

Alternatives to Numenian doctrine: Plutarch

Besides the Numenian doctrine, other eschatological speculations adhering to a similar cosmological framework can be recognized during the first centuries AD (perhaps also somewhat earlier). Thus a comparable concept might be reconstructed, although somewhat tentatively, from Plutarch's *De facie in orbe lunae* (*De fac.* 29.944BC).⁴⁵ Here the Chaeronean describes the features on the Moon's surface, consisting of deep and extensive gulfs, similar to those on Earth. The largest of those is called Hecate's *muchos*; Plutarch then continues: τὰ δὲ δοῦ, μικρὰ or μακρὰ etc. Cherniss believes it highly probable that the words dropped out of the subsequent text are to be restored as <τὰς Πύλας> (Cherniss 1951: 153, cf. 1957: 210, Schibli 1990: 117, n. 32); then follows an explanation, "for through them pass the souls now to the side of the Moon that faces heaven and now back to the side that faces earth". Cherniss compares the concept with those of Numenius, Porphyry and Macrobius, and concludes that Plutarch modelled his description on Plato's *Republic*. This passage is part of a longer discussion in which Plutarch describes the threefold constitution of human beings, consisting of body, soul, and mind (*De fac.* 28.942F–30.945D). The body is generated by the earth, the soul by the moon, and the mind by the

42 In the Ostia mithraeum of Sette Sfere the niches are located near the mosaic depictions of Cancer and Capricorn (CIMRM 239).

43 CIMRM 66 (why both *eisodos/exodos* on one of the pillars in front of one of the benches?), 186 (Cupid and Psyche approximately above one of the niches).

44 Cf. the possible association of the depictions of Cautes and Cautopates on the southern and northern benches of mithraei with the ascent and descent of souls and Porphyry's description of Cautes associated with the south and Cautopates associated with the north (*De antro nymph.* 24.14–25.1) and north and south wind, respectively (*De antro nymph.* 25.4–11, 26.1–7, 29.1–2), as concepts closely related to the ascent and descent of souls (Gordon 1976: 128).

45 What follows is a slightly revised version of the discussion in Bilić 2020: 87–88.

46 Cf. *De gen. Socr.* 22.591B for a somewhat different concept. It is possible that both accounts (that in *De facie* and that in *De genio Socratis*) ultimately rely on Xenocrates (Gottschalk 1980: 102;

sun.⁴⁶ Therefore, every human experiences dying twice, the first time when the mind and the soul separate from the body, which happens on earth, and the second time when the mind separates from the soul, which occurs on the moon. The “birth” is, consequently, also twofold. Plutarch’s two “gates”, or “recesses” (if we reject Cherniss’ reconstruction), represent the portals for the passage of mind-soul towards the earth on the one side of the moon, and the passage of the pure mind towards the sun on the other. Therefore, Plutarch approached the Platonic tradition in a different manner from the “Numenian” convention; but, since Porphyry also knew of the sun and the moon as the gates of the souls, it is possible that this allegorising tradition had a life of its own, independent of the better attested one.⁴⁷

Variants of this Plutarchian lunisolar eschatological arrangement is also attested elsewhere in classical tradition. Thus it is possible to recognize in a passage from Sextus Empiricus Posidonius’ concept similar to Plutarch’s, although this interpretation is unlikely;⁴⁸ it is more probable that Lucian parodies some such journey of the soul when he describes a voyage from the earth to the moon, thence to the sun, and finally to heaven and Zeus’ citadel (*Icarom.* 1; Cumont 1922: 106), while the Bern scholia in Lucan’s *BC* perhaps also describes the voyage of the soul from the sun through the moon to the earth (*Comm. Luc. Phars.* 9.9, Usener 1869: 291; Reinhardt 1953: 780.10–12).⁴⁹ Finally, Porphyry’s testimony, reporting how the theologians make the Sun and Moon “gates of the souls”, which corresponds to the testimony in Firmicus Maternus, where the descent through the sun and the ascent through the moon are described, shows a certain similarity to this concept, even though it is not completely identical to it (Porph. *De antro nymph.* 29.12–14 with Akçay 2019: 145–152; Firm. Mat. *Math.* 1.5.9). Elsewhere, the Manichaeans believed that the sun receives the souls and passes them over to the moon, who delivers them to the aeons of the Father, or that the moon carries the souls to the sun,

Dillon 1996: 214–217). At *Sent.* 29.22–31 Porphyry (Stob. 1.49.55) describes the ethereal, solar, lunar and earthly bodies of the soul (cf. Gersh 1986: ii.491, n. 301; Johnson 2013: 120–121; Akçay 2019: 123–124, 140, 176), while the *Chald. Or.* 61e Des Places (Procl. *Tim.* iii.234.26–30), cited by Proclus in the context of a discussion of Porphyry’s views (*Tim.* fr. 80 Sodano; cf. Johnson 2013: 120; Akçay 2019: 158–159), describe the descent of the soul through the aether, sun, moon and air (cf. Gersh 1986: ii.593, n. 404; Johnson 2013: 120; Akçay 2019: 160, n. 47).

47 On the other hand, at *De gen. Socr.* 22.590F Plutarch mentions two “openings” (*anastomôeis*) at the intersection of the Galaxy and zodiac (thus De Lacy & Einarson 1959: 467; cf. Kidd 1988: i.489), suggesting his familiarity with the “primary” tradition. It is not clear from the text whether Plutarch discusses the intersections of the Galaxy and zodiac in Gemini and Sagittarius or the solstitial points in Cancer and Capricorn.

48 *Adv. Math.* 9.73–74 (“[the souls] having quitted the sphere of the sun, inhabit the region below the moon”); Reinhardt 1953: 780.26–781.58, 782.10–791.19; disputed by Jones 1932: 116 (with reference to Reinhardt’s earlier works), similarly interpreted in Ju 2009: 114.

49 Cf. Mart. Cap. 2.150–166 (a division of the heavens into three regions: from the aether to the solar sphere, from the solar to the lunar sphere, and from the moon to the surface of the earth); Jul. *Or.* 4.44.158AB (Van den Berg 2001: 181) (the emperor expressed his wish to abide with King Helios after his death; elsewhere, Julian’s syncretic Helios elevates the souls to the intelligible world, *Or.* 4.10.136AB, 8.12.172A–D, Van den Berg 2001: 181, 222).

who ferries them to the aeon of light and the land of the blessed.⁵⁰ Similarly, some Pahlevi works describe the afterlife voyage of the soul as consisting in three steps: stars, moon, sun, and, eventually, “lights without beginning”, which was compared to Anaximander’s cosmology with its rings/ wheels surrounding the earth.⁵¹ Finally, several *Upanishads* describe the eschatology that includes both the moon and sun as stations on the soul’s path to the other-world or, in the case of the former, its return to the earth (*ChU* 4.15.5, 5.10.2, 4–6, Hume 1921: 224, 233; *BrU* 5.10, 6.3.15–16, Hume 1921: 153, 163; *KU* 1.2–3, Hume 1921: 303–304; West 1971: 63–64; *PrU* 1.9–10, Hume 1921: 379).

It is now finally time to discuss Porphyry’s second remark on the Galaxy, as announced above.⁵² This discussion will also contribute to the issue of introduction of tropical signs into eschatological speculation, briefly addressed above. It was pointed out in the preceding paragraphs that Numenius, Porphyry and Macrobius all recorded the Pythagorean belief in the Milky Way as the abode of souls.⁵³ This tradition was noted by other classical authors. For a number of them, apparently diverging from the Pythagorean notion, the Galaxy is explicitly described as the abode of the blessed, rather than all souls (Cic. *Resp.* 6.20 Powell).⁵⁴ A relatively early account treating Galaxy as the afterlife abode of all souls, however, is found in the work of the 4th-c. Academic philosopher Heraclides Ponticus (whose *floruit* was in the mid-4th c. BC). Here Empedotimus, an imaginary character, called the Milky Way

50 *Acta Archel. cum Man. disp.* 8, 11, cf. Epiph. *Adv. Haeres.* (66) 26.6–7; Epiph. *Adv. Haeres.* (66) 9.8–10, cf. *Kephalaia* 158.31–32. See also *Manichaean Psalms* 267.7–9 (Williams 1994: 229–230, 247–248).

51 *Bundahishn* 2 (Henning 1942: 230–233, 239–241; Anklesaria 1956: 31–35), cf. 3.7, 4A.4, 9.2 (Anklesaria 1956: 39, 55, 93); *Adrai Viraz* 7–10 (Haug 1917: 196–198); *Dāmdāt Nask* in *Šāyast La-Šāyast* 12.5 (West 1860: 341–342; West 1971: 67, cf. 90); cf. for this Persian cosmological concept Lincoln 1999: 185–186. For the comparison with Anaximander see Burkert 2004: 111, 113–114; cf. Furley 1987: 28; Hahn 2001: 19–20, 37–38.

52 What follows is a revised version of the discussion in Bilić 2020: 83–84, 88–89.

53 For a criticism of the thesis that the Milky Way is the abode of souls see Philopon. *In Arist. Mete.*, pp. 115.21–24, 117.32–36, 118.18–20, with Damascius (only against soul-vehicles) in 117.21–26, 118.12–14, 20–22 Hayduck (cf. Kupreeva 2009: 108–114). For “Pythagoreans” see especially Burkert 1972 and Huffman 1993.

54 Cicero’s source for the account in *Somnium* was either Antiochus or Posidonius, or Posidonius by way of Antiochus (Dillon 1996, 96–97, 101); less likely, he turned to Heraclides Ponticus – on whom see immediately below – directly (Dillon 1996, 97, 101; Kupreeva 2009, 98, 111); Manil. *Astron.* 1.758–804; perhaps Val. Flacc. 1.832–850; perhaps Sym. *Rel.* 3.20 (cf. Cameron 2011: 304, n. 149); *CIL* iii.1 suppl. 9631.2–3 = iii.2 suppl. 14685.4–5 with Bilić 2020; Favon. *Somn. Scip.*, p. 1.21–24 Hoder = 1.2, p. 13.14–16 Van Weddingen; Mart. Cap. 2.207–213; Placidius *Liber. Gloss.*, v.79 Goetz s.v. *Lacteus circulus*; Philopon. *Adv. Procl.* 7.20, p. 290.7–9 Rabe. For the Galaxy as the *path* of the virtuous to heaven see Auson. 3.37–42 = Paulinus of Nola *Carm.* 5.37–42 and Dracont. *Romul.* 5.323–329, *PLM* v.129–130. On the 3rd c. disk from Brindisi a celestial voyage or apotheosis directed towards Scorpio, i.e. the intersection of the Galaxy and the ecliptic, is depicted (*LIMC* 8.1.492, 2.320 s.v. *Zodiacus* 6; Burkert 1972: 367, n. 91). For possible representations of the ascent of a soul to the Milky Way see Cod. Vindob. 2352 f. 22 (Thiele 1898: 149, Fig. 65) and Cod. Matrit. A 16 fol. 68^v (Thiele 1898: 148, Fig. 64) (Cook 1925: ii.1.39, n. 5).

the path of the souls who traverse the celestial Hades.⁵⁵ Thus Heraclides understood the Galaxy as the road (ὁδός) of souls, rather than their final or temporary abode; but the remainder of his sentence suggests that he after all understood it as “celestial Hades” — alternatively, this Hades perhaps occupied the entire celestial realm. Both explanations seem equally possible, but in the light of references to Pythagorean belief in eschatological nature of the Milky Way, perhaps the latter is closer to what Heraclides had in mind. In his vision Empedotimus further saw three gates and three roads: one in Scorpio, where the apotheosis of Hercules occurred, another on the boundary between Leo and Cancer,⁵⁶ and a third between Aries and Pisces (fr. 94 Wehrli = fr. 57 Schutrumpf *ap.* Varro fr. 560 Bücheler).⁵⁷ This report combines the notion of the Galaxy as the abode of souls with zodiacal gates as entry and exit points, although these gates are located in somewhat unexpected and unusual places. At the same time, it is our earliest testimony for this type of particular and recognisable eschatological concept. It appears that the Numenian tradition was not established in Heraclides’ time or at least that it was not the only available option in the mid-4th c. BC. On balance, it seems more likely that the eschatological doctrine involving the two tropical signs Cancer and Capricorn had developed in a post-Heraclidean time, perhaps even under the influence of his ideas.

Other sources of late antiquity, apart from those in the Numenian tradition, similarly associated the notions of cosmic gates and the Galaxy as the abode of souls.⁵⁸ Thus Praetextatus’ widow mentioned in his epitaph that, because of his philosophical studies, the gate of heaven lies open to him, but Jerome denied him the *palatio* of the Milky Way (CIL VI.1779d.9 = ILS 1259; Jer. *Epist. ad Marc.* 23.3, PL 22.426), where his widow believed he would wait for her, thus

55 Heracl. fr. 96 Wehrli (= fr. 52 Schutrumpf) *ap.* Damasc. *ap.* Philop. *In Arist. Meteo.*, p. 117.9–12, 31–32 Hayduck, with Damascius’ and Philoponus’ commentary on pp. 117.12–19, 118.20–22 and 117.32–36, 118.18–23 Hayduck, respectively (cf. Kupreeva 2009: 108–114). For Heraclides’ opinion on the souls in the Milky Way see also fr. 97 Wehrli (= fr. 50 Schutrumpf).

56 Macrobius (*Somn. Scip.* 1.12.8) placed the constellation of *Crater Liberi patris* between Cancer and Leo, where intoxication is for the first time experienced by the descending souls because of the influx of matter, after they have left the Galaxy by exiting the sign of Cancer. Courcelle (1969: 42, n.71) associated this passage with Damasc. *In. Phaed.* 1.2–3, which includes a reference to Porphyry’s *Commentary on the Phaedo* (fr. 179 Smith), and it can be conjectured that he or Numenius were the authors (or transmitters) of the concept. But Crater was (at best) between the signs Virgo and Libra (in terms of constellations, Crater is between Leo and Virgo), not Cancer and Leo, and this seems like an attempt to attach the conception of Crater as associated with the soul’s descent to one of Heraclides’ gates. On the other hand, Vergil (*Georg.* 1.32–36) suggested that August could posthumously be catasterised in the space precisely between Virgo and Libra, and Servius comments (*Georg.* 1.33) that the ancestors placed the home of the gods in these two constellations (Cameron 2011: 580).

57 The discussion could have belonged to Varro’s satire Τριοδίτης τριπόλιος/*At the Cross-Roads before the Three Gates*, Kupreeva 2009: 103–108; on these three gates see Reiche 1993: 168–177. Plutarch (*De lat. viv.* 1130C) mentions a “third road” to/in the underworld, although he describes only two abodes of the deceased, which is associated by Wilamowitz-Moellendorf (1922: 498–500) with Varro’s concept.

58 What follows is a revised version of the discussion in Bilić 2020: 83–84.

showing that he knew that the gates of heaven lead to the Galaxy.⁵⁹ Jupiter's *palatia* in the Milky Way was also known to Martianus Capella, reached *via* Gemini – “the threshold of starry sky” – by Apollo-sun and Mercury.⁶⁰

It thus seems that during late antiquity the tradition of the Galaxy as the abode of the (blessed) souls was widespread, which is a notion that originated at least as early as the 4th c. BC, while some – rather tentative – testimonies suggest that it might have been current earlier than this period.⁶¹

Furthermore, it is known on good authority that the Pythagoreans nurtured a curious belief that the Milky Way marks a former orbit of the sun,⁶² with an alternative explanation according to which the Galaxy is the path of one of the stars that fell from heaven at the time of Phaethon's fall.⁶³ The former belief was explicitly attributed to Oenopides, who is reported to have offered the meal of Thyestes as the reason for the change (Oen. 41A10 D-K). Elsewhere,

59 Cf. Cameron 2011: 304, who denies the connection of the gate and the Galaxy. For the Galaxy touching the *caeli portae* see the anonymous astronomical poem in manuscripts from Paris (MS 12117, f. 138^r) and Leiden (MS Voss. Lat. 8° 15, f. 61) (*Haec pictura*) (*Anth. lat.* ii.244, no. 761.34–35 Riese) (here *caeli portae* might refer to Cancer and Capricorn, which would be a repetition of Numenian assertion, or it could mean that the Galaxy touches the solstitial colure in Gemini and Sagittarius).

60 Mart. Cap. 1.29 (Martianus explicitly refers to a *signum*, but he must have meant a constellation), 30, 97. He is probably referring to a passage in Ovid, where the path of the gods – the Milky Way – leads to the *domus* of Jupiter, called the *Palatia caeli* (*Met.* 1.168–176 with Anderson 1997: 168–169).

61 Thus it was claimed that the expression ἔριφος ἐς γὰλ' ἔπειτον from the much earlier “Orphic” gold tablets (A1 and A4 = 1B18.13, 20.5 D-K = frs. 487–488 Bernabé = 3.4, 5.10 Graf-Johnston, with variants in P1 = fr. 485 Bernabé = 26a.3–5 Graf-Johnston and P2 = fr. 486 Bernabé = 26b.3–4 Graf-Johnston) might represent an allusion to the Milky Way in an eschatological context (Burkert 1972: 363, n. 71, with earlier literature; Kouremenos *et al.* 2006: 170; Bernabé & Jiménez San Cristóbal 2008: 79–80). Cf. an enigmatic tablet from Gaul, where (l. 3) one can perhaps recognize a similar expression (Bernabé & Jiménez San Cristóbal 2008: 225). However, this interpretation seems at the moment poorly substantiated.

62 Cf. Philo (*De Provid.* 2.89, p. 101 Aucher), Armenian version (Runia 2008: 41). Furthermore, Metrodorus of Chios believed it to be a (surely former?) course of the sun (70A13 D-K). Some Latin authors took the Milky Way as the actual course of the sun, if only as the opinion of the uneducated: Placid. *Liber. Gloss.*, v.79–80 Goetz, s.v. *Lacteus circulus*; Isid. *Etym.* 3.46; Σ Germ. *Arat.* pp. 187.14–21, 230.6–8 Breysig; Anon. II *Arat. Lat.*, pp. 276–277 Maass; Bede, *De natura rerum* 18, PL 90.233A; an inscription on the map accompanying the *Liber Floridus* of Lambert St-Omer (Miller 1895: iii.50; Lecoq 1987: Fig. 1 on p. 17 no. 138; Hiatt 2008: 108) (see Gundel 1910: 561.62–66). The Milky Way was in a strange way associated with the sun by a number of Presocratics (Anax. 59A1, 42 D-K, cf. PDerveni xxv.3–12, according to Burkert 1997: 169–170, *contra* Betegh 2004: 301–302; Anax. 59A80 D-K and Democr. 68A91 D-K with Alex. *In Meteo.*, p. 37.23–28 Hayduck, Olymp. *In Meteo.*, pp. 66.28–29, 67.32–68.2 Stüve, Philop. *In Meteo.* p. 103.7–14; Hippocr. 42A6 D-K; Parm. T68 Coxon = 28A43 D-K = Aët. 2.20.16 Mansfeld & Runia 2020; “others” in Aët. 3.1.4 Mansfeld & Runia 2020 = 58B37c D-K), perhaps as a reflection of the earlier mythic concept.

63 Arist. *Meteo.* 345a14–18 = 58B37b D-K, 41A10 D-K; cf. Alex. *In Meteo.*, p. 37.8–22 Hayduck; Olympiod. *In Meteo.*, pp. 66.29–67.32, 69.35–70.6 Stüve; Philop. *In Meteo.*, pp. 101.24–102.36 Hayduck; Aët. 3.1.2–3 Mansfeld & Runia 2020 = 58B37c D-K; Manil. *Astron.* 1.729–749 does not attribute the theories explicitly to the Pythagoreans. See Burkert 1972: 321–322; Kidd 1988: ii.487–488; Mansfeld in Mansfeld & Runia 2010[2005]: 482–489.

the meal of Thyestes is offered as the mythic explanation of the cause of the errant motion of all planets (Anon. I *Isag.* 6 (Vat. gr. 191), p. 98.5–7 Maass), or Atreus' discovery of the planets' opposite ("errant") motion is given as the cause for the creation of the myth of the temporary change of the sun's path, which actually has no connection to its alleged leaving of the Milky Way (Philop. In *Arist. Meteo.*, pp. 101.34–102.3, 16–23 Hayduck).⁶⁴ Another version of the latter belief explains the Galaxy as Phaethon's path, which in effect absorbs it to the former, since Phaethon was initially only an epithet of Helios, and the name was used in Latin and later Greek as the name of the sun god himself (D. S. 5.23.2; Manil. 1.735–749; Olymp. In *Meteo.*, pp. 66.30–67.3 Stüve; cf. Lucian. *VH* 1.16; Gundel 1910: 562.43–50; Diggle 1970: 4 with n. 1).⁶⁵ In this way it is clear that the ancients associated the Milky Way, in one way or another, with the orbit of the sun and that one way by which solar movement was introduced into eschatological speculations was as a consequence of this particular association; alternatively, it could have been that the Galaxy was introduced into eschatological considerations due to its association with the course of the sun.

Conclusion

The Neopythagorean/Neoplatonic πύλαι correspond exactly with the tropics. This quite simple and elegant interpretation seems less successful in its exegesis of the Ithacan cave, and the reference to the generation of souls recognized by the Neopythagoreans and Neoplatonists in the description of the cave hardly justifies later exegeses. Nevertheless, the notion of the Milky Way as the abode of souls is well documented, and the Galaxy's intersections with solstitial colures were indeed considered as portals to the Otherworld. It seems hardly unlikely that this elaborate concept was present in the Homeric poetry, but some of its non-eschatological reflections can perhaps be recognized in the *Odyssey*; furthermore, in the light of the well-documented connection of solar movement and eschatology, even some eschatological reflections seem perhaps less far-fetched, especially when the gates of mortals and immortals are taken into consideration, even though the elaborate system envisaged by the Numenian tradition cannot be recognized in the Homeric text.

The Numenian doctrine seems to have developed gradually from a number of previously existing elements and concepts. The earliest level seems to have been Pherecydes' speculation on cosmological and eschatological matters involving "caves" and "gates", followed shortly by Parmenides' familiarity with

64 Polybius (34.2.6 with Eustath. *Od.* 10.21, i.364–365) claimed simply that Atreus discovered that the sun revolves in a direction opposite to the movement of the heavens, no doubt in connection to the meal of Thyestes (cf. Soph. fr. 738 Pearson; Eur. fr. 861 Nauck *ap.* Achil. *Isag.* 1, 20, Anon. I *Isag.* 1 (Vat. gr. 191); [Lucian.] *Astrol.* 12; Σ Eur. *Or.* 998; Achil. *Isag.* 20).

65 Dionys. Scyt. *FGrHist* 32F7 *ap.* D. S. 3.57.5 claimed that *Helios* was cast to the Eridanus, rather than Phaethon, while Nonn. *D.* 38.151–152 claimed that Helios gave to Phaethon his own name (Phaethon is the common name for the Sun god in Nonnus, Diggle 1970: 183).

the two gates used for descent and ascent of souls. Apparently during this same period or perhaps somewhat later, the Pythagorean belief in the eschatological nature of the Milky Way was either introduced into this doctrine or was available for such an introduction.⁶⁶ In the mid-4th c. Heraclides Ponticus added the notion of three zodiacal gates and three roads for the ascent of the soul to the already existing concept of the Galactic otherworld, which probably means that this particular aspect of Numenian doctrine as we know it was at least not firmly established at the time. The introduction of tropical signs as entry and exit points on the ecliptic was the final element of the fully-formed Numenian doctrine, one that could not have been introduced much earlier than the time of Heraclides. Whether all these elements – especially the inclusion of tropical signs – were combined only by Numenius or during the period between the mid-4th c. BC and the mid-2nd c. AD is impossible to answer. Heraclides' speculations were made at the time when the zodiac circle as such was not even introduced or was introduced only recently in Greece,⁶⁷ so this is the earliest possible date for the inclusion of tropical signs into the two-path doctrine. Perhaps the novelty of the zodiac motivated contemporary philosophers to claim it for their speculations – just as it did Heraclides – and someone incorporated the tropical signs into the already existing eschatological framework that included the ascent and descent of souls, Galaxy, gates, caves and paths.

The exact nature of parallelisms between this classical concept – or, rather, a nexus of similar concepts – and its counterpart(s) in ancient Indian eschatological speculations remains obscure. Seaford (2020) offered a thorough parallel study of Greek and Indian philosophy focusing on the period ca. 600–326 BC, arguing for similar (and roughly contemporary) socio-economic developments as an *explanans* for the correspondences between these otherwise separate intellectual complexes. This framework might also be applied, in most general terms, as an explanation of similarities in Greek and Indian iterations of the two-path doctrine, as postulated by Seaford himself, although he did not adduce the classical testimonies utilised in the present essay (see above). It certainly surpasses McEvilley's outright assertion of the Indian origin of the two-path doctrine (which he does not scrutinise in any detail and which he discusses in the wider context of the transmigration of souls), which was somehow transferred to the Presocratics such as Pherecydes and Heraclitus (McEvilley 2002: 39–44, 115–117). However, as already emphasised, due to the obstacles enumerated above it simply does not seem possible to devise a model which would allow determining the possible cross-cultural interactions between the two traditions that would circumvent these obstacles. Until some such model is developed, an aporetic conclusion – such as that offered by Mander (1999) cited above – remains, regrettably, the only scientifically honest inference possible.

66 Philolaus, the most prominent representative of the “Pythagoreans”, had lived ca. 470–ca. 385 BC (Huffman 1993: 5–6, 8).

67 Greek astronomers have been using it since the late 4th c. BC (Ossendrijver 2020a: 49; Rochberg 2020a: 150), while it was initially introduced in Babylonia ca. 400 BC (Ossendrijver 2020b: 135) or in the late 5th c. at the earliest (Rochberg 2020a: 150; 2020b: 477).

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