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# The Art of 'Scoring' Cosmopoiesis in Archaic Melic Verse: How the Singing-Poets of the Hellas of Yore Musically Mapped Their *Lebenswelt*

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[...] it is not clear in what respect the poet's song and voice are literally θέσπις ἀοιδή.

— Andrew Ford.

## Abstract

Among the Hellenes in archaic 'Song culture', it was axiomatic that when the 'inspired' *aidos* declaimed 'sacred song' (θέσπις ἀοιδή), the voice of the divine itself sounded forth. But what credited such a claim? What property of 'melic verse' encoded the voice of the Gods? Pursuant to what semiotic rationale? To answer these questions, this chapter looks at (1) what counted as the 'divine' for the early Hellenes, (2) how the 'inspired' *aidos* was able to 'source' it, (3) how he made it afford intelligence about cosmopoiesis and, finally, (4) how he gave this intelligence an expression that was legible to his listeners. The case is made that information about cosmopoiesis was encoded in the *melodies* and *metre* that accompanied the ordinary words used in melic verse. The semiotic rationale behind this claim was a mimetic correlation between (i) the 'arithmology' used to compose melodies and rhythms and (ii) the 'arithmology' used to quantify the blends of cosmic energies that powered the song's subject matter into its 'complexion'. Hence, listening to 'sacred song' amounted to hearing two narratives about the object of the song: one in the 'ordinary' words of mortals recounting what it means '*sub species hominis*', the other in melody relating its 'sacral', cosmopoietic significance.

**Keywords:** archaic melic verse, sacred song, hieroglossia, semiotics and *mousiké*, encoding environmental affordance, semiotics and arithmology

## 1. Introduction

‘The very voice of the divine itself sounds forth in what is heard’. This is the tenor of what Plato says in the *Ion* and in *Laws* about a variety of melic verse now generally called ‘sacred song’ (θέσπις ἀοιδή) when sung by an ‘inspired’ singing-poet or *aoidos*.<sup>1</sup> Modern first-time readers of the relevant passages would quite naturally assume this is said for dramatic effect or that it reflects some sort of tradition consecrated *fable convenue* or literary convention. However, better-informed and more context sensitive readings are not so dismissive. They tend to suppose that this sort of claim was meant to be taken literally and therefore ought to be treated as such.<sup>2</sup> What encourages them to say this more than anything else is the abundance of similar sounding language in the surviving works of Alcman, Hesiod, Pindar, Theognis, Bacchylides and many others. And let us not presume that what is purported by these self-styled ‘emissaries of the Muses’ boils down to no more than the predictably self-serving rhetoric of an ‘aedic ideology’. That would suppose that poetry and song listening publics were less convinced of the validity of the claim than the performers who made it, and until the fifth century BCE there is very little proof of that.<sup>3</sup>

But if this ‘conceit’ should be taken literally, what could justify such a bold statement? What *property* of verse encoded what counted as the voice of the divine? What semiotic engineering was required to make ‘θέσπις ἀοιδή’ a signifier of something as incommensurably other-worldly as the voices of the immortals? Alternately, what ‘theory of the sign’ lent this conceit the credence it evidently enjoyed?

To wend our way to some sort of clarity on this semiotic *punctum caecum*, I begin by placing a question mark beside those passages in the works of Plato where he suggests that the answer is to be found in the *melody* and *metre* modulating the ordinary words used in poetry. A good example of the kind of passage I refer to can be found in Plato's *Laws*.

[...] the gods, in pity for the human race thus born to misery, have ordained the feasts of thanksgiving as periods of respite from their troubles; and they have granted them as companions in their feasts the Muses and Apollo the master of music, and Dionysus, that they may at least set right again their modes of discipline by associating in their feasts with gods. [...] Now, whereas all other creatures are devoid of any perception of the various kinds of order and disorder in movement (which we term rhythm and harmony), to men the very gods, who were given, as we said, to be our fellows in the dance, have granted the pleasurable perception of rhythm and harmony, whereby they cause us to move and lead our choirs,

<sup>1</sup>On ‘ὁ θεὸς αὐτὸς ἐστὶν ὁ λέγων’, cf. *Ion*, 534d, *Phaedrus*, 245a & *Laws*, 719c. On ‘sacred song’ (θέσπις ἀοιδή or θεσπιωδία), cf. [1, 2]: 178-193 & [3]: 21-26.

<sup>2</sup>Cf. [4]: 38ff., [5]: 13, [6]: 36, 40, 64, [7]: 100ff., [8]: 28ff., [9]: 10-11, 16-17, 80-81. Comp. [2]: 178ff., [10], [11]: 116f., [12]: 78-79 & [13]: 34. For more sceptical or opposed views, cf. [14]: 171-172, [15-18]. For an up-to-date bibliography on the whole question, cf. [19]: 64n.18.

<sup>3</sup>Cf. [20]: 54n.56 on [12, 21, 22] and others who have studied the gradual transformation of poetic practices entrained by the pressures on rhapsodes to tailor their productivity and performances to the tastes of civil authorities and the general public and how this resulted in the view that Singing-Poets were ‘lying’ when they claimed they were emissaries of the Gods. Needless to say, we are unconcerned with poetic productivity in this ‘disenchanted’, post-archaic age. Also beyond the scope of this chapter, are what can be called the ‘lays of men’ ([3]: 17), which, in so far as they are ‘non-sacral’, should be contrasted with ‘θέσπις ἀοιδή’.

*linking us one with another by means of songs and dances; and to the choir they have given its name from the "cheer" implanted therein. Shall we accept this account to begin with, and postulate that education owes its origin to Apollo and the Muses?*<sup>4</sup>

Unquestionably, the main interest of this passage concerns Plato's 'conservative', not to say 'reactionary', views on the importance of music, melody and rhythm for educational purposes. But something else comes across quite distinctly in this passage which is highly relevant to early Hellenic ideas on the semiotics and semantics of the 'musical arts' like 'μουσοποιία', 'μελοποιία' and 'θεσπιωδία'. For it would seem that the goal of the 'inspired' singing-poet was to semantically and narratologically 'bi-nature' what one heard in his 'sacred song' and do so by 'over-signifying' what it related about its subject matter in 'profane', ordinary words ('πεζός λόγος') with a second, 'hieratic' or 'hieroglossic'<sup>5</sup> meaning encoded in melodised tones and metred rhythms.

What finality was subserved by 'over-signifying' verse with this melodically and metrically encoded hieratic meaning (σημεία, αἶνος, ἔννοια)? To judge from a close reading of texts like the one above, one might assume that it was primarily 'parainetic', *i.e.*, to instil in listeners certain tradition-hallowed values, norms and aspirations and thereby federate them around community binding 'ultimate sacred postulates'. Less narrowly focused readings, however, notably those that consider the point of prefacing melic verse with a hymnic 'proem',<sup>6</sup> would assume that something more fundamental was aimed at. Namely to express or 'epi-phon-ise' the song's subject matter 'κατὰ τὴν τοῦ θεοῦ ἐνέργειαν', *i.e.*, to the power of the 'cosmic' agencies to which it is beholden for its Being-in-the-world. The reference to Apollo and Dionysus in the passage above credits this view in as much as these appellations are, in the final analysis, metonyms for 'starry Ouranos' and 'all-bearing Gaia' and the role these 'Ouranides' (Οὐρανῖνες) play in the 'unveiling' (ἀνακάλυψις) of the world (cf. *infra*, note 21). A point which is important to stress here because it suggests that what made melic verse the 'voice of the divine' was its ability to signify or 'mime' the role played by Ouranos and Gaia in giving to the object sung about its Being-what-it-is. And even if it is not feasible here to go into all the scholarship from Dieterich [29] to Clay [30] on early ideas about *Mutter Erde*, it should be made perfectly clear right from the outset that what will be said in the following about the 'Sacred' or the 'divine' will be devoid of the least worth or meaning if it is confused in any way, shape or degree with any posterior acceptations of these words. And by 'posterior acceptations' I do not merely mean 'monotheological' models of a 'supreme being' or any of their 'post-theological' *Aufhebungen*. Nor do I refer only to the ideal of the divine in

<sup>4</sup>*Laws*, 653c-654a. Comp. *Symposium*, 187a-e, Homer, *Il.*, 1.603f., Hesiod, *Theogony*, 36-55, Pindar, *Pyth.*, 1.1-10 & *Pyth.*, 3.88-95 & – somewhat asyndetically – Theognis, 15-18.

<sup>5</sup>For what I mean by 'hieroglossia' cf. Robert [23]: 'the hierarchical relationship between two or more languages in which one is held to be the primordial idiom in the ordering of the representation of the world and the other, or others, receive the core of their meaning from the first. In other words, the value of the words of one language will be validated by their reference to another'. While Robert and I agree on this, we differ on what the expression 'primordial idiom' can mean. For unlike Robert, I do not think it must refer only to a second 'language', *e.g.*, Chinese as opposed to Japanese. It can also refer to another *medium*, *e.g.*, 'music' as opposed to 'ordinary speech'.

<sup>6</sup>On the hymnic proem as a ritual 'performative utterance' whose aim was to summon various cosmopoietic agencies, cf. [24]: 6-7, [25]: 8-9, [26]: 493-94, [27]: 47-53 & [28]: 305ff.

‘polis religion’ in which the Sacred was ‘*devocavit e coelo, et in urbibus collocavit*’.<sup>7</sup> I am also, and even above all, referring to the ‘astrocentric’ paradigm of cosmopoiesis usually referred to as the ‘harmony of the spheres’. This is a cosmopoietic ideal that emerged in the course of the fifth century BCE and differs radically from earlier cosmopoietic models in that prior to then ‘life-bearing Gaia’ (γαῖα φερέσβιος) was as much a cosmopoietic agency as Helios, Zeus or Apollo.<sup>8</sup> In any event, all we care about in the following is the semiotics of the way ‘sacred song’ ‘epi-phon-ised’ the voice of the divine because the melodies and rhythms accompanying and modulating the ‘mere words’ in melic verse encoded intelligence about the way Ouranos and Gaia gave to the subject matter of song its Being-what-it-is.

What, then, is the semiotic rationale that is operative in the claim that melodies and rhythms literally ‘lend a voice’ to the ‘divine’? Alternately, *how* can melody and rhythm ‘mime’ the powers that produces the cosmos and its content and therefore constitute a semiotic resource or ‘signary’ that one *must* use when it is one's intention to ‘epi-phon-ise’ the ‘divine nature’ (θεία δύναμις, θεία μοῖρα) of the object of sacred song?

The first point to be addressed by raising these questions is the extreme difficulty of providing them with adequate answers. This is mainly due to a total lack of anything anyone could consider reliable, first hand evidence. In fact, all we have is a mass of tantalisingly suggestive bits and pieces which, partially revelatory though each may be in their own way, are nonetheless extremely difficult to join together in such a way as to reconstruct the Humpty-Dumpty of which they are the debris. And the challenge is made all the greater when we make allowances, as we must, for the fact that none of the terms of our heuristic can be matched to anything resembling a stable, univocal referent. This is so because we have to assume that from the Bronze Age to the end of the Archaic period, anything referred to as ‘music’ or ‘song’ (e.g., ‘μουσική’, ‘μολπή’, ‘μελοποιία’, ‘ῥαπτὰ ἔπεα’ etc.) was subject to lively discussion among both theorists and practitioners, and not just as concerns their ‘signifying function’ in sacred song. Consequently, it would be rash to suppose that it is riskfree to speak of any of our key terms *singulare tantum*, even in a narrowly circumscribed timeframe.

To get around the hurdles this represents, we have no alternative but to resort to the same *faute de mieux*, ‘cladistic’ strategy resorted to by all philologists when confronted with a similar goal. In other words, we will assume that a certain logic is operative in, through and as all the evidence we have suggesting that, in some sense, the ‘Immortals’ really did sing forth in ‘sacred song’ and that this basic underlying logic is legible in varying ways and degrees in each of the bits of testimony we have. Consequently, what is required to elucidate the enigma at hand is to (a) identify the various expressions of the basic underlying logic, (b) look at what is opaque or obscure about each of them in the light of what is less opaque or obscure in other expressions of the same basic idea and, finally, (c) describe how each seem to be *membra*

<sup>7</sup>Wrested from the heavens, and relegated to the municipality’ (Cicero, *Tusculane disputations*, V, iv, 10).

<sup>8</sup>To have a sense of this difference, consider all the celebratory references to ‘life-giving Gaia’ (γαῖα φερέσβιος, γαῖαν παμμήτειραν, αἰθέρα καὶ γαῖαν πάντων γενέτειραν) in Hesiod (*Theogony*, 693), Pherecydes (DK7B2), Aeschylus (*Perians*, 618, Fragment 44), Euripides (*Phoenicians*, 685f., *Bacchae*, 275f.) and Homeric Hymn to Earth Mother of All, then compare this with the cerebral astro-centrism of Plato’s *Timaeus*, 36e, 90a, *Republic*, 529d & *Laws*, 898e as well as Aristotle’s *Metaphysics*, 1072a10ff. & *Ethica Nicomachea*, 1177b27-34. Cf. also [28]: 179ff., [29], [30]: 15-26, [31] II: 251-60, [32] & *infra* note 20.



*disjecta* of one 'originary' *unitas multiplex*. To this end, I will attempt to supply what I hope will be considered uncontroversial answers to the following questions.

1. What was the vocation of the inspired singing-poet and the finality of his art?
2. Why was some sort of commerce or dialogue with the 'divine itself' considered essential to practicing his art successfully?
3. What was the *modus operandi* of this dialogue between mortals and immortals?
4. Why was this sort of activity relevant, important and even vital to the community the inspired poet belonged to?
5. How did the singing-poet make melody, metre and musical sounds a 'signary' he could use to 'mime' or 'epi-phon-ise' the very voice of the Sacred?

## 2. The vocation of the *aoidos* and the finality of his art

Readers of literature on Indo-European Comparative Poetics will know that it is common to characterise the archaic *aoidos* as his community's 'tribal encyclopaedist'.<sup>9</sup> This basically means that he was the memoriser of the survival guaranteeing lessons learned from the collective experience of his client community communicated in allegorical form via the heroic feats of the tribe's great men.<sup>10</sup> This is true. Little else can be made of all the myths and legends that singing-poets were supposed to learn by heart and of which emblematic works like the *Iliad* are clear and eloquent testimony. But this pre-occupation was very much '*en abyme*' relative to a far greater imperative. Namely that of attempting to 'homologise' or synchronise the entire way of life of the singing-poet's community to the existence-structuring periods and cycles of its natural environment. This is why his *métier* was sometimes said to consist of practicing 'meteorology' (μετεωρολογία).<sup>11</sup> What this means is that it was his job to 'explore happenings in the celestial Empyrium and the Earth's vasty deeps' in order to make the 'signs of the sacred' (διοσημεῖαι) dappling his tribe's *Umwelt* 'afford' intelligence about the cosmos-creating, cosmos-orchestrating agencies at work in, through and *as* the natural environment where his community dwelt.<sup>12</sup>

Why this was then considered necessary or important hardly needs explaining. In marked contrast with today, people then did not have the technological capabilities we have to lull ourselves into the false idea that nature is a minor factor in the world we dwell in and that whenever it poses us a problem we can always just 'geo-engineer' 'nature resilient' and even 'nature resistant' living spaces. To the contrary, they were convinced that life itself and the

<sup>9</sup>[33]: 36ff., [34]: 150, [35]: 189ff., [36], [37]: 68-84.

<sup>10</sup>[27]: 4-6, [36]: 26, [38]: 57, [39] & [40]: 193.

<sup>11</sup>[41]: 3ff., [42]: 414f., [43]: 393ff., [44]: 141f. & [45]: *passim*.

<sup>12</sup>On exploring 'τὰ περὶ τῶν οὐρανίων παθημάτων καὶ περὶ τῶν ἐν Αἰδοῦ', cf. Plato, *Ion*, 531c, *Theatetus*, 173e, *Republic*, 596c, Hesiod, *Theogony*, 119, 669, Pindar, *Nem.*, 10.87sq. Sophocles, *Oedipus Tyrannus*, 300-301 as well as [34]: 154ff., [46]: 139-140, [47]: 130ff., [48]: 385ff., [49]: 47ff. & [50]: 99ff.

benefits of everything good it had to offer depended intimately and directly upon being as harmonised as it was possible to be to the cycles and cadences of the astro-meteoro-geological processes of which their *Lebenswelt* was a product.<sup>13</sup> But if this is clear, what is not, is the way the singing-poet distilled the ‘intelligence’ (εὖ εἰδώς, σύνεσις) that was needed to realise this harmonisation.

Certainly, we cannot rule out the possibility that at least some of them may have practiced geomancy and generated geognosy more or less the way Earth systems scientists do so today. In any event, we know that there existed a form of ‘reasoned reflexion’ (ἐμφορονος ζήτησις) called ‘omen science’ (τεκμαίρεσθαι), which because it consisted of ‘the discovery of non-evident truths by means of evident signs’ ([55]: 240ff.) seems to resemble what we today call ‘empirico-inductive reasoning’. Still, it would be unwise to focus too narrowly on this manner of analysing ‘sacred signs’ (διοσημεῖαι) to conduct *meteorologia*. Not, however, because ratiocination as ‘sophisticated’ as this could not be conjured out of the conceptuality and linguistic resources then available to *meteorologi*.<sup>14</sup> Rather because the ‘τεκμαίρεσθαι’ just referred to was not the only way to make the *Lebenswelt* ‘afford’ insight into the *modus operandi* of the agencies that give it the aspect in which guise it appears to us when we notice it. For alongside this ‘conjectural’ or ‘inductive’ mode of reasoning there existed another approach to nature study and *meteorologia*, one usually referred to as ‘intuitive’ or ‘inspirational’ reasoning (ἐμπνοίησις, ἐνθουσιαστική, μαντική ἔνθεος, χρησμολογία). What is more, it would appear that this alternative way of interfacing with the *Lebenswelt* and emptying it of the mysteries of its *Dasein* was considered altogether more reliable than the aforementioned reasoned reflection.<sup>15</sup>

Here I refer to the well-nigh universal belief that singing-poets and oracles were unable to vaticinate as they ought to unless they were ‘out of their wits’ (ἐκφρων) or ‘beside themselves’ (ἔξω ἑαυτοῦ). The *locus classicus* for this *doxa* is of course the passages of Plato's *Ion* devoted to the ‘theoleptic fit’ rhapsodes needed to undergo to become the mouthpiece of the divine. Unfortunately, however, this dialogue divulges nothing of any use for elucidating the utility of being ‘witless’ for practicing *meteorologia*, which is, again, ransacking the firmament and the Earth's vasty deeps to make them afford intelligence about the mysteries they conceal about cosmopoiesis, coming-to-be and complexity. That is why it would be better to stick to the ‘aetiologies’ of ‘inspiration’ (ἐνθουσιασμός) we find in the natural philosophies (περὶ φύσεως περὶ τῆς ὅλης οὐσίας) of the Pre-Socratics, especially those Armand Delatte discusses in his still valuable 1934 study entitled ‘*Les conceptions de l'enthousiasme chez les philosophes présocratiques*’ [59].

<sup>13</sup>Cf. Hesiod, *WD*, 42, Homer, *Il.* 2.484-7, *Homeric Hymns to Demeter*, 216-217, Pindar, *Nem.*, 11.44, Simonides Fr. 1, Simonides, 527, Archilochus Fr. 130, Theognis, 133-36, 1075 & Plato, *Republic*, 274c-d. For commentary and analysis, cf. [11]: 30, [51]: 189, [52]: ch. 7 (‘Fate in Sophocles’), [53]: 152-153 & [54]: 10ff. [52]: 164 & [53]: 149, 162 can also be profitably consulted as regards the strategies that were resorted to to reconcile ‘strong program’ fatalism with the exercise of a mortal agent's free will.

<sup>14</sup>Cf. [56]: 28, [48]: 321-22 & [57]: 3ff. who all indicate that the relative ‘scientific’ backwardness of the early Hellenes was due not so much to an inability to ‘progress’ the way we define it today as to a desire to make progress in a direction and by means that science as we understand it is useless to attain.

<sup>15</sup>This comes across distinctly in Alcmaeon of Croton, DK24A1: ‘περὶ τῶν ἀφανέων, περὶ τῶν θνητῶν σαφήνεια μὲν θεοὶ ἔχοντι, ὡς δ’ ἀνθρώποις τεκμαίρεσθαι’. For commentary cf. [58]: 19-22, [31] I: 344ff., [25]: 234ff.

### 3. Poetic 'inspiration' (ἐνθουσιασμός) and 'nature study' (μετεωρολογία)

By Delatte's reading of the pre-Socratic aetiologies of inspiration he analyses, being 'ἐκφρων' had nothing to do with being 'delusional', a pathology which was indeed sometimes confused with 'enthusiasm' (ἐνθουσιασμός) but was nonetheless not at all the same thing.<sup>16</sup> What it really meant is that the individual undergoing a 'theoleptic fit' or an 'orgia' with Muses and Sirens had been liberated from the limitations placed upon anyone who interfaces with their natural environment with no more than ordinary powers of perception.<sup>17</sup> Indeed, while 'unhinged' (ἔξω ἑαυτοῦ), he specifically filters out of his apprehension of his surroundings everything that can be sensed via the perceptual channels the rest of us rely on to sense it. However, this does not mean that he thereby stops interfacing with his *Umwelt* or that while doing so he is not perceiving anything. All it means is that he is using another sort of perceptual channels to do so. Channels which allow the inspired *meteorologos* to, as it were, 'sense past' the complexity adorning the perceptible side of his *phaneron* so that he can 'clairaudiently auscultate' it and in so doing source or 'incubate' (ἐγκοιμάομαι) insight into the way this latter is given its perceptibility.<sup>18</sup> And by using the words 'clairaudiently auscultate', I am not just allusively doffing my hat in the direction of R. Murray Schaeffer's *Tuning of the World*. I am doing so in a very literal sense and for a very specific purpose. Namely to make allowances for those 'otherworldly sounds' ('θαύματ' ἀκοῦσαι', 'χθόνια θεὰ ἀυδήσσαι') or strange 'rumours' ('ὀμφαί', 'ὄσσαι', 'ὅπι καλῇ' etc.) that inspired oracles, prophets and *aidoi* said they heard whilst 'witless' and were wont to impute to various divine interlocutors.

Of course, the Pre-Socratic natural philosophers were sceptical of the idea that anything like a Muse actually existed. They did not withal maintain that when 'inspired' oracles and *aidoi* were 'beside themselves' and *claimed* that they were hearing Muses, they were not hearing anything or that they were delusional. To the contrary, they assumed that something was indeed heard. But if that be so, if these 'inspired' hearers were not lying or hallucinating, what *were* they hearing? What property of the *Umwelt* emitted the 'rumours' that only the

<sup>16</sup>For the opposition between mantic 'enthusiasm' and delirium attributed to mental illness ('μανίας ὑπὸ νοσημάτων ἀνθρωπίνων'), cf. Plato, *Phaedrus*, 244bd, 265a, *Timaeus*, 71d, *Ion*, 538a, *Republic*, 364b & *Laws*, 772d.

<sup>17</sup>This is what Plato meant in *Phaedrus* 265a in his reference to 'mania' as 'madness arising from a divine release from customary habits' (ὑπὸ θείας ἐξαλλαγῆς τῶν εἰωθότων νομίμων γιγνομένην).

<sup>18</sup>On this point, I am following Delatte's gloze of Empedocles Frr. B110, B129, B132 and Democritus Frr. B112, B116, B129 (cf. [59]: 26-27, 52-56) on the way the 'possessed sorcerer' (μαινόμενος ἐνθεος) was supposed to have engaged in commerce (ἐμπελάζειν) with the instrumental cause of possession (μαντικὸν ῥεῦμα καὶ πνεῦμα). It seems clear that this consisted of a form of what was called 'far thinking' or 'deep thinking' ('δολιχόφρονες', 'φορὴν βαθεῖα', cf. Empedocles DK31B11) in which the inspired *sophoi* takes leave of normal ways of interfacing with the natural surrounding ('τὰ παρόντα') by substituting the ordinary organs of sense perception with one called the '*prapides*' (πραπίδες) which, it seems, was located, like the '*thymos*' (θυμός) and the '*phrenes*' (φρένες), in the midriff. Evidently it was the ability of the inspired *sophoi* to 'stretch' (ὀρέγεσθαι) the powers of perception peculiar to this organ past the perceptible surface of 'τὰ παρόντα' and into their normally imperceptible interiors (βυθοί) which allowed him or her to become 'ἄτμος ἐνθεος' or 'ἐμπιμπλαμένη τοῦ πνεύματος', i.e., capable of divining the cosmopoietic dynamic at work inside the observed object and which deposits it into its outward manifestation.



‘inspired’ *meteorologos* could apprehend and that needed to be ‘tuned in to’ to practice geomancy and distil geognosy? The fact that a great variety of appellatives and epithets were used to refer to it (‘μαντικὸν ῥεῦμα καὶ πνεῦμα’, ‘πῦρ αἰίζων’, ‘κεραυνός’, etc.) would suggest that it is unwise to refer to the source of these ‘otherworldly sounds’ with a single, univocal term. It is nonetheless without hesitation that I follow Delatte in privileging the appellative ‘ἀναθυμιάσεις’, a word usually translated as ‘exhalations’. To have a sense of the way these ‘exhalations’ were essential to cosmopoiesis—and therefore to using melodies and metre to ‘score’ it in ‘θέσπις ἀοιδή’—a reminder of early ideas on cosmogony and ontogenesis cannot be avoided.

#### 4. The mechanics of cosmopoiesis and the ‘unveiling’ (ἀνακάλυψις) of the world

Given the scholarly firepower marshalled behind the view that ‘eine Kosmos-‘Idee’ ist dem frühgriechischen Denken fremd’,<sup>19</sup> there is little chance that anything one could say on this matter will not be controversial. It is nevertheless enough for our purposes merely to develop the point we made above about the ‘divinity’ of the Sky and the Earth.<sup>20</sup> Though it is well known that the latter enjoyed this status because, in mythopoeic thought, the ‘unveiling’ (ἀνακάλυψις) of the cosmos was considered to be the fruit of their union or ‘hierogamy’,<sup>21</sup> it is less well known that these cosmocrators or ‘ἀρκτικάι αἰτίαι’ did not interact with one another directly. They did so via the energies they precipitate at each other, notably in the form of those we call hot and cold, dry and wet, high and low pressure, etc. [41–45]. What is more, these energies were useless for cosmopoiesis unless they encountered each other in the midst of a pre-cosmic, immaculately quality-free medium usually referred to as ‘aether’ (αἰθήρ) or ‘the impossible-to-experience’ (τὸ ἄπειρον) or ‘the self-natured’ (τὸ αὐτοφυής) or simply ‘the void’ (χάσμα μέγ’).<sup>22</sup> This is so because it was only where and when the energies radiating from the Sky and the Earth meet and blend in this undifferentiated milieu that this latter gets ‘agitated’, ‘fretted’, ‘tempered’ (πληγή) or ‘concocted’ (πέσσεσθαι) until

<sup>19</sup>A single ‘kosmos-idea’ is foreign to early Greek thought’, [60]: 60, [34]: 150ff., [61]: 205 & [62]: 417ff.

<sup>20</sup>For evidence of nature worship in earlier times, cf. Democritus, DK68A75, Prodicus of Ceos, DK84B5, Aristophanes, *Peace*, 406ff., Plato, *Apology*, 26d, *Cratylus*, 397cd, 408de, *Laws*, 715e–716b, 886a, 821b, 899b, 950d, *Epinomis*, 985b, 988b, Aristotle, *Metaphysics*, 1074b 1–14, *De Caelo*, 284a 2–18 & Fragment 10. See also [63]: 446–7, [4]: 116, [64]: 170–71, 177–8, [47]: 23, 131, [65]: 14–15, nn.27–29, [66, 67]: 165 & [68]: 102ff.

<sup>21</sup>Cf. *Derveni Papyrus*, cols. 14–15, Pherecydes of Syros, DK7B2, Aeschylus, Fr. 44, 1–5, Pindar’s Fragment 31 (=Aelius Aristides, 2.142) and Alcman’s cosmogony as per [5, 69]: 134–35 & [70]: 5ff. Cf. also [41]: 28ff., [64]: 63, [71]: 82ff., [72]: 256–7, 389ff. & [67]: 165. Cf. [73]: 419ff. on the way this basic cosmopoietic model is obscured in much of the relevant evidence by the ‘diachronic skewing’ that resulted from attempts to reconcile or overlook tensions within the tradition of Archaic metapoetics.

<sup>22</sup>Cf. [13]: 22 & [70]: 5–6 on the use of ‘αὐτοφυής’ as a ‘conventional’ way of referring to an initial, ‘pre-cosmic stuff’ or ‘πρώτη φύσις πρὸ τῆς οὐρανοῦ γενέσεως’. To this epithet, and to others like it (e.g., χάος, νύξ, τι μεταξὺ, χώρα), applies the predicates Theophrastus used to describe Anaximander’s ‘Boundless’, namely ‘something whose nature is definable neither qualitatively nor quantitatively’ (φύσις ἀόριστος καὶ κατ’ εἶδος καὶ κατὰ μέγεθος). Cf. also [74]: 1171–1183 & [30]: 15f.

it yields 'complexions' (συμπεπλεγμένα) and 'complexity' (σύμπλεξις).<sup>23</sup> And not just the 'complexity' we today would identify as the naturally occurring meteorological phenomena that decorate our natural surroundings. For the proverbial 'unveiling' that Helios gave Gaia to make her 'presentable', he also gives to each of all-bearing Gaia's 'offspring' (τέκνα)<sup>24</sup> so that they too are unveiled.

Naturally, and importantly, these *doxai* about cosmogony and ontogenesis entailed key epistemological corollaries, notably regarding what counted as 'genuine knowledge' (γνησίη γνώμη) about the 'true nature' of what one encounters in one's average, everyday Being-in-the-world. Knowledge like this was believed to be unobtainable just by observing things with the normal means of perception or by extrapolating 'polymathically' from data furnished in this way. One has 'γνησίη γνώμη' when one knows the way cosmopoietic agencies *give* phenomena the 'complexions' in which guise they are perceived,<sup>25</sup> and to attain that knowledge, one has to be capable of 'δολιχόφρονες' or 'φρὴν βαθεῖα'. This means that one needs to apprehend what one perceives from the perspective of what is going on in the 'abyss' (βυθός) which is dissimulated by the perception's outward manifestation.<sup>26</sup> This is so because it is only there that one can ascertain the 'blends' of Sky and Earth energies that give phenomena their 'complexion'.

Now all this is relevant to the aforementioned 'exhalations' because, in the final analysis, they are the 'instrumental cause' of the complexity-synthesising process going on in these 'depths' and therefore what *meteorologoi* needed to study to know what deposits complexity on to the natural environment's outward appearance.<sup>27</sup> And, in turn, this is relevant to the divinatory techniques utilised in *meteorologia* and 'wonder study' (τετρατοσκοπία) because the reason their practitioners entered a 'theoleptic fit' was to 'auscultate' the perceived environment in

<sup>23</sup>Knowledgeable readers will know that the use of variants of 'σύμπλεξις' to translate 'complexity' and the 'complexions' of various perceptibles (μετ' αἰσθήσεως ὄντα) is an Aristotelian choice of word. This I believe is legitimate given that what Aristotle expresses with this sort of terminology is essentially identical to what his predecessors say using other words. A case in point is Columns 14-15 of *The Derveni Papyrus*. Here we find a reference to the birth of Chronos as a by-product of the way Sky and Earth 'smite against each other' (κρούεσθαι πρὸς ἄλληλα). But in the same columns, it is perfectly clear that *everything* is 'born from the sun to the earth because of the way they smite each other'. Similar imagery can be found in numerous other sources, for example, the 'unveiling' (ἀνακάλυψις) of Gaia that Pherecydes describes in DK7B2, the 'impregnation' of 'Chthona' in Aeschylus Fr. 44, 1-5 and Alcman's cosmogony as per [5, 69]: 134-135 & [70]: 5ff. Hence, we do not betray the ideas of earlier cosmologists simply by privileging an Aristotelian choice of words.

<sup>24</sup>Aeschylus, *Persians*, 619, Pherecydes, DK7B2 & Philolaus, DK44B1 & B2. Cf. also [75]: 212-213.

<sup>25</sup>Though not easy to discern on a hasty reading, this is what Empedocles DK31B3 is at pains to make clear. For what it says is that we should not trouble over whether one kind of perception is superior to all the others. All that matters is apprehending how *all* perceptible phenomena are manifest 'in the way by which each is manifest' (ἢ δῆλον ἕκαστον). The same point is made in Heraclitus DK22B17.

<sup>26</sup>This is what Anaxagoras refers to in his famed aphorism 'phenomena are the perception of the unperceivable' (ὅψις γὰρ τῶν ἀδῆλων τὰ φαινόμενα) (Anaxagoras, DK59B21a). Comp. Leucippus, DK67A9, Democritus, DK 68B9, B11, B117 & Heraclitus DK22B54 & B123.

<sup>27</sup>Particularly useful on this point are the studies on Aristotle's *Meteorologica* by [43, 45] who make it clear that Aristotle's goal in this work was to match descriptions of observable, naturally occurring meteorological phenomena with an account of the way exhalations should behave if they are the efficient causes of the described phenomena. Hence what we observe as comets, auroras, lightening, thunder, wind, rain and seismic activity are really just the outward appearance of exhalations undergoing cooling or heating, desiccating or liquefying, compression or rarefaction as they rise or descend between a supreme above and a supreme below.

order to apprehend the ‘amazing sounds’ made by ‘exhalations’ as they circulate to and fro (ἄνοδος καὶ κάθοδος) across a vast ethereal gulf in order to ‘cook’ pre-cosmic aether in to complexions, complexity and cosmos.<sup>28</sup> Without an ability to do that, the pretention that *meteorologia* was of any use or importance to anyone was vain for the whole point and sole worth of the exercise was to discern the cosmos-orchestrating powers at work in, through and as the natural environment so that ancient listeners could harmonise themselves thereto.

So much then for our summary reminder of the cosmology, ontology and epistemology that counted for folks in archaic ‘Song culture’ and subtended their belief that when the ‘inspired’ *aoidos* intoned ‘sacred song’, the very voice of the divine itself rang out. The question now becomes one of establishing how the insight gained by this more-than-normal, ‘clairaudient’ mode of interfacing with the *Umwelt* passes from something only the ‘inspired’ *meteorologos* can sense to something he relates in verse and that his audience understood.

## 5. Encoding cosmopoiesis and making it intelligible

This is critical. The ‘amazing sounds’ that ‘inspired’ *meteorologoi* heard whilst in the throes of a theoleptic trance were heard by no one else. What is more, the ‘signs’ (σημεία) that came out of their mouths when ‘vaticinating under the urging of divine guidance’ (θείῃ πομπῇ χρωόμενος) were, if not necessarily pure gibberish, nonetheless never more than ‘latently meaningful’ (οὐ συνετὰ συνετῶς).<sup>29</sup> Hence, the ‘intelligence’ (εὖ εἰδώς, ἐννέπειν) *meteorologoi* learned from the Muses while on their katabatic ‘divine pilgrimage’<sup>30</sup> could not be of the least relevance to the ‘non-inspired’ members of their community, much less the foundation for their entire ‘encyclopaedia’, unless it was somehow made ‘legible’ (σύνητος, ἐνδεικτικός) to them.<sup>31</sup> So, again, how did target audiences access and decode what the singing *aoidos* had to say when he wanted to relate to others what Sirens and Muses had related to him?

Before offering a response to that question, it should be made clear that the ‘melic verse’ composed and performed by an inspired *aoidos* was not the only medium in which one could ‘mime’ sacred referents and in so doing transmit ‘hieroglossic’ meaning (σημεία). To be convinced of that, one has only to read what Koller and Kowalzig say about Hellenic dance, Hegel and Heidegger about Hellenic architecture, Vernant and Burkert about Hellenic statuary and Gentili and Gadamer about *all* the arts. In addition, even if ‘melic’ verse was the main ‘delivery system’, we cannot assume withal that the ‘unmarked’, ‘ordinary speech’ in verse (‘γυμνὸς λόγος’, ‘πεζὸς λόγος’) could not be used to ‘epi-phon-ise’ hieratic meaning in the absence of melodies and rhythms. Proof enough of this can be found in the fact that we do indeed know about early ideas on cosmogony in the surviving works of Homer, Hesiod and Alcman, all of it communicated through words bereft of any detectable musical accompaniment. Still, this ‘unmarked’

<sup>28</sup>Despite the evident misgivings of the dialogue’s author, we see a good description of this process in *Cratylus* 412d-413c.

<sup>29</sup>It is in this sense that we must understand passages on the semantics of ‘oracular utterance’ or ‘λέγεις ὥς ἐν ἐκστάσει ἀποφοιβώμενος’ like the ones we find in Euripides, *Iphigenia in Aulis*, 466, Herodotus, 2.57 and Heraclitus DK22B93 on which cf. [25]: 234-238.

<sup>30</sup>On this ‘θείων θεωριῶν’, cf. [49]: 47ff., [48]: 385-389, [50]: 99ff. & *supra* note 12.

<sup>31</sup>From Sappho Fr. 16, Theognis 769-772 and Herodotus 2.57, we know that inspired performers were well aware of the need to satisfy this expectation.

way of communicating cosmopoietic information was less important than the 'marked' features of verse from which the former is distinguished. And by 'marked features of verse', I am not referring to 'allegory' and other 'metaphorical' uses of language which 'hint at' (δί' αἰνιγμῶν εἰρηται) a gnomically-charged 'under-thought' (ὑπόνοια). I am referring instead to the *melo-dised tones* and *metred rhythms* which accompanied and modulated the 'naked words' (γυμνὸς λόγος) in melic verse and which in so doing 'over-signified' the latter by 'bi-naturing' (διφύεται) what it should be taken to mean because it was thanks to these melodies and rhythms that the hearers were apprised of the cosmopoietic dynamics (θεία δύναμις) that gave to the song's subject matter its time, place, nature, character, destiny and Being-in-the-world.

But how can melodies and rhythms 'mime' the cosmopoietic dynamics that produces the cosmos and its content and therefore constitute an 'apophantic' resource one *must* utilise when it is one's intention to 'epi-phon-ise' one's objects to the power of what gave them their Being-in-the-world? This brings us back to the semiotic question of the property of melic verse which was supposed to count as the very voice of the divine itself. It also invites us to explain how this property assured some sort of 'co-naturality' (συγγένεια) between signs and signifieds. For in the place and at the time that interests us, in 'Song culture', it was axiomatic that signs were meaningless unless they were consubstantial with their denotata. Obviously such a link or 'co-naturation' could not work or seem to work without the help of something which was common *both* to the 'nature' of the signified cosmopoietic dynamics *and* to whatever property of heard verse was supposed to count as its substance made 'sacred song'. What, then, was the mediating *tertium quid* which assured this 'co-naturality' between signifying melodies and rhythms,<sup>32</sup> on the one hand, and on the other, their 'divine' signified?

## 6. 'Scoring' com-plex-ity

Because of the disparate, ambiguous and inconsistent tenor of the evidence, it is certain that anything one will say about what this *tertium quid* could be or consist of will encounter reserves, objections and reprimands. Still, to judge from the bulk of the extant evidence, it seems certain that when inspired *aoidoi* wanted to 'score' cosmopoiesis they began by attributing a *numerical value* to the attributes (πάθη, διαφοραί, ἕξεις) of the beings it created. More precisely, each of the ever-varying com-plex-ions (συμπεπλεγμένα) exhibited by various states of Sun and Earth roasted aether were distinguished from one another—and from the imperceptible aether whence they issue—by receiving 'ratios' (λόγοι) which *quantitatively define* the blend (κρᾶσις) of cosmopoietic principles (ἀρχαί) whose mixture accounts for the way each complexion appears to us when observed. For, again, this is all that com-plex-ity was considered to be, a blend of the energy of the Sun and of the Earth which together 'con-coct' pre-complexed, diaphanous aether into the perceptibles (μετ' αἰσθήσεως ὄντα) populating our sensoria.

Why was this way of quantifying the energies that produce the cosmos relevant to melic verse and its use as a way to 'epi-phon-ise' the divine? Quite simply because the 'numeri-

<sup>32</sup>For space reasons, we cannot look at the use of metered rhythms to 'epi-phonise' the sacred, which, in any event, has been thoroughly and expertly presented in Georgiades [76].



cal signature' of the blend of Sky and Earth energies that created the song's subject matter was replicated in the 'arithmology'<sup>33</sup> used to structure the melodised tones (μέλος) and metred rhythms (ῥυθμός) modulating 'sacred song'. As a result, this latter was transformed into a 'phonic replica' (ἀγάλμα φωνή) of the cosmopoietic dynamic that gave to the song's denotatum its com-plex-ion. Though some of the details of the method used are to a certain extent discernible in the fragments of Anaximander, Heraclitus, Empedocles and other pre-Socratic natural philosophers,<sup>34</sup> it is better to explain all this in relation to the 'arithmology' of Philolaus of Croton. Not because the historical Philolaus himself provides us with a clearer use of arithmology and its utility for descriptive phenomenology than his peers. The paucity of direct, attested, reliable information about his views makes this impossible. On the other hand, there are sure signs that Philolaus' use of arithmology in his cosmology and phenomenology was the basis for Aristotle's more complete and detailed theorising about phenomenology (περὶ αἰσθήσεως καὶ αἰσθητῶν).<sup>35</sup> Hence, to illustrate the way the *aidoi* of yore 'scored' complexity, and therefore the 'coming-to-be' that powered it, our approach will be the following:

1. First we will summarise Aristotle's phenomenology and, after that,
2. Identify in it what can only be an Aristotelian use of arithmology then,
3. In what remains, identify what can only be a genuinely Philolean use of arithmology to score complexity and, finally,
4. Justify the assumption that Philolaus' use of arithmology to score com-plex-ity offers insight into the way versecraft was practiced in earlier times because some variant of his arithmology was used as a 'template' for composing the 'music' which accompanied melic verse so that, thanks to this accompaniment, the latter was believed to contain the voice of the divine.

What then is there to say about Aristotle's phenomenology and the role played by arithmology in it which helps us on this question?

## 7. On the 'arithmology' of Aristotle's *De Sensu* - and its Philolaic Palimpsest

Mercifully because all that interests us about Aristotle's περὶ αἰσθήσεως or 'descriptive phenomenology' is the insight it offers into archaic methods for scoring cosmopoiesis, we are spared the hazardous task of involving ourselves in certain controversies about what his

<sup>33</sup>Though I will use this term throughout in the rather general way that Delatte [77] & Burkert [78] use it, I recognise that Zhmud [79] is right to think it is better to use 'number symbolism' to identify what the former refer to and reserve the qualifier 'arithmology' for the pseudo-science inaugurated by Speusippus.

<sup>34</sup>*Inter alia*, cf. [78]: 417 on Anaximander and for the others, cf. [80]: 126-127, 137-138 (Heraclitus), 196, 217 (Empedocles), 201 (Parmenides) & 209-10 (Anaxagoras).

<sup>35</sup>Cf. [81]: 263 on the view shared by Burkert [78] & Huffman [82] that Aristotle is a relatively reliable source as concerns Philolaus. Cf. also [83]: 84.



theorising on the matter actually consisted of.<sup>36</sup> For the same reason, we are unconcerned with the details of the way Aristotle's phenomenological discourse pertains to his views on imagination, cognition and the way the *sensus communis* correlates sensory data from a plurality of sense organs to form a unified idea of what the percipient is perceiving. Indeed, for our very specific purposes it is enough to identify and comment on the main stages involved in the way Aristotle's phenomenology defines 'simple sensations' (ἀπλᾶ αἰσθητά) when they are apprehended 'accurately' (ὅταν ἐνεργῶμεν ἀκριβῶς περὶ τὸ αἰσθητόν, *De Anima*, 428a13).

In its simplest form, one could define the first stage of the process thus: one starts by dividing the realm of the sensible into five 'families of sensibles' (τὰ ὑπὸ τὴν αὐτὴν αἴσθησιν), i.e., seeing, hearing, touching, smelling and tasting (*De Anima*, III, i). After that, the challenge is to define the *full range* of each 'family of sensibles'. This is done by establishing a *maximal and minimal intensity of sensory stimulus* above or below which a normally functioning organ of sense either senses nothing because of the exiguity of the stimulus or is destroyed by the excessive intensity of the stimulus.<sup>37</sup> Between these two 'extremes' (ἄκρα, ἔσχατα, ἀντικείμενα), one finds all the 'com-plex-ions' (συμπε-πλεγ-μένα) it is possible to synthesise by blending the two qualitative 'extreme opposites' (μεγίστη διαφορά, τελεία διαφέροντα) at the top and bottom of the scale in differing 'proportions' or 'ratios' (λόγοι τῶν ἄκρων).<sup>38</sup> Hence, in the family of sensibles defined by the extreme opposites called brightness or darkness, a blend of the extremes in which brilliant white is superior to pitch black by a ratio of three parts to two will result in a shade of pale grey whose 'λόγος τῶν ἄκρων' is 3:2.

Once the full range of possible 'simple sensations' (ἀπλᾶ αἰσθητά) has been established in this way for each family of sensibles, it then becomes necessary to *systematically differentiate* the *varieties* of complexions arrayed between these two 'qualitative opposites'. More precisely, the task is to identify a variety of complexions Aristotle calls 'εἶδη πεπερασμένα' or 'definite forms of sensation'. There are two reasons why it is important to limit the different families of sensibles to a finite number of 'definite forms'. The first concerns the fact that the interval between the extremes delimiting each genre of sensible is a *continuum* (συνεχές) comprising *all* the different complexions a given class of sensibles can produce as 'blends', in varying proportions, of its delimiting extremes. However, because this continuum can be divided into an *infinite* number of ratios, using the latter to represent different complexions is of little use for distinguishing between perceptible forms *which are appreciably different from one another* unless the continuum in which these forms are seried is 'discretised' (τέμνεται) into a *finite* number of 'intervals' (διαστήματα) covering segments of the continuum which are neither too small nor too large to isolate a *single, self-same* 'simple sensation' (ἀπλᾶ αἰσθητόν) *noticeably* unlike any other in the continuum (*De Sensu*, 445b27-446a21).

<sup>36</sup>This is particularly to be appreciated as concerns the long-running 'literalism-spiritualism debate' pitting Richard Sorabji's 'physiological' reading of Aristotle's theory of perception against Myles Burnyeat's 'formalist' reading. For a summary of the positions and the issues, cf. [84]: 328-30. Proof that this debate was never more than a side-show is the fact that most recent studies on Aristotle's phenomenology have gone back to David Ross's simple, succinct, clear and undoubtedly correct analysis. Cf. [85] and [86] and then compare with [87]: 143-145.

<sup>37</sup>For a succinct and elegance summary, cf. [87]: 143 on *De Anima*, 424a2-10, 26-b1, 426a27-b8, 429a29-b3, 435a21.

<sup>38</sup>For the idea that any given sensation is a com-plex-ion (συμπε-πλεγ-μένον) generated as a mixture of the two 'extremes' (ἀντικείμενα, ἔσχατα) which embrace or enclose the family of sensibles the given sensation belongs to, cf. *De Sensu*, 445b24-27, 447b1, 448a10 as well as *De Anima*, 407b32, *Physics*, I, v-vii, *De Gen. et Corr.*, 324a5-9, 329a25ff. & *Metaphysics*, 1067a7, 1069b2-8. For the way these "μεγίστη διαφορά" are distinguished as either 'penetrative' (διακριτικός) or 'compressive' (συγκριτικός), cf. *Metaphysics*, 1057b8-34, *De Sensu*, 439b26-27, 440b18-21, 442a14.

To illustrate how this works in practice, consider the following illustration: everything contained in the continuum delimited by the extremes, we today would call ultraviolet and infrared belong to the family of sensibles called colours. But to identify the segment of the continuum corresponding to the colour yellow, it has to be distinguished both from the hues higher up on the spectrum that are more green than yellow and from the hues lower down on the spectrum that are less yellow than orange. Until that happens, until the chromatic form called yellow is isolated from the chromatic forms on the scale other than yellow, it is not possible to use a ratio to identify the interval on the scale which is yellow and nothing else besides. Hence, the first reason for limiting families of sensibles to a finite number of 'definite forms' was to be sure that ratios are useful for descriptive phenomenology because they stand for intervals of a 'qualitative continuum' corresponding to perceptible forms (εἶδη) which are *sui generis* because they are *perceptibly* different from all the other perceptibles belonging to the same qualitative continuum.

The second reason why these continua of sensibles need to be divided into a finite number of 'definite forms' (εἶδη πεπερασμένα) might seem to a hasty reading to concern essentially aesthetic considerations. In reality, however, it is about a great deal more, namely to have at one's disposal *a means to systematically and methodically define and organise the entire universe of sensibles according to a single template*. To see why it is fair to say this, we only need to look at the way Aristotle distinguishes between perceptible forms which are 'defined' (πεπερασμένα) and those which are not with the help of the arithmological distinction he makes between ratios he qualifies as 'definite', 'well-ordered' or 'rational' (ἐν ἀριθμοῖς εὐλογίστοις, τεταγμένος, κατὰ λόγον) and opposing them ratios he describes as 'undefined', 'disordered' and 'irrational' (κατ' ἀορίστως, ἀτάκτος, ὅλως οὐκ ἐν λόγῳ, *De Sensu*, 439b29-440a15, 440b20-21, 442a16). What makes the former category of ratios 'rational' and 'pure' (καθαρά) is quite simply the fact that they replicate the ratios of the concords of the heptatonic 'diatonic' pitch scale.<sup>39</sup> In other words, no ratio not expressible in the proportions 1:2, 2:3 or 3:4 can be considered anything but 'irrational' and 'impure'.

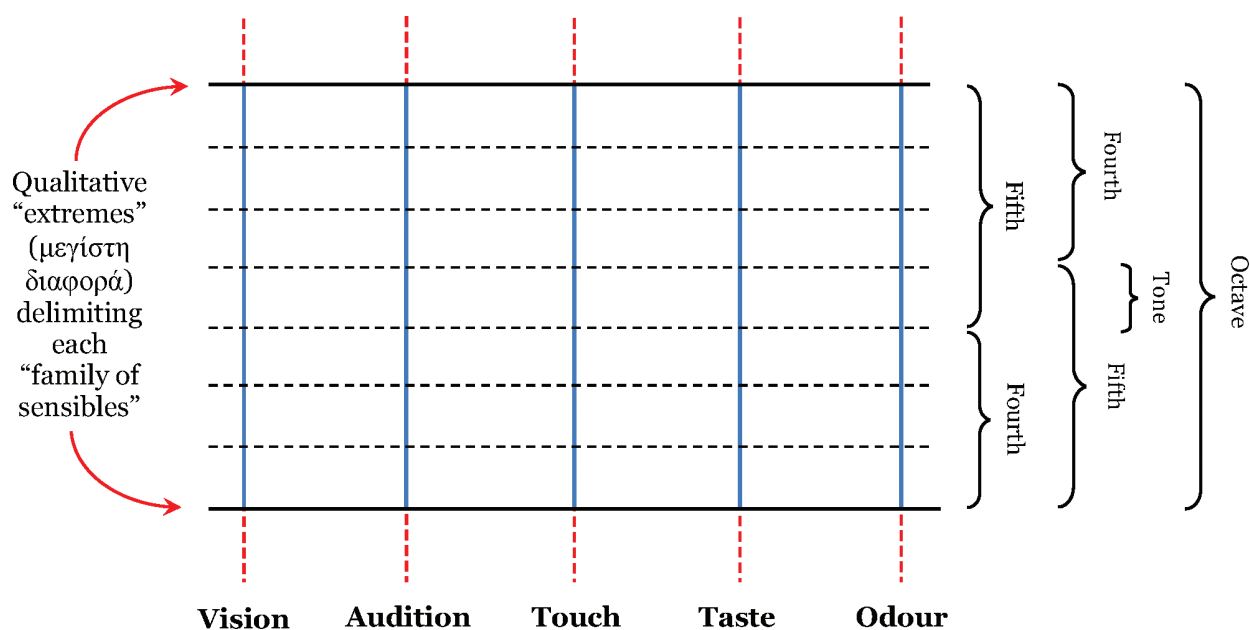
Not surprisingly, this manner of discriminating among 'rational' and 'irrational' or 'pure' and 'impure' ratios has implications for discriminating among 'pure' and 'impure' *phenomena* in that *no* simple perception (ἀπλᾶ αἰσθητόν) in *any* class of sensibles can be considered 'pure' or 'rational' unless the mixture of contrary qualities they are synthesised out of can be expressed as one or another of the ratios of the heptatonic pitch scale. And just as the 'pure' tones of the heptatonic pitch scale are said to yield 'concords' (συμφωνία) which are 'attractive' or 'pleasant' (ἡδίστα, ἡδονή), perceptions of forms in classes of sensibles *other than sound* too are 'attractive' when the ratios of their constituent blends of contraries replicate those of the pure concords of the heptatonic pitch scale. Hence, Aristotle's descriptive phenomenology consists of distinguishing 'pure', 'regular', 'exact' and 'attractive' 'simple perceptions' (ἀπλᾶ αἰσθητά) for *every* class of sensible by how well the ratios of the heptatonic pitch scale are replicated in the ratios which define complexions in classes of sensibles *other than musical arrangements of sound*. And we can be certain that this 'heptachotomic' organisation of perception does indeed apply to *every* family of sensibles, and therefore to the *totality* of phenomena, despite the fact that it is only in his analysis of colours and tastes that Aristotle makes this point clearly and

<sup>39</sup>For clarity's sake, be it noted that this expression should be considered a simplified variant of what specialists refer to as 'the tetrachordal intervallic structures at the base of the organisation of musical sounds in Greece' ([88]: 31) or 'the whole number ratios that govern the concordant intervals in music' ([82]) or 'the basic divisions of the octave by fifths and fourths from the extremes' ([89]: 442).

explicitly (*De Sensu*, 439b19-440a6, 442a17-29). A consideration of his use of the word 'commensurability' (συστοιχία) at *De Sensu*, 447b26-448a19 helps us see why this is so.

## 8. The ratios of the diatonic pitch scale as a template for defining 'εἶδη πεπερασμένα'

Typically, Aristotle uses the predicate 'commensurable' (ἐν τῇ αὐτῇ συστοιχίᾳ) when referring to qualities which may be 'different in form' (ἕτερα καὶ ἀνόμοια τῷ εἶδει) but are nonetheless 'of the same family' (ταὐτὰ καὶ ὅμοια τῷ γένει, συγγενῇ, ὁμόφυλα) and as such can be affected by and turn into one another but cannot turn into or be affected by qualities belonging to *other* families of sensibles 'except incidentally'.<sup>40</sup> However, when specified (τέμνεται) in terms of the ratios of the heptatonic pitch scale, phenomena belonging to *different* families of sensibles become 'commensurable with one another' (σύστοιχα ἀλλήλοις) *if and because they are defined by one and the same ratio*. In other words, the qualities 'sweet', 'dry', 'white' and 'soft' all unquestionably belong to different families of sensibles. However, but because the *ratio* of the interval each of them occupies in their respective qualitative spectrum is identical, they are all *eo ipso* 'σύστοιχα ἀλλήλοις'.<sup>41</sup> As a result, Aristotle's descriptive phenomenology is the product of two kinds of 'commensurability': one an 'intra-generic' commensurability *specific to a single 'family of sensibles'* and the other a 'trans-generic' commensurability, superposed upon the former, which is *based on the ratios of the diatonic pitch scale*. The following diagram illustrates how this looks graphically in that the vertical lines represent 'intra-generic' commensurability while the lateral dotted lines indicate 'trans-generic' commensurability.



**Figure 1.** Intra- and trans-generic 'commensurability' in Aristotle's *De Sensu*.

<sup>40</sup>*De Gen. et Corr.*, 323b25-26, *Physics*, 188a32-b8, 224b28ff., *Categories*, 14a20-22, *Post Analytics*, 75a38-b17, *Topics*, 123b1-124a9, 153a35-b24, *De Anima*, 416a 34, *De Sensu*, 447b1-3 & *Metaphysics*, 1057a27-30.

<sup>41</sup>A more detailed but very clear presentation of the same point can be found in [90]: 71-72, especially in his remarks on *Post Analytics*, 78b34-79a6.

To even a cursory glance, it will be obvious to the trained eye that this diagram can make no claim to being ‘accurate’ as concerns the magnitudes of the intervals that ‘heptasect’ the vertical lines in it as a function of the basic divisions of the octave indicated on the right hand side.<sup>42</sup> However, it at least has the merit of illustrating approximately how Aristotle’s *De Sensu* uses ‘the whole number ratios that govern the concordant intervals in music’ as a template by which to define simple sensations (ἀπλᾶ αἰσθητά) which are pure, clear, pleasant and well-ordered *no matter what family of sensibles they may belong to*. As for the other, ‘impure’ simple sensations—unaccounted for in this diagram—, their comparative inferiority is not due to the fact that the blends of qualitative opposites they were synthesised out of cannot be mimed as a ratio; it is due to the fact that their ratios are merely ‘κατὰ λόγον τῷ μᾶλλον καὶ ἥττον’, i.e., quantifications of blends of qualitative opposites *not* expressible in the whole number ratios 1:2, 2:3 or 3:4.

A longer, more patient treatment of what we have just seen would have given us the occasion to assess some of the voluminous commentary devoted to Aristotle’s *De Sensu*. For example, the question of how well Aristotle mastered mathematical harmonics in his fifth-century Athens and, relatedly, whether or not something like a proper ‘science’ of harmonic even existed at that time [81]. We could also have pondered over why he failed to notice or seemed not to care about certain aporias which were attendant upon his use of arithmology for descriptive phenomenology. For example, the difficulties entailed by using a single ratio to stand for intervals which themselves perforce constitute infinitely divisible continua [93]. But as engrossing as curiosities like these may be in their own right, dwelling upon them will not help us with what matters here, which is ascertaining how all this pertains to ‘scoring cosmopoiesis’ *the way the composers of melic versets used to do it*. For that is all that interests us about Aristotle’s use of arithmology in his descriptive phenomenology—the light it sheds on the way the ‘inspired’ *aoidoi* of archaic Hellenic ‘Song culture’ used melodies and rhythms to ‘musically map’ their *Lebenswelt* and in so doing lend a voice to the cosmic agencies which synthesise the ‘sacred signs’ (διοσημεῖαι) adorning the mesocosm that hosts our existences. To justify seeing Aristotle as a useful reference for such a light-shedding mission, let us remind ourselves of the still outstanding stages of the heuristic we proposed above, namely: (1) distinguishing between what is *and is not* Aristotelian in Aristotle’s use of arithmology in his *De Sensu*; (2) contending that what is not Aristotelian in it is Philolaic and, finally; (3) arguing that what is specifically Philolaic about it does not mean that it cannot withal be considered a means for mapping cosmopoiesis the way it was done by melic versifiers if not ‘from time immemorial’ at least back to the Bronze age. To expedite the first of these three objectives, let us start with a reminder of what Aristotle says about the ‘so-called Pythagoreans’ in Book A of his *Metaphysics*.

## 9. Aristotle and the ‘so-called Pythagoreans’ in the *Metaphysics*

Though Aristotle was clearly in a hurry to discharge what he had to say about them, his haste does not prevent us seeing him make exactly the same point about the ‘so-called

<sup>42</sup>For a systematic treatment on this matter, cf. [91, 92]: 160ff., [81]: 12ff. & [89]: 133ff. It is not unimportant to our point to mention that for practical musical purposes, e.g., tuning a lyre, being ‘accurate’ about the basic divisions of the octave was often irrelevant given the diversity of ‘culturally determined conceptions of musical agreeability’ and the consequent proliferation of ‘minor resonances’ to satisfy these differing criteria ([89]: 136).



Pythagoreans' as the one Plato makes in the *Philebus* about 'the ancients, who were better than we and lived nearer the gods', for in both cases, it is a question of men who had come up with the idea of using the properties and ratios of a musical pitch scale as a means to represent everything in the universe on the assumption that those same properties and ratios structure and arrange everything in the cosmos that is not musical.<sup>43</sup> Alternately, they believed that in the same way that musical tones are blends of extremes delimiting a pitch scale, the substance, parts and attributes of everything peopling the perceptible universe too are synthesised out of blends of opposites delimiting various families of non-musical commensurables.<sup>44</sup>

Even though Aristotle does not identify his sources when speaking of the so-called Pythagoreans, the exegetes who have compared what he says of them in Book A with the attested fragments of Philolaus of Croton have little doubt that the latter's books must be the main source. Granted, this 'likelihood', plus the conspicuous resemblance of Aristotle's use of arithmology in *De Sensu* to the applications of arithmology routinely attributed to the Pythagoreans, is insufficient grounds for assuming that Aristotle had simply 'copied' what he found in his reading of Philolaus. In any event, making such an assumption would be tantamount to ignoring his robust rejection of various aspects of Pythagorean arithmology. For example, their alleged failure to make it subserve a worthy 'final cause',<sup>45</sup> their supposedly unsatisfying explanation of the way 'numbers' define sensibles,<sup>46</sup> their omission of a viable 'material cause' and, finally—and altogether incomprehensibly—the way they are supposed to have 'ontologised' numbers.<sup>47</sup> Still, despite these objections, and the efforts Aristotle makes to distinguish his use of arithmology from that of the Pythagoreans,<sup>48</sup> it cannot be denied that the idea of using 'numerical values' to define 'pure', 'attractive', 'rational' 'definite forms', and doing so the way Aristotle does it in *De Sensu* and elsewhere, is in large measure borrowed from what he found in Philolaus [78, 81, 82, 94].

But if this were so, if it were true that Aristotle's use of arithmology in his *De Sensu* differs but in details from what Philolaus would have said if he had developed a descriptive phenomenology of his own, what guarantee do we have that any of what we have just described reflects anything but Philolaus? The question matters to us because we are looking for reliable information about the way inspired singers of sacred song (θεσπιωδοί) are supposed to have made melic verse the very voice of the divine because the melody and metre they used in composing it encoded the cosmopoietic significance of what they sang about. Hence, if in reading Aristotle's use of arithmology in his descriptive phenomenology we can be sure we find Philolaus, that would not be of much use to us if what the latter says about using ratios to score complexity was not shared by others, and more particularly by the *aoidoi* and rhapsodes who composed and performed the 'sacred song' in which guise the voices of Muses and Gods

<sup>43</sup>*Metaphysics*, 985b32-986a7, comp. *Philebus*, 17de.

<sup>44</sup>*Metaphysics*, 986b3-8: 'τὰναντία ἀρχαὶ τῶν ὄντων [...] ἐκ τούτων ὡς ἐνυπαρχόντων συνεστάναι καὶ πεπλάσθαι φασὶ τὴν οὐσίαν'.

<sup>45</sup>*Metaphysics*, xiii, vi, 8, viii, 9-10, xiv, iii, 15, iv, 2 & vi, 1-2.

<sup>46</sup>*Metaphysics*, 1054a9-19 & 1077b18-1078a31.

<sup>47</sup>For justly severe criticisms of Aristotle on this obvious misreading of the Pythagoreans, cf. *inter alia*, [41]: 69, [82]: 56-64, [94]: 402-403, 456, [95]: 27 & [96, 97]: 164.

<sup>48</sup>This is especially evident in Aristotle's attempts to make *physical matter* rather than 'numbers' the substrate that gets determined by ratios (cf. *De Sensu*, 440b14-23, *Metaphysics*, 989b29, 1069b9, 1089b27).



were supposed to have graced the ears of their audiences. So, once again, why suppose that in reading Aristotle's use of Philolaic arithmology, we are reading anything but Philolaus?

## 10. Philolaus and musical practices in archaic song culture

As with so much of what concerns us here, the most serious obstacle to a straightforward answer to the question is the scarcity of relevant and unambiguous data. Some things, however, are not subject to doubt. For example, we cannot suppose that the 'science' of harmonics inaugurated by Philolaus, but more likely Archytas (Barker [90]: 29), was without precedent just because Plato, the Academy and Aristotle were so impressed by what they understood of Pythagorean 'mathematical harmonics' and so unimpressed by anything known about harmonics and its applications up to that time.

But if this means that Philolausian harmonics was not unprecedented, what precedents could we be speaking about? Certainly not ones that are traceable back to the 'oriental centres of learning' that some continue to invoke for *any* accomplishment it was once common to identify as a specifically Hellenic innovation [98]. In any case, not as concerns analysing musical arrangements of sound arithmologically and engineering what results from that analysis into a template for applications like descriptive phenomenology or scoring cosmopoiesis [94, p. 315]. For finalities like that Pythagorean speculation on the numerical nature of harmony is indebted to musical practices and theorisation going back to Indo-European times.<sup>49</sup> About this there can be no doubt. It is inconceivable that the archaic Hellenes could have produced and tuned musical instruments as sophisticated and elaborate as we know they were without some sort of arithmology and an arithmology that must have served as the basis of Philolaic and 'Pythagorean' 'number symbolism'.<sup>50</sup> We can also be certain that this same archaic arithmology was essential to the claim that 'music' lent a voice to the divine by being a means to 'mime' what the object of song owes to the cosmopoietic agencies which 'separated it off' (ἀποκριθῆναι) from pre-cosmic aether by 'cooking' it into a stand-alone, complexed being. And, finally, and even in the absence of any incontrovertible first hand evidence, we can be sure that these assumptions are as valid for legendary *aoidoi* like Orpheus, Tiresias, Musaeus and Bakis as they are for Hesiod, Alcman and the singers of sacred song alluded to in the *Homeric Hymn to Apollo* [5, 99].

Emphasising which is not tantamount to denying the early Pythagoreans all the credit that Plato's Academy, Aristotle and modern 'mathematical harmonics' enthusiasts think they deserve for 'revolutionising' music analysis. And not just for launching harmonics down the developmental path leading to Euclid's *Sectio Canonis* and Aristoxenus' *Elementa Harmonica*. Also by having contributed to doing to harmonics and music theory what the pre-Socratic natural philosophers are reputed to have done to 'the science of Being', namely wresting a

<sup>49</sup>It is revealing that even '*ex oriente lux*' zealots cannot deny this (cf. [99]: 381).

<sup>50</sup>For Philolaus' debt to 'empirical harmonics', cf. [81]: 266 whose careful analysis of the terminology used by Philolaus in the latter's key Fragment 6a makes it clear that 'every significant term in these sentences, with one exception [*scil.* the 'epogdoic'], belongs to the vocabulary of musicians'. Cf. also [89]: 114: 'For all we know, Philolaus' cycle through the four notes of the framework could well reflect the first steps that he carried out when tuning his lyre'.

de-supernaturalised, de-deified, disenchanted concept of Being from superannuated, mythopoetic *doxai* about the Gods ([96, p. 45ff.], [100, p. 204f.]).

Still, there can be no doubt about the debt of Pythagorean arithmology and 'number symbolism' to an extremely old bardic tradition, and there is no shortage of ways to credit this view. For example, even Leonid Zhmud, who questionably affirms that the heptatonic tone scale is a Pythagorean 'invention' [94, p. 292], nevertheless admits that it was, in some sense, latent in the techniques used by the archaic makers of musical instruments while plying their trade. And M.L. West, Andrew Barker and Carl Huffman make substantially the same point about Alcman, Lasus of Hermione and Epigonus of Ambracia while emphasising that even though there is no reason to suppose there was anything 'Pythagorean' about the way the latter theorised about music, that did not prevent them coming up with ideas on the links between harmonics and cosmopoiesis whose 'arithmology' differed but in details from the 'Pythagorean diatonic' [5, 90, 82].

So, once again, there is no question but that the so-called Pythagoreans brought something original both to music theory and to its applications outside music theory and singularly in epistemology, cosmology, ontology, phenomenology and ethics. Still, like Fraenkel [72], Burkert [78] and Lohmann [101], I believe that it is less accurate to say that the Hellas provided fertile grounds on which specifically Pythagorean ideas on harmonics and their extra-musical applications could take root than it is to characterise those ideas as a distillate or *Aufhebung* of 'theoretical' potential that was latent in that terrain.<sup>51</sup> Something we are at pains to stress here because it is critical to everything we said above about Aristotle's phenomenology and the way it is representative of earlier, 'archaic' ideas on 'scoring complexity' and 'miming' the 'ballet' (χορεία) of the cosmopoietic agencies that power the universe into its perceived aspect. For in reading Aristotle's phenomenological discourse in *De Sensu*, we do indeed discern the use of unmistakably Philolaic ideas on harmonics as a template for scoring phenomena as 'definite forms' (εἶδη πεπερασμένα). But precisely because we are seeing that, we are seeing a great deal more. In other words—and albeit only approximately, selectively and at the level of general principles—, we are seeing the way early Hellenic *aidoi* and 'musicians' (μελοποιοί, μουσοποιοί) composed and performed melic verse when it was their intention to make 'sacred song' a means to hear the divine in and as melodised tones and metred rhythms. To illustrate how we can be relatively certain of this, even in the absence of solid proof and incontrovertible testimony, let us go back to the diagram in **Figure 1** on page 15.

For the reasons given above, the manner of melodically mapping complexity illustrated in it must in the final analysis be considered a schematic rendering of Aristotle's 'descriptive phenomenology'. It is not withal a melodic signary that legendary singers of sacred song like Orpheus, Eumolpe or Tiresias would have disapproved of.<sup>52</sup> But approve of it though they might, they would no doubt nonetheless have pointed out that something is missing from it. Namely, any reference to what occupies or at least ought to occupy *the spaces above*

<sup>51</sup>Cf. [78]: 298 & [101]: 5-6.

<sup>52</sup>Even though Wersinger does not mention these legendary *aidoi* by name in her patient analysis of 'le terme *sustoichia*' ([102], p. 232ff.), what she says in her gloze of the sources and testimonia she scrutinises nevertheless significantly substantiates the point we are making here.

and below the diagram and which are 'hyphenated' by the vertical lines in it. A remark which is not intended to suggest that Orpheus' illustrious successors had neglected to think of putting something in these spaces. However, where Aristotle would have made use of them to be sure that what is between them semiotically subserves his formal, final, proximal and material causes and Plato would have used them to rhapsodise *ad more geometrico* about the 'harmony of the spheres', the inspired *aoidoi* in song culture would have opted for a simpler alternative. They would have placed this diagram *en abyme* in relation to the 'Ouranides' (Οὐρανῖνες) by reserving the space above for 'starry Ouranos' and the space below for 'all-bearing Gaia'. They would have done that because as far as they were concerned nothing ever crossed—or ever will cross—the stage of the mesocosm hosting our existences that is not a 'passion' or 'birthling' (πάθημα, τέκνα) of the 'sacred marriage' of the Sky and the Earth. Consequently, this 'marriage' is something one *must* signal when it is one's desire to sing of things to the power of the agencies to which they are beholden for their time, place, nature, character, destiny and Being-what-they-are.

The semiotic implications of this view for what is going on in this diagram speak for themselves. For placing the sign system depicted in it *en abyme* relative to these divinities and their cosmos-creating relationship entails more than transforming the vertical lines in it into so many 'hyphens' which conjoin Ouranos above and Gaia below. It entails transforming them into mediums *in, through and as* which the cosmos-synthesising dynamics of Ouranos, Gaia and their 'sacred marriage' receive a 'melodic signature' and in the guise of that signature convert any 'sacred song' containing it into the very voice of the divine. That was the point of using the ratios of the diatonic pitch scale to 'heptasect' the qualitative continua these lines stand for. It was a question of being able to 'mime' different 'complexions' in melodised tone and metered rhythms. However, this 'mimesis' was not just 'eikastic'. In other words, the goal was not merely to define or specify different complexions by distinguishing their particular perceived aspects from those of other complexions belonging to the same family of sensibles. It was also, and above all, to quantify the contribution made by the Sky and the Earth to the blend of energies which give complexions and complexity what they appear to be when observed.

In any event, if this sign system could not do that, if in quantifying complexions as 'ratios of qualitative extremes' it did not *always, already, also and thereby* 'co-mime' what blends of Sky and the Earth energies made those complexions be by blistering pre-cosmic aether into their perceptible forms, it could not be a way of 'scoring complexity' that an 'inspired' singer of 'sacred song' could have taken seriously.

## 11. Concluding remarks

Readers who cast a critical eye back upon what was said in the foregoing will no doubt have reservations about some aspects of what they read. Most likely they will be particularly pronounced as concerns our portrayal of the way melic verse in archaic song culture was used to 'score' cosmopoiesis. For if the point of composing sacred song was to sacralise its referents by 'epiphonising' their cosmopoietic significance, one would have to assume that this applies

to subject matter that could be literally epic in scale and complexity. Why then did we limit our demonstration of the semiotics of the process whereby this happens to the way *individual* musical notes stand for *individual* ἀπλᾶ αἰσθητά? Alternately, why was not anything said about the way musical notes could be concatenated and counterpointed in such a way as to epiphonise the cosmic significance of highly complex situations and subject matter in which multiple *composite referents* interact dynamically over time and space with other *composite referents*?

Other readers will wonder why we spoke of 'melodised tone' and 'metered rhythm' together when the only 'sign system' we discussed was one based on the diatonic pitch scale. This could give the impression that 'melic verse' could not 'mime' cosmopoiesis except as melodised tones and that 'metered rhythm' must therefore have played no more than an auxiliary role in the signifying process. This is most regrettable given that it has been argued to great effect that 'the self-declaration by things themselves about their very Being' can be signified through metered rhythms all on their own.<sup>53</sup> Still other readers will feel that space should have been devoted to way the inspired *aoidos* was like and yet unlike the inspired oracles who did not or could not 'sing' and therefore required the assistance of various hermeneutic middlemen (ἐρμηνέων ἐρμηνῆς) to give a legible expression to the intelligence they incubated whilst in a theoleptic fit.

To the readers who raise these objections and others that are just as legitimate, I offer the admittedly lame excuse that only so much can be covered in an article length treatment of the semiotic *punctum caecum* we explored and that some of the resulting insufficiencies will be redressed in a planned book length study devoted to this chapter's *Sache selbst*. I will also add that their reading will not have been in vain if it has succeeded in making them see some merit in the modest point this chapter wanted to make and which I resume thus.

People listening to the 'sacred song' composed and performed by an 'inspired' *aoidos* were hearing the 'melodic signature' of the cosmopoietic dynamics that gave the object of the song the 'complexion' in which guise it was accessible to the 'non-inspired' audience. The semiotic rationale behind this claim was a mimetic correlation between (i) the arithmological characteristics of the melodies and rhythms structuring the sounds one heard in the song and (ii) the arithmology used to give a quantitative expression to the blends of cosmic energies that powered the song's subject matter into its complexion and its Being-in-the-world. As a result, the listener was hearing two narratives about the object of the song: one in the profane, ordinary words of mortals recounting what it means *sub species hominis*, the other in melody and metre relating its sacral, cosmopoietic significance. This is why it is so apt to refer to 'sacred song' or θεσπὶς ἀοιδή as a form of 'hieroglossia'. For the goal of the hieroglossia peculiar to 'θέσπὶς ἀοιδή' was to 'oversignify' the ordinary acceptations of the object of verse signified in prosaic words and narrative and do so by telling a separate narrative about the same object in a language whose form was 'musical' rather than 'lexical' and whose semantics were 'hieratic' rather than 'profane'.

<sup>53</sup>On 'das Substantielles sich-bekunden der Dinge selbst', cf. [32]: 63-69, [34]: 125-126, [76]: 42-45.



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