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MULTIPLE ANALOGY IN PS.-ARISTOTLE, *DE MUNDO* 6[*]

The short treatise known as Περὶ κόσμου (*De mundo*) is a learned piece of protreptic addressed to Alexander, 'the best of princes', usually identified with Alexander the Great.[1] The treatise is traditionally attributed to Aristotle, and although it does espouse recognizably Aristotelian views, it contains various doctrinal and linguistic elements which have led the large majority of scholars to regard it as inauthentic.[2] The dating of the treatise is a more controversial matter, though most scholars would put it somewhere in the Hellenistic period.[3]

The treatise can be divided into three main parts. First, the opening chapter states the purpose and character of the treatise. Second, Chapters 2–4 present a systematic overview of the structure of the universe, with salient phenomena in each of the five concentric layers of the universe. These three chapters aim to set out facts without much explanation, either of the general structure of the universe or of the phenomena listed. They seem to elaborate on the first definition of *kosmos*, stated at the very opening of Chapter 2: 'A system composed of heaven and earth and the elements contained in them' (391b9–10).[4] This definition is attributed to Chrysippus in Stobaeus' *Anthology* (1.21.5 = *SVF* 2.527) and quoted by Posidonius in his *Meteorology* (Diog. Laert. 7.138 = fr. 14 Kidd). As it stands, the definition does not suggest that, in addition

[1] J. Bernays, 'Über die fälschlich dem Aristoteles beigelegte Schrift περὶ κόσμου', in *Gesammelte Abhandlungen* (Berlin, 1885), 2.278–81, argues that the addressee is Tiberius Alexander, Philo's nephew and governor of Egypt in the latter half of the first century A.D. This is accepted by M. Pohlenz, *Die Stoa* (Göttingen 1948–9), 1.361 and 2.177.

[2] Exceptions are P. Gohlke, *Aristoteles an König Alexander über die Welt* (Paderborn, 1968³); G. Reale, *Aristotele: Trattato sul cosmo per Alessandro* (Naples, 1974); A.P. Bos, *Aristoteles: Over de kosmos* (Meppel, 1989); A.P. Bos, 'Considerazioni sul *De mundo* e analisi critica delle tesi di Paul Moraux', *Rivista di filosofia neoscolastica* 82 (1990), 587–606. Cf. G. Reale and A.P. Bos, *Il trattato sul cosmo per Alessandro attribuito ad Aristotele* (Milan, 1995).

[3] For an overview of the various conjectures concerning the date and authorship of the treatise, see Furley's introduction in E.S. Forster and D.J. Furley (edd.), *Aristotle: On Sophistical Refutations; On Coming-to-be and Passing-away; On the Cosmos* (Cambridge, MA, 1955), 340–1; O. Schönberger, *Aristotle: Über die Welt* (Stuttgart, 1991); 46–53; Reale and Bos (n. 2), 25–57; J.C. Thom, 'The power of God in Pseudo-Aristotle's *De mundo*: an alternative approach', in C. Helmig and C. Markschies (edd.), *The World Soul and Cosmic Space: New Readings on the Relation of Ancient Cosmology and Psychology* (Berlin, forthcoming).

[4] We follow Lorimer's Greek text in the Budé edition (1933) and Furley's English translation in the Loeb edition (1955). On occasion, Furley's translations are slightly modified.

to the 'heaven and earth and the elements', something else might be required to sustain the system, and Chapters 2–4 proceed accordingly.

The third part consists of Chapters 5–7, which aim to afford genuine insight into some features of the world that the author finds of utmost importance. Chapter 5 explains why it is that the *kosmos*, being composed of the opposites that bring about generation and destruction of particular things, as a whole remains a well-functioning system, indestructible and ungenerated. We are told that the opposites from which the universe is constituted are kept in dynamic balance by a 'single power pervading all things' (μία ἡ διὰ πάντων διήκουσα δύναμις, 396b28–9).[5] This power is the cause of the regular motions of celestial beings, of changes of seasons and days and nights, of meteorological and geological phenomena, and finally of biological phenomena. Although it is responsible for the generation and destruction of particulars, it is also, and more importantly, responsible for keeping the universe indestructible for all time.

Chapters 6 and 7 tell us about the origin of this single power pervading all things, which is identified as the god. These two chapters fulfil the promise, made at the end of Chapter 1, of 'theologizing' (391b4), and they seem to elaborate on the second definition of *kosmos* given at the beginning of Chapter 2: 'The order and arrangement of the wholes preserved by the god and through the god' (391b11–12).[6] More precisely, Chapter 6 explains the god's relation to the universe by means of analogies, whereas Chapter 7 adds more information about the god and his effects in the world by studying his various names.

Chapter 6, on which we shall be focussing in this paper, is the longest chapter in the treatise. Nearly all the work in this stretch of the text is achieved by a series of well-crafted and carefully organized analogies. In the first part of this paper we shall analyse the analogies one by one in their order of appearance and show how they support the author's theological views. In the second part we shall say something about the nature of these analogies and the way in which they are organized. This will allow us to suggest, in the third part, that the author deserves more credit for his rhetorical as well as philosophical qualities than he usually tends to receive in modern literature.

Very briefly, the author adheres to the traditional view that the first principle can only be explained by analogy.[7] However, we shall show that he takes this view to a new level by offering a sequence of no less than a dozen analogies, such that one corrects or supplements another, thus building a complex conception in the mind of the reader. Consequently, the multiplication of analogies is not an extravagant rhetorical profusion, as one might think upon superficial reading of the text, but an elaborate explanatory device which affords a fuller grasp of the first principle of the universe.

I. THE ANALOGIES

The target: how the god functions (397b9–398a6)

Before we turn to the first analogy in Chapter 6, we should say something about the one Bekker column that precedes it. This introductory stretch of the text contains a number

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[5] See the parenthetical remark in ch. 4, 394b10, and also ch. 6, 398b20–3.

[6] ἡ τῶν ὅλων τάξις τε καὶ διακόσμησις, ὑπὸ θεοῦ τε καὶ διὰ θεὸν φυλαττομένη. Some MSS read διὰ θεῶν φυλαττομένη.

[7] This view can be found in e.g. Xen. *Mem.* 4.3.13–14; Pl. *Resp.* 506d–e and 508a–509a; in Arist. *Metaph.* Λ.10.1075a11–25; Theophr. *Metaph.* 4b11–18.

of interesting doctrinal and linguistic points which deserve closer scrutiny, but here we shall have to restrict ourselves to a brief summary. First, we learn that the description of the universe given in the preceding chapters would be incomplete without a description of that which is most supreme in the universe and which keeps it together (ἡ συνεκτικὴ αἰτία, 397b9). The author claims that everyone agrees that this is the god. Second, although the god is indeed 'the preserver (σωτήρ) of all things and the creator (γενέτωρ) of everything in this cosmos no matter how it is brought to fruition' (397b20–1), he does not achieve this by himself taking the trouble directly to operate in the world; rather, he 'uses an unremitting power (δύναμις ἄτριτος), by means of which he controls even things that seem far off' (397b22–4). Third, the divine power diminishes with distance. That is why the highest sphere of fixed stars shows the greatest regularity and permanence, whereas things on earth, 'being at the farthest remove from the god's beneficence, seem to be weak, discordant and full of great turmoil' (397b30–2). Nevertheless, the power of the god does reach everywhere, including our region at the centre of the universe.

The Great King (398a6–398b12)

To illustrate these three points, the author introduces the first and the most elaborate analogy, that with the Great King of Persia. Things are said to be organized in Persia in such a way as to make the king appear supremely magnificent and exalted. The king resided in Susa or Ecbatana, invisible to all (παντὶ ἀόρατος, 398a14), in a splendid palace surrounded by walls shining with gold, electrum, and ivory. We would like to make four points here. First, Susa, and particularly Ecbatana, were places roughly in the middle of the Persian Empire at its peak. This is notable because there will be two other analogies – the portrait of Phidias and the keystone – in which the middle position of the item in the source domain will be contrasted with something in the target domain, namely the god's position on the periphery of the universe (400a5–19). Second, the Great King was invisible to all, just as the god is invisible to all. In both cases invisibility seems to be a factor of magnificence. As Herodotus explains (1.99), the Persian king made himself invisible in order to leave the impression of being distinguished from other people. The invisibility of the god will become topical in later parts of the text as well (399a31, 399b12, 399b22). Third, the king's residence was said to be 'surrounded by walls shining (ἀστράπτοντα) with gold, electrum and ivory', which is clearly intended to evoke the heavenly sphere, not only visually, by conjuring up the twinkling of stars with slightly different colours, but also etymologically and phonetically, as the Greek participle ἀστράπτοντα at 398a16 is likely to bring the noun ἄστρα to the reader's mind. Finally, Herodotus (1.98) reports that Ecbatana had seven concentric circular walls, each internal one somewhat smaller and higher than the preceding one, each with the protruding layer of the wall painted in a different colour. No doubt these were originally meant to represent the orbits of the seven planets, much like the famed 'temple of the seven spheres' in Borsippa (Birs Nimrud).

   After the description of the king's palace comes a description of socio-political organization. Of the most important and trusted persons, some were appointed as the king's bodyguards and attendants, others as guardians of the city walls,[8] who were

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[8] It is not clear whether this refers to each of the seven city walls of Ecbatana or each city wall in the empire. The latter seems to fit the intended conclusion better.

called πυλωροί ('gate-watchers') and ὠτακουσταί ('eavesdroppers'). This is probably a version of the report in Herodotus (1.100) that the Great King had his spies – κατάσκοποι and κατήκοοι – at every place in the empire. With this in mind, we can understand the author's conclusion at 398a22–3: 'So that the King himself, who was called master and god, might see everything and hear everything.'

Moreover, there were people appointed as revenue officials, generals of war, captains of the hunt, receivers of gifts to the king, 'and others, each responsible for administering a particular task, as need may be' (398a25–6). The empire was divided into nations under generals, satraps, and kings – all of whom were slaves to the Great King – with couriers, spies, messengers, and signal-officers. The author was particularly impressed by the signal-officers (φρυκτωριῶν ἐποπτῆρες, 398a31), who took care of a network of fire signals by means of which messages from the far ends of the empire could quickly reach Susa or Ecbatana, 'so that the King could learn the same day about all new events in Asia' (398a34–5), and take action accordingly.

With this elaborate organization of the empire, explicitly called κόσμος at 398a32, the Great King was able to rule without appearing to supervise or execute any of the tasks. In other words, the empire is set up in such a way that the Great King receives all important information and issues all important commands – without being seen by anyone save perhaps his closest attendants.

Before drawing the conclusion, the author pauses to reflect on a limitation of the analogy and to remind us that the source and the target of the analogy are in fact on very different scales. We must suppose, he says, that the Great King of Persia falls short of the magnificence of the god of the universe as much as the humblest and weakest creature falls short of the magnificence of the Great King. Note that a deficiency in the initial analogy is here repaired by another analogy: in order to prevent the reader from associating the god's magnificence too closely with that of the Great King, the author says that the Great King – the paradigm of dignity among mortal beings – is as far removed in magnificence from the god as a worm or a slug is removed from the Great King. Having intercepted a possible source of error in the initial analogy, the author cashes it in: if it is undignified for the Great King to be seen as the actual supervisor and executor of the relevant tasks, this would be so much more unbecoming of the god. 'It is more noble and more becoming of the god to reside at the highest place, while his power, pervading the whole cosmos, moves the Sun and the Moon and turns the whole of the heavens, and becomes the cause of preservation of things on earth' (398b7–10).

The main point of the first analogy, then, is to explain that the god can be causally operative in the world without himself pervading it – he can make things happen without himself being where they happen – and to show that this sort of causal efficiency is a true mark of divine nature and supreme magnificence. This is most probably intended as a criticism of the Stoic view that the god is causally operative in the world by permeating it through and through, as scholars have observed.[9] We might also add that a likely origin of the first analogy is Aristotle's comparison of the animal with a city well governed by law in *De motu animalium* 10.703a29–b2. The main point which Aristotle makes there is that, just as such a city does not need a monarch running around and

[9] E.g. Pohlenz (n. 1), 1.361; H. Strohm 'Studien zur Schrift von der Welt', *MH* 9 (1952), 137–75, at 160; P. Moraux, *Der Aristotelismus im I. und II. Jh. n. Chr., Band 2: Der Aristotelismus bei den Griechen von Andronikos bis Alexander von Aphrodisias* (Berlin, 1984), 37–8; J.-J. Duhot, 'Aristotélisme et stoïcisme dans le ΠΕΡΙ ΚΟΣΜΟΥ pseudo-Aristotélicien', *RPhA* 8 (1990), 191–228, esp. 203–4; and Thom (n. 3).

attending to each affair, so the animal does not need a soul in every part of the body to make it perform its function. Of course, there are two very different political orders in the background of the two analogies. Aristotle found the political order of the Persian Empire repugnant, and there are reasons to think that the same holds true for the author of the *De mundo*. We shall suggest that the last analogy in the series, the one with the law of a city, may be plausibly interpreted as the author's attempt to put the rule of law in the reader's mind in place of the oriental despotism fostered by the first analogy.

Be that as it may, the author does articulate one important point at which the analogy between the Great King and the god breaks down. What the god does *not* require, in contrast with the Great King, is 'contraption and support from others, as rulers on earth require a plurality of hands due to their weakness' (398b10–12). The Great King's rule relies on the proper functioning of his contraptions – for example, on each link in the chain of his fire signals – and on a number of subjects who perform their tasks promptly and reliably. In particular, he needs the aforementioned complex and complicated system of bodyguards, attendants, guardians, spies, signal-officers, revenue officials, generals, captains of the hunt, receivers of gifts, and others in order to rule his empire, and that is a mark of his weakness. The god, by contrast, promulgates his power in the universe with a single stroke, and that is a clear indication of his power. The most distinguished mark of the divine (τὸ θειότατον), the author tells us, is to be able to produce very diverse effects 'with ease and with a simple motion' (μετὰ ῥᾳστώνης καὶ ἁπλῆς κινήσεως, 398b13). To illustrate this, the author introduces two further analogies: one with engineers, who set their gadgets in motion with a single release mechanism, and the other with puppeteers, who effect harmonized motions of various parts of their puppets by pulling a single string.

Engineers (398b12–16) and puppeteers (398b16–20)

Both of these analogies have often been put into philosophical use. Aristotle repeatedly refers to engineered automata to explain physiological processes (*De motu an.* 7.701b2–10; *Gen. an.* 2.1.734b9–18; see also Ps.-Aristotle, *Mech.* 848a34–7), whereas puppets are a philosophical commonplace from at least Plato onwards (see *Resp.* 514b; *Leg.* 644d, 804b).[10] What is common in these two types of device is that in both cases a single and simple movement by the operator is transformed into a set of complex motions. In the first case, once a triggering system is activated – for instance by opening a trap door and thereby letting a weight fall which then puts the mechanism in motion – the impetus is transmitted from axle to axle in a complex internal gear system. In the case of mechanical puppets, the pulling of a single string causes the coordinated, complex movements of different body parts of the puppet.[11] The obvious positive analogy would be exactly this: the god can operate the cosmos in an uncomplicated manner, by giving it a simple impetus, and without all the complications and troubles that must be involved in governing the Persian Empire.

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[10] For an informative discussion of the way in which these devices are used in analogies, see S. Barryman, 'Ancient automata and mechanical explanation', *Phronesis* 48 (2003), 344–69; D. Henry, 'Embryological models in ancient philosophy', *Phronesis* 50 (2005), 1–42. See also P. Gregoric and M. Kuhar, 'Aristotle's physiology of animal motion: on *neura* and muscles', *Apeiron* 47 (2014), 94–115.

[11] So the puppets in question should not be confused with marionettes, in the case of which different body parts are moved by *different* strings.

Note, however, that these analogies might appear misplaced, for the author refers to them in order to contrast their operations with the Great King, who is dependent on many different officers and systems of command to rule his empire. One could at this point object that neither the puppeteer nor the operator of the automaton could achieve the desired effect without the rather complex internal gear system of their devices. Indeed, the internal structure of the automata displays a comparable complexity and causal chain: one axle puts the next one in motion, just as the royal order is transmitted through the system of command. We think, however, that the point is that, for different types of task, such as to levy taxes, to manage gifts, to defend the country from enemies, to organize hunts, and so forth, the king has to turn to different types of officer and is dependent on different chains of command. As opposed to this, the god can bring about all the complex movements in the cosmos by a *single* simple operation.

Of course, one is likely to wonder how such a single simple operation that triggers a mechanical chain reaction can result in the enormous variety of things in this world, manifesting such hugely different patterns of behaviour. The author wants to show that this is because each thing moves in accordance with its constitution, and their trajectories are not the same but different, and even, in some cases, opposite. This is why they react differently to the same triggering cause. To illustrate this point, the author introduces another pair of analogies.

Cast geometrical solids (398b27–30) and released animals (398b30–399a1)

The first of these is the analogy with geometrical solids: if one puts a sphere, a cube, a cone, and a cylinder into a pitcher and casts them all at once, each one of them moves in accordance with its particular shape. So, one single motion of casting can produce motions of different magnitude and direction determined by the characteristic shapes of the solids cast. This analogy is reminiscent of Chrysippus' famous example of the distinction between a proximate and a primary cause with reference to the cylinder and the cone, where the primary and perfect cause of the cylinder's rolling is its shape or nature.[12] However, Chrysippus used the example to underline the causal priority of the characteristics of the objects set into motion, whereas in our author's analogy these characteristics explain only the diversity of effects produced by the same triggering cause.

The second analogy of this set is that with animals: if one puts a fish, a land animal, and a bird in one's cloak, and then throws them out all together, each one will move differently in the direction of its natural habitat, 'a single first cause gave them all the ability to move with ease in their proper ways' (398b34–5). There are discussions about the source of this particular analogy – whether or not it originates from the same source as the preceding one.[13] Not wishing to speculate on this point, we can say that the purpose of both analogies is to show that a single motion at the beginning of a causal chain can produce a great variety of motions dictated by the specific nature of things moved. 'Likewise with the universe', our author completes the analogy, 'by

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[12] In Cic. *Fat.* 41–3 (= *SVF* 2.974, L.–S. 62C) and Gell. *NA* 7.2.6–13 (= *SVF* 2.1000, L.–S. 62D).
[13] W.L. Lorimer, *Some Notes on the Text of Pseudo-Aristotle "De mundo"* (Oxford, 1925), 63–5; cf. J.P. Maguire, 'The sources of Pseudo-Aristotle *De mundo*', *YClS* 6 (1939), 109–67, at 151–2, and Duhot (n. 9), 207–11.

means of a simple revolution of the whole heaven completed in a night and day, the different paths of all are produced' (399a1–4). We take it that the 'simple revolution of the whole heaven' refers to the apparent diurnal motion of the heavens. Also, we take it that 'the different paths of all' produced by the simple revolution of the whole heaven are the apparent motions of the planets along the ecliptic.

The chorus leader (399a12–35)

The diverse motions of the celestial bodies are not only dictated by the single motion of the sphere of the fixed stars but are attuned so as to create a harmony which contributes another sense in which this world is a *kosmos*. This leads the author to the sixth analogy, that with the chorus. The chorus analogy, known in the cosmic context at least from the *Timaeus*, is subtly anticipated by a passing comparison of the triggering cause with the opening keynote (ἔνδοσις, 398b26–7) which gives a signal and sets the pitch for the orchestra. Moreover, the analogy has already occurred at the very first mention of the celestial gods and their movements in Chapter 2 (391b17–18), but now in Chapter 6 the limelight is on the chorus leader. Moreover, whereas in Chapter 2 one would think that only the coordinated *movements* of the dancers create the basis for the analogy, here the other, *auditory*, aspect is developed as well: the members of the chorus not only move, but sing, too. The text strongly suggests that the author sub-scribed to the doctrine of the harmony of the heavenly spheres.[14] In this way, the focus on the chant of the chorus members is not a mere illicit accretion from the ana-logy. Rather, it is an example of the way in which analogies can reveal newer and newer facets of the phenomena to be described. The tighter the analogy, the more rhet-orically powerful it is, but also the more philosophically poignant it becomes.

Moreover, in accordance with what we have learned in Chapter 5 and parts of Chapter 6 about the opposites and the coordinated functioning of different natures, we now come to appreciate the characteristic differences among the members of the chorus, in terms of their vocal range and sometimes also gender. Harmony, as the author explained in great detail in the previous chapter, is created out of opposites. Following this view, the heavenly diapason is now explained as emerging from the variety of indi-vidual and generic natures showing contrasting auditory features. These generic natures or individual constitutions (τὰ τῶν διαστημάτων μήκη καὶ τὰς ἰδίας ἑκάστων κατασκευάς, 399a5–6), coupled with the differences in distances from the centre of the universe, result in differences in angular speed and pitch.

Although there is surprisingly little ancient evidence about the chorus leader's role, gestures, and other methods by which he or she conducted the chorus,[15] there is one aspect of the figure of the coryphaeus that is certainly worth noting in the present con-text. The role of the chorus leader is very often taken by the god: it is the god himself

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[14] If this interpretation is correct, it seems at first sight that the author used the older eight-note celestial harmony scheme (seven planets plus the sphere of the fixed stars) that is attributed to the Pythagoreans in Aristotle's *Cael.* 2.9.290b12–291a9 and in Eratosthenes' *Hermes*. This scheme is to be distinguished from the later versions of the doctrine using only seven tones (see W. Burkert, *Lore and Science in Ancient Pythagoreanism* [Boston, MA, 1972], at 351–2). On the other hand, our text does not speak about the harmony of the spheres *per se*, but rather of the celestial bodies. Such a view would create obvious difficulties in the case of the fixed stars – we would simply have too many notes. Perhaps the stars emit a single note collectively.

[15] For an overview and analysis of the evidence, see P. Wilson, *The Athenian Institution of the Khoregia: The Chorus, the City and the Stage* (Cambridge, 2000), esp. 134.

who leads the *choreutai* in the dance and hymn in his praise.[16] Conversely, the human chorus leader is sometimes taken to represent the god.[17] Moreover, the dance led by the god could sometimes take cosmic dimensions. Indeed, Sophocles in the fifth stasimon of the *Antigone* gets very close to the image we find in the *De mundo* when he represents Dionysus as the chorus leader of the fire-breathing stars (ἰὼ πῦρ πνεόντων | χοράγ' ἄστρων, 1146–7).

According to the description of the author of the *De mundo*, the heavenly bodies, each in its own way, *directly* heed the signalling of the divine chorus leader, whereas the lower-level meteorological and geographical phenomena are mechanical effects of the movements of the heavenly bodies. Night and day and the seasons are defined and delimited by the movement of the Sun, and the floods of rivers and the growth and decay of organisms 'follow upon' (ἕπονται, 399a26) these meteorological phenomena. Thus, when the author says at 399a26 that all these things occur 'of the first and original cause' (διὰ τὴν πρώτην καὶ ἀρχέγονον[18] αἰτίαν), we must understand this to mean that the divine signalling is the *proximate cause* of the motions of the heavenly bodies, and the *ultimate, non-proximate cause* of the lower-level phenomena.

The specification of this causal chain can, moreover, give some further indication regarding the more general problem of the causal role of the divine *dunamis* in the natural world. It seems that, when the author says at 397b30–398a1 that the efficiency of the divine *dunamis* is inversely proportional to the distance from the heaven, he does not simply mean physical distance. So it is not so much that this *dunamis* gradually extinguishes, in the same way as, for example, physical waves do further from the epicentre; distance from the source refers also, or even primarily, to the number and nature of intermediaries in a causal chain. Observe that the same applies concerning the power of the Great King. As the hierarchy of power descends in ever more subjects who are in charge of lower subjects, the power of the Great King diminishes. The subjects at the lower end of the hierarchy, more remote from the Great King, are more likely to forget their place and disobey than the subjects closer to the Great King.

The army alarm (399a35–b13)

However, the analogy of the chorus leader breaks down at one crucial point. The chorus leader is clearly present and visible to both the members of the chorus and the audience. Indeed, we must assume that the coryphaeus leads the dance of the chorus by visible movements and signals. This is what the next analogy, taking the example of the army alarm, is meant to amend. The army alarm – the sound of the trumpet – is a purely auditory signal, whereas the trumpeter remains invisible for the majority of troops. More importantly, even though the command obviously comes from the army general, his intentions are mediated through the trumpeter and the sound of the trumpet. From this perspective, the army alarm analogy is a more suitable means of conveying the author's ideas about the way in which the god exerts its influence on physical processes in the cosmos. Pressing the analogy a little further, the trumpeter can take the function of

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[16] See also Pl. *Leg.* 665a, 653d–654a: Apollo, the Muses, and Dionysus as συγχορευτάς τε καὶ χορηγούς.

[17] See e.g. Xenophon of Ephesus, *An Ephesian Tale*, 1.2.2, on Anthia, the fourteen-year-old beauty who led the chorus at the local festival in Ephesus and who was revered by locals as Artemis herself (see Wilson [n. 15], 349 n. 23).

[18] Retaining the emendation of Wendland and Wilamowitz, followed by Lorimer and Furley.

the outer sphere, and the general that of the god. The sound of the trumpet would, in this case, be analogous to the physical influence of the outer sphere on the coordinated lower celestial movements.

The soul (399b13–25)

In the next step the author contrasts the perceptible – visible and audible – signals of the chorus leader and the trumpeter with the imperceptibility of the god who can be grasped only by thought (ἀόρατος ὢν ἄλλῳ πλὴν λογισμῷ, 399a31). This remark in fact brings us back to Chapter 1 of the treatise, in which the method and proper subject matter of philosophy was defined as observing divine things not with the body but 'with the divine eye of the soul' (θείῳ ψυχῆς ὄμματι, 391a15). If so, we start to get a completely different image of signalling from what either the chorus leader or the army alarm analogy could convey. The divine signalling, expressed by the verb σημαίνειν, can only be received by *intellectual* focussing on the emitter. Perhaps there is even no active emission of any particular signal – indeed, we shall shortly read that the divine does not admit any change – but the receiver grasps the message simply by focussing intellectually on the god, and this is how the god governs the recipient's behaviour. This image will then be reinforced by the very last analogy, in which the causal role of the god is compared to the way in which the law governs the city. If the main lines of this admittedly strong interpretation are correct, we are getting very close to the Aristotelian description of the way in which the Unmoved Mover moves the celestial intellects. At any rate, all of this strongly suggests, even if the author does not make it explicit, that the heavenly bodies, or their spheres – that is the primary recipients of the divine signalling – are intelligent. Just as Aristotle himself is less than explicit about the question of whether or not the heavenly bodies are ensouled and have intellects, so too is the author of the *De mundo*.

However, it is not entirely obvious how far the interpretation of the analogy should be pushed. Strictly speaking, the formulation does not go further than demonstrating that something invisible can produce visible, far-reaching, and momentous effects. It is none the less equally clear that the author wants the analogy to go deeper. For instance, in the next analogy, the author focusses on the way in which the soul directs our lives, and emphasizes that it is ultimately due to our souls that we produce visible and tangible constructions such as whole cities. In this case, the wording ὁ τοῦ βίου διάκοσμος (399b16) is an evident indication that the *ordering* function of the soul, and not merely its causal efficacy, is put into parallel with the properly diacosmic function of the god. It is by stressing this ordering, structuring, diacosmic function of both the god and the soul that we get a full-blown microcosm–macrocosm analogy.[19]

Drawing the analogy between the individual soul and the ultimate causal principle of the cosmos has a long tradition, of course. If Anaximenes' fragment DK 13 B2 is authentic – if not in its wording, then at least in its tenor – we have the image right at the very beginning of the tradition.[20] Closer to our text is the familiar analogy between the World Soul and the individual rational souls in the *Timaeus*, with the obvious difference that the World Soul in the Platonic formulation is *not* the ultimate causal

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[19] See G.E.R. Lloyd, *Polarity and Analogy* (Cambridge, 1966), 252–3.

[20] 'As our soul, being air, holds us together, so *pneuma* and air surround the whole world' (οἷον ἡ ψυχὴ ἡ ἡμετέρα ἀὴρ οὖσα συγκρατεῖ ἡμᾶς, καὶ ὅλον τὸν κόσμον πνεῦμα καὶ ἀὴρ περιέχει, DK 13 B2 = Aëtius 1.3.4).

source of order in the cosmos. There is a point, however, where the analogies of Anaximenes and Plato go further and state also that the essence or 'stuff' of the individual soul and the governing principle of the cosmos are the same, namely air in the case of Anaximenes, and the mixture of Being, Same, and Different in the *Timaeus*. It is remarkable that the author of the *De mundo* remains at the *functional* level of the microcosm–macrocosm analogy. He only says that the god functions at the cosmic level in producing purposeful actions as the soul does in and for the individual organism and the community to which the individual belongs, without suggesting that in essence or substance the god is like the soul or the intellect.

Even if the army alarm analogy has certain advantages over the chorus analogy concerning the perceptual properties of the causal source, it has one obvious drawback – it gives the feeling of temporal discontinuity. The sound of the trumpet bursts out in a sudden, momentary act, and it triggers a rapid succession of activities as its effect. As such, it is opposed to the continued maintenance of a stable state and a continuous functioning. This part of the image could in theory illustrate the description of the god as a creator (γενέτωρ, 397b21, 399a31). Yet, if the movements of the heavenly bodies are eternal, there is no proper analogue to the sudden and temporary state of alarm in the military camp. The next two analogies seem to have the role of correcting the picture precisely by focussing on the god's role as a preserver (σωτήρ, 397b20, 401a24), or, in more technical language, as the sustaining cause (συνεκτικὴ αἰτία, 397b9).

The keystone (399b29–33) and the portrait of Phidias (399b33–400a3)

The first of these two analogies is that of the keystone. As long as the keystone is in place, the whole structure remains stable; once the keystone is removed, the structure collapses. The second analogy to stress the maintaining function of the god is that of Phidias' portrait. Phidias built the statue of Athena on the Acropolis holding a shield. Allegedly, one of the figures on the shield bore his face, and Phidias made it a part of a mechanism such that damage to this figure would bring about the collapse of the whole statue. Once again, the author hastens to indicate the limitation of the analogy. As opposed to Phidias' portrait, which is in the middle,[21] and indeed also the keystones, which are in the middle of the vaults (οἱ μέσοι κείμενοι, 399b30–1), the god is not in the middle, but – as the author now emphasizes – at the extremity of the spherical universe, whereas the centre of the universe is occupied by the turbulent region of the earth (400a5ff). Indeed, the topical features of these last two analogies – that is, the stability of

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[21] This localization of Phidias' portrait is in contrast with other ancient descriptions of Athena's shield. Some of the numerous surviving accounts of the ornaments and scenes on the shield contain precious details about the depiction of the fight between the Greeks and the Amazons (e.g. Plin. *HN* 36.18 and Paus. 1.17.2.). Some others, most notably Plutarch (*Vit. Per.* 31), also mention that among the Greeks fighting the Amazons, an ageing bold figure is the depiction of Phidias himself, whereas a man raising a spear is supposed to portray Pericles. Yet – and here comes the interesting part – it seems fairly certain from these accounts that the middle of the shield was occupied by a Gorgon head, whereas the two fighters purportedly representing Phidias and Pericles were at the upper or more probably the lower extremity of the shield. Indeed, this is what we can see on the so-called 'Strangford shield', customarily supposed to be a copy of Athena's shield. Incidentally, J. Mansfeld, 'Two attributions', *CQ* 41 (1991), 541–4, points out that the apparently mistaken localization of Phidias' portrait is a further argument against attributing the *De mundo* to Aristotle. It is highly unlikely, he argues, that Aristotle, having spent so many years in Athens, could be so mistaken about the position of the portrait, forgetting also the Gorgon head. For a response, see Reale and Bos (n. 2), 170–1.

the cause – and the negative aspect of the analogy – that is, the spatial localization of the cause – turn out to be connected. It is appropriate for the changeless god to dwell not in the turmoil characteristic of the centre of the cosmos but in the changeless heavenly region at the periphery. The point about the localization of the god is also supported by beliefs and cultic practices shared by Greeks and other peoples, indicating that all agree that the god is in the highest regions. This stretch of text, by the way, is closely paralleled by Aristotle's *De caelo* 1.3, where the localization of the god at the periphery and its inalterability is brought into conjunction, and supported by an appeal to traditional wisdom and common religious practices.[22]

Human leaders (400b6–11)

The keystone and the portrait are, however, inanimate things that maintain the stability of lifeless and inactive objects through mere mechanical force. They do not induce such complex coordinated actions as the Great King, the chorus leader, or the army general do but simply hold together, or prevent the destruction, of static, non-dynamic structures. Indeed, at 399b29 the author makes explicit the limitation of the keystone analogy by excusing himself for the humble comparison of the god with something inanimate. Noting this serious limitation of the analogies working with inanimate items in the source domain, the author immediately switches back to analogies with human agents: 'In a word, then, as the helmsman in his ship, as the charioteer in his chariot, as the leader in a chorus, as the lawgiver in a city,[23] as the commander in a military camp, so is the god in the cosmos' (400b6–8).

In this enumeration of animate analogues, we meet again some items from the earlier analogies, such as the chorus leader and the military commander. It may also be suggested that the lawgiver is meant to take the place of the Great King from the first analogy, thus indicating the author's preference for the rule of law over oriental despotism, but also to pave the way for the final analogy with the law. In any case, the new items are the helmsman in his ship and the charioteer in his chariot. Obviously, both of these have a distinguished history in the philosophical tradition as paradigm cases of agents who are, and who ought to be, in command.[24] Here we wish to note three things. First, some analogies in this group – namely the charioteer, the military commander, and the chorus leader – occur in conjunction in a memorable passage from Plato's *Phaedrus* (246e–247a) as illustrations for Zeus, the chief god. Second, the same analogies join the analogy with the Great King in that they depict human individuals who command other human beings, or at any rate other living beings, in the case of the

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[22] As Lloyd (n. 19), 58–9, observed: 'The connection between the heavenly regions and divinity is a constant feature of Aristotle's theology. He often refers to religious beliefs shared, he says, by Greeks and Barbarians alike, according to which the heavenly bodies are gods and the heaven itself (the "uppermost region") is divine.'

[23] All the MSS have ἐν πόλει δὲ νόμος, which is emended into νομοθέτης by Lorimer, followed by Furley. Lorimer (n. 13), 114–19, convincingly defends his emendation. Briefly, the emendation is justified because the author will continue by drawing a contrast between this group of analogies and the analogy of the law of a city. This would obviously not work had the law of a city already been included among this set of analogies. The point of contrast, i.e. that the command in the first group is wearisome, would just as obviously be inapplicable to the law. And the corruption is easy to explain in view of the prominence of the law analogy at the end of the chapter.

[24] Helmsman: Pl. *Plt.* 272e, *Criti.* 109c; Arist. *De an.* 2.1.413a8–9. Charioteer: Pl. *Phdr.* 246e–247a. For more references, see Lorimer (n. 13), 115–17.

charioteer. Third, this group of analogies seem open-ended, in the sense that there might be other instances of the same sort of commanding function.

The law of the city (400b11–401a11)

All these threads will be drawn together by combining the positive analogies of the inanimate group of analogues (the portrait of Phidias and the keystone) and the animate group of analogues (the helmsman, the charioteer, the chorus leader, the lawgiver, the military commander) in the final analogy, that with the law of a city. As opposed to the inanimate analogues, but in line with the animate analogues, the law governs the behaviour of human beings, that is, it coordinates the goal-directed activities of all members of a political community. On the other hand, in line with the inanimate analogues, but as opposed to the animate analogues, the law, and the god, achieves all this without any internal change, activity, or possibly tiresome care and effort. The *aponia* of the god is of course a *bona fide* Aristotelian doctrine, shared by Epicureans and some Platonists as well. We find an emphatic mention of it on the closing page of Aristotle's *Physics* (8.10.267b2–3): 'Thus we have a mover that has no need to change along with that which it moves but will be able to cause motion always; for the causing motion under these conditions involves no effort.'[25] Providing a possibly even closer parallel, the *aponia* of the divine is mentioned at *De caelo* 2.1, where it is also connected with the location of the divine and supported by traditional views.[26]

Furthermore, although it may be carved in stone, the law itself is invisible. As our author says, it is established 'in the souls of those who observe it' (ἐν ταῖς τῶν χρωμένων ψυχαῖς, 400b14). The analogy of the law henceforth also incorporates the intelligible, non-perceptible nature of the god that the author stated earlier in the chapter (ἀόρατος ὢν ἄλλῳ πλὴν λογισμῷ, 399a31, with our remarks above, p. 582), indicated earlier in the analogy with the Great King (παντὶ ἀόρατος, 398a14), and underlined later in the analogy with the soul (ἀόρατος οὖσα, 399b15). The invisible law affects our lives by being present in our invisible souls that govern and put in order our lives (ὁ τοῦ βίου διάκοσμος, 399b16). If we try to extract the cosmo-theological doctrine that is supposed to be conveyed by this part of the analogy, we get the idea that the god governs the behaviour of those who heed him by being in their souls.

This makes perfect sense in an Aristotelian context: the god determines the conduct of the heavenly bodies by being contemplated and desired by the heavenly intellects. This contemplation and desiring gets manifested in the eternal circular motion which causes meteorological phenomena and periodic changes in the sublunary sphere, thus 'all things come into being and grow strong and perish, obedient to the laws of the god' (401a9–10). The final analogy therefore seems to gesture towards a new type of causation: namely, all the analogies involving human agents were examples of *efficient causation*; or, to use a different causal taxonomy, the human agents acted as *triggering*

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[25] Translation from R.P. Hardie and R.K. Gaye, rev. J. Barnes, *The Complete Works of Aristotle*, vol. 1 (Princeton, NJ, 1984), 446.

[26] Considering the dialectical position of the *De mundo*, it is worth noting that, in later Peripatetic tradition, claims about the trouble-free existence of the cosmic god are often connected with a direct criticism of the immanence of the Stoic god – just as we find these elements side by side in the *De mundo*. See e.g. Alexander, *De mixtione*, 226.24–9, and the careful analysis in T. Bénatouïl, 'How industrious can Zeus be? The extent and objects of divine activity in Stoicism', in R. Salles (ed.), *God and Cosmos in Stoicism* (Oxford, 2009), 23–45.

causes. Then, in the analogy with the keystone and Phidias' portrait, we got examples of *sustaining causes*. No doubt the law operates as a sustaining cause of the city, but the fact that it is said to be in the soul, as an intentional object of thought, clearly points in the direction of the Aristotelian doctrine of the god as a *final cause*.[27]

Thus the analogy is rounded off: just as the law is related to a city, so is the god related to 'that greater city, the *kosmos*' (400b27–8).

II. ORGANIZATION OF THE ANALOGIES

After this overview of the individual analogies, we are now in position to say something about the sequence of analogies in Chapter 6 of *De mundo*, their nature, and their organization.

The primary objective of the chapter is to provide a description of the god *qua* maintaining cause of the cosmos: that is, to give an account of how the god can be the ultimate causal source of the cosmic order. It is to be noted first of all that the majority of the analogies in Chapter 6 – with the notable exception of the law analogy, to which we shall shortly turn – do not actually explain how, in what way and manner, or by what mechanism, means, or process, the god fulfils his causal role in the cosmos. So these analogies do not function like modelling the behaviour of gas molecules by billiard balls, or explaining the functioning of the vascular system on the analogy of water pipes. The analogies in our text show rather that, even though some aspects of the theory about the god's causal role in the cosmos might appear implausible, or even incomprehensible, there are parallels to demonstrate that things, even in our immediate surroundings, can function in a comparable way. For instance, it is not the case that the same cause would affect all things in the same way, for there are cases in our environment as well where a single impetus triggers different but coordinated and functional reactions in different subjects. Similarly, the soul analogy will not explain how, by what means or what mechanism, the god activates cosmic processes – the primary demonstrandum is that there are cases in which something invisible can have perceptible effects on other entities, including those which are spatially far removed. Thus, although one would of course be eager to learn more on the subject, we should not expect from the soul analogy an elucidation of the nitty-gritty details of either psycho-physical interaction in humans or the mechanism of the interaction between god, divine *dunamis*, and physical entities in the cosmos.

A second important feature of the analogies is that at least some of them also carry a normative element: they show not merely what is the case or what is possible, but also what is *fitting* or *appropriate* to the divine. Developing a conception of the divine by examining what is and what is not fitting to the god has, of course, a long history in Greek theological thought. Indeed, at the very beginning of the tradition, Xenophanes of Colophon argues for the motionlessness of the cosmic god exactly on this ground: 'always he abides in the same place, not moving at all, nor is it appropriate

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[27] Although final causation certainly is not prominent in this treatise, we would not agree with Duhot (n. 9), 215 and 224, that the author of this treatise is ignorant of final causation, or, for that matter, that 'the noetic nature of God is equally absent from the treatise' (224). P. van Nuffelen, *Rethinking the Gods: Philosophical Readings of Religion in the Post-Hellenistic Period* (Cambridge, 2011), 137, also thinks that in the *De mundo* 'god seems to have become reduced to a giant efficient cause rather than a final cause'.

(ἐπιπρέπει) for him [sc. the cosmic god] to migrate from one place to another' (DK 21 B26, translation based on Lesher). The author of the *De mundo* bases the first analogy, that with the Great King, on the same normative claim: 'So it is better to suppose, what is also more fitting and most appropriate to the god … for it is not fitting even among men for princes' (398a1–7). And this is also how that elaborate analogy is finally rounded up. It would be 'beneath the dignity' (ἄσεμνον, 398b4) of the king to attend to all matters himself, yet it would be 'much more inappropriate' (πολὺ μᾶλλον ἀπρεπές) for the god personally to take care of all the petty affairs in the world. Thus, the analogy is not strictly speaking between *how* the Great King and the god operate, but between how it is *fitting* or appropriate for them to operate in their respective realms.

The most conspicuous and prominent feature of the author's exposition, however, consists in the fact that he employs a whole series of analogies. At this point, in order fully to appreciate the author's method, we need to introduce some distinctions. Let us start with the obvious. In a single analogy, one source is related to one target. Of course, in a single analogy there may be more than one way in which the source is related to the target, but that is irrelevant for our immediate purpose. Then we can imagine a series of unconnected analogies, such that each analogy has its own source and target, without any overlap. This is just a concatenation of different single analogies. However, a series of analogies can also be connected, such that they have a target in common. For instance, in the *Phaedrus* 246e–247b, Plato compares the same target, Zeus, with several different sources – the charioteer, the military commander, and the chorus leader. Let us call this *multiple analogy*.

Now we also have to distinguish among different types of multiple analogy, according to whether and how the various sources associated with the single target are related to one another. First, the different sources may not bear any relation to one another, but only to the target, respectively explaining non-related aspects or features of that target. For instance, Empedocles develops an analogy between the feathers of birds and the hair of mammals (DK 31 B83 = Arist. *Mete.* 4.9, 387b1–5). But he also develops an analogy between the eggs of birds and the fruit of trees, such as the olives of the olive tree (DK 13 B79 = Arist. *Gen. an.* 4.8, 777a7–11 and Theophr. *Caus. pl.* 1.7.1).[28] In this case, nothing links the two sources – the hair of mammals on the one hand and the olives on the other – beyond the fact that both are analogically related to different features of birds. Let us call this type of multiple analogy *paratactic analogy*.

We get a different type when the different source domains contain one or more items or features which correspond to one another as well as to the items in the target domain. We can take an Aristotelian example, developing the previous example from Empedocles, comparing the hair of land animals with both the scales of fish and the feathers of birds. They are all said to provide protection for the surface of the body. However, the scales and the feathers are both made predominantly of the earthy stuff, and hence their toughness as well as their insensitivity. Of course, the same goes for the hair of land animals. In fact, a larger number of the shared features discovered in the two sources of the analogy (the scales of fish and the feathers of birds) increases the inductive basis for an inference concerning the same feature in the target of the analogy (the hair of land animals). The inductive basis for conclusions about the target domain can also be increased by finding further sources with comparable features. This type of analogy, as Cameron Shelley rightly insists, is an extremely important

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[28] See Lloyd (n. 19), 335.

heuristic device, used in ancient times in philosophy as much as today in various fields of science, from archaeology to evolutionary biology.[29] Let us call this type of multiple analogy *cumulative analogy*.

There is yet another type of relationship between the different sources of a multiple analogy. To appreciate the importance of this type of multiple analogy, it will be useful to remember that analogies, though indispensable tools for knowledge acquisition, have their limitations. That is, no analogy is perfect. More to the point, imperfections in analogies can be very misleading. Notably, one can mistakenly map an item from the source domain which is not in fact present in the target domain; or one can mistakenly map the absence of an item from the source domain to the target domain where it is in fact present; or one can mistakenly focus on some item in the source domain which is present in the target domain but should not be equally focussed on because that leads to mistaken conclusions about the target domain.

Now a limitation of an analogy might be expressed in terms of explanatory caveats. Alternatively, a limitation or a misleading aspect of an analogy may be displayed and patched up by one or several further analogies. In this case, the further analogies will not be 'more of the same', as in the case of cumulative analogies, but rather they will be correctives to the original analogy. We shall call this type of multiple analogy *emendative analogy*.[30] Note that in paratactic and cumulative analogies the order in which the different sources are introduced is irrelevant. As opposed to this, in the case of emendative analogy the sequence of the sources is absolutely crucial, in so far as the consecutive analogies refer back to and repair the previous ones.

One obvious advantage of emendative analogies is the following. As it has also been shown by empirical research, the cognitive force of analogies is so great that, even if their limitations are duly explained, over time they are retained together with their misleading aspects and thereby very often lead to oversimplification and misconception. They 'stick', and they stick together with what is infelicitous in them.[31] If, however, one uses a series of interlocking emendative analogies, the analogies are retained together, preserving the way in which they repair one another, thus conveying a richer and more nuanced conception of the target domain which they are introduced to explain.

This is neatly summarized in the conclusion of a seminal paper on multiple analogies written by a group of cognitive scientists and psychologists:

> There are two main conclusions to be derived from the work that we have presented. First, there are serious hazards involved in the use of analogies. In particular, the employment of a single analogy for a complex concept may impede the acquisition of more advanced understanding of that concept and engender misconceptions. Second, access to a fuller and more immediate comprehension of conceptual complexities may be achieved by the systematic employment of integrated sets of multiple analogies.[32]

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[29] C. Shelley, *Multiple Analogies in Science and Philosophy* (Amsterdam, 2003). It is important to note, however, that Shelley seems to restrict the term 'multiple analogy' to this type of multiple analogy. In our taxonomy, this is only one subclass of multiple analogies, and hence we give it a different name.

[30] R.J. Spiro, P.J. Feltovich, R.L. Coulson, and D.K. Anderson, 'Multiple analogies for complex concepts: antidotes for analogy-induced misconception in advanced knowledge acquisition', in S. Vosniadou and A. Ortony (edd.), *Similarity and Analogical Reasoning* (Cambridge, MA, 1989), 498–531, seem to restrict the term 'multiple analogy' to this type. Once again, in our taxonomy this is only a subclass of multiple analogies.

[31] See ibid.

[32] Ibid., 528.

It seems to us that the author of the *De mundo* fully appreciates both of these points and puts them into practice effectively. It is clear that the analogies in Chapter 6 do not form an unconnected series, but one rich multiple analogy with a single target, and that is the god's causal efficiency, namely the way in which the god operates in the world. Although in this one rich multiple analogy we find cumulative analogies, it is emendative analogies that prevail. The analogy with the Great King (1) is emended by two analogies, that with the engineer setting in motion his automatic gadget using a single release mechanism (2) and that with the puppeteer setting in motion his puppet using a single thread (3). Though (2) and (3) independently emend the same item in the source domain, namely the Great King's need for a plurality of assistants requiring a plurality of engagements, they are mutually related as cumulative analogies. The same is the case with the next pair of analogies, that with the geometrical solids (4) and with the animals in the cloak (5). Though (4) and (5) independently emend the same item in the source domain – namely a relatively small variety of motions triggered by a single release mechanism or a single thread – they are mutually related as cumulative analogies.

The next analogy, that with the chorus leader (6), is interesting in that it has a double role. On the one hand, it is yet another cumulative analogy, along with (2) and (3), adding another case in which some single thing brings about various effects; but it is also an emendative analogy, because it repairs one important limitation in the source domain of the analogies (4) and (5): namely, although casting the geometrical solids by a single throw, or setting free different animals by a single movement of the cloak, produces varied effects, these effects are not in any way coordinated and harmonized. The effects of the chorus leader, by contrast, are coordinated and do form a harmony.

The analogy with the army alarm (7) has a double role, much like the preceding one. On the one hand, it is a cumulative analogy, along with (6), offering another example in which one single thing brings about various but coordinated movements. However, it is also emendative in that it repairs one deficiency in the source domain of analogy (6), and that is the visibility of the chorus leader. Unlike the chorus leader, who is visible to the members of the chorus, the trumpet signal, as well as the emitter of the signal, and of course also the military commander, who gave the order to the trumpeter, are invisible to the troops. The invisibility of the causal source brings us closer to the target domain, namely to the invisibility of the god.

The analogy with the soul (8) is straightforwardly emendative of the preceding one. Although the trumpet signal is invisible, it is none the less audible, whereas the god is entirely imperceptible. This limitation in the source domain is repaired with (8), since the soul produces all sorts of wonderful effects without itself being perceptible in any way.

The next two analogies, those with the keystone (9) and the portrait of Phidias (10), are emendative not merely of (8) but of all the preceding ones too, for all the previous analogies present the items in the source domains as causes of certain movements and actions. Although the same relation is also found in the target domain, for the god does cause movements in the world, there is a crucial further feature in the target domain which is missing in the source domains of the earlier analogies – and that is the fact that the god is also the *sustaining* cause of things in the world. This deficiency is emended by (9) and (10), in so far as the keystone has the function of keeping the whole structure together and the whole statue would collapse if the portrait of Phidias were damaged. As far as their mutual relationship is concerned, however, (9) and (10) are cumulative analogies.

Now the obvious deficiency of (9) and (10) is that they both have inanimate things in the source domain, which is precisely the opposite of what we find in the target domain,

namely the god who is a living being. To repair this problem, the author supplies a group of five analogies (11) featuring living beings who govern other creatures or things: the helmsman, the charioteer, the chorus leader, the lawgiver, and the military commander. This group is just a list of slightly different source domains thrown in without elaboration, and we propose to treat it as a single analogy – clearly of the emendative type. We have mentioned that the group seems open-ended, easily expandable by many other similar cases, and that it partially overlaps with certain items in the source domains found in earlier analogies.

The immediate problem with this group, however, is that all the listed animate beings that are in charge of governing other creatures or things do so with much toil and effort, whereas in the target domain the situation is quite the opposite: the god operates in the world without any toil or effort. To repair this, we get the final analogy, that with the law (12). This analogy is obviously emendative, but it is also cumulative in that it reinforces some other elements in the source domains of the earlier analogies, namely imperceptibility, having many variegated effects, and ones which are coordinated, being an object of intellectual focussing, and perhaps also being a single thing. Thus the final analogy poignantly rounds up the whole multiple analogy in Chapter 6.

III. PROPOSED REASSESSMENT

The author of the *De mundo* has had some bad press, especially with respect to his philosophical competence and acuity. Moraux, for example, remarks, not without scorn, that 'our author is hardly a very profound metaphysician or theologian'.[33] The underlying assumption is surely that the author put all his philosophical cards on the table in the final chapters of the work. Indeed, when Moraux continues by listing the different ways in which the relationship between the divine *ousia* and *dunamis* could be developed, he ends by saying that 'on that subject he [s.c. the author of the *De mundo*] does not say a word and *apparently has not given any thought*'.[34] Moraux's overall appraisal, as well as the assumption spelled out in the sentence we have just quoted, is representative of the prevailing view among recent interpreters. We strongly believe that due attention paid to the use of analogies in the philosophically crucial Chapter 6 invites us to challenge this overall negative assessment.

First of all, observe that the author does not promise an exhaustive, in-depth discussion of the topic. In his introduction to Chapter 6, he explicitly states that he will offer, in this case as well, only a summary treatment (κεφαλαιωδῶς, 397b9–10). In the light of this statement, it seems rather uncharitable to assume that the author would have nothing else to say on the subject. As a matter of fact, in view of the literary genre and the assumed target audience of the text, a much more detailed and technical description of the metaphysical relationship between the divine *dunamis* and *ousia* would simply be inappropriate – more inappropriate than the scientific, meteorological technicalities of the first chapters.

On the positive side, the author prudently selects and inventively executes a method of explanation which is not only firmly anchored in tradition but perfectly appropriate for the specific topic at hand and the target audience in view. The traditional view, as

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[33] Moraux (n. 9), 40.
[34] Ibid., our emphasis.

we have mentioned, is that the god can only be explained by means of analogies, and our author remains fully faithful to it. Indeed, he makes ample use of the memorable analogies used in the past to elucidate the god's nature and relation to the world, and such literary allusions were no doubt rhetorically effective. However, the author combines these with other analogies that seem to be his own invention, and, more importantly, he does so in a remarkably skilled way – by organizing them in one rich multiple analogy.

The author appears to be very sensitive to the limitations of individual analogies and he emends these limitations by carefully choosing further analogies, with the result that he gradually builds up a complex conception of the god which will stick in the minds of his readers.[35] This complex conception no doubt features some central Peripatetic ideas about the god and the universe: that the god is immaterial and eternal, that he is an object of thought, that he is at the periphery of the spherical and eternal universe, that he is a final cause as well as an efficient cause whose simple input to the first heaven is mediated down to the centre of the universe with increasing variation and irregularity, and so forth. This complex conception constructed by means of the multiple analogy shows not only that it is *possible* for the god to have these features but also that it is *appropriate* for him to have them, since these features secure the god's superior dignity. With this complex conception implanted in their minds, the more talented among the readers should have the resources to deal with more advanced philosophical texts. We do not think one could reasonably demand more of a protreptic treatise.

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[35] This crucial aspect of the author's procedure has been overlooked by Duhot (n. 9) in his otherwise insightful discussion of the text. Failing to see that the analogies progressively emend one another, he thinks that they disconnectedly introduce discrepant or incompatible points, which leads him to believe that the argument is muddled and the treatise 'of low philosophical value' (233). Similarly, van Nuffelen (n. 27), 136, thinks that the author just 'heaps comparison on comparison'. Van Nuffelen's failure to observe the connection between the Great King analogy and the law analogy leads him to claim that 'Whereas Maximus [of Tyre in *Or.* 11] incorporated the notion of immobile law into his image of the Great King, *On the World* likens god separately to the Persian King and to law' (136), and to make a negative appraisal of the author's use of the image of the Great King (138). Nevertheless, Chapter 6 of van Nuffelen's book is very informative about that image in Post-Hellenistic literature.