

# Cosmic Order and Divine Power

Pseudo-Aristotle, *On the Cosmos*

*Scripta Antiquitatis Posterioris*  
*ad Ethicam REligionemque pertinentia*  
XXIII

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**Mohr Siebeck**

# SAPERE

Scripta Antiquitatis Posterioris  
ad Ethicam RELigionemque pertinentia

Schriften der späteren Antike  
zu ethischen und religiösen Fragen

Herausgegeben von

Rainer Hirsch-Luipold, Reinhard Feldmeier  
und Heinz-Günther Nesselrath

unter der Mitarbeit von

Natalia Pedrique, Andrea Villani  
und Christian Zgoll

Band XXIII





# Cosmic Order and Divine Power

Pseudo-Aristotle, *On the Cosmos*

Introduction, Text, Translation and  
Interpretative Essays by

Johan C. Thom, Renate Burri, Clive Chandler,  
Hans Daiber, Jill Kraye, Andrew Smith,  
Hidemi Takahashi, and Anna Tzvetkova-Glaser

edited by

Johan C. Thom

Mohr Siebeck

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## SAPERE

Greek and Latin texts of Later Antiquity (1st–4th centuries AD) have for a long time been overshadowed by those dating back to so-called ‘classical’ times. The first four centuries of our era have, however, produced a cornucopia of works in Greek and Latin dealing with questions of philosophy, ethics, and religion that continue to be relevant even today. The series SAPERE (*Scripta Antiquitatis Posterioris ad Ethicam Religionemque pertinentia*, ‘Writings of Later Antiquity with Ethical and Religious Themes’), now funded by the German Union of Academies, undertakes the task of making these texts accessible through an innovative combination of edition, translation, and commentary in the form of interpretative essays.

The acronym ‘SAPERE’ deliberately evokes the various connotations of *sapere*, the Latin verb. In addition to the intellectual dimension – which Kant made the motto of the Enlightenment by translating ‘*sapere aude*’ with ‘dare to use thy reason’ – the notion of ‘tasting’ should come into play as well. On the one hand, SAPERE makes important source texts available for discussion within various disciplines such as theology and religious studies, philology, philosophy, history, archaeology, and so on; on the other, it also seeks to whet the readers’ appetite to ‘taste’ these texts. Consequently, a thorough scholarly analysis of the texts, which are investigated from the vantage points of different disciplines, complements the presentation of the sources both in the original and in translation. In this way, the importance of these ancient authors for the history of ideas and their relevance to modern debates come clearly into focus, thereby fostering an active engagement with the classical past.



## Preface to this Volume

The treatise *De mundo* (dated around the 1st cent. BCE) offers a cosmology in the Peripatetic tradition which draws also on Platonic and Stoic thought and subordinates what happens in the cosmos to the might of an omnipotent god. Thus the work is paradigmatic for the philosophical and religious concepts of the early imperial age, which offer points of contact with nascent Christianity.

In line with the mission and aims of the SAPERE series, this volume on *De mundo* is explicitly interdisciplinary by nature, bringing together contributions from scholars from a broad spectrum of disciplines and specialisations which focus on specific topics, each from its own disciplinary perspective.<sup>1</sup>

The volume opens with the Greek text and a new English translation by Johan Thom, a classicist and ancient philosopher. The translation is accompanied by brief notes intended to help the reader understand difficult terms and concepts in the text itself. Thom is also responsible for the general introduction to the treatise.

The first interpretive essay is by Clive Chandler, a classicist specialising in literature and ancient philosophy. He discusses the language and style of *De mundo*, a crucial aspect of the text, not only because of the richness and diversity of its language, but also because language and style feature prominently in discussions of the text's authorship, dating, genre, and function.

In her essay Renate Burri, a classicist focussing on ancient geography, treats a section of the first, descriptive part of *De mundo*, namely the overview of the geography of the cosmos (ch. 3). She demonstrates how the author succeeds in presenting the inhabited world as a connected and integrated whole, which in turn provides the background for the theological discussion of the cosmos in the second part of *De mundo*, in which god's role in the orderly arrangement and maintenance of this whole is explained.

The next essay, by Johan Thom, focuses on the cosmotheology of *De mundo*, especially as it comes to the fore in the second part of *De mundo* (chs. 5–7). The main rationale of the treatise is indeed to provide an explanation of the way god interacts with the cosmos, despite the fact that he is independent and separate from the cosmos ('transcendent') according to Peripatetic doctrine.

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<sup>1</sup> For more specialised treatment of details see e.g. STROHM 1970; REALE / BOS 1995.



The following four essays all discuss the reception or possible influence of *De mundo* in various intellectual traditions.

Andrew Smith, an ancient philosopher, considers common themes found in *De mundo* and in other pagan philosophical texts, as well as evidence for direct reception by pagan philosophers.

Anna Tzetskova-Glaser, who specialises in Hellenistic Judaism and early Christian literature, discusses how the crucial distinction between god's essence or substance (οὐσία) and his power (δύναμις) – one of the basic tenets of *De mundo* – is treated by Hellenistic-Jewish and Christian authors from the 2nd century BCE to the 5th century CE.

Hidemi Takahashi, a Syriac specialist, provides an overview of the various Syriac and Arabic versions of *De mundo* and their relationships.

The essay by Hans Daiber, an Orientalist, considers possible 'echoes' of *De mundo* in the broader Arabic-Islamic world, including Islamic, Christian, and Jewish intellectuals.

The final essay is by Jill Kraye, an intellectual historian and former librarian. She demonstrates that the current debate regarding the authorship of *De mundo* is by no means a recent phenomenon: the same arguments underlying the current discussion, that is, arguments based on the language, style, and doctrines of *De mundo*, have already been used for or against Aristotelian authorship from the early modern period to the 19th century.

We would like to express our sincere thanks to the editors of the SAPERE series, Reinhard Feldmeier, Heinz-Günther Nesselrath and Rainer Hirsch-Luipold, who initiated the project and without whose invaluable comments and support it would not have been completed. We are also very grateful for the friendly and efficient administrative and editorial assistance provided by Christian Zgoll, Natalia Pedrique, Barbara Hirsch and Andrea Villani.

Stellenbosch, February 2014

Johan Thom

# Table of Contents

SAPERE . . . . .	V
Preface to this Volume . . . . .	VII

## A. Introduction

Introduction ( <i>Johan C. Thom</i> ) . . . . .	3
1. Author and Date . . . . .	3
2. Sources and Other Texts . . . . .	8
3. Composition and Contents . . . . .	10
4. Readers, Genre, and Function . . . . .	14
5. Text Editions and Translations . . . . .	16

## B. Text, Translation and Notes

ΑΡΙΣΤΟΤΕΛΟΥΣ ΠΕΡΙ ΚΟΣΜΟΥ ( <i>Text and Translation by Johan C. Thom</i> ) . . . . .	20
Notes on the Translation ( <i>Johan C. Thom</i> ) . . . . .	58

## C. Essays

Didactic Purpose and Discursive Strategies in <i>On the Cosmos</i> ( <i>Clive Chandler</i> ) . . . . .	69
1. Key Studies of the Language of <i>On the Cosmos</i> . . . . .	69
2. Discursive Strategies and General Format . . . . .	73
3. Varieties of Lexis and Register . . . . .	78
4. The Descriptive Sections . . . . .	82
5. The Cosmic Sections . . . . .	85
6. Conclusion . . . . .	87
The Geography of <i>De mundo</i> ( <i>Renate Burri</i> ) . . . . .	89
1. Preliminary Remarks . . . . .	89
2. Earth and Water within the Cosmos . . . . .	95
3. Geographical Description of Earth and Water . . . . .	96
4. Conclusion . . . . .	105
The Cosmotheology of <i>De mundo</i> ( <i>Johan C. Thom</i> ) . . . . .	107
1. Philosophy as Cosmotheology . . . . .	108
2. God and the Definition of Cosmos . . . . .	109
3. An Overview of the Cosmos as Backdrop . . . . .	110
4. Preservation despite Conflicting Phenomena . . . . .	111
5. The Relationship between God and the Cosmos . . . . .	112
6. Conclusion . . . . .	119

The Reception of <i>On the Cosmos</i> in Ancient Pagan Philosophy (Andrew Smith) . . . . .	121
1. Common Themes . . . . .	122
2. Named References to <i>On the Cosmos</i> . . . . .	127
3. Conclusion . . . . .	131
The Concepts of οὐσία and δύναμις in <i>De mundo</i> and Their Parallels in Hellenistic-Jewish and Christian Texts (Anna Tzvetkova-Glaser) . . . . .	133
1. God's Essence and God's Power according to <i>De mundo</i> . . . . .	134
2. Hellenistic-Jewish Authors . . . . .	135
3. Christian Authors . . . . .	140
4. Summary . . . . .	151
Syriac and Arabic Transmission of <i>On the Cosmos</i> (Hidemi Takahashi) . . . . .	153
1. Introduction . . . . .	153
2. Syriac Version of <i>On the Cosmos</i> . . . . .	153
3. Arabic Versions of <i>On the Cosmos</i> . . . . .	158
4. Relationship of the Arabic Versions to the Syriac Version . . . . .	161
5. Concluding Remarks . . . . .	167
Possible Echoes of <i>De mundo</i> in the Arabic-Islamic World: Christian, Islamic and Jewish Thinkers (Hans Daiber) . . . . .	169
1. Introduction . . . . .	169
2. Quotations from <i>De mundo</i> in Arabic-Islamic Scientific Literature . . . . .	170
3. Echoes of <i>De mundo</i> in Christian Syriac and Arabic Texts from the 9th Century . . . . .	171
4. Echoes of <i>De mundo</i> in Islamic and Jewish Theology . . . . .	178
Disputes over the Authorship of <i>De mundo</i> between Humanism and <i>Altertumswissenschaft</i> (Jill Kraye) . . . . .	181
1. Chronology . . . . .	181
2. Arguments . . . . .	188

## D. Appendices

I. Related Texts (Andrew Smith) . . . . .	201
II. Bibliography . . . . .	209
1. Abbreviations . . . . .	209
2. Editions, Commentaries, Translations of Ancient Texts . . . . .	209
3. Articles, Monographs and other Texts . . . . .	210
III. Indices (Andrea Villani) . . . . .	217
1. Source Index . . . . .	217
2. General Index . . . . .	221
IV. About the Authors of this Volume . . . . .	229

## *A. Introduction*



# Introduction

Johan C. Thom

The short treatise *On the Cosmos* (Περὶ κόσμου = *De mundo*) ascribed to Aristotle<sup>1</sup> attempts to provide an explanation of the role of god in preserving and maintaining the cosmos while at the same time upholding the notion of his transcendence and independence. In doing so it draws on and interacts with various philosophical traditions, although it retains a Peripatetic foundation. Intended for a general audience, this treatise is an important example of the kind of eclectic popular philosophy found in the Hellenistic-Roman period.<sup>2</sup>

## 1. Author and Date

Although *De mundo* is attributed to Aristotle, its authenticity remains a contentious issue. The text did not form part of Andronicus of Rhodes's edition of Aristotelian texts that was published around the middle of the 1st century BCE.<sup>3</sup> The first definite testimony providing a plausible *terminus ante quem* is a reworked translation or adaptation of *De mundo* ascribed to Apuleius of Madaura (b. c. 125 CE). The authenticity of this work has been debated since the middle of the 19th century, but recent scholarship again tends to come out in support of Apuleian authorship.<sup>4</sup> The evidence of this testimony is, however, somewhat ambiguous. From the closing sen-

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<sup>1</sup> It occupies only 11 pages in the Berlin edition (BEKKER 1831, 391a–401b).

<sup>2</sup> A very valuable overview of research on *De mundo* up to 1995 may be found in REALE / BOS 1995, 357–411. For the notion popular philosophy, see K. ZIEGLER, "Plutarchos von Chaironeia", *RE* 21.1 (1951) 636–962; M.-O. GOULET-CAZÉ, "Popular Philosophy", *Brill's New Pauly* 11 (2007) 617–8; L. VAN DER STOCKT, "Semper Duo, Numquam Tres? Plutarch's Popularphilosophie on Friendship and Virtue in On Having Many Friends", in: G. ROSKAM / L. VAN DER STOCKT (eds.), *Virtues for the People. Aspects of Plutarchan Ethics*. Plutarchea Hypomnemata 4 (Leuven 2011) 19–39; PELLING 2011; J. C. THOM, "Popular Philosophy in the Hellenistic-Roman World", *Early Christianity* 3 (2012) 279–95. For *De mundo* as popular philosophical text, see also FESTUGIÈRE 1949, 478.

<sup>3</sup> See BESNIER 2003, 475; FLASHAR 2004, 271. For the text tradition of *De mundo* see LORIMER 1924. For the date of Andronicus's edition of Aristotle's school treatises, see GOTTSCHALK 1987, 1095–6.

<sup>4</sup> See the discussion by BEAUJEU 1973, IX–XXIX; also REGEN 1971; HIJMANS 1987, 408; A. MARCHETTA, *L'autenticità apuleiana del De mundo*. Collana di filologia classica 6 (L'Aquila 1991); M. ZIMMERMAN, "Ap(p)uleius III. Apuleius of Madaura", *Brill's New Pauly* 1 (2002) [905–9] 907.

tence of the Preface, it appears that Apuleius presents this adaptation as his own work in which he will discuss the heavenly system “following Aristotle, the wisest and most learned of philosophers, and the authority of Theophrastus.”<sup>5</sup> This may suggest that Apuleius considers the material of his source to be Aristotelian, but the expression Theophrastean.<sup>6</sup> It therefore appears unlikely that Apuleius thought the original Greek text was written by Aristotle.<sup>7</sup> If Apuleius is indeed the author of this translation, we have a *terminus ante quem* of c. 150 CE. It has been argued that Maximus of Tyre (2nd cent. CE) was influenced by *De mundo*, which would support such a terminus,<sup>8</sup> but the evidence is suggestive rather than certain.<sup>9</sup>

Other explicit *testimonia* are much later.<sup>10</sup> Proclus (410/12–485 CE) is dubious about the authenticity of *De mundo*.<sup>11</sup> Stobaeus (5th cent. CE), on the other hand, includes extensive excerpts from *De mundo* (altogether about two-thirds of the text) in his *Anthology*, all of which he attributes to Aristotle’s *Letter to Alexander*.<sup>12</sup> Philoponus (c. 490–575 CE) likewise accepts that the work (which he refers to as a ‘book’ [βιβλίον] or a ‘treatise’ [λόγος]) was written by Aristotle.<sup>13</sup> David (6th cent. CE) calls *De mundo* a ‘treatise’ (πραγματεία) addressed to “king Alexander”, but he makes no mention of the author.<sup>14</sup>

<sup>5</sup> Apul. *Mund.* pifat. *fine*, § 289 Beaujeu: *nos Aristotelen prudentissimum et doctissimum philosophorum et Theophrastum auctorem secuti ... dicemus de omni hac caelesti ratione.*

<sup>6</sup> Thus HIJMANS 1987, 429.

<sup>7</sup> See DIHLE 1997, 12.

<sup>8</sup> See e.g. ZELLER 1885, 400–2; LORIMER 1925, 141–2; POHLENZ 1965, 376 n. 1; MORAUX 1984, 67–8. See on Maximus also Smith’s essay, below pp. 122–123.

<sup>9</sup> There may be a reference to *De mundo* in [Justin] *Cohortatio ad Graecos* (see Krayer’s essay, below pp. 181, 188), but the identification is not certain.

<sup>10</sup> See also Smith’s essay, § 2 (Named References to *On the Cosmos*). For possible echoes of *De mundo* in the Arabic-Islamic world, see Daiber’s essay.

<sup>11</sup> οὐτε [εἰμαρμένη] ὁ νοῦς τοῦ παντός, ὡς πού φησι πάλιν Ἀριστοτέλης, εἶπερ ἐκεῖνον τὸ Περὶ κόσμου βιβλίον, “The mind of the universe is also not destiny, as Aristotle somewhere claims, if the book *On the Cosmos* is indeed his” (in *Ti.* 3, p. 272.20–1 Diehl). Proclus’s reference to the *nous* as destiny is not found anywhere in *De mundo*, however; see MANSFELD 1992, 403 n. 4. Smith, in his essay (below, pp. 127–129) suggests Proclus is thinking of *De mundo*’s identification of god with fate in ch. 7.

<sup>12</sup> Stob. *Ecl.* 1.40 (vol. 1, pp. 255–72 Wachsmuth) = *Mund.* 391b9–397b8; 1.1.36. (vol. 1, pp. 43–6) = *Mund.* 400b6–401a27; 1.5.22 (vol. 1, pp. 82–3) = *Mund.* 401b8–27.

<sup>13</sup> Philoponus *Aet. mund.* pp. 174.25–175.2 and 179.11–17 Rabe, quoting *Mund.* 397b13–6.

<sup>14</sup> *In cat.* p. 113.22–3 Busse; see MANSFELD 1992, 397. See in general also the essay by Smith, below.

Most modern scholars, however, agree that the treatise was not written by the Stagirite.<sup>15</sup> Factors relevant to the debate about authorship and date include the following:<sup>16</sup>

### 1.1. Doctrinal position and philosophical locus

The philosophical position in *De mundo* differs in some significant respects from that found in other authentic Aristotelian writings. One of the most important of these is the doctrine about god's involvement in the cosmos which conflicts with Aristotle's view elsewhere of god as the Unmoved Mover.<sup>17</sup> Other differences include the statement in *De mundo* that the air is by nature cold and dark (a Stoic doctrine), while according to Aristotle it is warm and humid,<sup>18</sup> and the fact that the Caspian Sea in *De mundo* is open to Oceanus, while in Aristotle it is landlocked (see below).

Scholars have furthermore identified similarities to Platonic, Stoic and Neopythagorean doctrines which may point to post-Aristotelian influences. Parts of *De mundo* indeed appear to have been influenced by, or to react against Stoic positions.<sup>19</sup> The title Περί κόσμου already suggests that the author composed his work as an Aristotelian alternative to Stoic discussions of the world, since this form of the title is elsewhere only used for Stoic works.<sup>20</sup> It is clear, however, that *De mundo* is based on Aristotle and his school in many of its main doctrines. This includes, *inter alia*, the doctrines about the fifth element,<sup>21</sup> the two exhalations, the eternity of the world, the geocentric world with concentric spheres, the division

<sup>15</sup> The most notable exceptions are Paul Gohlke, Giovanni Reale, and Abraham Bos; see e.g. GOHLKE 1936; id. 1968; REALE 1974; BOS 1989; id. 1990; REALE / BOS 1995. An early dating near the time of Aristotle is also supported by SARRI 1979; RADICE 1994; M. ANDOLFO, "La storia degli influssi del De mundo sino al terzo secolo dell'era cristiana, alla luce delle recenti acquisizioni sulla sua paternità e datazione", *Rivista di filosofia neoscolastica* 89 (1997) 82–125. For the extensive debate on authorship in the early modern period see Krayer's essay.

<sup>16</sup> See also the arguments used in the early modern debate as discussed in Krayer's essay, § 2.

<sup>17</sup> The author of *De mundo* in fact tries to reconcile Aristotle's position with the notion of god's involvement in the world, but this will be discussed in more detail below in my essay on Cosmotheology.

<sup>18</sup> See MAGUIRE 1939, 124; MORAUX 1984, 14–5.

<sup>19</sup> Cf. e.g. the definition of κόσμος in *Mund.* 2, 391b9–12 and the phrase συνεκτική αἰτία in *Mund.* 6, 397b9; see DUHOT 1990; MANSFELD 1992, 401, 405 n. 24. For the anti-Stoic tendency of *De mundo*'s theology see GOTTSCHALK 1987, 1137. The view of earlier scholars that *De mundo* was extensively influenced by the Stoic philosopher Posidonius (e.g. ZELLER 1919–23, 3.1:664–70; VON WILAMOWITZ-MOELLENDORF 1902, 1:186; CAPELLE 1905) is however no longer tenable; see MAGUIRE 1939; STROHM 1987.

<sup>20</sup> See MANSFELD 1992.

<sup>21</sup> Although there are differences between Aristotle and *De mundo* concerning the ether; see E.-O. ONNASCH, "Die Aitherlehre in de Mundo und ihre Aristotelizität", *Hermes* 124 (1996) 170–91.



into a supralunary region and the sublunary world, and the transcendent god. There are also many similarities between chapter 4 and the first three books of Aristotle's *Meteorology*, although *De mundo* is probably dependent on Theophrastus rather than Aristotle.<sup>22</sup> The attribution of the text to Aristotle further confirms the author's primary philosophical allegiance.

### 1.2. Language and style

Some of the words and linguistic expressions used in *De mundo* point to a date after the time of Aristotle. These include hapax legomena or words not found elsewhere before the 3rd century,<sup>23</sup> or the use of conjunctions such as *καίτοι* and *τε καί*.<sup>24</sup> Instead of the type of argumentation found in other writings by Aristotle, we find in *De mundo* an exposition without substantiation. *De mundo* has (in parts) a more elevated 'literary' style than the normal technical style we find in Aristotle's other treatises;<sup>25</sup> it simply states instead of providing proofs, using images and comparisons instead of syllogistic arguments.<sup>26</sup> Its citation of Homer furthermore differs from the usage typical of Aristotle.<sup>27</sup>

### 1.3. Geographical knowledge

There are several geographical details that appear to be based on post-Aristotelian developments.<sup>28</sup> A few examples will have to suffice: the existence of Taprobane (present-day Sri Lanka) was unknown to the Greeks before a naval expedition to the southern coast of Asia launched by Alexander. According to Aristotle, the Caspian Sea was completely enclosed by land mass, while *De mundo* considers it to an embayment of Oceanus.<sup>29</sup> Aristotle nowhere discusses the divisions between the three 'continents' Europe, Asia, and Libya, but the author of *De mundo* refers to two different theories, namely, that they were divided either by isthmuses or by rivers.

<sup>22</sup> See STROHM 1953; id. 1987; MORAUX 1984, 20–3.

<sup>23</sup> BARNES 1977; SCHENKEVELD 1991; MARTÍN 1998 (lexical evidence points to the early Imperial period).

<sup>24</sup> P. BOOT, "An Indication for the Date of the Pseudo-Aristotelian Treatise *De Mundo*", *Mnemosyne* 34 (1981) 139–40 (on the use of *καίτοι*; but see the criticism of MORAUX 1984, 82 n. 266); DIHLE 1997, 8 (on the use of *τε καί*).

<sup>25</sup> A brief discussion is found in RUDBERG 1953, 10–2, 36 who suggests Posidonius may have been a decisive influence for this kind of style. See on *De mundo*'s style also STROHM 1970, 269; MORAUX 1984, 57–75; SCHENKEVELD 1991, 226–7; Chandler's essay below.

<sup>26</sup> MORAUX 1984, 57.

<sup>27</sup> M. SANZ MORALES, "Las citas homéricas contenidas en el tratado 'De mundo', atribuido a Aristóteles, prueba de su inautenticidad", *Vichiana* 4 (1993) 38–47. On the style of *De mundo* see further Chandler's essay, and for early modern debates regarding the style of *De mundo* see Krayer's essay.

<sup>28</sup> For more detail, see Burri's essay, below pp. 89–94.

<sup>29</sup> See CATAUDELLA 2003.

In all these cases *De mundo* probably depends on Eratosthenes (c. 285–194 BCE), even if through an intermediary source.<sup>30</sup>

#### 1.4. Cultural-historical background

Some of the images and comparisons would not have been used by someone in Aristotle's time. The description of the palace and reign of the King of Persia is not based on knowledge by a contemporary, but rather on literary allusions.<sup>31</sup> In the same way the description of Phidias's statue of Athena, which will fall apart if the self-portrait of the artist placed in the centre of the shield is removed, is also a literary topos; Aristotle himself, having seen the statue, would have known that this portrait was not located at the centre of the shield.<sup>32</sup>

Such arguments are not all equally cogent, but taken together they have lead most scholars to the conclusion that *De mundo* cannot be dated in the time of Aristotle (384–322 BCE). Even among scholars who do not accept the authenticity of the treatise there is, however, a broad range of suggested dates, which varies from just after the time of Aristotle up to the mid-second century CE.<sup>33</sup> In view of the fact that the treatise displays tendencies similar to Middle Platonism (i.e. the combination of Platonic, Aristotelian, and Stoic ideas), and that neither Cicero nor Philodemus seems to have known *De mundo*,<sup>34</sup> a date around the turn of the era seems reasonable,<sup>35</sup> although an earlier date cannot be ruled out.

<sup>30</sup> Cf. MORAUX 1984, 16–20; DIHLE 1997. See further Burri's essay, below pp. 105–106.

<sup>31</sup> REGEN 1972; MORAUX 1984, 66.

<sup>32</sup> MANSFELD 1991, 541–3.

<sup>33</sup> Cf. e.g. BARNES 1977 (3rd cent. BCE); SCHENKEVELD 1991 (350–200 BCE); RUNIA 2002, 305 (200 BCE); RIEDWEG 1993, 94 (first half of 2nd cent. BCE); ZELLER 1919–23, 3.1:653, 664–70 (not before the 1st cent. BCE); FURLEY 1955, 339–41 (around the time of Andronicus's edition, i.e. second half of 1st cent. BCE); FESTUGIÈRE 1949, 477 and GOTTSCHALK 1987, 1138 (after Andronicus's edition); MANSFELD 1992, esp. 391 (not before the end of the 1st cent. BCE); MAGUIRE 1939, 113 (around turn of the century); VON WILAMOWITZ-MOELLENDORF 1902, 1:186 (first half of the 1st cent. CE); POHLENZ 1965, 382–3 and MORAUX 1984, 6–7, 77, 81–2 (near the time of Philo of Alexandria [c. 15 BCE–c. 50 CE]); LORIMER 1924, 1 n. 2 (c. 40 CE); MARTÍN 1998 (1st cent. BCE or CE); FLASHAR 2004, 272 (1st cent. CE); STROHM 1970, 268 (between the time of Plutarch [c. 45 CE–before 125 CE] and that of Apuleius [middle 2nd cent. CE]).

<sup>34</sup> Philodemus *Rhet. PHerc.* 1015/832 col. LVI 15–20 explicitly states that Aristotle did not try to persuade Alexander to study philosophy (καὶ διότι σχεδὸν ἐκ βασιλείας παρεκάλει [Φ]ίλιππον τότε, καὶ τῆς Περσικῆς διαδοχῆς ἐπικρατοῦντ' ὤφ[ε]λε, "Und weil er beinahe von der Königsherrschaft hinweg Philippos damals (zum Philosophieren) zu überreden suchte, hätte er es auch bei einem sich der persischen Thronfolge Bemächtigenden (= Alexander) tun sollen"; ed. and trans. GAISER 1985, 465–7), which means that he either was unaware of *De mundo* or did not consider it to be written by Aristotle; see MANSFELD 1992, 391.

<sup>35</sup> Cf. MANSFELD 1992, 400: "In my view, a Peripatetic philosopher of Platonic leanings using a Stoic book-title can hardly be dated earlier than the late first cent. BCE."

Earlier attempts by scholars to identify either the author or the addressee of *De mundo* have since been rejected. Bergk, for example, suggested that the author was Nicolaus of Damascus and the addressee the son of Herod the Great, while Bernays proposed Tiberius Alexander, the nephew of Philo of Alexandria, as addressee.<sup>36</sup> The most plausible explanation, however, is that someone from the Peripatetic tradition wrote the treatise and addressed it to Alexander the Great to lend it more credibility.<sup>37</sup>

## 2. Sources and Other Texts

One of the vexed issues in the debate about the dating of *De mundo* is its relationship to other authors and texts. Several authors and texts have been adduced, either as sources used by *De mundo*, or as texts influenced by *De mundo*, in an attempt to establish *termini a quo* or *ad quem*, respectively. In many cases the chronological relationship cannot, however, be established with certainty.

*De mundo* contains several quotations, all of which are from authors and texts prior to Aristotle: Homer, *Iliad* 1.499 = 5.754 = 8.3 (*Mund.* 397b26); 15.192 (*Mund.* 400a19); *Odyssey* 5.64 (*Mund.* 401a4); 6.42–5 (*Mund.* 400a10–14); 7.115 = 11.589 (*Mund.* 401a7); 7.116 = 11.590 (*Mund.* 401a1–2); Heraclitus (fl. c. 500 BCE) *DK* 22 B 10 (*Mund.* 396b20–2); *DK* 22 B 11 (*Mund.* 401a10–11); Empedocles (c. 492–432 BCE) *DK* 31 B 21.9–11 (*Mund.* 399b25–8); Sophocles (c. 495–406 BCE), *Oedipus Tyrannus* 4–5 (*Mund.* 400b5–6); Plato (c. 429–347 BCE), *Laws* 715e–716a, 730c (*Mund.* 401b24–9); Orphic fr. 31 Bernabé = 21 Kern (*Mund.* 401a27–b7).<sup>38</sup> The fact that no quotation is from a text later than Aristotle could be an argument for the authenticity of *De mundo*, but it can equally be explained as the author's attempt to maintain the fiction of Aristotelian authorship.

More contentious are other, less obvious, potential sources. Posidonius (c. 135–c. 51 BCE) has long been proposed as a significant source for the meteorological section (ch. 4), but his influence has indeed been seen in

<sup>36</sup> BERGK 1882; BERNAYS 1885, 278–82 (cf. POHLENZ 1965, 376, 382–3.). For criticism of these proposals see ZELLER 1885. For an extensive overview of the debate during the early modern period see Krayer's essay.

<sup>37</sup> ZELLER 1885.

<sup>38</sup> The dating of the Orphic fragment is uncertain, but it could be a version of the Orphic hymn underlying the Derveni Papyrus, in which case it may pre-date Plato and Aristotle; see MORAUX 1984, 5–6; W. BURKERT, "Die neuen orphischen Texte: Fragmente, Varianten, 'Sitz im Leben'", in: W. BURKERT / L. GEMELLI MARCIANO / E. MATELLI / L. ORELLI (eds.), *Fragmentsammlungen philosophischer Texte der Antike - Le raccolte dei frammenti di filosofi antichi* (Göttingen 1998) [387–400] 398; BERNABÉ 2004, 44.

other parts of *De mundo* as well.<sup>39</sup> Extensive Posidonian influence in our text has, however, now been called into question. According to Joseph Maguire, many of the perceived parallels may be explained as either commonplaces or by the use of common sources. He contends that there are clear indications that Pseudo-Aristotle depends on 'neo-Pythagorean' (= Hellenistic Pythagorean) sources, most of them with a Peripatetic character, rather than on Posidonius.<sup>40</sup> Although he allows for Stoic influence in, for example, *De mundo* chs. 2–3 and 7, this ultimately goes back to Chrysippus. Pseudo-Aristotle did not, however, use Chrysippus directly, but depends on Stoic material reworked by other intermediaries such as Antiochus of Ascalon (b. c. 130 BCE) or Arius Didymus (court philosopher of Augustus).<sup>41</sup> Maguire's view has in turn been attacked by Francesco Sarri, who tries to show on the basis of linguistic and doctrinal evidence that *De mundo* must have served as a source for the Hellenistic Pythagorean authors, rather than vice versa. According to him, the Pythagoreans modernised the language of *De mundo*; they also combined an Academic-Peripatetic transcendentalism with a Stoic immanentism, while the latter is absent in *De mundo*.<sup>42</sup> Hans Strohm also takes a strong position against Posidonius as source of the meteorological section, arguing that Theophrastus was used (directly or indirectly) as source, instead.<sup>43</sup> *De mundo* as a whole is not based on Stoic sources, but represents the kind of rapprochement between Aristotelian and Platonic thought also found in a Middle Platonist like Plutarch.<sup>44</sup>

Another textual relationship worthy of mention is that between *De mundo* and Hellenistic-Jewish authors, namely Aristeas (2nd or 1st cent. BCE?), Aristobulus (2nd cent. BCE) and Philo of Alexandria. *Letter of Aristeas* 132 and Aristobulus frs. 2 and 4 refer to the power of god in a manner reminiscent of *De mundo*, while Philo also uses the notion of 'powers'

<sup>39</sup> See e.g. ZELLER 1919–23, 3.1:667 n. 1, but esp. CAPELLE 1905. For incisive criticism of Capelle's procedure see MAGUIRE 1939; STROHM 1970, 264 n. 3.

<sup>40</sup> MAGUIRE 1939, citing *inter alia* Ps.-Archytas, Ps.-Philolaus, Ps.-Ocellus, Timaeus Locrus, Ps.-Onatas, and Ps.-Ephantus. Cf. also ZELLER 1885, 401 for Ps.-Onatas using *De mundo*. A more circumspect position on the relationship between *De mundo* and the Pythagorean texts is taken by LORIMER 1925, 137–40. See on Onatas, Ephantus, and Ocellus also Smith's essay, below pp. 123–124, 126.

<sup>41</sup> MAGUIRE 1939, 119–26, 162–4. For the similarities and differences between Arius Didymus fr. 31 Diehl = Chrysippus SVF 2.527 and *De mundo* chs. 2–3 see also FESTUGIÈRE 1949, 492–500; STROHM 1970, 288–90. BARNES 1977, 40–3 accepts Reale's contention that Chrysippus used the *De mundo* rather than vice-versa, but this is unlikely; see MORAUX 1984, 78 n. 263.

<sup>42</sup> SARRI 1979.

<sup>43</sup> STROHM 1953; id. 1970, 295–323; id. 1987, 69–84, esp. 80.

<sup>44</sup> STROHM 1952; id. 1970, 265 n. 4, 267–8. Cf. also MANSFELD 1992, 410 n. 61; FLASHAR 2004, 272.

(δυνάμεις) as mediating forces functioning between god and the world.<sup>45</sup> This has led some scholars to suggest that *De mundo* originated within the context of Hellenistic Judaism,<sup>46</sup> while others maintain that the Hellenistic Jewish authors were probably influenced by *De mundo*.<sup>47</sup>

As is clear, the precise direction of dependency (if any) between *De mundo* and the texts mentioned above is disputed in most cases. At the most, these similarities provide an indication of the philosophical milieu in which *De mundo* had its origin.

### 3. Composition and Contents

*De mundo* displays a relatively well-structured unity of composition. It consists of two main parts: a description of the cosmos; and an explanation of cosmic harmony and of god's role in the cosmos. There is a clear movement from the first half to the second; that is, the description of the cosmos is not given for its own sake, but serves as background for the discussion of god's involvement in the world in the latter half. The composition may be schematized as follows:

- I. *Introduction: Praise of philosophy (ch. 1, 391a1–b8)*
  - A. Philosophy as contemplation of what exists
  - B. Philosophy versus detailed studies
  - C. Appeal to Alexander to study philosophy
- II. *Description of the cosmos (chs. 2–4, 391b9–396a32)*
  - A. Cosmology in general (chs. 2, 391b9–3, 393a8)
    1. Definition of the cosmos
    2. The upper, unchangeable part
      - a. Ether and heaven
        - (1) Heaven
        - (2) Ether
        - (3) Stars
        - (4) Planets
    3. The lower, changeable part

<sup>45</sup> See MORAUX 1984, 41–4 (with extensive references); STERLING 2009 (on Aristobulus); DILLON 1977, 161–3 and RUNIA 2002, 296–9 (on Philo).

<sup>46</sup> Notably LAGRANGE 1927. POHLENZ 1965, 380–3 contends that *De mundo* took over 'Oriental-Jewish' ideas and that it had its origin in the same spiritual environment as Philo.

<sup>47</sup> RADICE 1994; RIEDWEG 1993, 88–95; RUNIA 2002, 305. For further discussion see the essay by Tzvetkova-Glaser.

- a. Fire
- b. Air
- c. Earth and water
- 4. The five elements
- B. Geography (ch. 3, 393a9–394a6)
  - 1. Sea and islands
    - a. Islands in the Mediterranean
    - b. Ocean and seas
    - c. Islands outside the Mediterranean
    - d. Continents
- C. Meteorology (ch. 4)
  - 1. Two exhalations
  - 2. Phenomena of the wet exhalation
    - a. Mist, dew, ice, frost
    - b. Cloud, rain, snow, hail
  - 3. Phenomena of the dry exhalation
    - a. Winds
    - b. Thunder and lightning
  - 4. Phenomena in the air
    - a. Apparent (optical) phenomena
      - (1) Rainbows and streaks
      - (2) Halos
    - b. Real phenomena
      - (1) Meteors
      - (2) Comets
  - 5. Phenomena in the earth
    - a. Volcanoes
    - b. Vapours emitted from chasms
    - c. Earthquakes
  - 6. Phenomena in the sea
    - a. Chasms
    - b. Tidal waves
    - c. Volcanoes

7. The mixture of elements responsible for the preservation of the whole

III. *Explanation of cosmic harmony and of god's role (chs. 5–7, 396a32–401b29)*

- A. Cosmic harmony from opposites (ch. 5)
  1. Examples: male, female; art
  2. Preservation through mixture
  3. Cause of preservation: agreement
  4. Praise of the cosmos
  5. Order even among extreme phenomena
- B. God in relationship to the cosmos (ch. 6)
  1. God's power at work in the cosmos
  2. Examples of action at a distance
    - a. The King of Persia and the Persian empire
    - b. Engineers, puppeteers
    - c. Throwing different shapes
    - d. Setting free different animals
  3. Effect of a single movement
    - a. Movement of planets
    - b. Example: chorus
    - c. Changes on earth
    - d. Example: war
  4. Invisibility of the impulse
    - a. Example: the soul
    - b. God seen through his works
  5. God maintaining the cohesion of the cosmos
    - a. Example: keystones
    - b. Example: Phidias's statue of Athena
  6. God located in heaven
  7. Constancy of the heavens versus the changes and cataclysms on earth
    - a. God preserves the pious
  8. God's role as leader and commander in the cosmos
    - a. Example: role of law

## b. Effect on plants and animals

## C. God's names and functions (ch. 7)

1. God is one but named after the effects which he causes

Quotation: Orphic poem

2. God and Fate

3. Conclusion: God and Justice

Quotation: Plato, *Laws*

(I) Chapter 1 provides an introduction in which philosophy is praised as the contemplation of all that exists. Through the mind, the soul can journey even to the heavens, discover large-scale relationships, and comprehend and interpret 'the divine things' (τὰ θεῖα). Such large-scale philosophical investigations, which the author calls 'theologizing' (θεολογεῖν), are contrasted with the examination and description of small-scale phenomena. The introduction ends by exhorting the addressee, Alexander, to study philosophy.

(II) The first main part, chapters 2–4, entails a description of the cosmos, including geography and meteorology. Although it contains a lot of detail, the emphasis is not on single phenomena, but on providing an all-encompassing view of the world.<sup>48</sup> (A) It starts out by giving a definition of 'cosmos' and then describes the cosmos in terms of the five elements, ether, fire, air, water, and earth, each occupying a region above the next element in sequence. (B) This is followed by a section focussing on the last two elements, water and earth, which thus contains a geographical description of Oceanus with its various embayments into the inhabited world, the location of major islands, and the division of the three continents, Europe, Libya and Asia.<sup>49</sup> (C) The third section deals with meteorological and other phenomena of the air, earth and sea. These are mostly attributed to either the wet or the dry exhalation, that is, exhalations of the sea or of the earth. From the wet exhalation come phenomena like mist, clouds, rain and snow, from the dry exhalation winds and phenomena associated with thunder and lightning. The author also distinguishes between phenomena in the air that are real and those that have only an apparent existence, that is, optical phenomena. The latter phenomena include halos around stars, and rainbows; real phenomena are meteors and comets.<sup>50</sup> Next, the author describes phenomena in the earth that are formed by water, wind and fire, such as volcanoes, vapours emitted from chasms, and earthquakes. Similar phenomena occur in the sea: chasms, tidal waves and volcanoes.

<sup>48</sup> Cf. STROHM 1970, 265: "Blick von oben."

<sup>49</sup> See Burri's essay, §§ 2–3.

<sup>50</sup> In *Mund.* 392b2–5, however, these are located in the fire.



(III) In the second main part of *De mundo*, chapters 5–7, the author tries to explain why the various tensions and opposing principles in the cosmos have not long ago lead to its destruction.<sup>51</sup> (A) The first explanation (ch. 5) is that nature creates harmony and concord from opposites. The cosmos as a whole has been created as a composition and mixture of opposing elements and principles. By being held within the confines of a sphere, the various opposing elements are forced into an equilibrium, which constitutes an agreement between them. This concord is the cause of the preservation of the cosmos, because through it, despite the cataclysmic forces at work in the world, the whole is kept indestructible. This chapter also contains an encomium extolling the beauty, composition, stability, diversity, etc. of the cosmos.

(B) In the next section (ch. 6) the author goes a step further: god is now explicitly identified as the cause of the cohesion of the cosmos and as the ‘begetter’<sup>52</sup> of everything that comes into existence. He does not act directly, however, but through his ‘power’ (δύναμις). God himself is based in the highest point in heaven, but his power is at work by first acting on the immediately adjacent region and then on the next, and so on, until it reaches the earth. The precise mechanism of how this works is not explained, but the author tries to show by means of extensive examples how it is possible to influence events at a distance without any direct physical contact or involvement; how a single movement can result in diverse effects; and how it is possible for an invisible initial impulse to give rise to so many subsequent events.

(C) The final section (ch. 7) shows how the various names given to god are based on the effects he causes to come into existence; the variety of effects do not negate the fact that he is one. This also applies to the various names given to Destiny and Fate: god is the one who causes what we ascribe to fate.

#### 4. Readers, Genre, and Function

*De mundo* has very little in common with the school treatises of Aristotle. It tries to convey insights about the cosmos in a simple manner, using images and comparisons instead of providing syllogistic proofs. It also does not enter into the various contemporary polemics regarding the topics treated in the work (e.g. ether as fifth element, or the eternity of the world). The text’s intended readers were probably persons with a good general (rhetorical) education, rather than specialized training as scientists

<sup>51</sup> For a more detailed discussion see the essay on Cosmotheology by Thom below.

<sup>52</sup> The only term used here and elsewhere for his creative activity is γενέτωρ; κτίστης or δημιουργός is not used.

or philosophers.<sup>53</sup> Significant is the fact that the author follows the literary tradition based on Eratosthenes instead of the most up-to-date scientific evidence available,<sup>54</sup> this would indicate that the readers have a general literary background rather than a scientific one. Although 'Alexander' is directly addressed in the first chapter, the fiction of a letter is dropped from the second chapter onwards,<sup>55</sup> but Alexander (as a person reputed to have a good general education) may represent the ideal audience. *De mundo* shares some of the characteristics of a handbook, but it goes beyond the dry and sober style of a mere handbook:<sup>56</sup> it tries to make the exposition of rather dry material more attractive with various stylistic and artistic devices such as poetic or rare words, literary quotations, rhetorical questions, ornamental epithets, elaboration, vivid descriptions, digressions, images and comparisons.<sup>57</sup> Such literary elaboration, the use of the arguments of beauty, possibility and usefulness, and of encomium, together with the exhortation to Alexander to study philosophy, furthermore point towards protreptic.<sup>58</sup> The author describes what he does as 'theologizing', θεολογεῖν (*Mund.* 391b4), and this may also indicate the function of *De mundo*: to move beyond a description of the world to an understanding of the god who maintains the cosmos.<sup>59</sup>

<sup>53</sup> See MORAUX 1984, 57. This audience would be similar to the *pepaideumenoi* that PELLING 2011, 56–7 proposes as the target audience of Plutarch's works.

<sup>54</sup> DIHLE 1997, 9–11: "Der Verfasser der Schrift vom Kosmos ist der literarischen Tradition zuzuordnen, in der sich das Weltbild des Eratosthenes unbeeinflusst von den späteren Fortschritten der Wissenschaft behauptete" (p. 11). See also Burri's essay, below pp. 105–106.

<sup>55</sup> See MORAUX 1984, 59. Stobaeus refers to this work in each of his excerpts as "from the letter of Aristoteles to Alexander", but Philoponus and David call it a 'treatise' (λόγος, πραγματεία) or 'book' (βιβλίον); see above, p. 4.

<sup>56</sup> FESTUGIÈRE 1949, 479–501 contends that *De mundo* is an 'introduction' (εἰσαγωγή) in which the text of a handbook has been rhetorically expanded; see also FURLEY 1955, 334. MORAUX 1984, 58, 78, with n. 263 suggests that the author used "a dry, Stoically coloured handbook" and elaborated it with the addition of Aristotelian material. These scholars refer in particular to the similarity between *De mundo* and Arius Didymus fr. 31 Diel, but as we have seen, the exact chronological relationship between these texts is problematic. The description of *De mundo* as a compendium (GOTTSCHALK 1987, 1132) does not do justice to the literary character of the work. See Chandler's essay below.

<sup>57</sup> See MORAUX 1984, 61–2.

<sup>58</sup> MORAUX 1984, 60–1.

<sup>59</sup> Cf. FESTUGIÈRE 1949, 478: "The world is not studied for itself, but as a way to come to God, to get to know the providence and governance of God"; also MORAUX 1984, 77; RUNIA 2002, 305: "He [sc. the author] is not attempting to give a scientific account of the universe, but works his way towards an explanation of its features in theological terms."

## 5. Text Editions and Translations

As mentioned above, the oldest translation of *De mundo* is a paraphrastic Latin version attributed to Apuleius of Madaura from the 2nd century CE.<sup>60</sup> The extensive fragments excerpted by Stobaeus provide important textual variants.<sup>61</sup> Other ancient versions include an Armenian translation variously dated to the 5th, 6th or 8th century;<sup>62</sup> a Syriac translation from the 6th century by Sergius of Rēš-ʿAinā;<sup>63</sup> as well as several Arabic translations preserved in at least five manuscripts dating from the 12th, 13th, 14th, and 17th centuries.<sup>64</sup> Two very literal Latin translations circulated in the Middle Ages: the one was probably prepared for King Manfred of Sicily (1258–66), while the other, attributed to Nicholas of Sicily, was eventually included in the Latin Aristotle printed in Venice in 1496.<sup>65</sup>

Although the Berlin edition by Immanuel Bekker remains the standard point of reference for the pagination of all works attributed to Aristotle,<sup>66</sup> the most recent critical edition of *De mundo*, and the one on which the text in this volume is based, is by W. L. Lorimer.<sup>67</sup> Earlier, Wilamowitz (in collaboration with Wachsmuth) included extracts of the text accompanied by notes in his *Griechisches Lesebuch*.<sup>68</sup> D. J. Furley prepared a minor edition for the Loeb Classical Library based on Bekker, but also taking account of Lorimer's edition.<sup>69</sup> More recently Giovanni Reale published a Greek text based on Lorimer's edition, accompanied by an extensive introduction and commentary. Abraham P. Bos collaborated in a second edition of this work.<sup>70</sup>

*De mundo* has been translated into English by E. S. Forster<sup>71</sup> and by Furley.<sup>72</sup> We have a German translation by Hans Strohm (with extensive

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<sup>60</sup> Text and translation in BEAUJEU 1973.

<sup>61</sup> See the references in n. 12 above.

<sup>62</sup> See LORIMER 1924, 21–3.

<sup>63</sup> See the essay by Takahashi; also LORIMER 1924, 24–5; RAVEN 2003.

<sup>64</sup> See the essay by Takahashi; also STERN 1964; id. 1965; F. KLEIN-FRANKE, “Die Überlieferung der ältesten arabischen Handschrift von Pseudo-Aristoteles *De mundo*”, *Le Muséon* 87 (1974) 59–65; RAVEN 2003.

<sup>65</sup> See LORIMER 1924, 25–8. The texts of these two versions are printed in parallel as an appendix in LORIMER 1924, 42–95.

<sup>66</sup> The text of *De mundo* forms part of vol. 1 of *Aristotelis opera* (BEKKER 1831).

<sup>67</sup> LORIMER 1933. In preceding publications he also discusses the text tradition and provides notes on the text (LORIMER 1924; id. 1925).

<sup>68</sup> VON WILAMOWITZ-MOELLENDORF 1902, 1:186–99, 2:127–34.

<sup>69</sup> FURLEY 1955.

<sup>70</sup> REALE 1974; REALE / BOS 1995.

<sup>71</sup> FORSTER 1914. A revised version of this translation has been included in the revised Oxford translation of *The Complete Works of Aristotle* edited by Jonathan Barnes (FORSTER 1984).

<sup>72</sup> FURLEY 1955.

notes), as well as by Otto Schönberger.<sup>73</sup> A.-J. Festugière provides a partial French translation, followed by an extensive discussion, in volume 2 of his *La révélation d'Hermès Trismégiste*; a complete translation is given by J. Tricot.<sup>74</sup> An Italian translation may be found in Reale's commentary mentioned above. Finally, we have a Dutch translation with some notes by Bos<sup>75</sup> and a Spanish translation without notes by José Pablo Martín.<sup>76</sup>

The Greek text in the present volume follows Lorimer's edition in keeping to the line breaks of Bekker's edition for the sake of easy reference; slight deviations are indicated by vertical bars in the text. There are only a few instances in which our text differs from Lorimer's (for more details see the Notes to the Translation):

392b16	ἀνά γῆν ἐλιττομένοις: Lorimer ἐν γῆ ἀναλισκομένοις
395b34	ἐξόδου: Lorimer [ἐξόδου]
398a32	φρυκτωρίων: Lorimer φρυκτωρ[ι]ῶν
398b14–15	μεγαλότεχνοι: Lorimer μηχανοτέχνηαι
400b7–8	νόμος: Lorimer νομο<θέτη>ς

Each of these textual variants is marked by an asterisk in the Greek text.

<sup>73</sup> STROHM 1970; SCHÖNBERGER 2005.

<sup>74</sup> FESTUGIÈRE 1949, 460–4; TRICOT 1949.

<sup>75</sup> BOS 1989.

<sup>76</sup> MARTÍN / ALESSO 2010.



*B. Text, Translation and Notes*

ΑΡΙΣΤΟΤΕΛΟΥΣ ΠΕΡΙ ΚΟΣΜΟΥ

1. Πολλάκις μὲν ἔμοιγε θεῖόν τι καὶ δαιμόνιον ὄντως χρῆμα, 391a  
ὡ Ἀλέξανδρε, ἡ φιλοσοφία ἔδοξεν εἶναι, μάλιστα δὲ ἐν οἷς  
μόνη διαραμμένη πρὸς τὴν τῶν ὄντων θεῶν ἐσπούδασε γνῶναι  
τὴν ἐν αὐτοῖς ἀλήθειαν, καὶ τῶν ἄλλων ταύτης ἀποστάντων  
διὰ τὸ ὕψος καὶ τὸ μέγεθος, αὕτη τὸ πρᾶγμα οὐκ ἔδεισεν 5  
οὐδ' αὐτὴν τῶν καλλίστων ἀπηξίωσεν, ἀλλὰ καὶ συγγενεστά-  
την ἑαυτῇ καὶ μάλιστα πρέπουσαν ἐνόμισεν εἶναι τὴν ἐκείνων  
μάθησιν. Ἐπειδὴ γὰρ οὐχ οἷόν τε ἦν τῷ σώματι εἰς τὸν οὐ-  
ράνιον ἀφικέσθαι τόπον καὶ τὴν γῆν ἐκλιπόντα τὸν ἱερὸν  
ἐκείνων χῶρον κατοπευῖν, καθάπερ οἱ ἀνόητοί ποτε ἐπε- 10  
νόουν Ἀλφάδαι, ἡ γοῦν ψυχὴ διὰ φιλοσοφίας, λαβοῦσα  
ἡγεμόνα τὸν νοῦν, ἐπεραιώθη καὶ ἐξεδήμησεν, ἀκοπιάτον  
τίνα ὁδὸν εὐρούσα, καὶ τὰ πλείστον ἀλλήλων ἀφροσύνας τοῖς  
τόποις τῇ διανοίᾳ συνεφόρησε, ῥαδίως, οἶμαι, τὰ συγγενῆ  
γνωρίσασα, καὶ θεῖω ψυχῆς ὄμματι τὰ θεῖα καταλαβομένη, 15  
τοῖς τε ἀνθρώποις προφητεύουσα. Τοῦτο δὲ ἔπαθε, καθ' ὅσον  
οἷόν τε ἦν, πᾶσιν ἀφθόνως μεταδοῦναι βουλευθεῖσα τῶν παρ'  
αὐτῇ τιμίων. Διὸ καὶ τοὺς μετὰ σπουδῆς διαγράψαντας ἡμῖν  
ἐνὸς τόπου φύσιν ἢ μιᾶς σχῆμα πόλεως ἢ ποταμοῦ μέγε-  
θος ἢ ὄρους κάλλος, οἷά τινες ἤδη πεποιήκασι, φράζοντες οἱ 20  
μὲν τὴν Ὀσσαν, οἱ δὲ τὴν Νύσσαν, οἱ δὲ τὸ Κωρῦκιον ἄν-  
τρον, οἱ δὲ ὅτιοῦν ἔτυχε τῶν ἐπὶ μέρους, οἰκτίσειεν ἂν τις  
τῆς μικροψυχίας, τὰ τυχόντα ἐκπεπληγμένους καὶ μέγα  
φρονούντας ἐπὶ θεωρίᾳ μικρᾶ. Τοῦτο δὲ πάσχουσι διὰ τὸ  
ἀθέατοι τῶν κρειπτόνων εἶναι, κόσμου λέγω καὶ τῶν ἐν 25  
κόσμῳ μεγίστων· οὐδέποτε γὰρ ἂν τούτοις γνησίως ἐπιστήσαν-  
τες ἐθαύμαζόν τι τῶν ἄλλων, ἀλλὰ πάντα αὐτοῖς τὰ 391b  
ἄλλα μικρὰ κατεφαίνετο ἂν καὶ οὐδενὸς ἄξια πρὸς τὴν  
τούτων ὑπεροχὴν. Λέγωμεν δὲ ἡμεῖς καί, καθ' ὅσον ἐφικτόν,  
θεολογῶμεν περὶ τούτων συμπάντων, ὡς ἕκαστον ἔχει φύ-  
σεως καὶ θέσεως καὶ κινήσεως. Πρέπειν δὲ γε οἶμαι καὶ 5  
σοί, ὄντι ἡγεμόνων ἀρίστῳ, τὴν τῶν μεγίστων ἱστορίαν μετιέ-  
ναι, φιλοσοφία τε μηδὲν μικρὸν ἐπινοεῖν, ἀλλὰ τοῖς τοιού-  
τοις δώροις δεξιοῦσθαι τοὺς ἀρίστους.

2. Κόσμος μὲν οὖν ἐστι σύστημα ἐξ οὐρανοῦ καὶ γῆς καὶ τῶν

[Aristotle] On the Cosmos<sup>1</sup>

*Introduction: A praise of philosophy*

1. (391a) Philosophy often seemed to me, Alexander, a divine and truly god-like matter, especially in those cases when it rises to the contemplation of the things that exist and is eager to get to know the truth in them; and while the other [sciences] avoid this<sup>2</sup> because of its sublimeness and magnitude, it [sc. philosophy] does not fear the task and does not consider itself unworthy of the noblest things, but considers the study of these things to be most closely related to itself and particularly fitting. For since it was not possible to arrive at the heavenly place in the body or to leave the earth behind and to explore that sacred region, as the foolish Aloads once intended,<sup>3</sup> the soul therefore by means of philosophy, taking the mind as its guide,<sup>4</sup> crosses over and travels around [sc. in the sacred region],<sup>5</sup> having found a way that is not tiring. It brings together in thought things that are most separated from each other in place, because, I think, it easily discovers the things that are related, and with the divine eye of the soul<sup>6</sup> it comprehends the divine things and interprets<sup>7</sup> them to humans. This is the case because it wants to share ungrudgingly with all, in so far as it can, part of its own privileges. Therefore those who earnestly describe to us the nature of a single place or the layout of a single city or the size of a river or the beauty of a mountain, as some have already done, some talking of Ossa,<sup>8</sup> others of Nyssa,<sup>9</sup> others of the Corycian Cave,<sup>10</sup> still others of whatever detail there happens to be – those one may indeed pity for their small-mindedness because they are amazed at the incidental and think much of a minor investigation.<sup>11</sup> This is the case because they are unable to see the nobler things – I mean the cosmos and the greatest things in the cosmos. For if they had really paid attention to these things, 391b they would never have marvelled at any of the other things, but all the other things would have appeared small to them and not worth anything compared to the superiority of those things. Let us then discuss and, as far as it is possible, ‘theologize’<sup>12</sup> about all these things – what kind of nature and position and movement each of them has. I think it is indeed fitting for you, as the best of leaders, to pursue the study of the greatest things, and for philosophy<sup>13</sup> to focus on nothing small, but to welcome outstanding persons with such gifts.<sup>14</sup>

*Description of the cosmos*

*Cosmology in general*

2. (391b9) Cosmos, then, is a system of heaven and earth and the en-



ἐν τούτοις περιεχομένων φύσεων. Λέγεται δὲ καὶ ἑτέρως κόσμος ἢ τῶν ὄλων τάξις τε καὶ διακόσμησις, ὑπὸ θεοῦ τε καὶ διὰ θεὸν φυλαττομένη. Ταύτης δὲ τὸ μὲν μέσον, ἀκίνητόν τε καὶ ἑδραῖον ὄν, ἢ φερέσβιος εἴληχε γῆ, παντοδᾶπων ζώων ἑστία τε οὔσα καὶ μήτηρ. Τὸ δὲ ὑπερθεῖν αὐτῆς, πᾶν τε καὶ πάντη πεπερατωμένον εἰς τὸ ἀνωτάτω, θεῶν οἰκητήριον, οὐρανὸς ὠνόμασται. Πλήρης δὲ ὧν σωμάτων θείων, ἃ δὴ καλεῖν ἄστρα εἰώθαμεν, κινούμενος κίνησιν αἰδίων, μᾶ περιαγωγῇ καὶ κύκλῳ συναναχορεύει πᾶσι τούτοις ἀπαύστως δι' αἰῶνος. Τοῦ δὲ σύμπαντος οὐρανοῦ τε καὶ κόσμου σφαιροειδοῦς ὄντος καὶ κινουμένου, καθάπερ εἶπον, ἐνδελεχῶς, δύο ἐξ ἀνάγκης ἀκίνητὰ ἔστι σημεῖα, καταντικρῶ ἀλλήλων, καθάπερ τῆς ἐν τόρῳ κυκλοφορουμένης σφαίρας, στερεὰ μένοντα καὶ συνέχοντα τὴν σφαῖραν, περὶ ἃ ὁ πᾶς ὄγκος κύκλῳ στρέφεται· καλοῦνται δὲ οὗτοι πόλοι δι' ὧν εἰ νοήσαιμεν ἐπεζευγμένην εὐθειαν, ἡ ἦν τινες ἄξονα καλοῦσι, διάμετρος ἔσται τοῦ κόσμου, μέσον ἡ μὲν ἔχουσα τὴν γῆν, τοὺς δὲ δύο πόλους πέρατα. Τῶν δὲ ἀκινήτων πόλων τούτων ὁ μὲν αἰεὶ φανερός ἐστιν ὑπὲρ κορυφῆν ὧν κατὰ τὸ βόρειον κλίμα, ἀρκτικός καλούμενος, ὁ δὲ ὑπὸ γῆν αἰεὶ κατακέκρυπται, κατὰ τὸ νότιον, ἀνταρκτικός καλούμενος. Οὐρανοῦ δὲ καὶ ἄστρον οὐσίαν μὲν αἰθέρα καλοῦμεν, οὐχ ὥς τινες, διὰ τὸ πυρῶδη οὔσαν αἰθεσθαι, πλημμελοῦντες περὶ τὴν πλεῖστον πυρὸς ἀπηλλαγμένην δύναμιν, ἀλλὰ διὰ τὸ αἰεὶ θεῖν κυκλοφορουμένην, στοιχεῖον οὔσαν ἕτερον τῶν τετάρων, ἀκήρατόν τε καὶ θεῖον. Τῶν γε μὴν ἐμπεριεχομένων ἄστρον τὰ μὲν ἀπλανῶς τῷ σύμπαντι οὐρανῷ συμπεριστρέφεται, τὰς αὐτὰς ἔχοντα ἕδρας, ὧν μέσος ὁ ζωοφόρος καλούμενος κύκλος ἐγκάρσιος διὰ τῶν τροπικῶν διέζωσται, κατὰ μέρη διηρημένος εἰς δώδεκα ζωδίων χώρας, τὰ δὲ, πλανητὰ ὄντα, οὔτε τοῖς προτέροις ὁμοταχῶς κινεῖσθαι πέφυκεν οὔτε ἀλλήλοις, ἀλλ' ἐν ἑτέροις καὶ ἑτέροις κύκλοις, ὥστε αὐτῶν τὸ μὲν προσγειότερον εἶναι, τὸ δὲ ἀνώτερον. Τὸ μὲν οὖν τῶν ἀπλανῶν πλῆθος ἀνεξεύρετόν ἐστιν ἀνθρώποις, καίπερ ἐπὶ μιᾷς κινουμένων ἐπιφανείας τῆς τοῦ σύμπαντος οὐρανοῦ· τὸ δὲ τῶν πλανήτων, εἰς ἑπτὰ μέρη κεφαλαιούμενον, ἐν τοσοῦτοις ἔστι κύκλοις ἐφεξῆς κειμένοις, ὥστε αἰεὶ τὸν ἀνωτέρω μεῖζω τοῦ ὑποκάτω εἶναι, τοὺς τε ἑπτὰ ἐν ἀλλήλοις ἐμπεριέχεσθαι, πάντας γε μὴν ὑπὸ τῆς τῶν ἀπλανῶν σφαίρας περιειληφθαι. Συνεχῆ δὲ ἔχει αἰεὶ τὴν θέσιν ταύτη ὁ τοῦ Φαίνοντος ἅμα καὶ Κρόνου καλούμενος κύκλος, ἐφεξῆς δὲ ὁ τοῦ Φαέ-

tities<sup>15</sup> contained within them.<sup>16</sup> But as an alternative the arrangement and order of the universe, preserved by god and because of god,<sup>17</sup> is also called cosmos.<sup>18</sup> The centre of this orderly arrangement, being unmoved and fixed, is allotted to "life-bearing earth",<sup>19</sup> as the hearth and mother of all kind of living things. The uppermost part of it, on the other hand, which is completely and on all sides bounded towards its highest region, the home of the gods, is called heaven. Being full of divine bodies (which we usually call stars) [and] moving with an eternal movement, it dances in a chorus<sup>20</sup> with all of them without pause throughout eternity in a single revolution and orbit. While the whole heaven and cosmos are spherical and moving, continually, as I have said, there are of necessity two immovable points directly opposite one another, as if belonging to a sphere being turned in a lathe; they remain firm and hold the sphere fast, and the whole mass is turned in a circle around them. These are called poles. If we would think of a straight line spanned through them, which some call an axis, it will be the diameter of the cosmos, 392a with the earth at the centre and the two poles at the ends. One of these immovable poles is always visible, being above our head in the northern region, and called the arctic pole; the other is always hidden under the earth, in the south, and called the antarctic pole. The substance of heaven and the stars we call ether [αἰθήρη], not, as some would have it, because it 'always burns' [ἀἴθεσθαί], being fiery (they err about its function, which is far removed from fire), but because it 'always runs' [ἀεὶ θεῖν], being carried around in a circle, as a different element from the four elements,<sup>21</sup> pure and divine. Some of the stars contained within it are carried without deviation along with the whole heaven, keeping the same positions, the middle of which, the circle called the zodiac, passes through the tropics at an angle like a girdle, divided into parts, [that is,] into the twelve regions of the zodiac. Others, the planets, do not move at the same speed as the former or as each other, but in varying cycles, so that a part of them is closer to the earth and another is higher up.<sup>22</sup> The number of fixed stars, then, cannot be discovered by humans, although they move on one visible surface, that of the whole heaven. The multitude of planets, on the other hand, grouped into seven parts, is [placed] in just as many<sup>23</sup> circles located next to one another, so that the higher circle is always larger than the one below it, and so that the seven circles are contained within one another, but all [seven] are again surrounded by the sphere of fixed stars. The circle of [the planet] that is at the same time called Phainon ['the Shining One'] and Kronos [Saturn] always has a position contiguous to this one [sc. the sphere of the fixed stars]; next in order is the

θοντος καὶ Διὸς λεγόμενος, εἴθ' ὁ Πυρόεις, Ἡρακλέους τε καὶ 25  
 Ἄρεος προσαγορευόμενος, ἐξῆς δὲ ὁ Στίλβων, ὄν ἱερὸν Ἐρ-  
 μοῦ καλοῦσιν ἔνιοι, τινὲς δὲ Απόλλωνος· μεθ' ὄν ὁ τοῦ Φω-  
 σφόρου, ὄν Ἀφροδίτης, οἱ δὲ Ἥρας προσαγορευοῦσιν, εἶτα ὁ  
 ἡλίου, καὶ τελευταῖος ὁ τῆς σελήνης, μέχρις ἧς ὀρίζεται ὁ 30  
 αἰθήρ, τὰ τε θεῖα ἐμπεριέχων σώματα καὶ τὴν τῆς κινή-  
 σεως τάξιν. Μετὰ δὲ τὴν αἰθέριον καὶ θεῖαν φύσιν, ἦντινα  
 τεταγμένην ἀποφαίνομεν, ἔτι δὲ ἄτρεπτον καὶ ἀνετεροίωτον  
 καὶ ἀπαθῆ, συνεχῆς ἐστὶν ἢ δι' ὅλων παθητῆ τε καὶ τρεπτῆ,  
 καί, τὸ σύμπαν εἰπεῖν, φθαρτῆ τε καὶ ἐπίκηρος. Ταύτης δὲ 35  
 αὐτῆς πρώτη μὲν ἐστὶν ἡ λεπτομερῆς καὶ φλογώδης οὐσία,  
 ὑπὸ τῆς αἰθερίου πυρουμένη διὰ τὸ μέγεθος αὐτῆς 392b  
 καὶ τὴν ὀξύτητα τῆς κινήσεως· ἐν δὲ τῇ πυρώδει καὶ ἀτά-  
 κτω λεγομένη τὰ τε σέλα διάττει καὶ φλόγες ἀκοντίζον-  
 ται καὶ δοκίδες τε καὶ βόθυνοι καὶ κομηταὶ λεγόμενοι στη-  
 ρίζονται καὶ σβέννυνται πολλάκις. Ἐξῆς δὲ ταύτης ὁ αἰθήρ 5  
 ὑποκέχεται, ζοφώδης ὢν καὶ παγετώδης τὴν φύσιν· ὑπὸ  
 δὲ ἐκείνης λαμπόμενος ἅμα καὶ διακαίόμενος λαμπρὸς  
 τε γίνεται καὶ ἀλειινός. Ἐν δὲ τούτῳ, τῆς παθητῆς ὄντι  
 καὶ αὐτῷ δυνάμεως καὶ παντοδαπῶς ἀλλοιουμένῳ, νέφη τε  
 συνίσταται καὶ ὄμβροι καταράσσουσι, χιόνες τε καὶ πάχνη 10  
 καὶ χάλαζαι πνοαί τε ἀνέμων καὶ τυφώνων, ἔτι τε βρον-  
 ται καὶ ἀστραπαὶ καὶ πτώσεις κεραυνῶν μυριῶν τε γνόφων  
 συμπληγάδες.

3. Ἐξῆς δὲ τῆς αἰερίου φύσεως γῆ καὶ θάλασσα ἐρή-  
 ρεισται, φυτοῖς βρούσσα καὶ ζώοις πηγαῖς τε καὶ ποταμοῖς, 15  
 τοῖς μὲν ἀνὰ γῆν ἐλιττομένοις\*, τοῖς δὲ ἀνερευγομένοις εἰς  
 θάλασσαν. Πεποίκιλται δὲ καὶ χλόαις μυρίαὶς ὄρεσι τε  
 ὑψηλοῖς καὶ βαθυξύλοις δρυμοῖς καὶ πόλεσιν, ἃς τὸ σο-  
 φὸν ζῶον, ὁ ἀνθρώπος, ἰδρύσατο, νήσοις τε ἐναλίοις καὶ ἠπεί-  
 ροις. Τὴν μὲν οὖν οἰκουμένην ὁ πολὺς λόγος εἰς τε νήσους καὶ 20  
 ἠπείρους διεῖλεν, ἀγνοῶν ὅτι καὶ ἡ σύμπασα μία νήσος ἐστὶν,  
 ὑπὸ τῆς Ἀτλαντικῆς καλουμένης θαλάσσης περιρρομένη.  
 Πολλὰς δὲ καὶ ἄλλας εἰκὸς τῆσδε ἀντιπύροθμους ἄπωθεν κεί-  
 σθαι, τὰς μὲν μείζους αὐτῆς, τὰς δὲ ἐλάττους, ἡμῖν δὲ πά-  
 σας πλὴν τῆσδε ἀοράτους· ὅπερ γὰρ αἱ παρ' ἡμῖν νῆσοι πρὸς 25  
 ταυτὶ τὰ πελάγη πεπόνθασιν, τοῦτο ἦδε ἡ οἰκουμένη πρὸς  
 τὴν Ἀτλαντικὴν θάλασσαν· πολλὰ τε ἕτεροι πρὸς σύμπα-  
 σαν τὴν θάλασσαν· καὶ γὰρ αὐταὶ μεγάλαι τινὲς εἰσι νῆ-  
 σοι μεγάλοις περικλυζόμεναι πελάγεσιν. Ἡ δὲ σύμπασα

cycle of Phaëthon ['the Radiant One'], also called Zeus [Jupiter]; then Pyroëis ['the Fiery One'], named after Heracles as well as Ares [Mars]; next Stilbon ['the Glittering One'], which some call sacred to Hermes [Mercury], others to Apollo; after this is the circle of Phosphoros ['the Light-Bearer'], which some name after Aphrodite [Venus], others after Hera; then that of the sun; and finally that of the moon.<sup>24</sup> The boundary of the ether stretches as far as this circle [sc. that of the moon]; it encompasses both the divine bodies and the order of their movement.

392a31 After the etherial and divine element, which we declare well-ordered, and furthermore inflexible, unchangeable and impassive, there immediately follows that which throughout is subject to change and alteration, and, in a word, destructible and perishable. The first [part] of this is the light and fiery substance, which is set on fire by the etherial element because of its size 392b and its quick movement. In what is called the fiery and unordered [element]<sup>25</sup> lights rush across and flames flash; and 'beams' and 'pits' and comets, as they are called, are often fixed in place and [then] extinguished.<sup>26</sup>

392b5 Next to this, the air is spread out below, opaque and ice-cold in nature. But when it is illuminated and at the same time heated by the former element, it becomes bright and warm. In this element [sc. the air], which also forms part of the reality that is subject to change<sup>27</sup> and which undergoes alterations in all kind of ways, clouds come together and rain showers fall down, also snow-flakes, frost and hailstones, blasts of wind and whirlwind, further thunder and lightning and falling thunderbolts, and the collision of countless storm-clouds.<sup>28</sup>

3. (392b14) Next to the element of air the earth and sea are set in place, filled with plants and animals, as well as fountains and rivers, some winding about the surface of the earth,<sup>29</sup> others discharging themselves into the sea. It is adorned with countless shoots of green, high mountains, thickets of high trees, and cities which that wise creature, man, has founded; also with islands in the sea and continents. The prevailing account then divides the 'inhabited' world into islands and continents, ignorant of the fact that the whole inhabited world is one island, surrounded by what is called the Atlantic Ocean.<sup>30</sup> It is likely that there are also many others situated far away from this world across the sea,<sup>31</sup> some larger than this one, some smaller, but all are invisible to us except this one. For the islands in our vicinity stand in the same relationship to these seas as the inhabited world to the Atlantic Ocean and many other inhabited worlds to the whole ocean. For these are also as it were great islands awashed by great seas. The whole of the moist element, covering the earth's surface and displaying the so-called in-

τοῦ ὑγροῦ φύσις ἐπιπολάζουσα, κατὰ τινὰς τῆς γῆς σπίλους 30  
 τὰς καλομένας ἀναπεφαγκυία οἰκουμένας, ἐξῆς ἂν εἴη τῆς  
 ἀερίου μάλιστα φύσεως. Μετὰ δὲ ταύτην ἐν τοῖς βυθοῖς κατὰ  
 τὸ μεσαίτατον τοῦ κόσμου συνερηρισμένη γῆ πάσα καὶ πε-  
 πιεσμένη συνέστηκεν, ἀκίνητος καὶ ἀσάλευτος· καὶ τοῦτ' ἔστι  
 τοῦ κόσμου τὸ πᾶν ὃ καλοῦμεν κάτω. Πέντε δὴ στοιχεῖα ταῦτα 35  
 ἐν πέντε χώραις σφαιρικῶς ἐγκείμενα, περιεχομένης ἀεὶ τῆς 393a  
 ἐλάττονος τῆ μείζονι—λέγω δὲ γῆς μὲν ἐν ὕδατι, ὕδατος  
 δὲ ἐν ἀέρι, ἀέρος δὲ ἐν πυρὶ, πυρὸς δὲ ἐν αἰθέρι—τὸν ὅλον  
 κόσμον συνεστήσατο, καὶ τὸ μὲν ἄνω πᾶν θεῶν ἀπέδειξεν οἰ-  
 κητήριον, τὸ κάτω δὲ ἐφημέρων ζώων. Αὐτοῦ γε μὴν τούτου 5  
 τὸ μὲν ὑγρὸν ἐστίν, ὃ καλεῖν ποταμοὺς καὶ νάματα καὶ θα-  
 λάσσας εἰθίσμεθα, τὸ δὲ ξηρὸν, ὃ γῆν τε καὶ ἠπειροὺς καὶ  
 νήσους ὀνομάζομεν.

Τῶν δὲ νήσων αἰ μὲν εἰσι μεγάλαι, καθάπερ ἡ σύμ-  
 πασα ἦδε οἰκουμένη λέλεκται πολλαί τε ἕτεραι μεγάλοις 10  
 περιορρόμεναι πελάγεσιν, αἰ δὲ ἐλάττους, φανεραὶ τε  
 ἡμῖν καὶ ἐντὸς οὔσαι. Καὶ τούτων αἰ μὲν ἀξιόλογοι, Σικελία  
 καὶ Σαρδῶ καὶ Κύρνος Κρήτη τε καὶ Εὐβοία καὶ Κύπρος  
 καὶ Λέσβος, αἰ δὲ ὑποδεέστεραι, ὧν αἰ μὲν Σποράδες, αἰ  
 δὲ Κυκλάδες, αἰ δὲ ἄλλως ὀνομάζονται. 15

Πέλαγος δὲ τὸ μὲν ἔξω τῆς οἰκουμένης Ἀτλαντικὸν τε  
 καὶ Ὠκεανὸς καλεῖται, περιορρέων ἡμᾶς. Ἐντὸς δὲ πρὸς δύ-  
 σεῖς στενοπόρῳ διανεωγῶς στόματι, κατὰ τὰς Ἡρακλείους λε-  
 γομένας στήλας τὸν εἰσρουν εἰς τὴν ἔσω θάλασσαν ὡς ἂν εἰς  
 λιμένα ποιεῖται, κατὰ μικρὸν δὲ ἐπιπλατυνόμενος ἀναχεῖ- 20  
 ται, μεγάλους περιλαμβάνων κόλπους ἀλλήλοις συναφεῖς,  
 πῆ μὲν κατὰ στενοπόρους αὐχένας ἀνεστομωμένος, πῆ δὲ πάλιν  
 πλατυνόμενος. Πρῶτον μὲν οὖν λέγεται ἐγκεκολῶσθαι  
 ἐν δεξιᾷ εἰσπλέοντι τὰς Ἡρακλείους στήλας, διχῶς, εἰς τὰς  
 καλομένας Σύρτεις, ὧν τὴν μὲν Μεγάλην, τὴν δὲ Μικρὰν, κα- 25  
 λοῦσιν· ἐπὶ θάτερα δὲ οὐκέτι ὁμοίως ἀποκολπούμενος τρία ποιεῖ  
 πελάγη, τὸ τε Σαρδόνιον καὶ τὸ Γαλατικὸν λεγόμενον καὶ  
 Ἀδριάν, ἐξῆς δὲ τούτων ἐγκάρσιον τὸ Σικελικόν, μετὰ δὲ  
 τοῦτο τὸ Κρητικόν, συνεχὲς δὲ αὐτοῦ, τῆ μὲν τὸ Αἰγύπτιον τε  
 καὶ Παμφύλιον καὶ Σύριον, τῆ δὲ τὸ Αἰγαῖον τε καὶ Μυρ- 30  
 τῶν. Ἀντιπαρῆκει δὲ τοῖς εἰρημένοις πολυμερέστατος ὧν ὁ  
 Πόντος, οὗ τὸ μὲν μυχαίτατον Μαιῶτις καλεῖται, τὸ δὲ ἔξω  
 πρὸς τὸν Ἑλλησποντον συνανεστόμωται τῆ καλουμένη Προ- 393b  
 ποντίδι. Πρὸς γε μὴν ταῖς ἀνασχέσεσι τοῦ ἡλίου πάλιν εἰσ-

habited regions at projections of the earth, would be next in sequence to the element of air most of all.<sup>32</sup> After this element [sc. water] the whole earth, firmly set and tightly compacted, exists in the depths right in the middle of the cosmos, immovable and unshakable. And this is the whole of the cosmos that we call the lower part. These five elements, then, 393a situated in spheres in five regions, the smaller always being encompassed by the larger – I mean, earth within water, water within air, air within fire, and fire within ether – make up the whole cosmos, and they make the whole upper part into a dwelling for the gods<sup>33</sup> and the lower part into one for short-lived creatures. Furthermore, a part of the latter is wet, what we are used to call rivers and streams and seas, and a part is dry, which we name land and continents and islands.

### *Geography*

393a9 Some of the islands are large, as this whole inhabited world has been said to be, and many others are surrounded by great seas; while others are smaller, being visible to us and inside [the Mediterranean]. And of these, some are noteworthy: Sicily, Sardinia, and Corsica, also Crete, Euboea, Cyprus, and Lesbos,<sup>34</sup> but others are less so, some of which are called the Sporades, some the Cyclades, and others with different names.

393a16 The sea outside the inhabited world is called the Atlantic as well as Oceanus, and it surrounds us. Within [the inhabited world] towards the west it opens with a narrow mouth, and at what are called the Pillars of Heracles it flows into the inner sea as if into a harbour. Little by little it broadens and spreads out, embracing gulfs connected to one another, at places opening through narrow necks of water, at others again broadening. It is said that first when one sails into the Pillars of Heracles, it curves out on the right into a double bay, into what is called the Syrtes, one of which they call the Major, the other the Minor. On the other side it does not further form gulfs in the same way and forms three seas, the Sardinian, the one called Galatian, and the Adriatic; diagonally next to these the Sicilian Sea, and after this the Cretan Sea, and continuous with this on the one side the Egyptian and Pamphylian and Syrian Seas, and on the other side the Aegean and Myrtoan. The Pontus stretches out on the opposite side to those already mentioned, a sea consisting of many parts. The innermost part of this is called Maeotis<sup>35</sup> and that on the outside, 393b towards the Hellespont, opens up into the sea called Propontis.

Indeed, in the east, Oceanus, again flowing into [the inhabited

ρέων ὁ Ὠκεανός, τὸν Ἰνδικόν τε καὶ Περσικὸν διανοίξας κόλ-  
 πον, ἀναφαίνει συνεχῆ τὴν Ἐρυθρὰν θάλασσαν διειληφώς. 5  
 Ἐπὶ θάτερον δὲ κέρασιν κατὰ στενόν τε καὶ ἐπιμήκη διήκων  
 αὐχένα, πάλιν ἀνευρύνεται, τὴν Ὑρκανίαν τε καὶ Κασπίαν  
 ὀρίζων· τὸ δὲ ὑπὲρ ταύτην βαθὺν ἔχει τὸν ὑπὲρ τὴν Μαιώτιν  
 λίμνην τόπον. Εἶτα κατ' ὀλίγον ὑπὲρ τοὺς Σκύθας τε καὶ  
 Κελτικὴν σφίγγει τὴν οἰκουμένην πρὸς τε τὸν Γαλατικὸν  
 κόλπον καὶ τὰς προειρημένας Ἡρακλείους στήλας, ὧν ἔξω 10  
 περιρρέει τὴν γῆν ὁ Ὠκεανός. Ἐν τούτῳ γε μὴν νῆσοι μέγι-  
 σται τυγχάνουσιν οὖσαι δύο, Βρεττανικαὶ λεγόμεναι, Ἀλ-  
 βίων καὶ Ἰέρνη, τῶν προΐστορημένων μείζους, ὑπὲρ τοὺς Κελ-  
 τοὺς κείμεναι. Τούτων δὲ οὐκ ἐλάττους ἢ τε Ταπροβάνη πέραν  
 Ἰνδῶν, λοξῆ πρὸς τὴν οἰκουμένην, καὶ ἡ † Φεβδὸλ καλουμένη, 15  
 κατὰ τὸν Ἀραβικὸν κειμένη κόλπον. Οὐκ ὀλίγα δὲ ἄλλαι μικραὶ  
 περὶ τὰς Βρεττανικὰς καὶ τὴν Ἰβηρίαν κύκλω περιεστεφάνων-  
 ται τὴν οἰκουμένην ταύτην, ἣν δὴ νῆσον εἰρήκαμεν ἥς πλά-  
 τος μὲν ἐστὶ κατὰ τὸ βαθύτατον τῆς ἠπείρου βραχὺ ἀποδέον  
 τετρακισμυρίων σταδίων, ὧς φασὶν οἱ εὐ γεωγραφῆσαντες, 20  
 μῆκος δὲ περὶ ἑπτακισμυρίους μάλιστα. Διαιρεῖται δὲ εἰς τε  
 Εὐρώπην καὶ Ἀσίαν καὶ Λιβύην.

Εὐρώπη μὲν οὖν ἐστὶν ἥς ὄροι κύκλω στήλαι τε Ἡρα-  
 κλέους καὶ μυχοὶ Πόντου θάλαττά τε Ὑρκανία, καθ' ἣν 25  
 στενότατος ἰσθμὸς εἰς τὸν Πόντον διήκει· τινὲς δὲ ἀντὶ τοῦ  
 ἰσθμοῦ Τανάιν ποταμὸν εἰρήκασιν. Ἀσία δὲ ἐστὶ τὸ ἀπὸ τοῦ  
 εἰρημένου ἰσθμοῦ τοῦ τε Πόντου καὶ τῆς Ὑρκανίας θαλάσσης  
 μέχρι θατέρου ἰσθμοῦ, ὃς μεταξὺ κεῖται τοῦ τε Ἀραβικοῦ  
 κόλπου καὶ τῆς ἔσω θαλάσσης, περιεχόμενος ὑπὸ τε ταύ-  
 τῆς καὶ τοῦ πέριξ Ὠκεανοῦ· τινὲς δὲ ἀπὸ Τανάϊδος μέχρι 30  
 Νείλου στομάτων τὸν τῆς Ἀσίας τίθενται ὄρον. Λιβύη δὲ τὸ  
 ἀπὸ τοῦ Ἀραβικοῦ ἰσθμοῦ ἕως Ἡρακλέους στηλῶν. Οἱ δὲ ἀπὸ  
 τοῦ Νείλου φασὶν ἕως ἐκείνων. Τὴν δὲ Αἴγυπτον, ὑπὸ τῶν τοῦ 394a  
 Νείλου στομάτων περιρρομένην, οἱ μὲν τῇ Ἀσίᾳ, οἱ δὲ τῇ Λι-  
 βύῃ προσάπτουσι, καὶ τὰς νήσους οἱ μὲν ἐξαιρέτους ποιοῦσιν, οἱ  
 δὲ προσνέμουσι ταῖς γείτοσιν ἀεὶ μοίραις. Γῆς μὲν δὴ καὶ  
 θαλάττης φύσιν καὶ θέσιν, ἣντινα καλεῖν εἰώθαμεν οἰκουμέ- 5  
 νην, τοιάνδε τινὰ ἱστορήκαμεν.

4. Περὶ δὲ τῶν ἀξιολογωτάτων ἐν αὐτῇ καὶ περὶ αὐτὴν  
 παθῶν νῦν λέγωμεν, αὐτὰ τὰ ἀναγκαῖα κεφαλαίουμενοι.  
 Δύο γὰρ δὴ τινες ἀπ' αὐτῆς ἀναθυμιάσεις ἀναφέρονται συν- 10  
 εχῶς εἰς τὸν ὑπὲρ ἡμᾶς ἀέρα, λεπτομερεῖς καὶ ἀόρατοι

world], opens out the Indian and Persian Gulf<sup>36</sup> and continuously displays in its embrace the Red Sea.<sup>37</sup> Towards the other promontory [sc. of Asia],<sup>38</sup> passing through a long and narrow strait, it again broadens out, circumscribing the Hyrcanian or Caspian Sea.<sup>39</sup> The part beyond this occupies a deep area beyond Lake Maeotis. Then little by little, beyond the Scythians and the Celtic land, it constricts the inhabited world at the Galatian Gulf<sup>40</sup> and the Pillars of Heracles mentioned above, outside of which Oceanus flows around the earth. In it [sc. Oceanus] there indeed happen to be two very large islands called the British Isles, Albion and Ierne,<sup>41</sup> larger than those described previously, lying beyond the Celts. Not smaller than these are Taprobane<sup>42</sup> beyond India, at an angle towards the inhabited world, and the island called Phebol,<sup>43</sup> lying by the Arabian Gulf. A considerable number of other small islands around the British Isles and Spain are placed in a circle around this inhabited world, which we have already called an island itself. Its width at the deepest point of the continent is little short of 40,000 stades, as the good geographers say, and its length just about 70,000 stades.<sup>44</sup> It is divided into Europe, Asia and Libya.

393b23 Europe, then, is the part whose boundaries, moving in a circle, are the Pillars of Heracles, the innermost parts of Pontus, and the Hyrcanian Sea, where a very narrow isthmus penetrates into Pontus. But some have said it is the river Tanais<sup>45</sup> instead of this isthmus.<sup>46</sup> Asia is the part extending from the above-mentioned isthmus, Pontus and the Hyrcanian Sea to another isthmus, which lies between the Arabian Gulf and the inner sea, encompassed by the latter and the surrounding Oceanus. But some place the boundary of Asia from Tanais to the mouths of the Nile. Libya is the part from the Arabian Peninsula to the Pillars of Heracles. But others say it is from 394a the Nile to the latter. Egypt, surrounded by the mouths of the Nile, some attach to Asia, others to Libya, and some treat the islands as separate, but others allocate them to the regions always closest to them. We have now described as such the nature and position of the earth and sea, which we usually call the inhabited world.

#### *Meteorology*

4. (394a7) Let us now speak about the most noteworthy phenomena in and around the inhabited world, while giving a summary of just the essential points.<sup>47</sup> There are two kinds of exhalations from the earth<sup>48</sup> that are continuously carried up into the air above us, composed of small



παντάπασιν, εἰ [τι] μὴ κατὰ τὰς ἐφάσ ἔστιν ὅτε ἀπὸ ποταμῶν τε καὶ ναμιάτων ἀναφερόμεναι θεωροῦνται. Τούτων δὲ ἢ μὲν ἐστὶ ξηρὰ καὶ καπνώδης, ἀπὸ τῆς γῆς ἀπορρέουσα, ἢ δὲ νοτερὰ καὶ ἀτμώδης, ἀπὸ τῆς ὑγρᾶς ἀναθυμωμένη φύσεως. Γίνονται δὲ ἀπὸ μὲν ταύτης ὀμίχλαι καὶ δρόσοι καὶ πάγων ἰδέαι νέφη τε καὶ ὄμβροι καὶ χιόνες καὶ χάλαι, ἀπὸ δὲ τῆς ξηρᾶς ἄνεμοί τε καὶ πνευμάτων διαφοραὶ βρονταὶ τε καὶ ἀστραπαὶ καὶ πρηστήρες καὶ κεραυνοὶ καὶ τὰ ἄλλα ἃ δὴ τούτοις ἐστὶ σύμφυλα. Ἔστι δὲ ὀμίχλη μὲν ἀτμώδης ἀναθυμιάσις ἄγονος ὕδατος, ἀέρος μὲν παχύτερα, νέφους δὲ ἀραιότερα· γίνεται δὲ ἤτοι ἐξ ἀρχῆς νέφους ἢ ἐξ ὑπολείμματος. Ἀντίπαλος δὲ αὐτῇ λέγεται τε καὶ ἔστιν αἰθρία, οὐδὲν ἄλλο οὔσα πλὴν ἀῆρ ἀνέφελος καὶ ἀνόμιχλος. Δρόσος δὲ ἐστὶν ὑγρὸν ἐξ αἰθρίας κατὰ σύστασιν λεπτὴν φερόμενον, κρύσταλλος δὲ ἀθρόον ὕδωρ ἐξ αἰθρίας πεπηγός, πάχνη δὲ δρόσος πεπηγυῖα, δροσοπάχνη δὲ ἡμιπαγῆς δρόσος. Νέφος δὲ ἐστὶ πάχος ἀτμῶδες συνεστραμμένον, γόνιμον ὕδατος· ὄμβρος δὲ γίνεται μὲν κατ' ἐκπιεσμόν νέφους εὖ μάλα πεπαχυσμένου, διαφορὰς δὲ ἴσχει τοσάσδε ὅσας καὶ ἡ τοῦ νέφους θλίψις· ἡπία μὲν γὰρ οὔσα μαλακὰς ψεκάδας διασπείρει, σφοδρὰ δὲ ἀδροτέρας· καὶ τοῦτο καλοῦμεν ὑετὸν, ὄμβρου μείζω καὶ συνεχῇ συστρέμματα ἐπὶ γῆς φερόμενον. Χιῶν δὲ γίνεται κατὰ νεφῶν πεπυκνωμένων ἀπόθραυσιν πρὸ τῆς εἰς ὕδωρ μεταβολῆς ἀνακοπέντων· ἐργάζεται δὲ ἢ μὲν κοπή τὸ ἀφρώδες καὶ ἔκλευκον, ἢ δὲ σύμπηξις τοῦ ἐνότος ὑγροῦ τὴν ψυχρότητα οὐπω χυθέντος οὐδὲ ἡραιωμένου. Σφοδρὰ δὲ αὕτη καὶ ἀθρόα καταφερομένη νιφετὸς ὠνόμασται. Χάλαζα δὲ γίνεται νιφετοῦ συστραφέντος καὶ βριθὸς ἐκ πηλῆματος εἰς καταφορὰν ταχύτεραν λαβόντος· παρὰ δὲ τὰ μεγέθη τῶν ἀπορηγνυμένων θραυσμάτων οἷ τε ὄγκοι μείζους αἷ τε φοραὶ γίνονται βιαιότεραι. Ταῦτα μὲν οὖν ἐκ τῆς ὑγρᾶς ἀναθυμιάσεως πέφυκε συμπίπτειν.

Ἐκ δὲ τῆς ξηρᾶς ὑπὸ ψύχους μὲν ὠσθείσης ὥστε ῥεῖν ἄνεμος ἐγένετο· οὐδὲν γὰρ ἐστὶν οὔτος πλὴν ἀῆρ πολὺς ῥέων καὶ ἀθρόος· ὅστις ἅμα καὶ πνεῦμα λέγεται. Λέγεται δὲ καὶ ἑτέρως πνεῦμα ἢ τε ἐν φυτοῖς καὶ ζώοις καὶ διὰ πάντων διήκουσα ἔμφυχός τε καὶ γόνιμος οὐσία, περὶ ἧς νῦν λέγειν οὐκ ἀναγκαῖον. Τὰ δὲ ἐν ἀέρι πνέοντα πνεύματα καλοῦμεν ἀνέμους, αὔρας δὲ τὰς ἐξ ὑγροῦ φερομένας ἐκπνοάς. Τῶν δὲ ἀνέμων οἱ μὲν ἐκ νενοτισμένης γῆς πνέοντες ἀπόγειοι λέγονται, οἱ δὲ ἐκ κόλπων διεξάπτοντες ἐγκολπίαι· τούτοις δὲ

particles and completely invisible, except sometimes in the morning when they are seen rising from rivers and streams. Of these, the one is dry and smoky, because it emanates from the earth; the other is wet and vaporous, because it is exhaled from the wet element. From the latter originate mists, dews, forms of frost, clouds, rain showers, snow, and hail; from the dry exhalation, winds and different kinds of blasts, thunder and lightning, fire-winds,<sup>49</sup> thunderbolts and the others things that are related to these. Mist is a vaporous exhalation not producing water, thicker than air, but thinner than cloud. It originates either from the beginning of a cloud or from its remnant. Its opposite is called, and indeed is, clear sky, being nothing other than air without cloud or mist. Dew is moisture produced out of a clear sky in a light condensation. Ice is water from the clear sky frozen together; hoar-frost is frozen dew, and dew-frost is half-frozen dew. A cloud is a vaporous condensed mass that produces water. Rain occurs when a cloud filled well enough is squeezed; its strength varies according to the pressure on the cloud: when it is mild, it disperses soft drops, but when strong, thicker drops. And this we call a rain shower, stronger than rain and pouring continuous round drops upon the earth. Snow occurs when clouds closely packed together break up, splitting up before the transformation into water. The splitting up produces the foaminess and whiteness [of snow], and the condensation of the moisture contained in it produces the cold, because it [sc. the moisture] has not yet been diffused or rarefied. 394b When it comes down heavily and densely, it is called a snow-storm. Hail occurs when a snow-storm condenses and gains weight from the compression so that it comes down faster. According to the size of the pieces broken off [from the cloud] the masses become larger and their motions more violent. These phenomena then naturally occur as a result of the wet exhalation.

394b7 From the dry exhalation, when it is pushed by the cold so that it flows, wind is created, for this is nothing but a lot of air moving together. It is at the same time also called breath [*pneuma*]. Breath is also used in another context for the animating and productive substance found in plants and animals and which pervades all things; it is not necessary to speak about this now. But the breaths blowing in the air we call winds, and the breaths coming from moisture, breezes. Some of the winds, blowing from moistened earth, are called land-winds; others, rushing from gulfs, gulf-winds. Those from rivers and

ανάλογόν τι ἔχουσιν οἱ ἐκ ποταμῶν καὶ λιμνῶν. Οἱ δὲ κατὰ  
 ῥῆξιν νέφους γινόμενοι καὶ ἀνάλυσιν τοῦ πάχους εἰς ἑαυ-  
 τοὺς ποιούμενοι ἐκνεφίαί καλοῦνται· μεθ' ὕδατος δὲ ἀθρόον  
 ῥαγέντες ἐξυδρίαί λέγονται. Καὶ οἱ μὲν ἀπὸ ἀνατολῆς συν-  
 χεῖς εὖροι κέκληνται, βορέαι δὲ οἱ ἀπὸ ἄρκτου, ζέφυροι 20  
 δὲ οἱ ἀπὸ δύσεως, νότοι δὲ οἱ ἀπὸ μεσημβρίας. Τῶν γε  
 μὴν εὖρων καικίας μὲν λέγεται ὁ ἀπὸ τοῦ περὶ τὰς θερινὰς  
 ἀνατολὰς τόπου πνέων ἄνεμος, ἀπηλιώτης δὲ ὁ ἀπὸ τοῦ περὶ  
 τὰς ἰσημερινὰς, εὖρος δὲ ὁ ἀπὸ τοῦ περὶ τὰς χειμερινὰς.  
 Καὶ τῶν ἐναντίων ζεφύρων ἀργέστης μὲν ὁ ἀπὸ τῆς θερινῆς 25  
 δύσεως, ὃν τινες καλοῦσιν Ὀλυμπίαν, οἱ δὲ ἰάπυγα· ζέ-  
 φυρος δὲ ὁ ἀπὸ τῆς ἰσημερινῆς, λιψὶ δὲ ὁ ἀπὸ τῆς χειμε-  
 ρινῆς. Καὶ τῶν βορεῶν ἰδίως ὁ μὲν ἐξῆς τῷ καικίᾳ καλεῖται  
 βορέας, ἀπαρκτίας δὲ ὁ ἐφεξῆς ἀπὸ τοῦ πόλου κατὰ τὸ με-  
 σημβρινὸν πνέων, θρασκίας δὲ ὁ ἐξῆς πνέων τῷ ἀργέστη, ὃν 30  
 ἔνιοι κικίαν καλοῦσιν. Καὶ τῶν νότων ὁ μὲν ἀπὸ τοῦ ἀφανοῦς  
 πόλου φερόμενος ἀντίπαλος τῷ ἀπαρκτίᾳ καλεῖται νότος,  
 εὐρόνοτος δὲ ὁ μεταξὺ νότου καὶ εὖρου· τὸν δὲ ἐπὶ θάτερα  
 μεταξὺ λιβὸς καὶ νότου οἱ μὲν λιβόνοτος, οἱ δὲ λιβοφοίνικα,  
 καλοῦσιν. Τῶν δὲ ἀνέμων οἱ μὲν εἰσιν εὐθύπνοοι, ὅποσοι διεκ- 35  
 πνέουσι πρόσω κατ' εὐθείαν, οἱ δὲ ἀνακαμφίπνοοι, καθάπερ  
 ὁ καικίας λεγόμενος, καὶ οἱ μὲν χειμῶνος, ὥσπερ οἱ νότοι, 395a  
 δυναστεύοντες, οἱ δὲ θέρους, ὡς οἱ ἐτησίου λεγόμενοι, μίξιν  
 ἔχοντες τῶν τε ἀπὸ τῆς ἄρκτου φερομένων καὶ ζεφύρων· οἱ  
 δὲ ὄρνιθίαί καλοῦμενοι, ἑαρινοὶ τινες ὄντες ἄνεμοι, βορέαι εἰσὶ  
 τῷ γένει. Τῶν γε μὴν βιαίων πνευμάτων καταιγίς μὲν ἐστὶ 5  
 πνεῦμα ἄνωθεν τύπτον ἐξαίφνης, θύελλα δὲ πνεῦμα βίαιον  
 καὶ ἄφνω προσαλλόμενον, λαίλαψ δὲ καὶ στρόβιλος πνεῦ-  
 μα ἄνω φερόμενον ἀνω, ἀναφύσημα δὲ γῆς πνεῦμα  
 ἄνω φερόμενον κατὰ τὴν ἐκ βυθοῦ τινος ἢ ῥήγματος ἀνάδο-  
 σιν· ὅταν δὲ εἰλούμενον πολὺ φέρηται, πρηστήρη χθονίος ἐστίν. 10  
 Εἰληθὲν δὲ πνεῦμα ἐν νέφει παχεῖ τε καὶ νοτερῷ, καὶ ἐξω-  
 σθὲν δι' αὐτοῦ, βιαίως ῥηγνύον τὰ συνεχῆ πιλήματα τοῦ νέφους,  
 βρόμον καὶ πάταγον μέγαν ἀπειργάσατο, <ὄς> βροντῆ λέγε-  
 ται, ὥσπερ ἐν ὕδατι πνεῦμα σφοδρῶς ἐλαυνόμενον. Κατὰ  
 δὲ τὴν τοῦ νέφους ἔκρηξιν πυρωθὲν τὸ πνεῦμα καὶ λάμψαν 15  
 ἀστραπὴ λέγεται· ὁ δὲ πρότερον τῆς βροντῆς προσέπεσεν,  
 ὕστερον γενόμενον, ἐπεὶ τὸ ἀκουστὸν ὑπὸ τοῦ ὄρατοῦ πέφυκε  
 φθάνεσθαι, τοῦ μὲν καὶ πόρρωθεν ὀρωμένου, τοῦ δὲ ἐπειδὴν  
 ἐμπελάσῃ τῇ ἀκοῇ, καὶ μάλιστα ὅταν τὸ μὲν τάχιστον ἢ  
 τῶν ὄντων, λέγω δὲ τὸ πυρῶδες, τὸ δὲ ἥττον ταχύ, ἀερώ- 20

lakes have a similarity to these. Those that come from the bursting of a cloud and that dissolve the thickness [of the cloud] into themselves are called cloud-winds. When they burst out all at once together with water they are called water-winds. Those [blowing] continuously from the east are named Euri, those from the north, Boreae, those from the west, Zephyri, and those from the south, Noti.<sup>50</sup> Of the Euri, the wind blowing from the direction of the summer sunrise<sup>51</sup> is called Caecias, that from the direction of the equinoctial sunrise,<sup>52</sup> Apeliotes, and that from the direction of the winter sunrise,<sup>53</sup> Eurus. Of the Zephyri, in the opposite direction, Argestes is the wind from the summer sunset,<sup>54</sup> which some call Olympias, but others Iapyx. Zephyrus is the wind from the equinoctial sunset,<sup>55</sup> Lips the one from the winter sunset.<sup>56</sup> Of the Boreae, the one next to Caecias is properly called Boreas; the one right next to it blowing from the [North] Pole to the south is called Aparctias; Thrascias, which some call Circias, is the one blowing next to Argestes. And of the Noti, the one coming from the invisible pole,<sup>57</sup> opposite to Aparctias, is called Notus; Euronotus is the one between Notus and Eurus. The one on the other side, between Lips and Notus, some called Libonotus, others Libophoenix.

394b35 Some of the winds blow in a straight direction – those that blow from the beginning onwards in a straight line; others vary in direction, such as 395a the one called Caecias; and some are prevalent in winter, such as the Noti, others in summer, like those called the Etesian winds, being a mixture of those coming from the north and of the Zephyri. Those called Ornithiae, a type of spring wind, are Boreae as far as class is concerned. Of the violent winds, a squall is a wind striking suddenly from above; a gust is a violent wind that jumps at you all of a sudden; a whirlwind, also a cyclone, is a wind turning upwards from below; an expulsion from the earth is a wind carried upwards in an outburst from some depth or chasm. When it moves turning strongly, it is a fire-wind. When the wind turns in a thick, moist cloud and it is pushed out through it, violently tearing apart the closely compressed material of the cloud, it creates a roar and a great crash <which> is called thunder, just like wind forced violently through water. In the breaking up of the cloud, the wind, because it is set on fire and made to shine, is called lightning. This indeed falls upon [us] before the thunder, although it is produced later, since what is heard is naturally preceded by what is seen, the latter being seen from far away, the former when it approaches our hearing, especially when the one is the fastest of all that exist, I mean the fiery element, and the other is less fast, being of air, arriving at our hearing by striking it. When

δες ὄν, ἐν τῇ πλήξει πρὸς ἀκοὴν ἀφικνούμενον. Τὸ δὲ ἀστρά-  
 ψαν ἀναπυρωθέν, βιαίως ἄχρι τῆς γῆς διεκθέον, κεραυνὸς  
 καλεῖται, ἐὰν δὲ ἡμίπυρον ἦ, σφοδρὸν δὲ ἄλλως καὶ ἀθρόον,  
 πρηστήρ, ἐὰν δὲ ἄπυρον παντελῶς, τυφών· ἕκαστον δὲ τού-  
 των κατασκήψαν εἰς τὴν γῆν σκηπτὸς ὀνομάζεται. Τῶν δὲ 25  
 κεραυνῶν οἱ μὲν αἰθαλώδεις ψολόεντες λέγονται, οἱ δὲ τα-  
 χέως διάττοντες ἀργῆτες, ἐλικίαί δὲ οἱ γραμμοειδῶς φε-  
 ρόμενοι, σκηπτοὶ δὲ ὅσοι κατασκήπτουσιν εἰς τὴν γῆν. Συλλή-  
 βδην δὲ τῶν ἐν ἀέρι φαντασμάτων τὰ μὲν ἐστὶ κατ' ἔμ-  
 φασιν, τὰ δὲ καθ' ὑπόστασιν—κατ' ἔμφασιν μὲν ἰριδες καὶ 30  
 ῥάβδοι καὶ τὰ τοιαῦτα, καθ' ὑπόστασιν δὲ σέλα τε καὶ  
 διάττοντες καὶ κομήται καὶ τὰ τούτοις παραπλήσια. Ἴρις  
 μὲν οὖν ἐστὶν ἔμφασις ἡλίου τμήματος ἢ σελήνης, ἐν νέφει  
 νοτερῶ καὶ κοίλῳ καὶ συνεχεῖ πρὸς φαντασίαν, ὡς ἐν κα-  
 τόπτρῳ, θεωρουμένη κατὰ κύκλου περιφέρειαν. Ράβδος δὲ ἐστὶν 35  
 ἰριδος ἔμφασις εὐθεία. Ἄλως δὲ ἐστὶν ἔμφασις λαμπρότη-  
 τος ἀστρου περιάυγος· διαφέρει δὲ ἰριδος ὅτι ἡ μὲν ἴρις 395b  
 ἐξ ἐναντίας φαίνεται ἡλίου καὶ σελήνης, ἡ δὲ ἄλως κύκλῳ  
 παντὸς ἀστρου. Σέλας δὲ ἐστὶ πυρὸς ἀθρόου ἕξαψις ἐν ἀέρι.  
 Τῶν δὲ σελάων ἃ μὲν ἀκοντίζεται, ἃ δὲ στηρίζεται. Ὁ μὲν  
 οὖν ἕξακοντισμὸς ἐστὶ πυρὸς γένεσις ἐκ παρατρίψεως ἐν ἀέρι 5  
 φερομένου ταχέως καὶ φαντασίαν μήκους ἐμφαίνοντος διὰ  
 τὸ τάχος, ὁ δὲ στηριγμὸς ἐστὶ χωρὶς φορᾶς προμήκης ἕκ-  
 τασις καὶ οἷον ἀστρου ῥύσις· πλατυνομένη δὲ κατὰ θάτερον  
 κομήτης καλεῖται. Πολλάκις δὲ τῶν σελάων τὰ μὲν ἐπι-  
 μένει πλείονα χρόνον, τὰ δὲ παραχρῆμα σβέννυται. Πολ- 10  
 λαὶ δὲ καὶ ἄλλαι φαντασμάτων ἰδέαι θεωροῦνται, λαμ-  
 πάδες τε καλούμεναι καὶ δοκίδες καὶ πίθοι καὶ βόθυνοι,  
 κατὰ τὴν πρὸς ταῦτα ὁμοιότητα ὡδε προσαγορευθεῖσαι.  
 Καὶ τὰ μὲν τούτων ἐσπέρια, τὰ δὲ ἑῶα, τὰ δὲ ἀμφιφανῆ  
 θεωρεῖται, σπανίως δὲ βόρεια καὶ νότια. Πάντα δὲ ἀβέ- 15  
 βαια· οὐδέποτε γάρ τι τούτων ἀεὶ φανερὸν ἰσότηρται κατε-  
 στηριγμένον. Τὰ μὲν τοίνυν ἀέρια τοιαῦτα.

Ἐμπεριέχει δὲ καὶ ἡ γῆ πολλὰς ἐν αὐτῇ, καθάπερ  
 ὕδατος, οὕτως καὶ πνεύματος καὶ πυρὸς πηγᾶς· τούτων δὲ αἱ  
 μὲν ὑπὸ γῆν εἰσὶν ἀόρατοι, πολλὰ δὲ ἀναπνοὰς ἔχουσι καὶ 20  
 ἀναφυσήσεις, ὥσπερ Λιπάρα τε καὶ Αἴτνη καὶ αἱ ἐν Αἰ-  
 ὄλου νήσοις· αἱ δὲ καὶ ῥέουσι πολλάκις ποταμοῦ δίκην, καὶ  
 μύδρους ἀναρριπτοῦσι διαπύρους. Ἐνιαὶ δὲ ὑπὸ γῆν οὔσαι πλη-  
 σίον πηγαίων ὑδάτων θερμαίνουσι ταῦτα, καὶ τὰ μὲν χλι-  
 ἀρὰ τῶν ναμάτων ἀνιάσι, τὰ δὲ ὑπέρζεστα, τὰ δὲ εὖ ἔχον- 25

that which flashes because it has been set alight, rushes violently to the ground, it is called a thunderbolt, but if it is half alight, though otherwise violent and dense, a fire-wind,<sup>58</sup> but if it is completely fireless, a smoking bolt.<sup>59</sup> But each of these when it falls upon the earth is named a falling-bolt.<sup>60</sup> Some forms of lightning<sup>61</sup> are called sooty when they are smoky, others vivid when they flash across rapidly, forked lightning when they move in wavy lines, falling-bolts when they fall on the earth.

395a28 Briefly put, some of the phenomena in the air have an apparent existence,<sup>62</sup> others exist in reality – in appearance, rainbows and ‘staves’<sup>63</sup> and such things; in reality, celestial lights,<sup>64</sup> shooting stars, comets and things like these.<sup>65</sup> A rainbow then is the reflection, as in a mirror, of a part of the sun or the moon, in a wet and hollow cloud, that is continuous in appearance, looking like the arc of a circle. A ‘staff’ is a rainbow appearing straight. A halo is the appearance of brightness 395b surrounding a star. It differs from a rainbow in that the rainbow appears opposite the sun and moon, but the halo around the whole star. A light is the setting alight of a mass of fire in the air. Some lights shoot like javelins, others remain fixed. The shooting movement then is the production in the air of fire moving rapidly and giving the appearance of length because of its speed; a light that remains fixed<sup>66</sup> is an elongated extension without movement, like a star flowing out. When it widens out on one side it is called a comet. Often some lights remain for a considerable time, but others are extinguished at once. Many other forms of phenomena are observed, called ‘torches’ and ‘beams’<sup>67</sup> and ‘jars’<sup>68</sup> and ‘pits’,<sup>69</sup> being named thus according to their similarity to these things. And some of these are observed in the west, some in the east, some in both, but rarely in the north and south. All are unstable; for not one of these has ever been described as always visible in a fixed position. Such then are the things of the air.

395b18 The earth also contains many sources in itself, of water, so also of wind and fire. Some of these are invisible under the earth, but many have vents and ruptures, like Lipara<sup>70</sup> and Etna and those on the Aeolian Islands.<sup>71</sup> They indeed often flow like a river, and emit extremely hot stones. Some sources under the earth, being close to water springs, heat these up, and they send up streams that are sometimes lukewarm, sometimes boiling hot, and sometimes well-mixed.

395b26 In the same way many outlets for wind [*pneumata*] are

τα κράσεως. Ὅμοιως δὲ καὶ τῶν πνευμάτων πολλὰ πο-  
 λαχοῦ γῆς στόμια ἀνέωκται ὧν τὰ μὲν ἐνθουσιᾶν ποιεῖ τοὺς  
 ἐμπελάζοντας, τὰ δὲ ἀτροφεῖν, τὰ δὲ χρησιμωδεῖν, ὥσπερ  
 τὰ ἐν Δελφοῖς καὶ Λεβαδείᾳ, τὰ δὲ καὶ παντάπασι ἀναι-  
 ρεῖ, καθάπερ τὸ ἐν Φρυγίᾳ. Πολλάκις δὲ καὶ συγγενὲς 30  
 πνεῦμα εὐκρατον ἐν γῇ παρεξωσθὲν εἰς μυχίους σήραγγας  
 αὐτῆς, ἔξεδρον γενόμενον ἐκ τῶν οἰκείων τόπων, πολλὰ μέρη  
 συνεκράδανεν. Πολλάκις δὲ πολὺ γενόμενον ἔξωθεν ἐγκατει-  
 λήθη τοῖς ταύτης κοιλώμασι καὶ ἀποκλεισθὲν ἐξόδου\* μετὰ  
 βίας αὐτὴν συνετίναξε, ζητοῦν ἔξοδον ἑαυτῶ, καὶ ἀπειργά- 35  
 σατο πάθος τοῦτο ὃ καλεῖν εἰώθαμεν σεισμόν. Τῶν δὲ σει-  
 σμῶν οἱ μὲν εἰς πλάγια σειόντες κατ' ὀξείας γωνίας ἐπι-  
 κλίνονται καλοῦνται, οἱ δὲ ἄνω ῥίπτοῦντες καὶ κάτω κατ' ὀρ-  
 θᾶς γωνίας βράσται, οἱ δὲ συνιζήσεις ποιοῦντες εἰς τὰ κοιλα 396a  
 ἰζηματῖαι· οἱ δὲ χάσματα ἀνοίγοντες καὶ τὴν γῆν ἀναρρη-  
 γνύντες ῥήκται καλοῦνται. Τούτων δὲ οἱ μὲν καὶ πνεῦμα 5  
 προσαναβάλλουσιν, οἱ δὲ πέτρας, οἱ δὲ πηλόν, οἱ δὲ πηγὰς  
 φαίνουσι τὰς πρότερον οὐκ οὔσας. Τινὲς δὲ ἀνατρέπουσι κατὰ  
 μίαν πρόωσιν, οὓς καλοῦσιν ὤστας. Οἱ δὲ ἀνταποπάλλοντες καὶ  
 ταῖς εἰς ἑκάτερον ἐγκλίσεισι καὶ ἀποπάλλεσσι διορθοῦντες αἰεὶ  
 τὸ σειόμενον παλματῖαι λέγονται, τρόμφω πάθος ὅμοιον 10  
 ἀπεργαζόμενοι. Γίνονται δὲ καὶ μυκηταὶ σεισμοί, σειόντες  
 τὴν γῆν μετὰ βρόμου. Πολλάκις δὲ καὶ χωρὶς σεισμοῦ γίνεται  
 μύκημα γῆς, ὅταν τὸ πνεῦμα σείειν μὲν μὴ αὐταρκες ἦ,  
 ἐνειλούμενον δὲ ἐν αὐτῇ κόπτηται μετὰ ῥοθίου βίας. Συσσω-  
 ματοποιεῖται δὲ τὰ εἰσιόντα πνεύματα καὶ ὑπὸ τῶν ἐν τῇ 15  
 γῇ ὑγρῶν κεκρυμμένων.

Τὰ δὲ ἀνάλογον συμπίπτει [τούτοις] καὶ ἐν θαλάσῃ·  
 χάσματά τε γὰρ γίνεται θαλάσσης καὶ ἀναχωρήματα  
 πολλάκις καὶ κυμάτων ἐπιδρομαί, ποτὲ μὲν ἀντανακο-  
 πὴν ἔχουσαι, ποτὲ δὲ πρόωσιν μόνον, ὥσπερ ἰστορεῖται περὶ 20  
 Ἑλίκην τε καὶ Βοῦραν. Πολλάκις δὲ καὶ ἀναφυσήματα  
 γίνεται πυρὸς ἐν τῇ θαλάσῃ καὶ πηγῶν ἀναβλύσεις καὶ  
 ποταμῶν ἐκβολαὶ καὶ δένδρων ἐκφύσεις ῥοαί τε καὶ δι-  
 ναι ταῖς τῶν πνευμάτων ἀνάλογον, αἱ μὲν ἐν μέσοις πε-  
 λάγεσιν, αἱ δὲ κατὰ τοὺς εὐρίπους τε καὶ πορθμούς. Πολ- 25  
 λαί τε ἀμπώτεις λέγονται καὶ κυμάτων ἄρσεις συμπεριο-  
 δεύειν αἰεὶ τῇ σελήνῃ κατὰ τινὰς ὠρισμένους καιροὺς. Ὡς δὲ  
 τὸ πᾶν εἰπεῖν, τῶν στοιχείων ἐγκεκραμένων ἀλλήλοισ ἐν  
 ἀέρι τε καὶ γῇ καὶ θαλάσῃ κατὰ τὸ εἶκος αἱ τῶν παθῶν  
 ὁμοιότητες συνίστανται, τοῖς μὲν ἐπὶ μέρους φθορὰς καὶ γε- 30

opened in many places of the earth. Some of these have the effect that those who come near them are inspired by god, some that they waste away, others that they prophesy, as those at Delphi<sup>72</sup> and Lebadeia,<sup>73</sup> and still other outlets destroy them completely, like the one in Phrygia.<sup>74</sup> Often also a naturally temperate wind in the earth, when it is forced sideways into the innermost caves of the earth and dislodged from its own regions, as a consequence shakes many parts. Often a large quantity [of wind] builds up from the outside and is enclosed within the cavities of the earth, and because it is cut off from an exit,<sup>75</sup> it violently shakes the earth to its foundations, seeking an exit for itself, and it produces as a result that which we normally call an earthquake. 396a Earthquakes which shake sideways at a sharp angle are called inclining;<sup>76</sup> those throwing the earth up and down at right angles are called vertical; those causing the earth to collapse into hollows are called subsiding earthquakes; those opening up chasms and tearing up the earth are called tearing earthquakes.<sup>77</sup> Some of them also throw up wind, some rocks, some mud; some uncover springs that were not there previously. Some overturn things with a single thrust, which they call thrusting earthquakes; some, thrusting back in the opposite direction and with inclinations in the other direction and with shocks always keeping upright that which is being shaken, are called oscillating earthquakes, producing an effect like a tremor. There are also roaring earthquakes, shaking the earth with a loud noise. Often there is also a roaring of the earth without an earthquake, when the wind is not strong enough to shake the earth, but being enwrapped in it, beats with rushing violence. The winds entering the earth are also condensed<sup>78</sup> by the moisture hidden in the earth.

396a17 Analogous events also occur in the sea: there are chasms in the sea, and often withdrawals and incursions of waves, sometimes with a recoil, sometimes with only a forward motion, as is reported about Helice and Bura.<sup>79</sup> Often there are also eruptions of fire in the sea, and fountains spout out, and rivers mouth out, and trees sprout out, and there are floods and eddies analogous to those of the winds, some in the middle of oceans, some in the narrows and straits. Many tides and tidal waves are said always to recur together with the moon at certain definite times.

To summarize, since the elements are mixed with one another, it is reasonable that similar phenomena occur in the air, on land, and in the sea, which bring about destruction and generation for the individual parts, but keep the whole indestructible and ungenerated.



νέσεις φέρουσαι, τὸ δὲ σύμπαν ἀνώλεθρόν τε καὶ ἀγένητον φυλάττουσαι.

5. Καίτοι γέ τις ἐθαύμασε πῶς ποτε, ἐκ τῶν ἐναντίων ἀρχῶν συνεσθηκώς ὁ κόσμος, λέγω δὲ ξηρῶν τε καὶ ὑγρῶν, ψυχρῶν τε καὶ θερμῶν, οὐ πάλαι διέφθαρται καὶ ἀπόλωλεν, ὡς κἂν εἰ πόλιν τινὲς θαυμάζοιεν, ὅπως διαμένει συνεσθηκυῖα ἐκ τῶν ἐναντιωτάτων ἔθνων, πενήτων λέγω καὶ ἰπλουσίων, νέων γερόντων, ἀσθενῶν ἰσχυρῶν, πονηρῶν χρηστῶν. Ἄγνοοῦσι δὲ ὅτι τοῦτ' ἦν πολιτικῆς ὁμοιοῦς τὸ θαυμασιώτατον, λέγω δὲ τὸ ἐκ πολλῶν μίαν καὶ ὁμοίαν ἐξ ἀνομοίων ἀποτελεῖν διάθεσιν ὑποδεχομένην πᾶσαν καὶ φύσιν καὶ τύχην. Ἴσως δὲ τῶν ἐναντίων ἢ φύσις γλίχεται καὶ ἐκ τούτων ἀποτελεῖ τὸ σύμφωνον, οὐκ ἐκ τῶν ὁμοίων, ὥσπερ ἀμέλει τὸ ἄρρεν συνήγαγε πρὸς τὸ θῆλυ καὶ οὐχ ἑκάτερον πρὸς τὸ ὁμόφυλον, καὶ τὴν πρώτην ὁμόνοιαν διὰ τῶν ἐναντίων συνῆψεν, οὐ διὰ τῶν ὁμοίων. Ἔοικε δὲ καὶ ἡ τέχνη τὴν φύσιν μιμουμένη τοῦτο ποιεῖν. Ζωγραφία μὲν γὰρ λευκῶν τε καὶ μελάνων, ὠχρῶν τε καὶ ἐρυθρῶν, χρωμάτων ἐγκερασαμένη φύσεις τὰς εἰκόνας τοῖς προηγουμένοις ἀπετέλεσε συμφῶνους, μουσικὴ δὲ ὄξεις ἅμα καὶ βαρεῖς, μακροὺς τε καὶ βραχεῖς, φθόγγους μίξασα ἐν διαφοροῖς φωναῖς μίαν ἀπετέλεσεν ἁρμονίαν, γραμματικὴ δὲ ἐκ φωνηέντων καὶ ἀφῶνων γραμμάτων κρᾶσιν ποιησαμένη τὴν ὅλην τέχνην ἀπ' αὐτῶν συνεστήσατο. Ταῦτό δὲ τοῦτο ἦν καὶ τὸ παρὰ τῷ σκοτεινῷ λεγόμενον Ἡρακλείτῳ "Συλλάψεις ὅλα καὶ οὐχ ὅλα, συμφερόμενον διαφερόμενον, συνᾶδον διᾶδον· ἐκ πάντων ἐν καὶ ἐξ ἑνὸς πάντα." Οὕτως οὖν καὶ τὴν τῶν ὅλων σύστασιν, οὐρανοῦ λέγω καὶ γῆς τοῦ τε σύμπαντος κόσμου, διὰ τῆς τῶν ἐναντιωτάτων κρᾶσεως ἀρχῶν μία διεκόσμησεν ἁρμονία· ξηρὸν γὰρ ὑγρῷ, θερμὸν δὲ ψυχρῷ, βαρεῖ τε κοῦφον μιγὲν, καὶ ὀρθὸν περιφέρει, γῆν τε πᾶσαν καὶ θάλασσαν αἰθέρα τε καὶ ἥλιον καὶ σελήνην καὶ τὸν ὅλον οὐρανὸν διεκόσμησε μία [ἡ] διὰ πάντων διήκουσα δύναμις, ἐκ τῶν ἀμίκτων καὶ ἑτεροίων, ἄερος τε καὶ γῆς καὶ πυρός καὶ ὕδατος, τὸν σύμπαντα κόσμον δημιουργήσασα καὶ μιᾷ διαλαβοῦσα σφαίρας ἐπιφανεία τὰς τε ἐναντιωτάτας ἐν αὐτῷ φύσεις ἀλλήλαις ἀναγκά-

*Cosmic harmony and God's role in the cosmos**Cosmic harmony from opposites*

5. (396a33) Some have indeed wondered how the cosmos, consisting of opposite principles, I mean dry and wet, cold and warm, has not long ago been destroyed and 396b perished – just as one would wonder how a city endures, since it consists of opposing classes, I mean of poor and rich, young and old, weak and strong, bad and good. They fail to recognize that this was the most wonderful thing about civic concord, I mean that it accomplishes one disposition out of many and a similar disposition out of diversity, a disposition allowing for every nature and fortune. But perhaps nature longs for opposites and creates consonance from these, not from similar things, just as, indeed, she has brought together male and female and not each of them to one of the same kind, and has formed the first concord by means of opposites, not by similar things. It seems that art also does this, imitating nature. For painting, by mixing the natures of the colours white and black, yellow and red, produces images in harmony with their originals; music, mixing high and low, long and short notes together, produces a single harmony through different sounds; and grammar, by creating a mixture of letters with and without sound,<sup>80</sup> composes its whole art from them. This is precisely what was meant by Heraclitus the Obscure: “Conjunctions: wholes and not wholes, agreement and difference, consonance and dissonance; one from all and all from one.”<sup>81</sup>

396b23 In this way, then, a single harmony has arranged<sup>82</sup> the composition of the universe, I mean heaven and earth and the cosmos as a whole, by means of the mixture of the most opposite principles: dry mixed with wet, warm with cold, heavy with light, straight with curved – a single power pervading all things<sup>83</sup> has set in order all the earth and sea, ether, sun, moon and the whole heaven, having created the whole cosmos from the unmixed and diverse, from air and earth and fire and water, and by holding them individually with the single surface of a sphere, compelled the most opposite elements in it [sc. the cosmos] to agree with one another, and from these brought about preservation for the whole. The cause of this [sc. preservation] is the agreement of the elements, and the cause of the agreement is all having an equal share and that none of them 397a is more powerful than the other; for the heavy elements are in equilibrium with the light, and the warm with its opposite, since nature teaches in these greater matters that equality somehow preserves concord, and that concord preserves the cosmos,

σασα ὁμολογήσαι καὶ ἐκ τούτων μηχανησαμένη τῷ παντὶ  
 σωτηρίαν. Αἰτία δὲ ταύτης μὲν ἢ τῶν στοιχείων ὁμολογία, 35  
 τῆς δὲ ὁμολογίας ἢ ἰσομοιρία καὶ τὸ μηδὲν αὐτῶν πλέον 397a  
 ἕτερον ἕτερου δύνασθαι τὴν γὰρ ἴσην ἀντίστασιν ἔχει τὰ βα-  
 ρέα πρὸς τὰ κοῦφα καὶ τὰ θερμὰ πρὸς θάτερα, τῆς φύ-  
 σεως ἐπὶ τῶν μειζόνων διδασκούσης ὅτι τὸ ἴσον σωστικόν πῶς  
 ἐστὶν ὁμοιοῦς, ἢ δὲ ὁμόνοια τοῦ πάντων γενετήρος καὶ περι-  
 καλλεστάτου κόσμου. Τίς γὰρ ἂν εἴη φύσις τοῦδε κρείττων; ἦν 5  
 γὰρ ἂν εἴπη τις, μέρος ἐστὶν αὐτοῦ. Τό τε καλὸν πᾶν ἐπώ-  
 νυμόν ἐστὶ τούτου καὶ τὸ τεταγμένον, ἀπὸ τοῦ κόσμου λεγόμε-  
 νον κεκοσμηθῆναι. Τί δὲ τῶν ἐπὶ μέρους δύναιτ' ἂν ἐξισω-  
 θῆναι τῇ κατ' οὐρανὸν τάξει τε καὶ φορᾷ τῶν ἄστρον ἡλίου τε 10  
 καὶ σελήνης, κινουμένων ἐν ἀκριβεστάτοις μέτροις ἐξ αἰῶνος  
 εἰς ἕτερον αἰῶνα; τίς δὲ γένοιτ' ἂν ἀψεύδεια τοιάδε, ἦντινα  
 φυλάττουσιν αἱ καλαὶ καὶ γόνιμοι τῶν ὄλων ὥραι, θέρη τε  
 καὶ χειμῶνας ἐπάγουσαι τεταγμένως ἡμέρας τε καὶ νύ-  
 κτας εἰς μηνὸς ἀποτέλεσμα καὶ ἐνιαυτοῦ; καὶ μὴν μεγέθει 15  
 μὲν οὗτος πανυπέρτατος, κινήσει δὲ ὀξύτατος, λαμπρό-  
 τητι δὲ εὐαυγέστατος, δυνάμει δὲ ἀγήρωσ τε καὶ ἀφθαρ-  
 τος. Οὗτος ἐναλίω ζῶων καὶ πεζῶν καὶ ἀερίων φύσεις ἐχώ-  
 ρισε καὶ βίους ἐμέτρησε ταῖς ἑαυτοῦ κινήσεσιν. Ἐκ τούτου πάν-  
 τα ἐμπνέει τε καὶ ψυχὴν ἴσχει τὰ ζῶα. Τούτου καὶ αἱ πα- 20  
 ράδοξοι νεοχμώσεις τεταγμένως ἀποτελοῦνται, συναραπτόν-  
 των μὲν ἀνέμων παντοίων, πιπτόντων δὲ ἐξ οὐρανοῦ κεραυνῶν,  
 ῥηγνυμένων δὲ χειμῶνων ἐξαισίω. Διὰ δὲ τούτων τὸ νοτερόν  
 ἐκπιεζόμενον τό τε πυρῶδες διαπνεόμενον εἰς ὁμόνοιαν ἄγει  
 τὸ πᾶν καὶ καθίστησιν. Ἡ τε γῆ φυτοῖς κομῶσα παντοδα- 25  
 ποῖς νάμασί τε περιβλύζουσα καὶ περιοχουμένη ζῶοις, κατὰ  
 καιρὸν ἐκφύουσά τε πάντα καὶ τρέφουσα καὶ δεχομένη,  
 μυρίας τε φέρουσα ἰδέας καὶ πάθη, τὴν ἀγήρω φύσιν ὁμοί-  
 ως τηρεῖ, καίτοι καὶ σεισμοῖς τινασσομένη καὶ πλημυρί-  
 σιν ἐπικλυζομένη πυρκαϊαῖς τε κατὰ μέρος φλογιζομένη. 30  
 Ταῦτα δὲ πάντα ἔοικεν αὐτῇ πρὸς ἀγαθοῦ γινόμενα τὴν δι'  
 αἰῶνος σωτηρίαν παρέχειν· σειομένης τε γὰρ διεξάπτουσιν αἱ  
 τῶν πνευμάτων παρεμπτώσεις κατὰ τὰ ῥήγματα τὰς ἀνα-  
 πνοὰς ἴσχουσαι, καθὼς ἄνω λέλεκται, καθαιρομένη τε ὄμ-  
 βροις ἀποκλύζεται πάντα τὰ νοσώδη, περιπνεομένη δὲ αὐ- 35  
 ραῖς τὰ τε ὑπ' αὐτὴν καὶ τὰ ὑπὲρ αὐτὴν εἰλικρινεῖται. Καὶ 397b  
 μὴν αἱ φλόγες μὲν τὸ παγετώδες ἠπιαίνουσιν, οἱ πάγοι δὲ  
 τὰς φλόγας ἀνιάσιν. Καὶ τῶν ἐπὶ μέρους τὰ μὲν γίνεται,  
 τὰ δὲ ἀκμάζει, τὰ δὲ φθείρεται. Καὶ αἱ μὲν γενέσεις ἐπα-

the parent<sup>84</sup> of all things and most beautiful of all.<sup>85</sup> For what being could be better than this [sc. the cosmos]? Whatever one may mention, is a part of it. Everything beautiful and well-arranged is named after it, because it is said 'to be ordered' from the word 'cosmos'.<sup>86</sup> Which of the individual parts could be compared to the arrangement in the heavens and the movement of the stars and the sun and moon, moving in most accurate measures from one age to the next? What reliability could be such as that which the beautiful seasons, producing all things, maintain, bringing in orderly manner summers and winters, days and nights, to complete a month or a year? Furthermore, in size this [sc. the cosmos] is the greatest of all, in speed the fastest, in splendour the brightest, and in power ageless as well as indestructible. It has distinguished the natures of creatures in the sea, land and air, and measured their lives through its own movements. From this all creatures breathe and have life. Even the incredible, strange phenomena of the cosmos are produced in an orderly manner: all kinds of winds dashing together, thunderbolts falling from the sky, violent storms breaking out. Through these, the moisture, when it is squeezed out, and the fiery substance, when it is dispersed, bring the whole into agreement and set it in order. The earth, sprouting forth with all kinds of plants and bubbling all over with springs, traversed in all directions by living creatures, producing all things at the right time and feeding them and receiving them [back again], and bringing forth innumerable forms and changes, keeps its ageless nature the same, even though it is shaken by earthquakes, overflowed by floods, and consumed in part by conflagrations. It seems that all these things happen to it for its good and provide perpetual preservation. For when it is shaken, eruptions of winds rush forth from it, having vents through chasms, as has already been said above,<sup>87</sup> and when it is cleansed by rain showers, it is washed clean from all the unwholesome things, and when it is blown all over by breezes, it is purified from the things under it and above it. Furthermore, 397b the flames mitigate the icy-cold and frost tempers the flames. And of the individual things some come into being, some flourish, and others are destroyed; and generation checks destruction, and destruction lightens generation. A single [principle of] preservation, accomplished out of all the things that continually change places with one another – now dominating, then being dominated – keeps the whole perpetually indestructible.

ναστέλλουσι τὰς φθοράς, αἱ δὲ φθοραὶ κουφίζουσι τὰς γενέσεις. Μία δὲ ἐκ πάντων περαιομένη σωτηρία διὰ τέλους 5  
ἀντιπερισταμένων ἀλλήλοις καὶ τοτὲ μὲν κρατούντων, τοτὲ δὲ κρατουμένων, φυλάττει τὸ σύμπαν ἀφθαρτον δι' αἰῶνος.

6. Λοιπὸν δὴ περὶ τῆς τῶν ὄλων συνεκτικῆς αἰτίας κεφαλαιωδῶς εἰπεῖν, ὃν τρόπον καὶ περὶ τῶν ἄλλων· πλημμελὲς γὰρ περὶ κόσμου λέγοντας, εἰ καὶ μὴ δι' ἀκριβείας, 10  
ἀλλ' οὖν γε ὡς εἰς τυπώδη μάθησιν, τὸ τοῦ κόσμου κυριώτατον παραλιπεῖν. Ἀρχαῖος μὲν οὖν τις λόγος καὶ πάτριός ἐστι πᾶσιν ἀνθρώποις ὡς ἐκ θεοῦ πάντα καὶ διὰ θεὸν συνέστηκεν, οὐδεμία δὲ φύσις αὐτῆ καθ' ἑαυτὴν ἐστὶν αὐτάρκης, ἐρημωθεῖσα τῆς ἐκ τούτου σωτηρίας. Διὸ καὶ τῶν παλαιῶν εἰπεῖν τινες προήχθησαν ὅτι πάντα ταῦτά ἐστι θεῶν 15  
πλέα τὰ καὶ δι' ὀφθαλμῶν ἰνδαλλόμενα ἡμῖν καὶ δι' ἀκοῆς καὶ πάσης αἰσθήσεως, τῇ μὲν θείᾳ δυνάμει πρέποντα καταβαλλόμενοι λόγον, οὐ μὴν τῇ γε οὐσίᾳ. Σωτὴρ μὲν γὰρ ὄντως ἀπάντων ἐστὶ καὶ γενέτωρ τῶν ὅπωςδήποτε κατὰ τόνδε τὸν κόσμον συντελουμένων ὁ θεός, οὐ μὴν αὐτουργοῦ καὶ ἐπιπόνου ζῶου κάματος ὑπομένων, ἀλλὰ δυνάμει χρώμενος ἀτρυτῶ, 20  
δι' ἧς καὶ τῶν πόρρω δοκούντων εἶναι περιγίνεται. Τὴν μὲν οὖν ἀνωτάτω καὶ πρῶτην ἔδραν αὐτὸς ἔλαχεν, ὕπατός τε διὰ τοῦτο ὠνόμασται, κατὰ τὸν ποιητὴν “ἀκροτάτη κορυφῆ” τοῦ σύμπαντος ἐγκαθιδρυμένος οὐρανοῦ· μάλιστα δέ πως αὐτοῦ τῆς δυνάμεως ἀπολαύει τὸ πλησίον αὐτοῦ σῶμα, καὶ ἔπειτα τὸ μετ' ἐκεῖνο, καὶ ἐφεξῆς οὕτως ἄχρι τῶν καθ' ἡμᾶς τόπων. Διὸ γῆ τε καὶ τὰ ἐπὶ γῆς ἔοικεν, ἐν ἀποστάσει 30  
πλειόστη τῆς ἐκ θεοῦ ὄντα ὠφελείας, ἀσθενῆ καὶ ἀκατάλληλα εἶναι καὶ πολλῆς μεστὰ ταραχῆς· οὐ μὴν ἀλλὰ καθ' ὅσον ἐπὶ πᾶν δικνεῖσθαι πέφυκε τὸ θεῖον, καὶ ἐπὶ τὰ καθ' ἡμᾶς ὁμοίως συμβαίνει τὰ τε ὑπὲρ ἡμᾶς, κατὰ τὸ ἐγγιόν τε καὶ πορρωτέρω θεοῦ εἶναι μᾶλλον τε καὶ ἥττον 35  
ὠφελείας μεταλαμβάνοντα. Κρεῖττον οὖν ὑπολαβεῖν, ὃ καὶ πρέπον ἐστὶ καὶ θεῶ μάλιστα ἀρμόζον, ὡς ἢ ἐν οὐρανῶ δύναιμις ἰδρυμένη καὶ τοῖς πλείστον ἀφροσύνησιν, ὡς ἔνι γε εἰπεῖν, καὶ σύμπασιν αἴτιος γίνεται σωτηρίας, μᾶλλον ἢ ὡς διήκουσα καὶ φοιτῶσα ἔνθα μὴ καλὸν μηδὲ εὐσχημον αὐτουργεῖν] τὰ ἐπὶ γῆς. Τοῦτο μὲν γὰρ οὐδὲ ἀνθρώπων ἡγεμόσιν ἀρμόττει, παντὶ καὶ τῷ τυχόντι ἐφίστασθαι ἔργῳ, λέγω δὲ οἶον στρατιᾶς ἄρχοντι ἢ πόλεως ἢ οἴκου, [καὶ] εἰ χρεῶν στρωματό-

*God in relationship to the cosmos*

6. (397b9) It now remains to speak in summary fashion about the cause holding the universe together, as has also been done about the rest; for it would be wrong when speaking about the cosmos – even if not in detail, then at least for a knowledge in outline – to pass over that which is most important in the cosmos. There is indeed an ancient account,<sup>88</sup> native to all people, that all things have come into existence from god and because of god, and that no thing by itself is self-sufficient, if deprived of the preservation deriving from him. Therefore some of the ancients were also led to say that all these things that appear to us through the eyes and hearing and every sensation are full of gods,<sup>89</sup> presenting an idea appropriate to the divine power, not however to the divine essence. For god is really the preserver of all things and the begetter<sup>90</sup> of everything however it is brought about in this cosmos, without indeed enduring the hardship of a creature hard at work for itself,<sup>91</sup> but by making use of an untiring power, by means of which he prevails even over things that seem to be far away. He has been allotted the highest and first place, and is therefore called supreme, established according to the poet “on the highest peak”<sup>92</sup> of the whole heaven. The body closest to him has most benefit of his power, and then the body next to it, and so on in sequence until the regions where we are. So the earth and the things on the earth, being at the greatest distance from the assistance of god, seem to be weak and incongruous and full of much confusion; but nevertheless, in as far as the divine naturally penetrates to everything, it happens to the things in our region in the same way as to the things above us: they share to a greater or lesser extent in god’s assistance according to whether they are closer or further from him. 398a It is therefore better to suppose – which is also fitting and most appropriate to god – that the power based in heaven is the cause of preservation for all things, even those furthest separated, one may say, rather than that it pervades and goes<sup>93</sup> to where it is not honourable or dignified that it should, and of itself<sup>94</sup> performs the things on earth. For it is not appropriate even for leaders of humans (I mean for example the ruler of an army or a city or a household) to oversee every trifling task, if it were necessary to tie up the bedclothes or to perform an inferior task, which any slave could do; but [what is

δεσμον εἶη δῆσαι καὶ εἶ τι φαυλότερον ἀποτελεῖν ἔργον,  
 ὃ κὰν τὸ τυχὸν ἀνδράποδον ποιήσειεν, ἀλλ' οἷον ἐπὶ τοῦ μεγάλου  
 βασιλέως ἰστορεῖται. Τὸ <γὰρ> Καμβύσου Ξέρξου τε καὶ 10  
 Δαρείου πρόσχημα εἰς σεμνότητος καὶ ὑπεροχῆς ὕψος μεγα-  
 λοπρεπῶς διεκεκόσμητο· αὐτὸς μὲν γάρ, ὡς λόγος, ἴδρυτο  
 ἐν Σούσις ἢ Ἐκβατάνοις, παντὶ ἀόρατος, θαυμαστὸν ἐπέ-  
 χων βασιλείον οἶκον καὶ περίβολον χρυσοῦ καὶ ἠλέκτρῳ 15  
 καὶ ἐλέφαντι ἀστράπτοντα· πυλῶνες δὲ πολλοὶ καὶ συνε-  
 χεῖς πρόθυρά τε σύχνοις εἰργόμενα σταδίοις ἀπ' ἀλλήλων  
 θύραις τε χαλκαῖς καὶ τείχεσι μεγάλοις ἀχώρωτο· ἔξω  
 δὲ τούτων ἄνδρες οἱ πρῶτοι καὶ δοκιμώτατοι διεκεκόσμητο,  
 οἱ μὲν ἀμφ' αὐτὸν τὸν βασιλέα δορυφόροι τε καὶ θεράποντες, 20  
 οἱ δὲ ἐκάστου περιβόλου φύλακες, πυλωροὶ τε καὶ ὠτακου-  
 σταὶ λεγόμενοι, ὡς ἂν ὁ βασιλεὺς αὐτός, δεσπότης καὶ θεὸς  
 ὀνομαζόμενος, πάντα μὲν βλέποι, πάντα δὲ ἀκούσι. Χωρὶς  
 δὲ τούτων ἄλλοι καθειστήκεσαν προσόδων ταμίαι καὶ στρατη-  
 γοὶ πολέμων καὶ κυνηγεσίων δῶρων τε ἀποδεκτῆρες τῶν 25  
 τε λοιπῶν ἔργων ἕκαστοι κατὰ τὰς χρείας ἐπιμεληταί. Τὴν  
 δὲ σύμπασαν ἀρχὴν τῆς Ἀσίας, περατουμένην Ἑλλησπόν-  
 τῳ μὲν ἐκ τῶν πρὸς ἑσπέραν μερῶν, Ἰνδῶ δὲ ἐκ τῶν πρὸς  
 ἔσω, διειλήφεσαν κατὰ ἔθνη στρατηγοὶ καὶ σατράπαι καὶ  
 βασιλεῖς, δούλοι τοῦ μεγάλου βασιλέως, ἡμεροδρόμοι τε 30  
 καὶ σκοποὶ καὶ ἀγγελιαφόροι φρυκτωριῶν τε ἐποπτῆρες.  
 Τοσοῦτος δὲ ἦν ὁ κόσμος, καὶ μάλιστα τῶν φρυκτωριῶν\*,  
 κατὰ διαδοχὰς πυρσευόντων ἀλλήλοις ἐκ περάτων τῆς ἀρ-  
 χῆς μέχρι Σούσων καὶ Ἐκβατάνων, ὥστε τὸν βασιλέα γι-  
 νώσκειν αὐθημερὸν πάντα τὰ ἐν τῇ Ἀσίᾳ καινουροῦμενα. 35  
 Νομιστέον δὴ τὴν τοῦ μεγάλου βασιλέως ὑπεροχὴν πρὸς τὴν  
 τοῦ τὸν κόσμον ἐπέχοντος θεοῦ τοσοῦτον καταδεεστέραν ὅσον  
 τῆς ἐκείνου τὴν τοῦ φαυλοτάτου τε καὶ ἀσθενεστάτου ζῶου,  
 ὥστε, εἴπερ ἄσεμνον ἦν αὐτὸν αὐτῷ δοκεῖν Ξέρξην αὐτουργεῖν  
 ἅπαντα καὶ ἐπιτελεῖν ἃ βούλοιο καὶ ἐφιστάμενον <έκαστα- 5  
 χου> διοικεῖν, ἢ πολὺ μᾶλλον ἀπρεπὲς ἂν εἶη θεῷ. Σεμνότερον  
 δὲ καὶ πρὸς ἡμᾶς ἀπρεπὲς αὐτὸν μὲν ἐπὶ τῆς ἀνωτάτω χώρας ἰδρῦ-  
 σθαι, τὴν ἢ δὲ δύνάμιν διὰ τοῦ σύμπαντος κόσμου διήκουσαν ἡλιόν  
 τε ἢ κινεῖν καὶ σελήνην καὶ τὸν πάντα οὐρανὸν περιάγειν αἰτίον τε  
 γίνεσθαι τοῖς ἐπὶ τῆς γῆς σωτηρίας. Οὐδὲν γὰρ ἐπιτεχνή- 10  
 σεως δεῖ καὶ ὑπηρεσίας τῆς παρ' ἐτέρων, ὥσπερ τοῖς  
 παρ' ἡμῖν ἄρχουσι τῆς πολυχειρίας διὰ τὴν ἀσθένειαν, ἀλλὰ  
 τοῦτο ἦν τὸ θειότατον, τὸ μετὰ ὁραστῶνης καὶ ἀπλῆς κινήσεως  
 παντοδαπὰς ἀποτελεῖν ιδέας, ὥσπερ ἀμέλει δρώσιν οἱ με-

appropriate] is for example related about the Great King.<sup>95</sup> <For> the pomp of Cambyses, Xerxes, and Darius was ordered in a magnificent manner to the height of dignity and authority. The King himself, they say, was based in Susa or Ecbatana, invisible to everyone, occupying a marvellous palace and an enclosure flashing with gold, electrum<sup>96</sup> and ivory. The many gate-towers and entrances in succession, separated from one another by many stades, were fortified with bronze doors and huge walls. Outside these the first and most esteemed men were set up in order, some as bodyguards and attendants around the King himself, others as guards of each outer wall, called Gatekeepers and Listeners, so that the King himself, named Master and God, might see everything and hear everything.<sup>97</sup> Apart from these, others were appointed as controllers of revenue, commanders of war and of the hunt, receivers of gifts, and curators of the remaining tasks, each appointed according to need. The whole empire of Asia, limited by the Hellespont on the western side and by the Indus on the eastern side, was divided according to nations among generals and satraps and kings, slaves of the Great King, as well as among couriers and scouts and messengers and overseers of the production of beacon-signals. So comprehensive was the arrangement, and especially of the system of signal-beacons,<sup>98</sup> signalling to one another in succession from the ends of the Empire to Susa and Ecbatana, that the King knew the same day all the new developments in Asia. 398b Now the authority of the Great King compared to that of god who has power over the cosmos must be considered just as much weaker as the authority of the most inferior and weakest creature compared to that of the King, so that, if it would be undignified for Xerxes to appear to do all things himself and to complete what he wanted to be done and to oversee and administer all things <everywhere>, it would be much more unbecoming for god. It is more dignified and becoming for him to be based in the highest region and for his power, penetrating through the whole cosmos, to move the sun and moon and to cause the whole heaven to revolve and to be the cause of preservation for the things on earth. For he has no need of the contrivance and service from others, as the rulers with us need the help of many hands because of their weakness; on the contrary, the most divine characteristic would be this: to produce all kinds of forms with ease and a simple movement, just as indeed the engineers<sup>99</sup> do, producing by means of the single release mechanism of an engine of war many varied activities. In the same way puppeteers, by pulling a single string, make the neck and hand and shoulder and eye and sometimes all the parts of the creature move with a rhythmical movement. So also



γαλότηχνοι\*, διὰ μιᾶς ὀργάνου σχαστηρίας πολλάς καὶ 15  
ποικίλας ἐνεργείας ἀποτελοῦντες. Ὁμοίως δὲ καὶ οἱ νευρο-  
σπάσται μίαν μήρινθον ἐπισπασάμενοι ποιούσι καὶ αὐχένα  
κινεῖσθαι καὶ χεῖρα τοῦ ζώου καὶ ὤμον καὶ ὀφθαλμόν, ἔστι  
δὲ ὅτε πάντα τὰ μέρη, μετὰ τινος εὐρυθμίας. Οὕτως οὖν καὶ  
ἡ θεία φύσις ἀπὸ τινος ἀπλῆς κινήσεως τοῦ πρώτου τὴν δύ- 20  
ναμιν εἰς τὰ συνεχῆ δίδωσι καὶ ἀπ' ἐκείνων πάλιν εἰς τὰ  
πορρωτέρω, μέχρις ἂν διὰ τοῦ παντός διεξέλθῃ κινήθην γὰρ  
ἕτερον ὑφ' ἐτέρου καὶ αὐτὸ πάλιν ἐκίνησεν ἄλλο σὺν κόσμῳ,  
δρῶντων μὲν πάντων οἰκειῶς ταῖς σφετέραις κατασκευαῖς,  
οὐ τῆς αὐτῆς δὲ ὁδοῦ πᾶσιν οὔσης, ἀλλὰ διαφόρου καὶ ἔτε- 25  
ροῖας, ἔστι δὲ οἷς καὶ ἐναντίας, καίτοι τῆς πρώτης οἷον ἐν-  
δόσεως εἰς κίνησιν μιᾶς γενομένης· ὥσπερ ἂν εἴ τις ἐξ ἄγ-  
γους ὁμοῦ ῥίψει σφαῖραν καὶ κύβον καὶ κῶνον καὶ κύλιν-  
δρον—ἐκαστον γὰρ αὐτῶν κατὰ τὸ ἴδιον κινήθησεται σχῆμα—  
ἢ εἴ τις ὁμοῦ ζῶον ἐνυδρὸν τε καὶ χερσαῖον καὶ πτηνὸν ἐν 30  
τοῖς κόλποις ἔχων ἐκβάλοι· δῆλον γὰρ ὅτι τὸ μὲν νηκτὸν  
ἀλόμενον εἰς τὴν ἑαυτοῦ δίαιταν ἐκνήξεται, τὸ δὲ χερσαῖον  
εἰς τὰ σφέτερα ἦθη καὶ νομοὺς διεξεργύσει, τὸ δὲ ἄεριον  
ἐξαρθὲν ἐκ γῆς μετάρσιον οἰχθήσεται πετόμενον, μιᾶς τῆς  
πρώτης αἰτίας πᾶσιν ἀποδοῦσης τὴν οἰκειάν εὐμάρειαν. Οὕ- 35  
τως καὶ ἐπὶ κόσμῳ· διὰ γὰρ ἀπλῆς τοῦ σύμπαντος ἰ οὐρα-  
νοῦ περιαγωγῆς ἡμέρα καὶ νυκτὶ περατουμένης ἄλλοῖαι  
πάντων διέξοδοι γίνονται, καίτοι ὑπὸ μιᾶς σφαίρας περιε-  
χομένων, τῶν μὲν θᾶπτον, τῶν δὲ σχολαιότερον κινουμένων  
παρὰ τε τὰ τῶν διαστημάτων μήκη καὶ τὰς ἰδίας ἐκάστων 5  
κατασκευάς. Σελήνη μὲν γὰρ ἐν μηνὶ τὸν ἑαυτῆς διαπεραί-  
νεται κύκλον αὐξομένη τε καὶ μειουμένη καὶ φθίνουσα,  
ἥλιος δὲ ἐν ἐνιαυτῷ καὶ οἱ τούτου ἰσόδρομοι, ὃ τε Φωσφόρος  
καὶ ὁ Ἑρμοῦ λεγόμενος, ὃ δὲ Πυρόεις ἐν διπλασίονι τούτων  
χρόνῳ, ὃ δὲ Διὸς ἐν ἐξαπλασίονι τούτου, καὶ τελευταῖος ὁ 10  
Κρόνου λεγόμενος ἐν διπλασίονι καὶ ἡμίσει τοῦ ὑποκάτω.  
Μία δὲ ἐκ πάντων ἀρμονία συναδόντων καὶ χορευόντων κατὰ  
τὸν οὐρανὸν ἐξ ἐνός τε γίνεται καὶ εἰς ἓν ἀπολήγει, κόσμον  
ἐτύμως τὸ σύμπαν ἀλλ' οὐκ ἀκοσμίαν ὀνομάσασα. Καθάπερ  
δὲ ἐν χορῷ κορυφαίου κατάρξαντος συνεπηχεῖ πᾶς ὁ χορὸς 15  
ἀνδρῶν, ἔσθ' ὅτε καὶ γυναικῶν, ἐν διαφόροις φωναῖς ὀξυτέ-  
ραις καὶ βαρυτέραις μίαν ἀρμονίαν ἐμμελῆ κεραυνύντων,  
οὕτως ἔχει καὶ ἐπὶ τοῦ τὸ σύμπαν διέποντος θεοῦ· κατὰ γὰρ  
τὸ ἄνωθεν ἐνδόσιμον ὑπὸ τοῦ φερωνύμως ἂν κορυφαίου προσ-  
αγορευθέντος κινεῖται μὲν τὰ ἄστρα ἀεὶ καὶ ὁ σύμπας οὐρα- 20

the divine being, by a simple movement of the first region, gives his power to the next things and from these again to those further away, until it permeates the whole. For one thing, being moved by another, itself again also moves something else in regular order, while all things act in a way appropriate to their own constitutions; but there is not the same way for all, but a different and diverse one, in some cases even the opposite, although there is just one initial striking of the key-note,<sup>100</sup> as it were, that leads to movement. It is as if one would throw a sphere, a cube, a cone and a cylinder from a vessel at the same time – for each of them will move according to its own shape<sup>101</sup> – or if one would have a water animal, a land animal and a bird in the folds of one's cloak and throw them out at the same time; for it is clear that the animal that swims will leap into its own habitat and swim away, the land animal will crawl away to its own haunts and pastures, and the creature from the air will rise from the ground and go off flying high in the air, although a single first cause restored to them all their own ability to move. 399a So too in the cosmos: by means of a simple revolution of the whole heaven completed in a day and a night the different orbits of all [the heavenly bodies] are produced, although they are encompassed by a single sphere, some moving faster, some more leisurely according to the length of the distances and their own constitutions. For the moon completes its own cycle in a month, waxing and decreasing and waning; the sun and those keeping pace with it, Phosphorus [Venus] and the one called after Hermes [Mercury], [complete it] in a year, Pyroeis [Mars] in twice the time of these, Zeus [Jupiter] in six times as much [i.e. 12 years], and finally the one named after Cronus [Saturn] in two and a half times as much as the one below it [i.e. 30 years].<sup>102</sup> A single harmony from all that sing and dance together in a chorus in the heaven comes from one beginning and tends towards one end,<sup>103</sup> giving the whole in a true sense the name 'order' [κόσμος] and not 'disorder' [ἄκοσμία].<sup>104</sup> Just as in a chorus, when the leader begins, the whole chorus of men, and sometimes also of women, join in singing, creating a single melodious harmony from a mixture of different voices, higher and lower, so it is also in the case of god who manages the universe. At the key-note [given] from above by him who might truly be called the chorus-leader, the stars and the whole heaven move continually and "the sun that lightens all"<sup>105</sup> travels his double journey, distinguishing day and night by rising and setting, and bringing the four seasons of the year, moving forwards to the north and back again to the south. There are rains in season and winds and dews and the events that take place in the atmosphere because of the first

νόσ, πορεύεται δὲ διττὰς πορείας ὁ παμφαῆς ἥλιος, τῇ μὲν  
 ἡμέραν καὶ νύκτα διορίζων ἀνατολῇ καὶ δύσει, τῇ δὲ τὰς  
 τέσσαρας ὥρας ἄγων τοῦ ἔτους, πρόσω τε βόρειος καὶ ὀπίσω  
 νότιος διεξέρπων. Γίνονται δὲ ὑετοὶ κατὰ καιρὸν καὶ ἄνεμοι  
 καὶ δρόσοι τὰ τε πάθη τὰ ἐν τῷ περιέχοντι συμβαίνοντα 25  
 διὰ τὴν πρώτην καὶ ἀρχέγονον αἰτίαν. Ἔπονται δὲ τούτοις  
 ποταμῶν ἐκροαί, θαλάσσης ἀνοιδήσεις, δένδρων ἐκφύσεις,  
 καρπῶν πεπάνσεις, γοναὶ ζώων, ἐκτροφαὶ τε πάντων καὶ  
 ἀκμαὶ καὶ φθίσεις, συμβαλλομένης πρὸς ταῦτα καὶ τῆς  
 ἐκάστου κατασκευῆς, ὡς ἔφην. Ὅταν οὖν ὁ πάντων ἡγεμῶν τε 30  
 καὶ γενέτωρ, ἀόρατος ὢν ἄλλῳ πλην λογισμῶ, σημήνη  
 πάση φύσει μεταξὺ οὐρανοῦ τε καὶ γῆς φερομένη, κινεῖται  
 πᾶσα ἐνδελεχῶς ἐν κύκλοις καὶ πέρασιν ἰδίοις, ποτὲ μὲν  
 ἀφανιζομένη, ποτὲ δὲ φαινομένη, μυρίας ἰδέας ἀναφαίνουσα  
 τε καὶ πάλιν ἀποκρύπτουσα ἐκ μιᾶς ἀρχῆς. Ἔοικε δὲ κο- 35  
 μιδῇ τὸ δρώμενον τοῖς ἐν πολέμου καιροῖς μάλιστα γινομέ-  
 νοις, ἐπειδὴν ἢ σάλπιγξ σημήνη τῷ στρατοπέδῳ τότε γὰρ  
 τῆς φωνῆς ἕκαστος ἀκούσας ὁ μὲν ἀσπίδα ἀναρῆται, ὁ δὲ  
 θώρακα ἐνδύεται, ὁ δὲ κνημίδας ἢ κράνος ἢ ζωστήρα περιτί-  
 θεται· καὶ ὁ μὲν ἵππον χαλινοῖ, ὁ δὲ συνωρίδα ἀναβαίνει, 5  
 ὁ δὲ σύνθημα παρεγγυᾷ· καθίσταται δὲ εὐθέως ὁ μὲν λο-  
 χαγὸς εἰς λόχον, ὁ δὲ ταξίαρχος εἰς τάξιν, ὁ δὲ ἵππευς  
 ἐπὶ κέρας, ὁ δὲ ψιλὸς εἰς τὴν ἰδίαν ἐκτρέχει χώραν· πάντα  
 δὲ ὑφ' ἑνα σημάντορα δονεῖται κατὰ προστάξιν τοῦ τὸ κράτος  
 ἔχοντος ἡγεμόνος. Οὕτω χρῆ καὶ περὶ τοῦ σύμπαντος φρονεῖν· 10  
 ὑπὸ γὰρ μιᾶς ὁροπῆς ὀτρυνομένων ἀπάντων γίνεται τὰ οἰκεῖα,  
 καὶ ταύτης ἀοράτου καὶ ἀφανοῦς. Ὅπερ οὐδαμῶς ἐστὶν ἐμπό-  
 διον οὔτε ἐκεῖνη πρὸς τὸ δρᾶν οὔτε ἡμῖν πρὸς τὸ πιστεῦσαι·  
 καὶ γὰρ ἡ ψυχὴ, δι' ἣν ζῶμέν τε καὶ οἴκους καὶ πόλεις  
 ἔχομεν, ἀόρατος οὔσα τοῖς ἔργοις αὐτῆς ὁράται· πᾶς γὰρ 15  
 ὁ τοῦ βίου διάκοσμος ὑπὸ ταύτης εὐρηταὶ καὶ διατέτακται  
 καὶ συνέχεται, γῆς ἀρόσεις καὶ φυτεύσεις, τέχνης ἐπίνοιαί,  
 χρήσεις νόμων, κόσμος πολιτείας, ἐνδημοὶ πράξεις, ὑπερό-  
 ριος πόλεμος, εἰρήνη. Ταῦτα χρῆ καὶ περὶ θεοῦ διανοεῖσθαι,  
 δυνάμει μὲν ὄντος ἰσχυροτάτου, κάλλει δὲ εὐπρεπεστάτου, 20  
 ζωῇ δὲ ἀθανάτου, ἀρετῇ δὲ κρατίστου, διότι πάση θνητῇ  
 φύσει γενόμενος ἀθεώρητος ἀπ' αὐτῶν τῶν ἔργων θεωρεῖται.  
 Τὰ γὰρ πάθη, καὶ τὰ δι' ἀέρος ἅπαντα καὶ τὰ ἐπὶ γῆς  
 καὶ τὰ ἐν ὕδατι, θεοῦ λέγοιτ' ἂν ὄντως ἔργα εἶναι τοῦ τὸν  
 κόσμον ἐπέχοντος· ἐξ οὗ, κατὰ τὸν φυσικὸν Ἐμπεδοκλέα, 25

“πάνθ' ὅσα τ' ἦν ὅσα τ' ἔσθ' ὅσα τ' ἔσται ὀπίσω,

and original cause. These are followed by the flowing of rivers, the swelling of the sea, the growth of trees, the ripening of fruits, the birth of animals, the nurturing and flourishing and decaying of all things, while the constitution of each also contributes to these things, as I have said. When therefore the leader and begetter of all things, being invisible except to the power of reason, gives the signal to every entity that moves between heaven and earth, everything moves continuously within its own orbits and limits, at times disappearing, at times appearing, displaying and again concealing thousands of forms from a single origin. 399b What happens seems exactly like that which takes place, especially in times of war, when the trumpet gives the signal to the army; for then, when each person hears the sound, one picks up a shield, another puts on a breast-plate, still another attaches his greaves or helmet or belt; one bridles his horse, one mounts his chariot, one passes on the password;<sup>106</sup> the company-commander goes to his company, the regimental commander to his regiment,<sup>107</sup> the cavalryman to his squadron, and the lightly-armed soldier runs to his own station. All are put into motion by one signaller according to the order of the commander who has control. So should one also think about the universe: by a single impulse<sup>108</sup> the proper functions of all things are performed when these are stirred into action, although this impulse is unseen and invisible. This [sc. its invisibility] in no way presents an obstacle for it [sc. the impulse] to act nor for us to believe [in it]; for the soul, on account of which we live and have households and cities, although it is invisible, is seen through its deeds. For the whole orderly arrangement of life is discovered and arranged and maintained by it: the ploughing and planting of the earth, the inventions of art, the use of laws, the order of government, activities within a country, war in foreign regions, peace. This one should also think about god, who is strongest in power, fairest in beauty, immortal in life, outstanding in excellence; because, though he cannot be seen by any mortal being, he is seen from the works themselves.<sup>109</sup> For it could truly be said that all that take place in the air and on land and in water are the works of god who has power over the cosmos.<sup>110</sup> From him, according to the natural philosopher Empedocles, [comes]

all that was and that is and that will be afterwards;  
trees grow and men and women,  
wild animals and birds and fish nurtured in water.<sup>111</sup>

δένδρεά τ' ἐβλάστησε καὶ ἀνέρες ἠδὲ γυναῖκες  
θῆρες τ' οἰωνοὶ τε καὶ ὕδατοθρέμμονες ἰχθύς."

Ἔοικε δὲ ὄντως, εἰ καὶ μικρότερον παραβαλεῖν, ἢ τοῖς  
ὀμφαλοῖς λεγομένοις τοῖς ἐν ταῖς ψαλίσι [λίθοις], οἱ 30  
μέσοι κείμενοι κατὰ τὴν εἰς ἑκάτερον μέρος ἔνδесιν ἐν ἀρ-  
μονία τηροῦσι καὶ ἐν τάξει τὸ πᾶν σχῆμα τῆς ψαλίδος καὶ  
ἀκίνητον. Φασὶ δὲ καὶ τὸν ἀγαλματοποιὸν Φειδίαν κατα-  
σκευάζοντα τὴν ἐν ἀκροπόλει Ἀθηναίων ἐν μέσῃ τῇ ταύτης  
ἀσπίδι τὸ ἑαυτοῦ πρόσωπον ἐντυπώσασθαι, καὶ συνδῆσαι τῷ 35  
ἀγάλματι διὰ τινος ἀφανοῦς δημιουργίας, ὥστε ἐξ ἀνάγκης,  
εἴ τις βούλοιο αὐτὸ περιαιρεῖν, τὸ σύμπαν ἀγαλμα λυεῖν 400a  
τε καὶ συγχεῖν. Τοῦτον οὖν ἔχει τὸν λόγον ὁ θεὸς ἐν κόσμῳ,  
συνέχων τὴν τῶν ὄλων ἀρμονίαν τε καὶ σωτηρίαν, πλὴν οὔτε  
μέσος ὢν, ἐνθα ἢ γῆ τε καὶ ὁ θολερὸς τόπος οὗτος, ἀλλ' 5  
ἄνω καθαρὸς ἐν καθαρῷ χωρῷ βεβηκῶς, ὃν ἐτύμως καλοῦ-  
μεν οὐρανὸν μὲν ἀπὸ τοῦ ὄρον εἶναι τὸν ἄνω, Ὀλυμπον δὲ οἶον  
ὀλολαμπῆ τε καὶ παντὸς ζόφου καὶ ἀτάκτου κινήματος κε-  
χωρισμένον, οἷα γίνεται παρ' ἡμῖν διὰ χειμῶνος καὶ ἀνέ-  
μων βίας, ὥσπερ ἔφη καὶ ὁ ποιητής 10

“Ὀλυμπόνδ', ὅθι φασὶ θεῶν ἔδος ἀσφαλὲς αἰεὶ  
ἔμμεναι· οὐτ' ἀνέμοισι τινάσσεται οὔτε ποτ' ὄμβρῳ  
δεύεται, οὔτε χιῶν ἐπιπίλνεται, ἀλλὰ μάλ' αἰθρη  
πέπταται ἀνέφελος, λευκὴ δ' ἐπιδέδρομεν αἴγλη.”

συνεπιμαρτυρεῖ δὲ καὶ ὁ βίος ἅπας, τὴν ἄνω χώραν ἀπο- 15  
δοῦς θεῶν· καὶ γὰρ πάντες ἀνθρώποι ἀνατείνομεν τὰς χει-  
ρας εἰς τὸν οὐρανὸν εὐχὰς ποιούμενοι. Καθ' ὃν λόγον οὐ κακῶς  
κακῆϊνο ἀναπεφώνηται

“Ζεὺς δ' ἔλαχ' οὐρανὸν εὐρὺν ἐν αἰθέρι καὶ νεφέλησι.”

διὸ καὶ τῶν αἰσθητῶν τὰ τιμιώτατα τὸν αὐτὸν ἐπέχει τό- 20  
πον, ἄστρα τε καὶ ἥλιος καὶ σελήνη, μόνα τε τὰ οὐράνια  
διὰ τοῦτο αἰεὶ τὴν αὐτὴν σώζοντα τάξιν διακεκόσμηται, καὶ  
οὔποτε ἀλλοιωθέντα μετεκινήθη, καθάπερ τὰ ἐπὶ γῆς εὐ-  
τρεπτα ὄντα πολλὰς ἑτεροιώσεις καὶ πάθη ἀναδέδεκται·  
σεισμοὶ τε γὰρ ἤδη βίαιοι πολλὰ μέρη τῆς γῆς ἀνέρρηξαν, 25  
ὄμβροι τε κατέκλυσαν ἑξαίσιοι καταρραγέντες, ἐπιδρομαί  
τε κυμάτων καὶ ἀναχωρήσεις πολλακίς καὶ ἠπειρώσεις ἐθα-  
λάττωσαν καὶ θάλαττας ἠπειρώσαν, βιαί τε πνευμάτων  
καὶ τυφῶνων ἔστιν ὅτε πόλεις ὄλας ἀνέτρεψαν, πυρκαϊαί τε  
καὶ φλόγες αἰ μὲν ἐξ οὐρανοῦ γενόμεναι πρότερον, ὥσπερ 30

He truly resembles – even if it is a rather trivial comparison – the so-called keystones in vaults, which lie in the middle and by being bound to both sides keep the whole shape of the vault in harmony and in order and immovable. They say that the sculptor Phidias, when he was making the Athena on the Acropolis, also carved his own face in the middle of her shield and attached it 400a to the statue by means of a secret form of workmanship, so that, if someone would wish to remove it, he would inevitably break up and demolish the whole statue.<sup>112</sup> This is the relationship god then has to the cosmos, maintaining the harmony and preservation of the universe, except that he is not in the centre, where the earth is, this turbid place, but he is above, pure in a pure region, which we in truth call heaven [οὐρανός] because the area above is the limit [ὄρος ... ἄνω], and Olympus because it is shining all over [όλολαμπής]<sup>113</sup> and is removed from all gloom and disorderly motion, such as happens with us through the violence of storm and winds, as the poet also said:

To Olympus, where they say the dwelling-place of the gods is which is always safe. It is not shaken by winds, nor ever drenched by rain, nor does the snow come near, but a clear sky, completely cloudless, spreads out, and a white radiance extends over it.<sup>114</sup>

All of daily life also joins in attesting this, assigning the upper region to god; for all of us humans lift up our hands to heaven when we pray. For this reason the following has also not been badly formulated:

Zeus has been allotted the wide heaven in the ether and the clouds.<sup>115</sup>

Therefore the most honoured of perceptible things, that is, the stars and sun and moon, also occupy the same place, and because of this only the heavenly bodies have been so arranged that they always preserve the same order, and are never changed or altered, just as the things on earth, which easily change, accept many alterations and changes. For violent earthquakes have already broken open many parts of the earth; rainstorms dashing down have flooded it; inroads and withdrawals of waves have often turned mainland into seas and seas into mainland; violent winds and typhoons have sometimes overturned whole cities; conflagrations and flames coming from heaven once consumed the parts to the east, as they say, in the time of Phaëthon;<sup>116</sup> and others, gushing forth and bursting out of the earth, in the west, as when the

φασίν, ἐπὶ Φαέθοντος τὰ πρὸς ἕω μέρη κατέφλεξαν, αἱ  
 δὲ πρὸς ἑσπέραν ἐκ γῆς ἀναβλύσασαι καὶ ἐκφυσῆσασαι,  
 καθάπερ τῶν ἐν Αἴτνῃ κρατήρων ἀναρραγέντων καὶ ἀνά τὴν  
 γῆν φερομένων χειμάρρου δίκην. Ἐνθα καὶ τὸ τῶν εὐσεβῶν  
 γένος ἐξόχως ἐτίμησε τὸ δαιμόνιον· περικαταληφθέντων γὰρ  
 <αὐτῶν> ὑπὸ ἰ τοῦ ῥεύματος διὰ τὸ βαστάζειν γέροντας ἐπὶ τῶν  
 ὤμων γοινεῖς καὶ σώζειν, πλησίον [αὐτῶν] γενόμενος ὁ τοῦ  
 πυρὸς ἰ ποταμὸς ἐξεσχίσθη παρέτρεψέ τε τοῦ φλογμοῦ τὸ μὲν  
 ἔνθα, ἰ τὸ δὲ ἔνθα, καὶ ἐτήρησεν ἀβλαβεῖς ἅμα τοῖς γονεῦσι  
 τοὺς ἰ νεανίσκους. Καθόλου δὲ ὅπερ ἐν νηὶ μὲν κυβερνήτης, ἐν  
 ἄρματι δὲ ἡνίοχος, ἐν χορῶ δὲ κορυφαῖος, ἐν πόλει δὲ νό-  
 μος\*, ἐν στρατοπέδῳ δὲ ἡγεμών, τοῦτο θεὸς ἐν κόσμῳ, πλήν  
 καθ' ὅσον τοῖς μὲν καματηρὸν τὸ ἄρχειν πολυκίνητόν τε  
 καὶ ἰ πολυμέριμον, τῷ δὲ ἄλυπον ἄπονόν τε καὶ πάσης κε-  
 χωλρισμένον σωματικῆς ἀσθενείας· ἐν ἀκινήτῳ γὰρ ἰδρυμένος  
 δυνάμει πάντα κινεῖ καὶ περιάγει, ὅπου βούλεται καὶ ὅπως,  
 ἐν διαφόροις ἰδέαις τε καὶ φύσεσιν, ὥσπερ ἀμέλει καὶ ὁ  
 τῆς ἰ πόλεως νόμος ἀκίνητος ὢν ἐν ταῖς τῶν χρωμένων ψυχαῖς  
 πάντα οἰκονομεῖ τὰ κατὰ τὴν πολιτείαν· ἐφεπόμενοι γὰρ  
 αὐτῷ δηλονότι ἐξίασιν ἄρχοντες μὲν ἐπὶ τὰ ἀρχεῖα, θε-  
 σμοθέται δὲ εἰς τὰ οἰκεῖα δικαστήρια, βουλευταὶ δὲ καὶ ἐκ-  
 κλησιασταὶ εἰς συνέδρια τὰ προσήκοντα, καὶ ὁ μὲν τις εἰς  
 τὸ πρυτανεῖον βαδίζει σιτησόμενος, ὁ δὲ πρὸς τοὺς δικαστὰς  
 ἀπολογησόμενος, ὁ δὲ εἰς τὸ δεσποτήριον ἀποθανούμενος.  
 Γίνονται δὲ καὶ δημοθoinαὶ νόμμοι καὶ πανηγύρεις ἐνιαύ-  
 σιοι θεῶν τε θυσίαι καὶ ἡρώων θεραπείαι καὶ χοαὶ κεκτη-  
 κότων· ἄλλα δὲ ἄλλως ἐνεργούμενα κατὰ μίαν πρόσταξιν ἢ  
 νόμιμον ἐξουσίαν σώζει τὸ τοῦ ποιήσαντος ὄντως ὅτι

“πόλις δ’ ὁμοῦ μὲν θυμιαμάτων γέμει,  
 ὁμοῦ δὲ παιάνων τε καὶ στεναγμάτων,”

οὕτως ὑποληπτέον καὶ ἐπὶ τῆς μείζονος πόλεως, λέγω  
 δὲ ἰ τοῦ κόσμου νόμος γὰρ ἡμῖν ἰσοκλινῆς ὁ θεός, οὐδε-  
 μίαν ἐπιδεχόμενος διόρθωσιν ἢ μετάθεσιν, κρείττων δέ,  
 οἶμαι, καὶ βεβαιότερος τῶν ἐν ταῖς κύρβεσιν ἀναγεγραμ-  
 μένων. Ἦγουμένου δὲ ἀκινήτως αὐτοῦ καὶ ἐμμελῶς ὁ σύμ-  
 πας οἰκονομεῖται διάκοσμος οὐρανοῦ καὶ γῆς, μεμερισμένος  
 κατὰ τὰς φύσεις πάσας διὰ τῶν οἰκειῶν σπερμάτων εἰς τε  
 φυτὰ καὶ ζῶα κατὰ γένη τε καὶ εἶδη· καὶ γὰρ ἄμ-  
 πελοι καὶ φοίνικες καὶ περσέαι

“σुकέαι τε γλυκεραὶ καὶ ἰ ἐλαῖαι,”

craters in Etna erupted and were carried over the earth like a torrent. Here, too, 400b the deity especially honoured the family of pious men; for when they were overtaken by the stream [of lava], because they were carrying their old parents on their shoulders and keeping them safe, the river of fire, when it came near, was split up and diverted a part of the lava to one side and a part to the other side, and it kept the young men unharmed, together with their parents.<sup>117</sup>

400b6 And in general, what the helmsman is on a ship, and the driver in a chariot, and the leader in a chorus, and the law<sup>118</sup> in a city, and a commander in an army,<sup>119</sup> this god is in the cosmos, except as so far that for them to command is exhausting, restless and full of care, but for him it is without pain, without toil and removed from all physical weakness. For he, established in the immovable, moves all things with power and leads them around, where and how he wills, in different forms and natures, just as, for instance, the law of the city, being immovable in the souls of those who use it, administers all things in public life. For it is clear that in obedience to the law the chief magistrates [archons] go to their offices, the junior magistrates to the appropriate courts, and the councillors and members of the assembly to their respective meeting-places; one man walks to the prytaneum [town-hall] to eat,<sup>120</sup> another to the courts to defend himself, still another to prison to die. Ordained by law there are also public feasts and annual festivals, sacrifices to the gods, cults of heroes, libations to the deceased. Many other different activities performed according to a single ordinance or authority based on the law truly preserve the words of the poet:

The city is filled with incenses,  
with chants as well as moans.<sup>121</sup>

So we must also think about the greater city, I mean about the cosmos: for god is an evenly-balanced law to us, admitting no correction or change, but stronger, I think, and surer than those inscribed on the triangular tablets.<sup>122</sup> When he leads in an unmoved and harmonious manner, the whole orderly arrangement of heaven and earth is administered, distributed to all things through their own seeds, and to plants and animals according to genus and species; for vines, 401a palms and perseas,<sup>123</sup>

sweet fig trees and olive trees,<sup>124</sup>

as the poet says; and those that have no fruit but provide other services, planes and pines and box-trees,

alders, black poplar and sweet-smelling cypress;<sup>125</sup>



ὡς φησιν ὁ ποιητής, τά τε ἄκαρπα μὲν, ἄλλας δὲ ἢ παρ-  
εχόμενα χρείας, πλάτανοι καὶ πίτυες καὶ πύξοι

“κλήθρη τ’ αἰγειρός τε καὶ εὐώδης κυπάρισσος,”

αἶ τε καρπὸν ὀπώρας ἠδὺν ἄλλως δὲ δυσθησαύριστον φέ- 5  
ρουσαι,

“ὄχναι καὶ ῥοιαὶ καὶ μηλέαι ἀγλαόκαρποι,”

τῶν τε ζώων τά τε ἄγρια καὶ ἡμέρα, τά τε ἐν ἀέρι καὶ  
ἐπὶ γῆς καὶ ἐν ὕδατι βοσκόμενα, γίνεται καὶ ἀκμάζει καὶ  
φθείρεται τοῖς τοῦ θεοῦ πειθόμενα θεσμοῖς· “πᾶν γὰρ ἐρπετὸν 10  
πληγῇ νέμεται,” ὡς φησιν Ἡράκλειτος.

7. Εἷς δὲ ὢν πολυώνυμος ἔστι, κατονομαζόμενος τοῖς πά-  
θεσι πᾶσιν ἄπερ αὐτὸς νεοχμοῖ. Καλοῦμεν γὰρ αὐτὸν καὶ  
Ζῆνα καὶ Δία, παραλλήλως χρώμενοι τοῖς ὀνόμασιν, ὡς  
κἂν εἰ λέγοιμεν δι’ ὄν ζῶμεν. Κρόνου δὲ παῖς καὶ χρόνου 15  
λέγεται, διήκων ἐξ αἰῶνος ἀτέρμονος εἰς ἕτερον αἰῶνα· ἀστρα-  
παῖός τε καὶ βρονταῖός καὶ αἰθήριος καὶ αἰθέριος κεραυνίος  
τε καὶ ὑέτιος ἀπὸ τῶν ὑετῶν καὶ κεραυνῶν καὶ τῶν ἄλλων  
καλεῖται. Καὶ μὴν ἐπικάρπιος μὲν ἀπὸ τῶν καρπῶν, πο-  
λιεύς δὲ ἀπὸ τῶν πόλεων ὀνομάζεται, γενέθλιός τε καὶ ἐρ- 20  
κεῖος καὶ ὀμόγνιος καὶ πατρῷος ἀπὸ τῆς πρὸς ταῦτα κοινω-  
νίας, ἔταιρειός τε καὶ φίλιος καὶ ξένιος καὶ στρατίος καὶ  
τροπαιοῦχος καθάρσιός τε καὶ παλαμναῖος καὶ ἰκέσιος καὶ  
μειλίχιος, ὥσπερ οἱ ποιηταὶ λέγουσι, σωτήρ τε καὶ ἐλευ-  
θέριος ἐτύμως, ὡς δὲ τὸ πᾶν εἰπεῖν, οὐράνιος τε καὶ χθόνιος, 25  
πάσης ἐπώνυμος φύσεως ὢν καὶ τύχης, ἅτε πάντων αὐ-  
τὸς αἴτιος ὢν. Διὸ καὶ ἐν τοῖς Ὀρφικοῖς οὐ κακῶς λέγεται

“Ζεὺς πρῶτος γένετο, Ζεὺς ὕστατος ἀρχικέρανος·

Ζεὺς κεφαλή, Ζεὺς μέσσα, Διὸς δ’ ἐκ πάντα τέτυκται·

Ζεὺς πυθμὴν γαίης τε καὶ οὐρανοῦ ἀστερόεντος· 401b

Ζεὺς ἄρσην γένετο, Ζεὺς ἄμβροτος ἔπλετο νύμφη·

Ζεὺς πνοιὴ πάντων, Ζεὺς ἀκαμάτου πυρὸς ὀρμῆ·

Ζεὺς πόντου ῥίζα, Ζεὺς ἥλιος ἠδὲ σελήνη·

Ζεὺς βασιλεύς, Ζεὺς ἀρχὸς ἀπάντων ἀρχικέρανος· 5

πάντας γὰρ κρύψας αὐθις φάος ἐς πολυγηθῆς

ἐκ καθαρῆς κραδῆς ἀνενέγκατο, μέρμερα ρέζων.”

and those which in autumn bear fruit that is sweet, but otherwise difficult to store,

pear-trees, pomegranate-trees and apple-trees with shining fruit;<sup>126</sup> and animals, wild and tame, nurtured in the air and on land and in water – all these come into being and flourish and are destroyed, obedient to the laws of god. “For every animal is driven to pasture by a blow”, as Heraclitus says.<sup>127</sup>

#### *God's names and functions*

7. (401a12) Though he [sc. god] is one, he has many names,<sup>128</sup> named for all the effects which he himself initiates. For we call him both Zena and Dia, using the names without distinction,<sup>129</sup> as if we would say “because of whom [δι’ ὅν] we live [ζῶμεν]”.<sup>130</sup> He is called Son of Cronus, that is, of Time [Chronos], because he extends from an endless age to another age. He is also called God of Lightning and of Thunder, God of Air and of Ether, God of Thunderbolt and of Rain – after rain-showers and thunderbolts and the other things. He is furthermore named Fruit-Bringer after fruits, Guardian of the City after cities, God of the Family and of the Household, God of the Race and of Parents, after his association with these things; God of Fellowship and of Friendship and Hospitality, of War and of Trophies, of Purification and of Vengeance, of Supplication and of Propitiation, as the poets say, and truly Preserver and Deliverer; to sum up, he is God of Heaven and of Earth, because he is named after every nature and fortune, since he himself is the cause of all things. Therefore it is also rightly said in the Orphic poems.<sup>131</sup>

Zeus was born first, Zeus is last, ruler of the thunderbolt;<sup>132</sup>  
 Zeus is the head, Zeus the middle; from Zeus all things are made;  
 401b Zeus is the foundation of earth and of starry heaven;  
 Zeus is a man, Zeus is an immortal maiden;  
 Zeus is the breath of all things, Zeus is the rush of tireless fire;  
 Zeus is the root of the sea, Zeus is the sun and moon;  
 Zeus is king, Zeus is ruler of all, ruler of the thunderbolt.  
 For having hidden all humans, again to the joyous light  
 he brought them up from his pure heart,<sup>133</sup> accomplishing baneful  
 things.

οἶμαι δὲ καὶ τὴν Ἀνάγκην οὐκ ἄλλο τι λέγεσθαι πλὴν τοῦ-  
 τον, οἷον εἰ ἀνίκητον αἰτίαν ὄντα, Εἰμαρμένην δὲ διὰ τὸ εἶρειν  
 τε καὶ χωρεῖν ἀκωλύτως, Πεπωμένην δὲ διὰ τὸ πεπερα- 10  
 τῶσθαι πάντα καὶ μηδὲν ἐν τοῖς οὖσιν ἄπειρον εἶναι, καὶ  
 Μοῖραν μὲν ἀπὸ τοῦ μεμερίσθαι, Νέμεσιν δὲ ἀπὸ τῆς ἐκάστω  
 διανεμήσεως, Ἀδράστειαν δὲ ἀναπόδραστον αἰτίαν οὔσαν  
 κατὰ φύσιν, Αἴσαν δὲ αἰεὶ οὔσαν. Τὰ τε περὶ τὰς Μοίρας 15  
 καὶ τὸν ἄτρακτον εἰς ταῦτό πως νεύει· τρεῖς μὲν γὰρ αἱ Μοῖ-  
 ραι, κατὰ τοὺς χρόνους μεμερισμένοι, νῆμα δὲ ἀτράκτου τὸ  
 μὲν ἐξειργασμένον, τὸ δὲ μέλλον, τὸ δὲ περιστρεφόμενον·  
 τέτακται δὲ κατὰ μὲν τὸ γεγονὸς μία τῶν Μοιρῶν, Ἄτρο-  
 πος, ἐπεὶ τὰ παρελθόντα πάντα ἄτρεπτά ἐστι, κατὰ δὲ τὸ 20  
 μέλλον Λάχεσις—εἰς πάντα γὰρ ἢ κατὰ φύσιν μένει λη-  
 ξις—κατὰ δὲ τὸ ἐνεστώς Κλωθῶ, συμπεραίνουσά τε  
 καὶ κλώθουσα ἐκάστω τὰ οἰκεῖα. Περαιίνεται δὲ καὶ ὁ μῦθος οὐκ  
 ἀτάκτως. Ταῦτα δὲ πάντα ἐστὶν οὐκ ἄλλο τι πλὴν ὁ θεός,  
 καθάπερ καὶ ὁ γενναῖος Πλάτων φησὶν· “ὁ μὲν δὴ θεός,  
 ὥσπερ ὁ παλαιὸς λόγος, ἀρχὴν τε καὶ τελευτὴν καὶ μέσα 25  
 τῶν ὄντων ἀπάντων ἔχων, εὐθείᾳ περαίνει κατὰ φύσιν πο-  
 ρευόμενος· τῷ δὲ αἰεὶ ξυνέπεται δίκη, τῶν ἀπολειπομένων  
 τοῦ θεοῦ νόμου τιμωρός”, “ἧς ὁ γενήσεσθαι μέλλων μακά-  
 ριός τε καὶ εὐδαίμων ἐξ ἀρχῆς εὐθύς μέτοχος εἶη.”

I also think that Necessity [Ἀνάγκη] means nothing else than him, as being an unconquerable [ἀνίκητος] cause; and Destiny [Εἰμαρμένη], because he strings together [εἴρειν] and advances unhindered; Fate [Πεπωμένη] because all things are limited [πεπερατώσθαι] and nothing that exists is infinite; Lot [Μοῖρα], from the fact that things are allotted [μεμερίσθαι]; Retribution [Νέμεσις], from the distribution [διανέμησις] to each; Inevitable [Ἀδράστεια], being an inescapable cause [ἀναπόδραστος αἰτία] by nature; Dispenser [Αἴσα], [a cause] that always exists [ἀεὶ οὖσα]. The things [they tell] about the Fates [Moirai] and the spindle somehow point in the same direction: there are three Fates, distinguished according to times, and part of the yarn on the spindle has been completed, part is still to come, and part is being spun.<sup>134</sup> One of the Fates, Atropos [Ἄτροπος = Inflexible], is assigned to the past, because all things that have passed are unchangeable [ἀτρεπτα]; Lachesis [Λάχεσις = Disposer] to the future, for an allotment [λήξις] by nature awaits all things; Klotho [Κλωθώ = Spinster] to the present, deciding and spinning [κλώθειν] for each person what is his.<sup>135</sup>

So also the story reaches its well-ordered end.<sup>136</sup>

401b23 All these things are nothing else but god, as the noble Plato also says: “God, as the ancient story tells, holding the beginning and the end and the middle of all things that exist,<sup>137</sup> brings them to an end, travelling with a straight path according to nature. Justice always accompanies him,<sup>138</sup> as avenger on those who fall short of the divine law.” “May he who intends to be blessed and happy<sup>139</sup> have a share in it [sc. Justice] right from the beginning.”<sup>140</sup>

## Notes on the Translation

- \* The asterisk in the Greek text refers to the list of textual variants found at the end of the Introduction.
- 1 The title appears to be based on the titles of Stoic texts; see MANSFELD 1992.
  - 2 The antecedent could be ‘contemplation’ (θέαν) or ‘truth’ (ἀλήθειαν).
  - 3 The giants Otus and Ephialtes wanted to pile the mountains of Olympus, Ossa, and Pelion on top of one another and storm heaven (Hom. *Od.* 11.313–16).
  - 4 Cf. Pl. *Phdr.* 247c: ψυχῆς κυβερνήτη μόνω θεατῆ νῶ. See on this passage STROHM 1970, 275.
  - 5 This is a reference to the topos of the heavenly journey of the soul; see JONES 1926; FESTUGIÈRE 1946; id. 1949, 441–58; COURCELLE 1972; KOLLER 1973. For the Platonic background of this passage see STROHM 1970, 265, 274–5; MANSFELD 1992, 410 n. 63.
  - 6 The phrase τὸ τῆς ψυχῆς ὄμμα (“the eye of the soul”) occurs for the first time in Pl. *Resp.* 533d2, while the phrase τὸ θεῖον ὄμμα (“the divine eye”) is first used by the Neoplatonists (cf. Porph. *VP* 10.29; Iambl. *VP* 16.70). The combination “the divine eye of the soul” is only found here. For the role of a divine aspect of the soul in enabling humans to understand vastly divergent phenomena in nature, cf. [Pl.] *Ax.* 370c; Phil. *Det.* 87–90.
  - 7 STROHM 1970, 239, 276 translates “offenbaren” (“reveal”), but this is an unusual meaning for προφητεύω.
  - 8 A mountain range in central Greece next to Mount Olympus.
  - 9 A city in Cappadocia, already mentioned by Theophrastus (fr. 159.1.65) and Megasthenes (fr. 21.16).
  - 10 A cave in Mount Parnassus, above Delphi. It was sacred to the Nymphs, the Muses and Pan.
  - 11 The Greek has a pun on the words ‘much’ (μέγα) and ‘little’ (μικρός).
  - 12 The word θεολογέω is first attested in Arist. *Metaph.* 983b29, but there it denotes an attempt to describe the cosmos in terms of mythology. Here it refers to discourse about the nature, position, and movement of ‘the greatest things’ in the cosmos, ultimately including god’s role in sustaining the cosmos; see *Mund.* 391b10–12 and esp. chs. 5–7. In *Metaph.* 1026a15–32 and 1064a28–b3 Aristotle uses the neologism θεολογική for the theoretical science dealing with the first and most fundamental principle, which is divine. He calls this science the ‘primary philosophy’. ‘Theologize’ is used in this sense, i.e. discussing the relationship between the divine principle and the cosmos. See also Thom’s essay on Cosmotheology.
  - 13 The dative φιλοσοφία can be understood in two ways: (a) It may be a second dative with πρέπειν (the first being σοι), in which case it denotes the subject of the infinitives ἐπινοεῖν and δεξιούσθαι (as in the translation given above; cf. also FURLEY 1955, ad loc.; STROHM 1970, ad loc.; FORSTER 1984, ad loc.; SCHÖNBERGER 2005, ad loc.). (b) The dative may be a dative of respect (“as regards philosophy”); cf. FORSTER 1914, ad loc.; TRICOT 1949, ad loc.; GOHLKE 1936, ad loc.; Bos 1991, 314; REALE / Bos 1995, ad loc.
  - 14 Bos 1991, 314–15 suggests “those whole excel through the gifts of philosophy”.
  - 15 Literally, ‘natures’ (φύσεων). In this translation φύσις is variously glossed as ‘being’, ‘entity’, ‘thing’, and ‘nature’.
  - 16 The same definition is found in Chrysippus *SVF* 2.527.1–3 *ap.* Arius Didymus fr. 31.1–2 (Diels, *Dox. Graec.* pp. 465–6), 2.529.3–4; Posidonius fr. 334 Theiler = 14

- Edelstein-Kidd *ap.* Diog. Laert. 7.138. There is indeed a significant similarity in contents between Arius Didymus fr. 31 and chs. 2–3 (beginning); see the Introduction, § 2.
- 17 Cf. also TRICOT 1949, ad loc. (“à cause de Dieu”). Others translate διὰ θεόν as direct or mediating agent; cf. FESTUGIÈRE 1949, 461 (“par Dieu”); FURLEY 1955, ad loc. (“through God”); STROHM 1970, ad loc. and SCHÖNBERGER 2005, ad loc. (“durch Gott”); Bos 1989, ad loc. (“deur toedoen van God”); REALE / Bos 1995, ad loc. (“in funzione di Dio”). Cf. also *Mund.* 397b14: ἐκ θεοῦ πάντα καὶ διὰ θεόν.
- 18 The Greek word κόσμος can also mean ‘order’.
- 19 φερέσβιος γῆ: the poetic form is γαῖα φερέσβιος; cf. *Hymn. Hom. Ap.* 341; Hes. *Theog.* 693; *Ap. Rhod. Argon.* 3.164, 4.1509.
- 20 The image of the choral dance of the heavens is again taken up in *Mund.* 399a12.
- 21 Aristotle made ether a fifth element, after earth, water, air, and fire. See Burri’s essay, n. 40. The etymology αἰεθεῖν is already found in Pl. *Cra.* 410b and in Arist. *Cael.* 270b22–3; the derivation from αἰθεροθαῖ is Stoic.
- 22 The reference is apparently to the variation in the orbits of individual planets. Cf. the translation of GOHLKE 1968, ad loc.; also Bos 1991, 316–17.
- 23 i.e. seven.
- 24 This is the so-called ‘Egyptian’ or ‘Pythagorean’ order of the planets; the other order used by ancient authors, the ‘Chaldean’, places Venus and Mercury after the sun. The origin of the names of the planets used here is uncertain: REALE / Bos 1995, 261–2 suggest that Aristotle introduced these “names of light” (“nomi di luce”) in contrast to the “divine names” (“nomi divini”) in his dialogue *Eudemus sive De anima*, but the names as a group are not otherwise attested before the 1st cent. BCE; see F. CUMONT, “Les noms des planètes et l’astrologie chez les Grecs”, *L’Antiquité classique* 4 (1935) 5–43.
- 25 In *Mund.* 395a29–b17 these phenomena are located in the air, not in the fiery element.
- 26 According to *Mund.* 395b9–10, some remain a long time, others are extinguished immediately.
- 27 Literally, “is itself also of a power liable to be influenced”. For the meaning of δύναμις in this context, see REALE / Bos 1995, 107, 183.
- 28 These phenomena are discussed in ch. 4 of *De mundo*.
- 29 Reading ἀνὰ γῆν ἐλιττομένοις with the mss., against Lorimer’s conjecture ἐν γῆ ἀναλισκομένοις (“expending themselves on land”); see LORIMER 1925, 75–8.
- 30 The term οἰκουμένη, literally the ‘inhabited world’, was coined by Herodotus, and referred to that part of the world that was known to be inhabited. This allows for the possibility that other parts of the world may be inhabited as well, even if they are unknown to us; see TALBERT 2004, 774; Burri’s essay, below pp. 97–98. The source of much of the details in ch. 3 regarding geography appears to be Eratosthenes, but our author probably used an intermediate source; see DIHLE 1997. Burri (below, pp. 105–106) suggests that the intermediate source may be Strabo.
- 31 Plato e.g. refers to the world of Atlantis at the other side of the Atlantic (*Ti.* 24e–25a), while Aristotle postulates an inhabitable region in the southern hemisphere analogous to that in the northern hemisphere (*Mete.* 2.5). Strabo (b. c. 64 BCE) 1.4.6, 2.5 also allows for other inhabited worlds beyond the one known to them.
- 32 For a discussion of this difficult passage, see Burri’s essay, below p. 98–99.
- 33 The reference is to the heavenly bodies; cf. *Mund.* 391b15–17. See already Pl. *Ti.* 40a–b.
- 34 For these seven islands, see Burri’s essay, n. 63.
- 35 The Sea of Azov north-east of the Crimea; see I. VON BREDOW, “Maeotis”, *Brill’s New Pauly* 8 (2006) 121.
- 36 The Greek implies that the reference is to one gulf; but cf. FURLEY 1955, 358 n. b.

- 37 The 'Red Sea' is not identical with the present-day gulf of this name; it entailed more or less the north-western part of the Indian Ocean, including the Red Sea, Persian Gulf and Arabian Sea; see B. BRENTJES / H. TREIDLER, "Erythra thalatta", *Brill's New Pauly* 5 (2004) 55–6.
- 38 For this interpretation, see LORIMER 1925, 80 n. 3. "The two promontories are the land between the Nile and the Red Sea, and that between the Tanais and the Caspian" (FURLEY 1955, 359 n. d). Burri, in her essay, n. 71, suggests that the text be emended to θάτερον ... πέρας ("other side").
- 39 Literally, "Hyrceanian and Caspian Sea". Again, the reference is to a single sea, namely the Caspian Sea. This description differs in two respects from Aristotle's descriptions elsewhere: according to Aristotle the Caspian Sea and the Hyrcanian Sea are two distinct inner seas (*Mete.* 2.1, 354a2–5), while *De mundo* describes it as one sea, or rather gulf, with a direct connection to Oceanus. The latter view is probably based on Eratosthenes. See MORAUX 1984, 17–19; DIHLE 1997, 8.
- 40 The Bay of Biscay. See also Burri's essay, n. 73.
- 41 Britain and Ireland.
- 42 This was the most common name for Sri Lanka from the time of Onesicritus (380/375–305/300 BCE) and Megasthenes (c. 350–290 BCE); cf. Strabo 15.1.14–5; Plin. *HN* 6.24.81; K. KARTTUNEN, "Taprobane", *Brill's New Pauly* 14 (2009) 136–7.
- 43 An unidentified island. For modern proposals, see FURLEY 1955, 360 n. a; REALE / BOS 1995, 276–7 n. 100. STROHM 1970, 293 considers it to be fictional. See also Burri's essay, n. 75.
- 44 A stade is c. 192 m. According to this measuring, the inhabited world was therefore c. 7,500 km wide and c. 13,400 km long. The source for these measurements is disputed. Posidonius gave the length of the inhabited world as 70,000 stades (*ap.* Strabo 2.3.6), but does not give the breadth; Eratosthenes gave the width as 38,000 stades, but a length of over 70,000. Artemidorus (fl. c. 100 BCE), on the other hand, suggested measurements similar to that of *De mundo* (*ap.* Plin. *HN* 2.112.242–3); see ZELLER 1919–23, 3.1:666 n. 1. For a discussion of these measurements, see Burri's essay, below p. 103 with n. 77.
- 45 The Don.
- 46 Here and below the author refers to two different theories of the divisions between the continents, the 'isthmus theory' and the 'river theory', although he seems to prefer the former; see MORAUX 1984, 19–20; also DIHLE 1997, 10; Burri's essay, below p. 104.
- 47 For an outline of the treatment of the phenomena in *De mundo* see FESTUGIÈRE 1949, 465–7; STROHM 1953, 278–9; 1970, 296–7; REALE / BOS 1995, 65–8.
- 48 The doctrine of two exhalations is characteristically Aristotelian; cf. Arist. *Mete.* 1.4–12. The sequence of the discussion in *De mundo* and some of the details, however, argue for Theophrastus as source rather than Aristotle; see STROHM 1953.
- 49 Cf. STROHM 1970, ad loc. ("Glutwinde"). See however *LSJ* s.v. πρηστήρ ("hurricane or waterspout attended with lightning"); also FURLEY 1955, 368 n. a: "Phenomena with wind and those connected with thunder and lightning are not clearly distinguished in Greek" (citing Arist. *Mete.* 371a15). FURLEY 1955, ad loc. and FORSTER 1984, ad loc. translate here with "fiery bolts".
- 50 The winds are systematized in terms of a wind rose:
1. Easterly winds (Euri)
    - a. East-north-east: Caecias
    - b. East: Apeliotes
    - c. East-south-east: Eurus
  2. Westerly winds (Zephyri)
    - a. West-north-west: Argestes (also Olympias or Iapyx)
    - b. West: Zephyr
    - c. West-south-west: Lips

3. Northerly winds (Boreae)
  - a. North-north-east: Boreas
  - b. North: Aparctias
  - c. North-north-west: Thrascias
4. Southerly winds
  - a. South: Notus (Noti)
  - b. South-south-east: Euronotus
  - c. South-south-west: Libonotus (or Libophoenix)

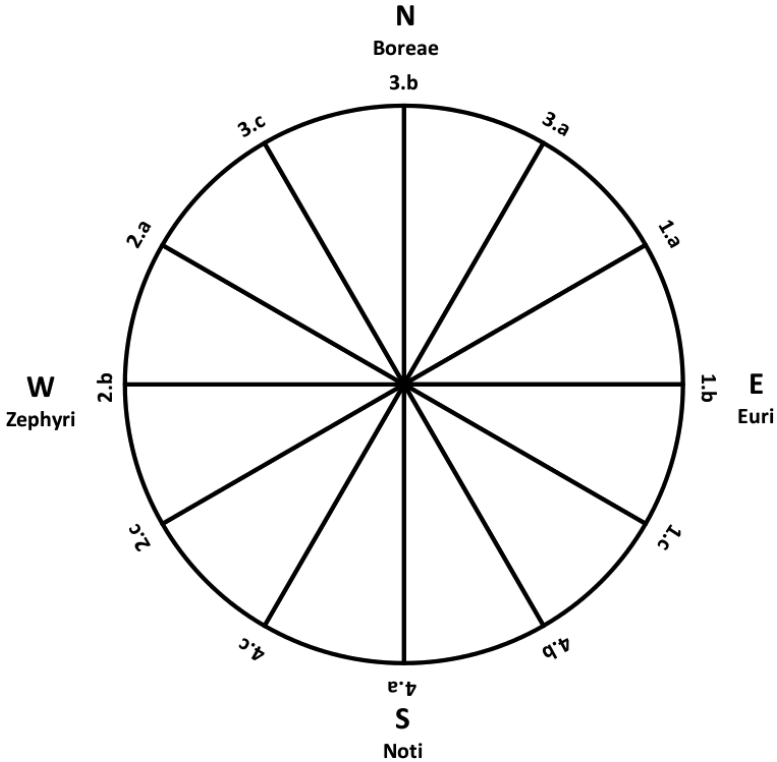


Figure 1: Wind rose

For a comparison of terminology for these winds between Aristotle's *Meteorology*, Theophrastus's *On the Winds*, and *De mundo*, see REALE / BOS 1995, 289.

- 51 i.e. north-east.
- 52 i.e. the east.
- 53 i.e. south-east.
- 54 i.e. north-west.
- 55 i.e. the west.
- 56 i.e. south-west.
- 57 The South Pole.
- 58 Cf. Arist. *Mete.* 371a15–18: "When the wind that is drawn down catches fire – which happens when it is finer in texture – it is called a firewind; for its conflagration sets on



- fire and so colours the neighbouring air" (trans. H. D. P. LEE, *Aristotle. Meteorologica*. Loeb Classical Library [Cambridge MA 1952]).
- 59 Thus FURLEY 1955, ad loc.; cf. also STROHM 1970, ad loc.
- 60 Thus FURLEY 1955, ad loc. σιηπτός is normally translated "thunderbolt", but we find here a word-play with κατασκήπτω, "fall upon".
- 61 The word κεραυνός has previously been translated as "thunderbolt", but the context here seems to require "lightning".
- 62 Literally, "exist in appearance". STROHM 1970, ad loc. translates "Spiegelungen".
- 63 Probably a streak of light; cf. FORSTER 1914, ad loc.
- 64 Thus LSJ s.v. σέλας.
- 65 In *Mund.* 392b2–5 these phenomena are located in the fiery element.
- 66 Literally, "the fixedness".
- 67 A kind of meteor; cf. LSJ s.v. δοκός II; Plin. *HN* 2.26.96; Hesychius s.v. δοκοί.
- 68 See also LSJ s.v. τιθίας, 'jar-shaped comet'; Sen. *Q Nat.* 1.14.
- 69 Cf. Arist. *Mete.* 342a36.
- 70 One of the Aeolian Islands.
- 71 A group of seven volcanic islands north-east of Sicily.
- 72 According to an ancient theory, the Pythia at Delphi was put in a trance by vapours escaping from chasms in the earth; cf. Plut. *De def. or.* 432d–437d.
- 73 In western Boeotia, the site of the oracle of Trophonius.
- 74 The Ploutonion cave in Hierapolis, whose air was noxious; cf. Strabo 13.4.14.
- 75 Disregarding Lorimer's exclusion of ἐξόδου.
- 76 Cf. TRICOT 1949, ad loc.: "obliques"; STROHM 1970, ad loc.: "Neigungsbeben"; REALE / Bos 1995, ad loc.: "inclinanti". FORSTER 1984, ad loc. and FURLEY 1955, ad loc. translate "horizontal".
- 77 See fig. 2 for a diagram of the various types of earthquakes; this is based on STROHM 1970, 320. See also the classification by LORIMER 1925, 135–6.

Above the earth

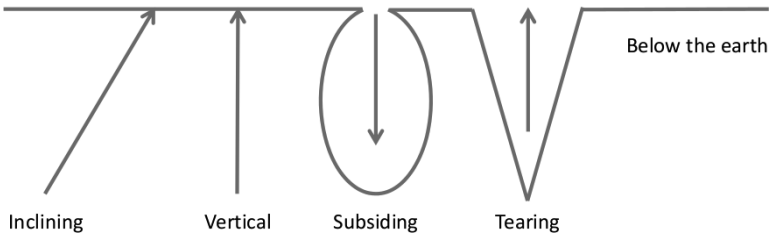


Figure 2

- 78 The meaning of the hapax legomenon συσσωματοποιέω is problematic. LSJ s.v. gives 'incorporate, amalgamate', but this is unsatisfactory. Most translations vary between 'condense' (cf. FURLEY 1955, ad loc.: "are recondensed"; FORSTER 1984, ad loc.: "are materialized"; SCHÖNBERGER 2005, ad loc.: "kondensieren"; also TRICOT 1949, ad loc.: "reçoivent une consistance corporelle") and 'strengthen' (STROHM 1970, ad loc.: "werden ... in ihrer Substanz verstärkt"; Bos 1989, ad loc.: "vergroten ... hun kracht"; REALE / Bos 1995, ad loc.: "vengono rafforzati"). For the conceptualisation underlying this sentence (although expressed differently) cf. Arist. *Mete.* 349b20–25.
- 79 Two cities in Achaëa destroyed by an earthquake and tidal wave in 373 BCE. Bura was on a hill, c. 40 stades from the sea. See Y. LAFOND, "Bura", *Brill's New Pauly* 2 (2003) 824; id., "Helice [1]", *Brill's New Pauly* 6 (2005) 69.

- 80 i.e. vowels and consonants.
- 81 Heraclitus *DK* 22 B 10.
- 82 διακοσμέω in the sense of arranging the cosmos, frequently used in *De mundo*, goes back to Plato; cf. e.g. *Ti.* 24c, 53a, 69c; *Phd.* 97c (ascribed to Anaxagoras), 98c; *Cri.* 113e; *Phdr.* 246e; etc.
- 83 The notion of a divine power pervading all things is especially found in Stoic authors; cf. *SVF* 1.158, 161, 533, 537.12–13; 2.323a, 442, 473, 946, 1040; 3.4, etc. For a discussion see THOM 2005, 87–8.
- 84 γενετήρ. According to *Mund.* 397b21–2 god is the ‘begetter’ (γενέτωρ) of all things in the cosmos.
- 85 Cf. *Pl. Ti.* 29a.
- 86 Meaning ‘order’. The author is playing on the words κεκοσμηθαι (‘to be ordered’) and κόσμος (‘order, cosmos’).
- 87 See *Mund.* 395b26.
- 88 Both Plato and Aristotle emphasised the importance of tradition; see ΣΤΡΟΗΜ 1970, 334.
- 89 Cf. Thales *DK* 11 A 22 *ap.* Arist. *De an.* 411a7–8; also *Pl. Leg.* 899b.
- 90 γενέτωρ. Plato (*Ti.* 28c) uses the expression ποιητής καὶ πατήρ (‘maker and father’) instead.
- 91 Literally, “a self-working and laborious creature”, i.e. a creature not having others to do the work.
- 92 Hom. *Il.* 1.499, 5.754, 8.3. A. P. Bos, “Greek Philosophical Theology and *De mundo*”, in: T. G. SINNIGE (ed.), *On and Off the Beaten Track. Studies in the History of Platonism* (Nijmegen 1985) [1–30] 24–5 contends that this is an allusion to *Il.* 8.1–27, where Zeus manages to pull all the gods, together with the sea and earth, upwards with a golden chain, which he attaches to one of the pinnacles of Mount Olympus.
- 93 The verbs δῆκω and φοιτᾶω are commonly used in Stoic texts to describe the pervasive activity of the divine principle; cf. the texts cited in n. 83.
- 94 i.e. without the assistance of servants or slaves; cf. *Mund.* 397b22. FURLEY 1955, 387 n. a points out that “the ‘power’ has here become identified with god”, which is inconsistent with *Mund.* 397b19; cf. also 398b8.
- 95 The King of Persia. For the comparison, see REGEN 1971, 28–32; 1972. We find similar comparisons in e.g. *Opif.* 71, 88; *Spec.* 1.18; *Decal.* 61; *Somm.* 1.140–1; *Max. Tyr.* 11.12. MAGUIRE 1939, 150 observes that there is a disjunction between god who has no need of any assistance and the Persian king who is surrounded by a multitude of attendants; cf. also POHLENZ 1965, 380; REGEN 1971, 29. The comparison only emphasises the extreme separation between god and the world; it should not be interpreted allegorically. See n. 97 below.
- 96 An alloy of gold and silver.
- 97 i.e. the King “saw and heard” by proxy of these officials. The formulation may be an allusion to Hom. *Od.* 11.109 (Helios, the sun, who hears and sees everything), but it was a common philosophical topos; cf. Xen. *Mem.* 1.4.18; *Pl. Leg.* 901d. There were however also officials in the Persian empire known as the “eyes and the ears” of the king; see Xen. *Cyr.* 8.2.10. FESTUGIÈRE 1949, 479 interprets the symbolism of the King’s attendants and assistants as a reference to lesser gods (the celestial bodies). Such an interpretation is indeed found in other contemporary texts; in Philo, *Somm.* 1.140–1 the attendants are interpreted as *daimones*; in *Max. Tyr.* 11.12 as other visible and invisible deities. Such an allegorical interpretation is however not supported by the context here; lesser gods have no function within the cosmotheology of *De mundo*, because god has no need of the ‘help of many hands’ (πολυχειρία; *Mund.* 398b10–16); see ΣΤΡΟΗΜ 1952, 164; REGEN 1971, 29. See further the discussion in the essay below on Cosmotheology.

- 98 Reading *φουκτωρίων* here with *Vind.* 8 and FURLEY 1955, ad loc. instead of the manuscripts' *φουκτωρίων* or Lorimer's *φουκτωρ[ι]ών*. For the problem with the manuscript reading see the discussion in LORIMER 1925, 94–5.
- 99 Following REALE / Bos 1995, ad loc. in reading *μεγαλότεχνοι* with most manuscripts. FURLEY 1955, ad loc. reads *μηχανοποιοί*, while LORIMER 1933, ad loc. has *μηχανοτέχνα*. The word may be corrupt (see the discussion in LORIMER 1925, 61–3), but the meaning is clear.
- 100 There is again a reference to “key-note” in *Mund.* 399a19.
- 101 This comparison is probably inspired by Chrysippus's famous example of the cylinder to explain the ‘freedom’ of human action: the cylinder is set in motion by an initial push, but its movement is determined by its own constitution, namely its rounded shape. In the same way human behaviour is ‘triggered’ by the series of events constituting fate, but the way they react is based on their own individual volitions and inclinations; cf. Chrysippus *ap. Cic. Fat.* 42–3 (in *SVF* 2.974); *ap. Gell. NA* 7.2.11 (in *SVF* 2.1000). For the use of the comparison in a different context cf. also Plut. *De Pyth. or.* 404f.
- 102 The rotation periods are the ones commonly found in Greek and Roman authors and can be traced back at least as far as Eudoxus (c. 390–c. 340 BCE) (fr. 124.88–91 Lasserre *ap. Siml. in Cael.* pp. 495.26–9 Heiberg); see the useful table of references in LORIMER 1925, 129.
- 103 Literally, “originates from one and ends in one”.
- 104 An allusion to Pl. *Gr.* 508a: “Because of this, my friend, they call this universe ‘order’ [κόσμος] and not ‘disorder’ [ἄκοσμία].”
- 105 Eur. *Med.* 1251.
- 106 Or “signal for battle”.
- 107 A ‘company’ (λόχος) consisted of c. 100 soldiers, and a ‘regiment’ (τάξις) of the soldiers a tribe in Athens had to supply (c. 1,000).
- 108 ὅσπῃ literally means “turn of the scale”; metaphorically, “decisive influence”; see *LSJ* s.v. I, III.
- 109 Cf. Rom 1.19–20.
- 110 The three-tier universe is common in ancient thought; cf. e.g. Cleanthes' *Hymn to Zeus* 15–16 with the commentary in THOM 2005, 93. These verses also express the thought that everything in the cosmos is god's work.
- 111 Empedocles *DK* 31 B 21.9–11.
- 112 The statue of Athena in the Parthenon was composite, made up of gold and ivory, and decorated with a variety of secondary figures. The story of Phidias was often told in later authors; the version found here is identical to [Arist.] *Mir. ausc.* 846a17–21. Cf. also Plut. *Per.* 31; Cic. *Tusc.* 1.15.34; Val. Max. 8.14.6; etc. For the fictional character of this story see WILAMOWITZ-MOELLENDORF 1902, 2:132; MANSFELD 1991, 541–3.
- 113 Such etymologies were popular among the Stoics, but not confined to them. Cf. Cornutus, *Theol. Graec.* 1; Achilles Tattius, *Isagoge* 5, p. 36.13 Maass; Philo *Opif.* 37; Stob. *Ecl.* 1.22.2 (the latter also quoting the same verses from Homer [*Od.* 6.42–5] that follow below).
- 114 Hom. *Od.* 6.42–5.
- 115 Hom. *Il.* 15.192.
- 116 Phaëthon was a son of Helios, who took his father's chariot but was unable to keep it on its regular course. The chariot crashed and burned up (parts of) the earth. Phaëthon himself was struck down by Zeus with a lightning bolt. Pl. *Ti.* 22c–d connects the myth with falling heavenly bodies that strike the earth, causing conflagrations. See T. HEINZE, “Phaëton [3]”, *Brill's New Pauly* 10 (2007) 905.
- 117 The story about the pious sons is related in Lycurg. *Leoc.* 95–6 (4th cent. BCE) (who mentions only one son); Strabo 6.2.3; Sen. *Ben.* 3.37.2, 6.36.1–2; *Aetna* 624–45 (c. 2nd cent. CE; wrongly attributed to Virgil and included in the *Appendix Vergiliana*).

- 118 LORIMER 1924, 36; 1925, 114–19; 1933, 94 suggests νομοθέτης for the mss. reading νόμος. The emendation is supported by STROHM 1970, 348 (see also the translation by FURLEY 1955, ad loc.), but others insist on the original reading: see MORAUX 1984, 67 n. 232; REALE / BOS 1995, 230, 340 n. 321. See also 400b14, 27. For god as law cf. Max. Tyr. 11.12.
- 119 Most of these comparisons are already found in Plato; cf. *Plt.* 272e, *Criti.* 109c (helmsman); *Phdr.* 246e–247a (driver, commander, chorus). They became commonplaces in the Hellenistic-Roman period; see STROHM 1970, 348.
- 120 In Athens certain officials and other recipients of honours had the right to eat at public expense; this was called σίτησις. See P. J. RHODES, “Sitiesis”, *Brill’s New Pauly* 13 (2008) 511–2. Socrates, in his defense speech, proposed that he be given this right as ‘penalty’ (*Pl. Ap.* 36e–37a). He is of course the supreme classical example of someone who died “in obedience to the law”.
- 121 Soph. *OT* 4–5.
- 122 Pyramid-shaped tablets on which the early laws were inscribed in Athens.
- 123 According to the *Oxford English Dictionary* s.v. a persea is “a fruit-bearing Egyptian tree that was formerly sacred to the god Ra, probably *Mimusops schimperii* (family Sapotaceae)”.
- 124 Hom. *Od.* 7.116, 11.590.
- 125 Hom. *Od.* 5.64.
- 126 Hom. *Od.* 7.115, 11.589.
- 127 Heraclitus *DK* 22 B 11. Most commentators assume that ‘blow’ (πληγή) alludes to Zeus’ use of the thunderbolt to enforce his rule; see *DK* 1:153; M. MARCOVICH (ed.), *Heraclitus. Greek Text with a Short Commentary* (Merida 1967) 429–30; C. H. KAHN (ed.), *The Art and Thought of Heraclitus* (Cambridge 1979) 194.
- 128 The term πολυώνυμος is characteristic of a hymnic style (for examples see KEYSNER 1932, 47), as is the listing of epithets that follows. Such an accumulation of names and epithets serves to glorify the god (D. AUBRIOT-SÉVIN, *Prière et conceptions religieuses en Grèce ancienne jusqu’à la fin du Ve siècle av. J.-C.* Collection de la Maison de l’Orient Méditerranéen 22, Série Littéraire et Philosophique 5 [Lyons 1992] 254 n. 188; S. PULLEYN, *Prayer in Greek Religion* [Oxford 1997] 96–115). STROHM 1970, 349 thus considers ch. 7 a concluding prose hymn. See also Chandler’s essay, below p. 78–82, on the hymnic register in *De mundo*. The epithets that follow mostly relate to Zeus, who in popular philosophy becomes god *tout court*. For a similar formulation, applied to Zeus, cf. Xen. *Symp.* 8.9: “For Zeus also, while appearing the same, has many names”. A list of Zeus’s epithets may be found in SCHWABL 1972.
- 129 Ζήνα and Δία are both used as accusatives of Ζεύς.
- 130 This etymology is attributed to Chrysippus in Arius Didymus fr. 30 (*ap.* Stob. *Ecl.* 1.1.26), but we already find both elements of the etymology in Pl. *Cra.* 396a–b. Its use became popular in other traditions as well, including Hellenistic Judaism; see SCHWABL 1978, 1353–8.
- 131 Orphic fr. 31 Bernabé = 21 Kern. Some of the verses are already found in the Derveni Papyrus (4th cent. BCE), which itself is based on earlier material; see T. KOUREMENOS / G. M. PARÁSSOGLU / K. TSANTSANOGLU (eds.), *The Derveni Papyrus. Studi e testi per il corpus dei papiri filosofici greci e latini* 13 (Firenze 2006) 8–10.
- 132 The reading in the Orphic fragment is ἀργικέραυνος, ‘with bright lightning’. The epithet ἀργικέραυνος used here and later in the text, is also found in Cleanthes’s *Hymn to Zeus* 32. It is not unlikely that Cleanthes himself is responsible for this epithet (THOM 2005, 146–7), which in turn may mean that Pseudo-Aristotle used a Stoic version of the Orphic poem; cf. WEST 1983, 219.
- 133 The reference is to the Orphic myth in which Zeus swallowed the world and created it anew; see WEST 1983, 88–93.

- 134 Pl. *Resp.* 616c–617d describes the role of the three Fates and their use of the spindle. Cf. also Hes. *Theog.* 905. For the goddesses of fate, see W. BURKERT, *Greek Religion* (Cambridge MA 1985) 174.
- 135 The etymologies of the Fates are already found in Chrysippus *SVF* 2.913, 914; cf. MAGUIRE 1939, 162.
- 136 WILAMOWITZ-MOELLENDORF 1902, 2:133–4 suggests that this is a play on the conventional ending of a story, which Plato also frequently alludes to; cf. *Resp.* 621b (“the story was saved and not lost”); *Phlb.* 14a; *Leg.* 645b; *Tht.* 164d. It is unclear whether it here just refers to the end of the ‘mythical’ section, or to the treatise as a whole.
- 137 Plato alludes to Orphic fr. 378.35–6 Bernabé = 247.35–6 Kern.
- 138 Justice (Δίκη) is closely related to Zeus in Greek thought (H. LLOYD-JONES, *The Justice of Zeus*. Sather Classical Lectures 41 [Berkeley / Los Angeles 1971]) and is associated with both cosmic and moral order (F. GRAF, “Dike”, *Brill’s New Pauly* 4 [2004] 415–6).
- 139 The expression “blessed and happy” (μακάριός τε καὶ εὐδαίμων) is associated with macarisms in Greek, which usually refer to the perfectly happy life or even to happiness in the afterlife; see J. C. THOM, “Beatitudes III. Greco-Roman Antiquity”, *Encyclopedia of the Bible and Its Reception* 3 (2011) 680–1. This concluding sentence is therefore an indirect macarism (“Blessed and happy is he who...”).
- 140 Two passages from Plato (*Leg.* 715e–716a and 730c) are here conflated. In Plato the antecedent of ‘it’ is not Justice, but Truth.

*C. Essays*



# Didactic Purpose and Discursive Strategies in *On the Cosmos*

*Clive Chandler*

In this essay I aim to explore some aspects of the language and style of *On the Cosmos* which are relevant to the didactic and protreptic objectives of the work and account for the elevated register which characterises substantial portions of the text. In my opinion, the register is determined by the nature of the subject matter that the author wishes to impart, and the feelings of wonder and reverence which he seeks to elicit from his audience should be seen as desirable preconditions for the adequate comprehension of such material.

## 1. Key Studies of the Language of *On the Cosmos*

Although it does not appear explicitly in the ancient lists of Aristotle's works as preserved in either Diogenes Laertius or the so-called Anonymous, *On the Cosmos* has been transmitted to us within the corpus of the philosopher's writings and has been the object of quite intense study.<sup>1</sup> The work is appreciably different in terms of format and style from any other item that has been transmitted under Aristotle's name. For the last one hundred and fifty years the focus of research and debate has been on matters such as authorship, date, and the correct attribution of the doctrines contained within the treatise. In the course of this research, some attention has been directed at what can be described as stylistic and linguistic issues. It would be fair to say, however, that where space has been allocated to consideration of linguistic and stylistic questions it has tended to be in support of arguments for or against the authenticity of the work. Given the preoccupations of previous scholarship on this work, this is not surprising. In the late nineteenth and first decades of the twentieth century there was a tendency to regard the treatise as a highly derivative work whose author had drawn heavily from other handbooks on philosophical doctrines, astronomy, geography, and metaphysics.<sup>2</sup> Since it was often

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<sup>1</sup> Especially when compared with the other short treatises of the Aristotelian Corpus, as noted by Bos 1977, 334.

<sup>2</sup> MAGUIRE 1939, 143–4 for example, suggested that the 'grand style' adopted by the author of the treatise obscured the argument of his original neo-Pythagorean source in chap-



assumed that the author was copying out, or at most adapting, entire passages from other sources, there was little point in wasting effort on stylistic analysis except insofar as such efforts might reveal the source of the specific doctrine.

A notable exception to this trend was Festugière who devoted a substantial chapter of the second volume of his great enterprise *La révélation d'Hermès Trismégiste* to a study of this Pseudo-Aristotelian work.<sup>3</sup> The chapter contains a section on date and literary genre (pp. 477–501) which offers a fairly detailed study of the main stylistic features of the text. In his effort to allocate *On the Cosmos* to a specific literary category Festugière pursued some instructive comparisons with works of a similar content and character, particularly Geminus' *Introduction to the Phaenomena* and Cleomedes' *The Heavens*. This strategy, as opposed to one which sought to trace the origin of specific doctrines within the text, yielded interesting results and led to some appreciation of the distinctiveness of *On the Cosmos*. Festugière was able to demonstrate that *On the Cosmos* is quite different from Geminus' summary, since the latter has no literary pretension and is only engaged in a precise communication of facts.<sup>4</sup> The Cleomedes treatise, however, offers a closer parallel to *On the Cosmos* since it too indulges in an artfully composed exordium and expatiates forcefully on matters where Cleomedes is in spirited disagreement with Epicurus. Yet while Cleomedes is discovered to restrict his rhetorical embellishments to those sections of the introductory treatise where they are most likely to be appreciated, the author of *On the Cosmos* is far less restrained. Festugière's additional comparison of *On the Cosmos* with fr. 31 of the *Epitome* of Arius Didymus confirms the rhetorically more elaborate status of the former which marks it out as distinctive even though Festugière persists in classifying it as an introduction and summary.<sup>5</sup> Yet there are limitations to Festugière's approach as well, and these emerge from his view on the nature of rhetoric. In several places, Festugière reveals that he regards rhetorical elaboration as largely decorative in function, a means of imparting attractiveness to discourse and superfluous to the exposition of facts.<sup>6</sup> As long as rhetoric is held to be synonymous with mere ornamentation, the specific discursive features of *On the Cosmos* must remain largely mysterious, the aberrations of an eccentric or self-indulgent author, one who was rea-

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ter 5. CAPELLE 1905, 539 detected the rudiments of a *periplus* beneath the section dealing with geography (3, 392b20–394a6) and judged it a clumsy reproduction from some handbook or outline of geography.

<sup>3</sup> FESTUGIÈRE 1949, 460–518. Festugière also gave attention to the issue of date of composition, and favoured the last years BCE or first years CE (479).

<sup>4</sup> FESTUGIÈRE 1949, 481, 486.

<sup>5</sup> FESTUGIÈRE 1949, 494–6 sets out the text of *On the Cosmos* and Arius Didymus in parallel columns.

<sup>6</sup> E.g. FESTUGIÈRE 1949, 492, 499, 500.

sonably careful about preserving a certain doctrinal consistency with the founder of the Lyceum, but did not devote as much attention to making himself speak in the way Aristotle spoke. It will be my contention, however, that the rhetorical features of the kind Festugière identifies are not mere ornamentation but in fact essential for the *kind* of communication which the author of *On the Cosmos* has undertaken.

Another contribution of importance to the study of the style of *On the Cosmos* was made by Rudberg a few years after the publication of Festugière's work. Rudberg classified those portions of *On the Cosmos* concerned with the subject of philosophy and the divine as examples of an elevated style of discourse which was particularly appropriate to communicating positive emotional states. This style is connected with inspiration, rapture, admiration, and is characterized by pathos and ὑψος ('sublimity'). By contrast, in the sections devoted to the description and cataloguing of the physical features and phenomena of sky and earth (i.e. the material from roughly 2, 392a5 to 4, 396a32) the style is simpler, less emotionally-charged and more precise and technical. He quite rightly pointed out that there was a tendency in Greek literature as far back as Homer for discourse about the cosmos (comprising all that is 'heavenly' – τὰ οὐράνια – or Olympian) to be rendered in an elevated style.<sup>7</sup>

Already in 1939 Maguire could begin his article with the declaration "no one now, I imagine, will be found to defend [the authenticity of the treatise]".<sup>8</sup> Yet defence of the work's authenticity enjoyed something of a late rally (or possibly a 'last stand') thanks mainly to the persistence of two highly respected scholars of Aristotle, Reale and Bos, in a series of probing publications.<sup>9</sup> Reale, and later Bos, established quite effectively that it was extremely difficult to declare *On the Cosmos* spurious solely on the basis of the doctrines it contained. In his influential review of Reale's detailed translation and study of the treatise, Barnes was among those who declared that the case for or against the authenticity of the work might be decided by a systematic study of its language.<sup>10</sup> Subsequently, several scholars were encouraged to renew their investigations into the work's authenticity while including more consideration of the linguistic and stylistic features of the work. It would probably be fair to say that the arguments against Aristotelian authorship were subsequently strengthened, but also that the

<sup>7</sup> RUDBERG 1953, 7–10, 30 (citing *Il.* 8.555–61 as an illustration); I am grateful to Prof. J. Thom for directing me to this scholar's work.

<sup>8</sup> MAGUIRE 1939, 111; though GOHLKE 1936 and 1968 persisted with his conviction that the work was in fact of Aristotelian authorship.

<sup>9</sup> REALE 1974. BOS 1977, 317–20 reminds us of how certain 'pseudepigraphical' works from the Aristotelian corpus were rehabilitated and how there is considerable disagreement as to the philosophical provenance and objectives of *On the Cosmos*.

<sup>10</sup> BARNES 1977.

likelihood that the work was later than the first century BCE was reduced significantly thereby.

The most thorough study of the language and style of *On the Cosmos* to date is the article published by Schenkeveld more than twenty years ago with the explicit objective of investigating how these aspects bear upon the question of the work's authenticity.<sup>11</sup> The article provides detailed information on 'Morphology' (pp. 230–1), 'Syntax' (pp. 231–46), 'Semantics' (pp. 246–9), and a short consideration of 'Stylistics' (pp. 249–51, though there are also some remarks on this topic on pp. 226–7). In several instances, the study of linguistic phenomena is constrained by textual questions, as Schenkeveld himself is aware. Even careful scribes sometimes adjust the text they are copying so that it conforms with the form of expression of their own day. No doubt this tendency is not even conscious all the time. For example, under morphology Schenkeveld notes that for *καταράσσοσι* ('fall down') at 2, 392b10 Stobaeus has the alternative Attic Greek form *καταράττουσι*, and there are a number of occasions where Stobaeus or the manuscripts preserve the alternatives *ττ* / *σσ*.<sup>12</sup> This obviously serves to complicate the question of whether the author prefers the Atticizing *ττ* to *σσ*, though one notices on balance a tendency to prefer *σσ* in the word *θάλασσα* ('sea'), and *ττ* in other words.<sup>13</sup> However, other features of language which do not depend on orthography alone and are therefore less susceptible to scribal alteration tend to confirm that the author deviates somewhat from standard Attic prose, though it could be said to fall within the variation observed in surviving texts. Though the data collected and analysed by Schenkeveld presented some difficulties of which he was acutely aware he was able to frame a conclusion in the following words: "We have sufficient data which make it inadvisable to maintain Aristotelian authorship of *De Mundo*."<sup>14</sup>

He sought further support for this conclusion in the frequencies of certain particles and connectives in *On the Cosmos* relative to their frequency in other key Aristotelian texts and recorded a statistically significant divergence. The assumption in this sort of exercise is that particles and connectives in Greek are the least *conscious* features of a speaker's or writer's discourse and can thus be exploited to test authorship. Although Schenkeveld ultimately found arguments against Aristotelian authorship, he did not agree with those who allocated a much later date to the work, and maintained a date from between 350 BCE and 250 BCE at the latest. This would mean that he saw no compelling linguistic evidence for placing it later

<sup>11</sup> SCHENKEVELD 1991.

<sup>12</sup> SCHENKEVELD 1991, 230.

<sup>13</sup> Noticeable exceptions would seem to be *ἐθαλάττωσαν* ('have turned into seas') 400a27–8 and *θαλάττας* 400a28.

<sup>14</sup> SCHENKEVELD 1991, 232.

than the fourth century BCE and thus contemporary with Aristotle himself. Schenkeveld's research leaves the possibility open, at least from a linguist's perspective, that *On the Cosmos* was composed by another member of Aristotle's school, either while Aristotle was still alive or not more than a few decades after his death.

## 2. Discursive Strategies and General Format

Not very much work has been done on how the linguistic and stylistic features of the treatise coincide with the rhetorical objectives of the treatise. In this brief consideration of the style of the treatise I propose to leave aside the question of the authenticity and date (which would seem to have been settled as far as it is possible to do) and the identification of sources (which would seem to be misguided anyway, particularly in cases where one assumes that the author of *On the Cosmos* is following one or several lost treatises on the basis of phraseology or doctrines shared with other extant texts). Since I have little to add to the information Schenkeveld assembled on morphology and syntax I shall take this opportunity to focus rather more on the discursive characteristics and rhetorical strategies which emerge from a study of the text's style. I shall, of course, need to proceed from a number of assumptions:

1. that the text forms a complete and autonomous discursive exercise;
2. that whatever the author's source (or sources), he should be given credit for the verbalization of the doctrines contained within his text;
3. that the format indicates that the text is consciously designed for an educated, but non-specialist audience;
4. that the text can be usefully analysed through a technique which identifies 'cola' (rather than sentences or clauses) as the fundamental unit of discourse segmentation.<sup>15</sup>

It is perhaps not entirely mere coincidence that Wilamowitz-Moellendorff selected *On the Cosmos* for inclusion in his own introductory anthology of Greek texts for use in schools in 1902.<sup>16</sup> The text is actually suited by its very nature to a didactic context. The treatise is indeed composed in

<sup>15</sup> In compiling my own stylistic and discourse analysis in preparation for this essay, I have utilised SCHEPPERS 2011, 3–50 who has developed and adapted both the concept of the colon initiated by E. FRAENKEL, "Kolon und Satz. Beobachtungen zur Gliederung des antiken Satzes" I und II, in: id., *Kleine Beiträge zur klassischen Philologie I. Zur Sprache. Zur griechischen Literatur* (Rome 1964) 93–130, 131–9; id., *Noch einmal Kolon und Satz* (Munich 1965); id., "Zur 'Wackernagelschen' Stellung von ἡμῖν, ὑμῖν, nobis, vobis", *MH* 23 (1966) 65–8, and ideas articulated by K. J. DOVER, *Greek Word Order* (Cambridge 1968).

<sup>16</sup> Comprising pages 188–99 of *Griechisches Lesebuch* 1,2.

such a way as to be appropriate for the imparting of information and concepts. The presentation is carefully and explicitly structured, and there is also a conscious effort to grade the conceptual sequence of the work so that the reader encounters concepts which become progressively more sophisticated. In general there is a progression from the superficial to the explanatory, from phenomena to cause.

At the beginning of the work there is an explicit addressee (Alexander, 391a2) and acknowledgement, through the use of the first and second person pronouns (ἔμοιγε 'me', 1, 391a1; καὶ σοί, ὄντι ἡγεμόνων ἀρίστῳ "for you, as the best of leaders", 1, 391b5–6), of a communication situation which imparts a specific role to author and audience. The work might be described as having the form of a letter, and as such can be usefully compared with several other surviving examples of letters which serve didactic purposes. Letters either by famous philosophers, or at least attributed to them, constitute a recognisable category of philosophical and didactic discourse from at least the middle of the fourth century BCE. These kinds of letters, even when they are directed at a specific addressee, tend to be appropriate for a much wider audience, and might even be termed 'open letters' or 'letter-essays'.<sup>17</sup> However, *On the Cosmos* is not as explicitly epistolary as other examples of this genre.<sup>18</sup> The Epicurean *Letter to Pythocles*, for example, with which this work may be compared in terms of subject matter and execution, foregrounds the epistolary scenario at its very opening:

"Epicurus to Pythocles, greetings. Cleon brought me (μοι) a letter from you (παρὰ σοῦ) in which you continue to show your affection for us (περὶ ἡμᾶς) in sufficient exchange for the earnest attention we have for you (τῆς ἡμετέρας περὶ σεαυτὸν σπουδῆς) and you are very convincingly trying to remember the arguments which lead to a blessed life. You ask me to send you (σεαυτῷ) a concise and clear outline on the subject of celestial things in order that you can memorise it easily. For the things written by us (ἡμῖν) elsewhere are, as you said, hard to commit to memory, and yet you always have them in your hands. We (ἡμεῖς) were delighted to receive your request (σοῦ τὴν δέησιν) and were full of pleasant expectations." (*Letter to Pythocles* 84)

One immediately notes the explicit greeting and the recapitulation of Cleon's request in his own letter, to which Epicurus is now graciously responding. The opening of *On the Cosmos*, on the other hand, contains no

<sup>17</sup> FURLEY 1955, 334 classifies *On the Cosmos* as an 'open letter'; for the notion of a 'letter-essay' see the attempt to characterise the form by STIREWALT 1993, 18–9. *On the Cosmos* certainly does not conform to the 'plain style' which Stirewalt regards as the norm for this category of text.

<sup>18</sup> FURLEY 1955, 338 reminds us that Demetrius *On Style* 234 mentions Aristotle's letters to Alexander (and Plato's to Dion's family) as examples of letters that have a more elevated character (μικρὸν ἐξηριμέναι πῶς— one notes with interest that in the opening sentence the author of *On the Cosmos* insists that philosophy alone "rises [διαιραμένη] to the contemplation of the things that exist", 1, 391a3) owing to their addressee, and resemble a treatise more than a letter (σύγγραμμα εἶναι ἀντ' ἐπιστολῆς).

indications of sender and greeting, nor does it acknowledge and describe a communicative (as opposed to an intellectual) context for the discourse. We are not offered an outline of social interactions outside the confines of the current text, as we are in the letter attributed to Epicurus. However, the author seeks rather to describe the current discourse as the culmination of a previous reflection on the subject:

“Philosophy often (πολλάκις) seemed to me (ἐμοίγε), Alexander, a divine and truly god-like (θεῖόν τι καὶ δαιμόνιον) matter...” (1, 391a1–2)

The author’s manner is reminiscent of the opening sentences of other treatises and speeches, such as the beginning of Xenophon’s *Lacedaemonian Constitution*: “On noticing once that... I was amazed...” (ἀλλ’ ἐγὼ ἐννοήσας ποτε ὡς... ἐθαύμασα...); and, more famously, the *Panegyricus* of Isocrates: “Often I have wondered at those who assembled festivals and established athletic contests, that...” (πολλάκις ἐθαύμασα τῶν τὰς πανηγύρεις συναγαγόντων καὶ τοὺς γυμνικούς ἀγῶνας καταστησάντων, ὅτι...) where the authors also explain that their interest in a subject is the result of previous engagement.<sup>19</sup>

So too, remaining with our current model for comparison, the *Letter to Pythocles* concludes with an explicit final injunction to the addressee and confirmation of the universal applicability of the contents:

“All these things, Pythocles, commit to memory (μνημόνευσον). For you will move far away from myth and will be able to have a full view of the things which are of the same kind as these. Most of all, give yourself (σεαυτὸν ἀπόδος) to the contemplation of the principles, the unbounded, and things related to these, and further to the contemplation of standards by which we make judgements (κριτηρίων), and of feelings, and the reason for which we engage in calculation. For a full view of these things will most easily create a full view of the causes of individual things. And those people, if they have not accepted these things to the extent they should, are likely neither to have conducted a proper comprehensive survey of these same things nor to have acquired an understanding for what purpose they should contemplate them.” (*Letter to Pythocles* 116)

The entire letter had been a response to Pythocles’ difficulty in memorising Epicurus’ physical doctrines. Now that the philosopher has indulged his friend’s request he is enjoined to commit the content of the present letter to memory. There is no such final summary or ‘signing off’ in the case of our work. Instead it ends with a quotation from Plato’s *Laws*. That is not to say that *On the Cosmos* contains no gestures towards the epistolary setting and the specific priorities of the addressee. The opening section concludes with a pointed acknowledgement of the addressee and the special relevance of the material which the author is to impart:

<sup>19</sup> FESTUGIÈRE 1949, 489–90 points out that the author of *On the Cosmos* constructed his exordium along established lines exemplified in Isocrates’ speech *To Demonicus*.

“I think it is indeed fitting for you, as the best of leaders (καὶ σοί, ὄντι ἡγεμόνων ἀρίστῳ), to pursue the study of the greatest things, and for philosophy to focus on nothing small, but to welcome outstanding persons with such gifts.” (1, 391b5–8)

So too, the extended allusions that the author makes to civil and military leadership when describing the relationship between God and the universe (6, 398a6–b6, 399a35–b10, 400b8) could point to an illustration which has particular relevance to Alexander as the future controller of the Persian Empire. The comparison is not one that features prominently elsewhere in the Aristotelian corpus, so its rather laboured deployment here might best be explained as motivated by the author’s desire to develop a parallel most likely to resonate with the declared audience of the discourse.<sup>20</sup>

Texts of this kind tend to be characterised by enthusiastic praise of their subject matter, an inclination to prioritise the salient concepts and most important information of the respective field, and a systematic delivery with didactic overtones. Their objectives, then, are on the one hand protreptic, concerned to motivate an audience to study a particular field, and on the other to provide an accessible introduction and manageable summary of the field in question. The work *On the Cosmos* betrays a consciousness of these objectives on several occasions. Repeatedly, the author announces that he is summarising or not giving full details.<sup>21</sup> The emotional engagement which characterises the first section of the work is a forceful indication of its protreptic nature, as well as the explicit description of the field as the most important in human affairs (τῶν μεγίστων, 1, 391b6).

Yet what is immediately striking about the text is the extent to which teacher and addressee and the didactic enterprise in which they are engaged, though acknowledged or inferred, are not given special prominence initially.<sup>22</sup> Semanoff’s analysis of the didactic strategies of Aratus’ *Phaenomena* provides an instructive comparison. Whereas Aratus is explicit about his role as teacher by displaying compassion for the student, confidence in his student’s intelligence, and even admits his own ignorance and limitations (all, it is argued, conducive to the kind of pedagogy favoured by the Stoic school),<sup>23</sup> the author of *On the Cosmos* prefers instead to allow philosophy itself to take centre stage. In the opening paragraph,

<sup>20</sup> Aristotle uses the example of a general and his army when discussing the issue of the relation between the supreme good (τὸ ἀγαθὸν καὶ ἄριστον) and the nature of the whole (ἡ τοῦ ὅλου φύσις) in *Metaph.* 12.10, 1075a1–15.

<sup>21</sup> E.g. αὐτὰ τὰ ἀναγκαῖα κεφαλαιούμενοι, 394a8; περὶ ἧς νῦν λέγειν οὐκ ἀναγκαῖον, 394b11–12; συλλήβδην δέ, 395a28–9; ὡς δὲ τὸ πᾶν εἰπεῖν, 396a27–8 and 401a25; κεφαλαϊωδῶς εἰπεῖν, 397b9–10; εἰ καὶ μὴ δι’ ἀκριβείας, 397b11; ὡς εἰς τυπῶδη μάθησιν, 397b12.

<sup>22</sup> The only occurrence of the verb διδάσκω (‘teach’) is in the phrase τῆς φύσεως ἐπὶ τῶν μεζόνων διδασκούσης (‘since nature teaches in these greater matters’), 5, 397a2–3.

<sup>23</sup> M. SEMANOFF, “Undermining Authority: Pedagogy in Aratus’ *Phaenomena*”, in: M. A. HARDER et al. (eds.), *Beyond the Canon* (Leuven 2006) 303–17, 307–16.

she is given her own agency, serves as the subject of a sequence of verbs denoting cognitive activity and will (ἐσπούδασε, οὐκ ἔδεισεν, ἀπηξίωσεν, ἐνόμισεν). Philosophy thereby combines the roles of investigator, teacher, and pupil, while the human intermediaries and participants in the process of investigation, acquisition, and transmission of knowledge are only present by implication. When the author resumes the role of *praeceptor* at the end of the exordium, it is with a hint of deference, and the jussive subjunctive is qualified by a hedging device:

“Let us then discuss (λέγωμεν) and, as far as it is possible (καθ’ ὅσον ἐφικτόν), ‘theologize’ (θεολογώμεν) about all these things...” (1, 391b3–4)

I shall comment later on the stylistic implications of the author’s use of the verb ‘theologize’ (θεολογεῖν), but one should note here that the term serves to announce that the instruction to be imparted is not mundane information; it comprises the most important and sublime matters which should form the ultimate objective of authentic philosophy.<sup>24</sup>

The author will occasionally remind us explicitly of his presence with verbs in the first person singular,<sup>25</sup> or in the first person plural,<sup>26</sup> but the author’s presence as *praeceptor* within the text is communicated most effectively by the marked rhetorical artifice of the treatise.<sup>27</sup> Notwithstanding this, there are scattered throughout the treatise several features characteristic of didactic discourse. After the descriptive sections on physical phenomena have come to an end the author begins his explanation of why the universe does not perish as a result of the opposing materials of which it is comprised with a form of hypophora: καίτοι γέ τις ἐθαύμασε πῶς ποτε, ἐκ τῶν ἐναντίων ἀρχῶν συνεστηκώς ὁ κόσμος, λέγω δὲ ξηρῶν τε καὶ ὑγρῶν, ψυχρῶν τε καὶ θερμῶν, οὐ πάλαι διέφθαρται καὶ ἀπόλωλεν...

<sup>24</sup> STROHM 1970, 265 aptly terms this verb “das Programmwort” of the work.

<sup>25</sup> E.g. καθάπερ εἶπον, 2, 391b20; λέγω, 5, 396a34, 396b2, 5, 23; 6, 398a7, and 400b26 all offering clarification.

<sup>26</sup> E.g. εἰ νοήσαμεν, 2, 391b25 which evokes the impression of a teacher inviting his pupil to imagine a straight line; ἀποφαίνομεν, 2, 392a32 at the transition to a new sector of the universe; ἰστορήκαμεν, 3, 394a6 at the conclusion of a section; λέγωμεν, 4, 394a8 at the transition to a new section containing descriptions of natural phenomena. καλοῦμεν, 2, 392a5 and 4, 394a31; εἰώθαμεν, 3, 394a5 and 4, 395b36 are not to be counted among these since they serve to denote general linguistic convention.

<sup>27</sup> Isocrates complained in his *Letter to Dionysius* 2–3 about the limitations of written communications (δι’ ἐπιστολῆς) with respect to persuasiveness when compared with advice delivered face-to-face (παρῶν πρὸς παρόντα); so too in his *Philippus* (or. 5) 25–6 he makes a distinction between the rhetorical effectiveness of a speech which is read out (by someone who is not the composer) and one which is delivered in person (ὅσον διαφέρουσιν τῶν λόγων εἰς τὸ πείθειν οἱ λεγόμενοι τῶν ἀναγινωσκομένων). One of the failings included in Isocrates’ list is that the reader of a text does not convey the persuasive force and character of the speaker (ἀναγινώσκη δὲ τις αὐτὸν ἀπιθάνως καὶ μηδὲν ἦθος ἐνημαιόμενος ἀλλ’ ὥσπερ ἀπαριθμῶν); the author of *On the Cosmos* has compensated for this possibility and imbued the text with a distinctive ἦθος.



(5, 396a33–b1). This effectively functions as an anticipation of a question from a pupil. One also notes a pause in the progression of the exposition above where a concession is made to the need for clarification for the benefit of the audience: ἐκ τῶν ἐναντίων ἀρχῶν... λέγω δὲ κτλ..., when the term recurs again a little further on in the same section (διὰ τῆς τῶν ἐναντιωτάτων κρᾶσεως ἀρχῶν μία διεκόσμησεν ἀρμονία, 5, 396b24–5), examples are still listed but not in parenthesis and the exposition moves forward (ξηρὸν γὰρ ὑγρῶ, θερμὸν δὲ ψυχρῶ, βαρεῖ τε κοῦφον μίγνεν... 5, 396b25–6).

### 3. Varieties of Lexis and Register

As well as being didactic the text is rich in variation, both in terms of its lexicon and texture. This is partly because of the different kinds of subject matter that are covered in the treatise, the shifting objectives in different sections, and also the kinds of allusion and direct quotation deployed within it. Most modern readers divide the work into three broad sections: an exordium (1, 391a1–b8), a description of the universe, the inhabited world, and the natural phenomena (2, 391b9–4, 396a32), and a treatment of how the universe is sustained, along with the role which god plays in its movement and order (5, 396a33–7, 401b29). Consequently, there are times when the language of *On the Cosmos* has something in common with surviving examples of *periplus* and *periegesis* literature, or astronomical and meteorological treatises, or hymns to gods, or encomia of an art at the beginning of treatises devoted to a single subject; in other places one can catch echoes of archaic poetry, or the words of famous philosophers. The entire treatise tends to employ assertion and description rather than demonstration, and in addition to the grandiloquence which has been noted frequently, there is also a self-consciousness on the part of the author as to the nature of his responsibility and the kind of language appropriate to its articulation.

In the introductory section of his work there are some key statements and terms which have a significant bearing on the register and style that the author will adopt. The subject matter of philosophy is characterised by “sublimeness and magnitude” (τὸ ὕψος καὶ τὸ μέγεθος, 1, 391a5); understanding of such elevated matters (τὴν ἐκείνων μάθησιν, 1, 391a7–8) is appropriate to philosophy (πρέπουσαν, 1, 391a7) since it shares the same pedigree (συγγενεστάτην, 1, 391a6); philosophy proclaims these things to mankind (τοῖς ἀνθρώποις προφητεύουσα, 1, 391a16);<sup>28</sup> others may write

<sup>28</sup> The choice of participle προφητεύουσα is suggestive: the verb is deployed in the opening of the *Sibylline Oracles* (ἀρχομένη πρώτης γενεῆς μερόπων ἀνθρώπων / ἄχρισ ἐπ’ ἐσχατίησι προφητεύσω τὰ ἕκαστα, 1–2) and though it usually signifies speaking on behalf of a god, LIGHTFOOT 2007, 323 notes that the sense “give inspired utterance to something” is especially characteristic of Hellenistic-Jewish usage.

with earnestness (τοὺς μετὰ σπουδῆς διαγράψαντας, 1, 391a18) on details of nature or human society, but this kind of activity is an indication of ‘small-mindedness’ (μικροψυχία, 1, 391a23), and such people give serious attention to the contemplation of trivialities (μέγα φρονούντας ἐπὶ θεωρίᾳ μικρᾶ, 1, 391a23–4).<sup>29</sup> By implication, the contemplation of the universe and the most important things within it (κόσμου... καὶ τῶν ἐν κόσμῳ μεγίστων, 1, 391a25–6) entails the antithesis of μικροψυχία which is ‘great-mindedness’ (μεγαλοψυχία), and in this instance ‘thinking much of’ (μέγα φρονεῖν) would be an entirely appropriate activity. One is invited to recall the character and stature of the μεγαλόψυχος as described in the fourth book of Aristotle’s *Nicomachean Ethics*. Such a man, we are assured, will speak with a deep voice and in a manner which is steady and measured (φωνῆ βαρεῖα καὶ λέξις στάσιμος, 1125a13–14), he will not indulge in verbal abuse, even of enemies (οὐδὲ κακολόγος, οὐδὲ τῶν ἐχθρῶν, 1125a8). Perhaps this conscious posture accounts for the restraint with which the author of *On the Cosmos* treats opponents and those with whom he disagrees. While those who focus on trivial details of the natural world are labelled ἀνόητοι (1, 391a10), there is nothing even approaching the virulently polemical and frankly *ad hominem* tone of Cleomedes in his attack on Epicurus and his followers.<sup>30</sup> The kind of material with which *On the Cosmos* is preoccupied surely requires an appropriate form of discourse, and the author proclaims his intentions with the words, λέγωμεν δὴ ἡμεῖς καί, καθ’ ὅσον ἐφικτόν, θεολογῶμεν περὶ τούτων συμπάντων, 1, 391b3–4. Bos notes that the verbs are deliberately selected to express two different perspectives;<sup>31</sup> λέγωμεν signifies our common appreciation

<sup>29</sup> STROHM 1952, 138 accuses the author of being guilty of μικροψυχία himself because of the sheer quantity of geographical and meteorological detail which the work contains. I prefer to think that the author believes that it is his attitude to such data, as demonstrated by the kind of language he uses in his entire account, that distinguishes him from these other small-minded thinkers.

<sup>30</sup> Epicurus was far blinder than a mole (πολύ τῶν σπαλάκων τυφλότερος, 158.8); a sarcastic tone is common (e.g. οὕτω δὲ ἄρα συνετός καὶ δαιμόνιος, 160.5 and ἡ ἱερὰ Ἐπικούρου σοφία, 162.24); Epicurus is compared to Thersites in the *Iliad*, 162.25–164.28; and perhaps most remarkably of all, an extended vitriolic apostrophe of the dead philosopher culminating in the creative insult καθάπερ τις σκώληξ ἐν πάνυ πονηρῷ τε καὶ κοπρῶδει βορβόρῳ καλινδούμενος, 166.28–9. FESTUGIÈRE 1949, 487–8 mentions Cleomedes’ attack as an example of how the genre of *eisagoge* permitted colourful and rhetorical material but makes no effort to mark the difference between Cleomedes and *On the Cosmos* in the treatment of opponents. RUDBERG 1953, 9, however, notes that Cleomedes’ negative emotional style when he condemns Epicurus is in marked contrast to the positive and quasi-hymnic praise he bestows on the sun in admiration of its power in sections 152 and 154.

<sup>31</sup> Bos 1991, 316. I believe Bos is correct in this instance but am not convinced that whenever the author of *On the Cosmos* provides two terms he is always making a significant distinction; thus Bos 1989, 71 points out that the adjectives θεῖος and δαιμόνιος, which are combined at the beginning of the treatise in the phrase θεῖόν τι καὶ δαιμόνιον (1, 391a1),

of the world (corresponding to the sections of the treatise that comprise a survey of the physical structure of the universe, a catalogue of the principal phenomena within it, and scientific explanations of their nature and causes), while θεολογῶμεν promises a transcendental perspective. This may indeed be the case, but it should be added that the two verbs could also serve to acknowledge that a less prosaic mode of expression is better suited to the sublimity of the subject matter. The key to understanding the stylistic choices made by the author of *On the Cosmos* lie in a proper appreciation of the significance of this proclamation. We have every right to expect σεμνότης (a feeling of reverence and respect) when faced with the sublime and the divine.<sup>32</sup> The words θεολογεῖν and προφητεύειν function as strong signals that the author will give priority to the divinity of the cosmos, and simultaneously indicate his awareness that he is part of a tradition established by Hesiod and continued and developed by subsequent sages of previous generations.<sup>33</sup> Opportunities for allusion to the discursive register of this tradition are therefore available, and the author of *On the Cosmos* is happy to take them.<sup>34</sup> These considerations explain why elevated and hymnic registers are appropriate:<sup>35</sup> they suit the nature of the subject by doing it justice, and simultaneously assure the reader that the subject deserves serious attention and the kind of respect one would reserve for the divine. Thus, the style serves the didactic objectives of the work.

Although there is a general uniformity in the language of the entire treatise<sup>36</sup> certain chapters do stand out from others from a stylistic perspective. Chapters 1 and 5, 6, and 7 in particular share certain features, whilst the de-

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do not have identical applications in Aristotle. It is not at all certain that the author is maintaining any such distinction here, and one notices that he has a propensity for pleonastic combinations; ἀκίνητος καὶ ἀσάλευτος, 3, 392b34 is one of a great many.

<sup>32</sup> It is 'undignified' (ἀσεμνον) for the King of Persia to do tasks himself (6, 398b4); it is 'more dignified' (σεμνότερον) for god to be based in the highest region (6, 398b6–8).

<sup>33</sup> Pherecydes is made to apply the verb θεολογεῖν to his own life's work in his letter to Thales in Diog. Laert. 1.122. STROHM 1970, 278 notes that the verb is associated with the writings and poems of an earlier age, and cites as illustration Aristotle's phrase οἱ παμπάλαιοι καὶ πρόωτοι θεολογήσαντες, *Metaph.* 1, 983b29; the author of *On the Cosmos* refers to an "ancient account" (ἀρχαῖος τις λόγος) with approval, 6, 397b13.

<sup>34</sup> The whole passage 2, 391b10–19, for example, which offers an alternative and less prosaic definition of the cosmos, is crammed with allusions to Hesiod and Presocratics like Parmenides and Anaxagoras.

<sup>35</sup> See K. KEYSSNER, *Gottesvorstellung und Lebensauffassung im griechischen Hymnus* (Stuttgart 1932), 28–48 on the hyperbolic style associated with hymns to gods (one notes the frequent occurrence of πᾶς and its compounds in *On the Cosmos*, the recurrence of adjectives in the superlative degree), and THOM 2005, 45–50 who discusses these characteristics in Cleanthes' *Hymn to Zeus*.

<sup>36</sup> Some terms, for example, recur at a distance from one another, sometimes in a slightly different context. The effect is that the treatise derives a degree of cohesion from lexical echo and resonance.

scriptive chapters 2–4 resemble, in many respects, a systematic catalogue. In terms of the structure and rhetorical efficacy of the project, it makes sense that the more grandiloquent and hymnic elements of the discourse predominate in the sections where they are expected and will make the most impact, that is at the opening and in the final parts. After all, the author will want to make an impressive beginning in order to grab the reader's attention, and have a strong conclusion. In the conclusion of the work, we find that the hymnic register is particularly prominent, the text sometimes becoming a catalogue of poetic compound words. Not only does the text present lists of honorific titles and epithets associated with traditional hymns, but the author increasingly has recourse to direct quotation from poetry. It is interesting that the author occasionally justifies his citations and allusions:

"The words of the poet truly (ὄντως) preserve..." (6, 400b24)

"Therefore it is also rightly (οὐ κακῶς) said in the Orphic poems..." (7, 401a27)

This would seem to be an acknowledgement on the part of the author of the appropriateness of these poetic statements, and that he is content to delegate the responsibility for describing the operation of the divine to voices which display the required competence.

The series of illustrations or comparisons that the author employs in order to explain the power of god provides additional opportunities for stylistic variety and metaphor. While the King of Persia constitutes an appropriate *paradeigma* or *parabolē* with which to teach and convince a student of a divine doctrine,<sup>37</sup> the sheer length of the description of the way he actually rules his empire becomes something of an end in itself (6, 398a10–35). The detail included here might seem indulgent (e.g. the precious metals of the royal enclosure, 398a15–16; the systems of fortification, 398a16–18; the catalogue of specialised servants of the king, 398a23–6), yet it all succeeds in driving the point of the comparison home by assisting the reader in visualisation, and therefore ultimately serves the didactic objectives of the work. This in turn leads to a sequence of further illustrations which become potential metaphors for the operation of the divine within the cosmos. One notes here that the author is prepared to admit illustrations from a variety of sources, ranging from the grand (Persian King) to the mundane (puppeteers, 6, 398b16–19; a chorus, 6, 399a14–8). Yet all of this is germane, for as the author insists, even the power and influence of the Great King pales into insignificance when compared to that of god (6, 398b1–3). In comparison with god, the Great King is even less significant than a puppeteer. So too, there is a vivid correspondence between the sound and

<sup>37</sup> For the rhetorical efficacy of illustrations of an historical type, see Aristotle *Rh.* 2.20, 1393a23–b4.

movement of the chorus and the movement of the heavenly bodies. The comparisons deployed thus give no offence to the dignity of the subject.

#### 4. The Descriptive Sections

The descriptive sections are the most obviously technical and summary portion of the text. Since the author is trying to convey as much information as possible within a restricted space, he is particularly conscientious in his deployment of techniques and markers which will help the reader to navigate through the material. The boundaries between the various sections are explicitly announced,<sup>38</sup> and the material is presented most effectively and economically through a catalogue-style, where discursive segmentation tends to follow the *Topic-Comment* sequence.<sup>39</sup> Topics are distinguished from one another and proclaimed through a *fronting* technique where a sentence begins with a noun phrase (usually in the genitive case) which provides the generic set and which is then subdivided into a series of items specified and differentiated from one another by the use of μέν and δέ, and these items may in turn be differentiated further.<sup>40</sup> The terms ἐξῆς or ἐφεξῆς which are frequently deployed, serve to reassure the reader both of the ordered arrangement of the cosmos itself and of the fact that, as a consequence, the account of the universe is also conducted κατὰ κόσμον or κατὰ μοῖραν and therefore amenable to comprehension (e.g. 2, 392a24; 392b5; 3, 392b14; 393a28; 4, 394b28, 29, 30). Other indications of order and sequence abound.<sup>41</sup>

Since the author is writing on the subjects physics, geography, and meteorology (which were already the domain of specialists), this has an im-

<sup>38</sup> E.g. μετὰ δὲ τὴν αἰθέριον καὶ θείαν φύσιν, ἦντινα τεταγμένην ἀποφαινομεν, 2, 392a31–2; ἐξῆς δὲ τῆς ἀερίου φύσεως γῆ καὶ θάλασσα ἐρήρῃσται, 3, 392b14–15; γῆς μὲν δὴ καὶ θαλάττης φύσιν καὶ θεσίν... τοιάνδε τινὰ ἱστορήκαμεν, 3, 394a4–6 followed immediately by περὶ δὲ τῶν ἀξιολογωτάτων ἐν αὐτῇ καὶ περὶ αὐτῆν παθῶν νῦν λέγωμεν... 4, 394a7–8; ταῦτα μὲν οὖν ἐκ τῆς ὑγρᾶς ἀναθυμιάσεως πέφρκε συμπίπτειν. ἐκ δὲ τῆς ξηρᾶς... 4, 394b5–7; τὰ μὲν τοίνυν ἀέρια τοιαῦτα, 4, 395b17.

<sup>39</sup> See SCHEPPERS 2011, 201–2 on the use of *Fronted Noun Phrases* including *fronted genitives* in Topic – Comment patterns (explained 2011, 301–3). R. RENEHAN, “On Some Genitives and a Few Accusatives in Aristotle. A Study in Style”, *Hermes* 125 (1997) [153–68] 157, 159–60 draws attention to this aspect of Aristotle’s style, and also notes (and this is ironic given the issue of the authenticity of *On the Cosmos*) that *Hist. an.* books 7–10, which are generally considered spurious, tend to lack this stylistic habit.

<sup>40</sup> Thus in his treatment of stars, τῶν γε μὴν ἐμπειριχομένων ἄστρον τὰ μὲν... τὰ δέ... ὥστε αὐτῶν τὸ μὲν... τὸ δέ... (2, 392a9–16); islands τῶν δὲ νήσων αἱ μὲν εἰσι μεγάλαι... αἱ δὲ ἐλάττους... καὶ τούτων αἱ μὲν ἀξιόλογοι... αἱ δὲ ὑποδεέστεραι ὧν αἱ μὲν... αἱ δέ... αἱ δέ... (3, 393a9–15); winds τῶν δὲ ἀνέμων οἱ μὲν... οἱ δέ... τούτοις δὲ ἀνάλογόν τι ἔχουσιν οἱ... (4, 394b13–16); lightning τῶν δὲ κεραυνῶν οἱ μὲν... οἱ δέ... ἑλικία δὲ οἱ... σκηπτοὶ δὲ ὄσοι... συλλήβδην δὲ τῶν ἐν ἀέρι φαντασμάτων τὰ μὲν... —κατ’ ἐμφασιν μὲν... καθ’ ὑπόστασιν δέ... (4, 395a25–31) etc.

<sup>41</sup> πρῶτον μὲν οὖν, 3, 393a23; μετὰ δὲ τοῦτο, 3, 393a28; εἶτα, 3, 393b8 etc.

pact on his *lexis*. So there are a number of technical terms in these sections (e.g. πόλοι, 2, 391b24; κλίμα, 2, 392a3; ἀναθυμιάσεις, 4, 394a9). Some nominal forms have a particular technical inflection, even where they derive from a verb which is in common usage (e.g. κατ' ἐκπτεσμόν, 4, 394a28; θλίψις, 4, 394a30; σύμπηξις, 4, 394a35; ἐκ παρατρύψεως, 4, 395b5). Compound nouns, adjectives, and adverbs are a striking example of how familiar components can be combined to create a precise technical term (e.g. ὀμοταχῶς,<sup>42</sup> 2, 392a14; λεπτομερῆς, 2, 392a35 which is an adjective that is used with great frequency in Greek but is almost always confined to technical and philosophical contexts); compound verbal forms which are constructed with two prepositional prefixes (e.g. ἐμπεριεχομένων,<sup>43</sup> 2, 392a9; συμπεριστρέφεται,<sup>44</sup> 2, 392a10), or a noun-stem as prefix (e.g. κυκλοφορούμενην,<sup>45</sup> 2, 392a8). Sometimes technical terms are applied in specific or extended ways which are not found in Aristotle: for example, Aristotle uses the adjective πρόσγειος consistently of terrestrial animals, environments, or phenomena as distinct from those associated with the seas and oceans, but in *On the Cosmos* the word features in a division of the planets in terms of altitude αὐτῶν τὸ μὲν προσγειότερον εἶναι τὸ δὲ ἀνώτερον (2, 392a15–16).<sup>46</sup> Some of these terms are apparently unique to *On the Cosmos* and presumably coinages of the author.<sup>47</sup> I take this as a particularly strong piece of evidence in favour of regarding the work as an original and independent undertaking, which while indebted to other sources is determined to claim ownership of the information and doctrines it has borrowed. Ownership is expressed through style.

<sup>42</sup> The adverb occurs only here, two other places in the Aristotelian corpus (*Ph.* 236b35, and the spurious *Pr.* 913b1), once in Simplicius (*in Phys.* 10.992.4), and in a handful of places in Proclus.

<sup>43</sup> Not found in the rest of the Aristotelian corpus except the spurious *Mag. mor.* 1187a3; but quite common as a technical term in mathematical and astronomical writings, e.g. Plut. *Quaest. conv.* 742f3; *Nicom. Ar.* 1.19.5; Ptol. *Tetr.* 1.1.1. While the verb ἐμπεριέχω is not listed in H. USENER / M. GIGANTE / W. SCHMID (eds.), *Glossarium Epicureum* (Rome 1977), Epicurus who is also fond of these kinds of compounds has ἐμπεριειλημμένα in the sense 'embraced' at *Ep. Hdt.* 68.

<sup>44</sup> Also unique to the Aristotelian corpus, but occurs as a technical term in a few other contexts, including astronomical ones, Plut. *De fac.* 927c10.

<sup>45</sup> Though the verbal form does not occur elsewhere in the Aristotelian corpus, the noun is deployed to signify circular movement, e.g. *Ph.* 265a13; *Metaph.* 1052a28; *De an.* 407a6.

<sup>46</sup> E.g. *Hist. an.* 591a23, 598a7; *Mete.* 368b33.

<sup>47</sup> We encounter compound forms which occur nowhere else (e.g. ἀποκολπούμενος, 3, 393a26; ὑπέρζεστα, 4, 395b25; συσσωματοποιεῖται, 4, 396a14–15; ἀντανακοπήν, 4, 396a19–20) and others which seem to exemplify an unparalleled application of the word (e.g. ἐγκεκοπῶσθαι, 3, 393a23 of the shape of a bay only here, elsewhere connected to clothing; στηριγμός, 4, 395b7 the only surviving example of its use in connection with light that 'remains fixed').

Yet as has been already noted by others, even in the descriptive sections we encounter poeticisms and rhetorical artifice.<sup>48</sup> For instance, there are examples of striking alliteration which cannot be accidental: διὰ τὸ πυρῶδη οὖσαν αἰθεσθαι, πλημμυελούντες περὶ τὴν πλείστον πυρὸς ἀπηλλαγμένην δύναμιν, 2, 392a6–7.<sup>49</sup> There is even a hymnic quality to some sections of the catalogue. When he comes to describe the biosphere (the regions of earth and water) the preliminary sentences teem with life and allusion: ἐξῆς δὲ τῆς ἀερίου φύσεως γῆ καὶ θάλασσα ἐρήρειαται, φυτοῖς βρούουσα καὶ ζώοις πηγαῖς τε καὶ ποταμοῖς, τοῖς μὲν ἀνὰ γῆν ἔλιπτομένοις, τοῖς δὲ ἀνερευομένοις εἰς θάλασσαν, 3, 392b14–17. The phrase φυτοῖς βρούουσα, which constitutes a complete colon, may be compared with the epithet of Persephone κόρη καρποῖσι βρούουσα which occupies the end of line 10 in *Orphic Hymn* 29. The second sentence is also remarkable, as is made clear if attention is paid to the sequence of cola:

πεποίκιλται δὲ	it is adorned
καὶ χλόαις μυρίαῖς	with countless shoots of green,
ὄρεσι τε ὑψηλοῖς	high mountains,
καὶ βαθυξύλοις δρυμοῖς	thickets of high trees
καὶ πόλεσιν,	and cities,
ἃς τὸ σοφὸν ζῶον,	which that wise creature,
ὁ ἄνθρωπος,	man,
ἰδρύσατο,	has founded;
νήσοις τε ἐναλίοις	also with islands in the sea
καὶ ἡπείροισι	and continents
(3, 392b17–20)	

Apart from the striking nature of the very rare poetic compound βαθυξύλοις,<sup>50</sup> the chiasmic structure of ὄρεσι τε ὑψηλοῖς καὶ βαθυξύλοις δρυμοῖς, the pleonastic effect of the adjective in the phrase νήσοις τε ἐναλίοις, the sentence also forges, through the verb πεποίκιλται and the notion of ‘decoration’, a connection with the famous account in Pherecydes of the cloak which Zas manufactures and decorates as a wedding gift for his bride Chthonie: τότε Ζὰς ποιεῖ φᾶρος μέγα τε καὶ καλὸν καὶ ἐν αὐτῷ ποικίλλει Γῆν καὶ Ὠγηνὸν καὶ τὰ Ὠγηνοῦ δώματα (fr. 68 Schibli = *PGrenf.* II ii col. I).<sup>51</sup> The verb ἰδρύσατο, like ἐρήρειαται earlier on,

<sup>48</sup> CAPELLE 1905, 564 judged this practice highly inappropriate for sections the purpose of which was to summarise information; FESTUGIÈRE 1949, 492 takes much the same view.

<sup>49</sup> The fact that the author is denying an etymological view which connects αἰθερ with αἰθεσθαι is perhaps significant in this instance.

<sup>50</sup> It occurs in Eur. *Bacch.* 1138 where the Messenger tells the chorus of how Pentheus’ body lies scattered beneath rocks and in dense undergrowth, βαθυξύλω φόβη.

<sup>51</sup> Interestingly, Clement quotes a passage from Isidorus’ *Interpretations of the Prophet Parchor* in which reference is made to this passage and πάντα ὅσα Φερεκύδης ἀλληγορήσας

serves to banish any hint of the trivial or the prosaic. This form of allusion both enriches the text and connects it with highly valued predecessors in the same tradition. There is also, as the cola show, an unexpected innovation which comes in the form of the addition of cities to the list of the things that embellish the earth, and a very special animal (τὸ σοφὸν ζῷον), man. It is hard not to imagine that the author is making an allusion to one of Aristotle's most famous remarks in the opening section of *Politics* 1253a2–3, but this is not the only point to the inclusion of humans and their civic accomplishments; the πόλις and its functions will serve as an important illustration for later sections when the survival of the cosmos and the influence of god are explained. The entire passage above then can be seen to serve as a sort of sub-proem to the discrete section of the work which is to be devoted to a description of the earth.

## 5. The Cosmic Sections

When the author turns from the imparting of details to explanations of why the universe as a whole persists and how it is regulated, he is not constrained in the same way by the catalogue template even if lists will continue to be employed. The didactic character is exemplified by the frequent recourse to analogies and illustrations. To demonstrate his view that the sustainability of a system comprised of opposites is not in fact threatened he appeals to the example of the πόλις (5, 396b1–7). There are lists here too (with asyndeton) which are arranged by representatives of opposing pairs: συνεστηκυῖα ἐκ τῶν ἐναντιωτάτων ἐθνῶν, πενήτων λέγω καὶ πλουσίων, νέων γερόντων, ἀσθενῶν ἰσχυρῶν, πονηρῶν χρηστῶν (5, 396b2–4). When he moves to draw a general principle from these details he does so in language suggestive of the fact that they are hidden divine truths:

“They fail to recognise (ἀγνοοῦσι) that this was the most wonderful thing (τὸ θαυμασιώτατον) about civic concord (πολιτικῆς ὁμοιοῖας), I mean that it accomplishes one disposition out of many (ἐκ πολλῶν μίαν) and a similar disposition out of diversity (ὁμοίαν ἐξ ἀνομοίων), a disposition allowing for every nature and fortune.” (5, 396b4–7)

Concord in a city conceals a remarkable truth – a wonder – whose superficially paradoxical character is reinforced by the chiasmic structure of expression in which it is couched (τὸ ἐκ πολλῶν μίαν καὶ ὁμοίαν ἐξ ἀνομοίων, “from many one and like from unlike”). It is clearly assumed that this

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ἐθεολόγησεν (*Strom.* 6.6.53.5), which shows that the ‘theologic’ register of the text was widely acknowledged.



phrasing will remind the reader of Heraclitus, and so it comes as no surprise to find this sage directly quoted a little later,<sup>52</sup>

“Conjunctions: wholes and not wholes, agreement and difference, consonance and dissonance; one from all and all from one.”

Συλλάψεις ὅλα καὶ οὐχ ὅλα, συμφερόμενον διαφερόμενον, συνᾶδον διαδον· ἐκ πάντων ἔν καὶ ἐξ ἑνὸς πάντα. (5, 396b20–2)

Not only does Heraclitus confirm the doctrine that the author has been proposing (“this is precisely what was meant by Heraclitus the Obscure [τῷ σκοτεινῷ Ἡρακλείτῳ]”, 5, 396b19–20), he also frames the doctrine in a similar paradoxical and chiasmic style. We are confronted by words and phrasing which suggest the language of initiation.

A little further on, the rhetorical figure anastrophe serves to provide additional support for the doctrine, and gives the impression (at least) of resembling a rational argument:

“...[a single power] brought about preservation for the whole (τῷ παντὶ σωτηρίαν). The cause of this [sc. preservation] is the agreement (ὁμολογία) of the elements, and the cause of the agreement is all having an equal share (ἰσομοιρία) and that none of them is more powerful than the other; for the heavy elements are in equilibrium with the light, and the warm with its opposite, since nature teaches in these greater matters that equality (τὸ ἴσον) somehow preserves (σωστικόν) concord (ὁμόνοια), and that concord preserves the cosmos, the parent of all things and most beautiful of all. For what being could be better than this [sc. the cosmos]? Whatever one may mention, is a part of it. Everything beautiful and well-arranged is named after it, because it is said ‘to be ordered’ from the word ‘cosmos.’” (5, 396b33–397a8)

The sequence of causation is first traced back in the following way: τῷ παντὶ σωτηρία is attributed to ὁμολογία which itself is attributed to ἰσομοιρία in turn, and then in chiasmic fashion the order is reversed so that τὸ ἴσον preserves (σωστικόν)<sup>53</sup> and produces ὁμόνοια (a synonym here for ὁμολογία),<sup>54</sup> which in turn preserves (one notes the elegant ellipse of adjective σωστική) the universe (κόσμος). As the sentence draws to its close, the encomiastic potential inherent in this aspect of the universe is given expression through the elaborate circumlocutions used to denote the universe. The phrase τοῦ πάντων γενετήρος is entirely at home in theological discourse,<sup>55</sup> and along with the superlative and compound adjective περικαλλεστάτου affords fitting tribute to the majesty of the cos-

<sup>52</sup> The first of several direct quotations which will be introduced into the text from this point.

<sup>53</sup> The adjective is deployed by Aristotle himself in a political context: δικαιοσύνη is σωστική of the laws, *Top.* 149b33.

<sup>54</sup> REALE 1974, 242 points out that the same noun is linked to Heraclitus (A1) and the verb ὁμολογεῖν is actually used by him (B 50 and 51 DK). It is therefore reasonably safe to assume that the presence of Heraclitus is still felt in this passage of *On the Cosmos*.

<sup>55</sup> LIGHTFOOT 2007, 546 in her discussion of the use of the nouns γενετήρ, γενέτης in the *Sibylline Oracles* notes that the concept appears in Plato: ὁ τότε τὸ πᾶν γεννήσας, *Ti.* 41a5.

mos, the final word in the sentence. The rhetorical question – which the author answers anyway – maintains the encomiastic flavour, as does the etymological play on the word *cosmos* itself (ἀπὸ τοῦ κόσμου λεγόμενον κεκοσμήσθαι), which is the source of all beauty and order.<sup>56</sup>

## 6. Conclusion

The passage above, then, is a good example of the discursive strategies employed by the author of *On the Cosmos* in the expository sections of the treatise. He is continually conscious of the fact that his subject forms part of a well-established tradition and he is careful to acknowledge that tradition selectively. These allusions and direct quotations do not only serve to show that the doctrines espoused find confirmation in earlier respected authors from that tradition. They also provide the author with an appropriate discursive register, one sanctioned by tradition and convention, that he can employ in his exposition of what philosophy should focus upon, if the term philosophy is understood in its most authentic sense. This, I believe, largely accounts for the stylistic peculiarities of the entire treatise. The author's objectives are complex. He needs to summarise a large quantity of data; he needs to provide an outline and brief explanation of the fundamental structures and physical processes of the universe; he needs to demonstrate that god ultimately plays an essential role – even if from a distance – in the maintenance and regular functioning of the universe. But perhaps more importantly he needs both to inform and to convince his reader, represented by Alexander, of the importance and truth of his message and these goals require an appropriate and effective didactic strategy. He needs to instil a sense of *wonder*.<sup>57</sup> The language and style of the work are very much part of this strategy and not simply embellishments.

As Aristotle taught, the sources of persuasion are to be sought in the subject itself.

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<sup>56</sup> As noted by Bos 1989, 136.

<sup>57</sup> On this see STROHM 1970, 265.



# The Geography of *De mundo*\*

Renate Burri

## 1. Preliminary Remarks

It has been argued that the geography of *De mundo*, treated in chapter 3 of the work, is the least appreciated part of the treatise, and that scholars tend to fly over this section and have not tried to understand it thoroughly.<sup>1</sup> In fact, the geographical section of *De mundo* has mainly been examined for hints that could help solve the problems of the sources, authorship, and date of this text, but with little success (see below). This contribution has another goal: it rather aims to give a more understandable account of the position and the nature of Earth according to *De mundo* by a 'close reading' of the geographical excursus in chapter 3, as well as of the cosmological system presented in chapter 2. Our approach will try not only to meet the objections outlined initially, but also to help to better judge the suggestions made considering the questions of origin and date of the treatise as a whole.

With regard to the possible sources of *De mundo*, the geographical excursus gives evidence neither for a Stoic background, which often has been attributed to the work in general, nor for Posidonius as a concrete source, as has been suggested by Zeller and Capelle.<sup>2</sup> Regarding the authorship of *De mundo*, specialists in the history of ancient geography have generally considered the work to be Pseudo-Aristotelian,<sup>3</sup> a view that has been shared in recent publications on the treatise and that is advocated in this contribution, too. A strong geographical argument for the pseudepigraphic character of *De mundo* is the representation of the Caspian Sea as an influx of Oceanus into the island-shaped world on its northern coast, whereas Aristotle in his *Meteorology* (2.1, 354a) clearly – and correctly – describes it as an inland sea, as Herodotus did before him (*Hist.* 1.202–3), and Ptolemy after him (*Geogr.* 7.5.4). Yet the idea that the Caspian Sea is an embayment of Oceanus, which had its origins in Ionian natural philosophy and

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<sup>1</sup> STROHM 1984, 290 (ad a16); REALE / BOS 1995, 264.

<sup>2</sup> ZELLER 1885, 399 with n. 1, and 410; CAPELLE 1905, *passim*. See especially MAGUIRE 1939, 127–8, and REALE / BOS 1995, 132 with n. 55.

<sup>3</sup> See REALE / BOS 1995, 264; they themselves, however, advocate its authenticity.

persisted into medieval times,<sup>4</sup> was also shared by Eratosthenes of Cyrene (3rd century BCE), the founder of scientific geography, and, following him, by Strabo (Augustan Period),<sup>5</sup> who became the most popular ancient geographer from Late Antiquity onwards.

Although reliable evidence on the date of *De mundo* seems to be unattainable,<sup>6</sup> we can specify an approximate period within which the work was very probably written. On the one side, the island of Taprobane, today's Sri Lanka, became known to the Greeks only in the course of Alexander the Great's expeditions; mention of the island (3, 393b14) points to a post-Aristotelian time of composition.<sup>7</sup> On the other hand, we may assume that our treatise was composed no later than around the mid-second century CE, when Apuleius of Madaura made a 'loose translation' of the work.<sup>8</sup>

During this period, Greco-Roman geographical notions generally still retained the Homeric model: according to Homer, who was traditionally seen as the first Greek geographer,<sup>9</sup> the world had the shape of an island and was surrounded by an endless ocean. This view persisted throughout antiquity – *De mundo* represents it, too – in spite of increasing geograph-

<sup>4</sup> DIHLE 1997, 6; CATAUDELLA 2003, 63; ROLLER 2010, 140.

<sup>5</sup> See Strab. *Geogr.* 11.6.1 pp. 506–7 C. (= Casaubonus); 11.7.1 p. 508 C.

<sup>6</sup> Cf. e.g. DIHLE 1997, 11–2, who suggests that *De mundo* was composed in the period of the Roman Empire on the basis of antiquated geographical terminology in ch. 3 as well as of style in the whole treatise; CATAUDELLA 2003, 70 notes aspects of Alexander's imperial propaganda in ch. 3 as known from historiographical works written after Alexander's death.

<sup>7</sup> The earliest reports on Taprobane are probably due to Alexander's helmsman Onesicritus; see Strabo's account, referring to Eratosthenes (Strab. *Geogr.* 15.1.14–15 pp. 690–1 C.); ROLLER 2010, 180. It is, however, controversial when exactly Onesicritus composed his work (see STRASBURGER 1939, 465–6; BROWN 1949, 5–7). Similarly difficult to assess as a chronological hint is the mention of the British Isles in *De mundo* under the name of νῆσοι...Βρεττανικάι / "Britannic Islands" (3, 393b11f.; trans. RB [see below, p. 94 n. 32]). The Greek explorer Pytheas of Massalia was the first to use this designation (DIHLE 1997, 10; GÄRTNER 2008, 288). The time of his expedition is very much disputed (see, e.g., GEUS 2002, 283 n. 127: 380–360 BCE; cf. NESSELRATH 2003, 617: 350–320 BCE; similarly GÄRTNER 2008, 288: between the composition of Eudoxus' *Circumnavigation of the Earth*, i.e. before 342 BCE, and of Dicaearchus' work of the same title, i.e. 309–300 BCE). At any rate, Aristotle does not use this name (DIHLE 1997, 10), and its occurrence in our text could rather testify to a post-Aristotelian date of *De mundo*. See also Krayer's essay, below pp. 190–191 ("Geography").

<sup>8</sup> See Introduction, above pp. 3–4.

<sup>9</sup> The Homeric epics, especially the *Odyssey*, offer a wide range of geographical information in a larger sense, corresponding to the less specific meaning of the term 'geography' in antiquity, which also included historical, political, economic, ethnographical, botanical, cultural and mythological details. For Eratosthenes, Homer figures among the first authors who dealt with geography, as we learn from the opening lines of Strabo's *Geography* (1.1.1 p. 1 C.). Nevertheless, Eratosthenes harshly criticised the reliability and accuracy of Homer's topographical and geographical data as well as their didactic and scholarly value (on this issue, see GEUS 2002, 264–6). Strabo, for whom Homer is an outstandingly important authority, vigorously disagreed with Eratosthenes' assessment.

ical knowledge and progress in cartography. In particular Herodotus, already in the fifth century BCE, questioned the idea of a world encircled by Oceanus,<sup>10</sup> and implied the existence of further (inhabited) regions, unknown to mankind and remote from the inhabited parts known to him, which he called *oikoumene*.<sup>11</sup> These unknown regions would be partly enclosed rather by land than by sea.<sup>12</sup> Nonetheless, the Homeric model of the island-shaped earth, surrounded by an endless ocean, would remain dominant throughout Antiquity, even if, on a scientific level, it was refuted by Ptolemy in the second century CE (see below).

The idea of a spherical instead of a disk-shaped world, embedded in a cosmological system, may have arisen towards the end of the fifth century BCE in the Pythagorean milieu.<sup>13</sup> The earliest written evidence for a spherical concept of the world can be found in Plato's dialogue *Phaedo* (completed around 380 BCE), where the earth, when seen from above, is said "to look like those balls that are covered with twelve pieces of leather."<sup>14</sup> Aristotle gave the first scientific evidence for the sphericity of the earth by stating in his treatise *On the Heavens* that during lunar eclipses the earth's shadow on the moon is always circular, from which he deduced that the earth must have a spherical shape.<sup>15</sup>

Both the idea of the existence of unknown (inhabited) parts of the world outside of 'our' *oikoumene* and the understanding that the earth is a sphere led to several efforts to calculate the circumference of the globe. The most famous attempt in Antiquity, and the first based on mathematical-astronomical methods, was made by Eratosthenes,<sup>16</sup> who calculated a circumference of 252,000 stades. Although it is unknown which type of stade he used, Eratosthenes' calculation is generally regarded by modern scholars as a very good approximation of the actual circumference of roughly 40,000 km.<sup>17</sup>

<sup>10</sup> Hdt. *Hist.* 4.36.

<sup>11</sup> See Hdt. *Hist.* 2.32; 34; 3.114. The term designated the 'inhabited' world or at least the world or the parts of the world 'known to be inhabited' and thus theoretically left open the possibility of further inhabited parts of the world. It is first attested in this meaning by the Presocratic philosopher Xenophanes (*DK* 21 A 41a; see also TALBERT 2004, 774; SCHMITT 2007, 73).

<sup>12</sup> TALBERT 2004, 774; see, e.g., Hdt. *Hist.* 2.32.

<sup>13</sup> See STRÜCKELBERGER 1997, 573; TALBERT 2004, 774; cf. GRASSHOFF 2003, 868.

<sup>14</sup> Pl. *Phd.* 110b; translation by FOWLER 1966.

<sup>15</sup> Arist. *Cael.* 2.14, 297b24–30. For three further pieces of evidence that were noted by Aristotle and that indicated the sphericity of the earth, see GEUS 2002, 225 n. 83.

<sup>16</sup> His work *On the Measurement of the Earth* is lost, but summarised by the astronomer Cleomedes, whose writing activities cannot be dated more precisely than to the period of the Roman Empire. A good account on Eratosthenes' calculation can be found in GEUS 2002, 227–35.

<sup>17</sup> See GEUS 2002, 235–8.

Eratosthenes also marks the commencement of scientific and systematic geographical literature, aimed at giving a full account of the subject and an overall description of the (inhabited) world, which nonetheless did not entail a revision of the Homeric model of the *oikoumene* island surrounded by Oceanus.<sup>18</sup> Most of Eratosthenes' *Geography* is lost, but Strabo quotes his predecessor quite extensively in his own *Geography*, sometimes disagreeing with him and criticising him, especially for his critical approach to Homer.<sup>19</sup> As far as we can reconstruct Eratosthenes' geographical work from the fragments handed down to us mainly through Strabo,<sup>20</sup> the first book of his *Geography* gave a critical historical overview of previous geographical scholarship. In the second book, Eratosthenes presented an updated geography,<sup>21</sup> discussing the shape and the surface of the earth. The length of the *oikoumene* he calculated to be 77,800 stades, and its width 38,000 stades.<sup>22</sup> The third and last book was a cartographical description of the *oikoumene*. For this purpose, instead of reverting to the tripartition of the *oikoumene* into continents (Europe, Asia, and Libya/Africa),<sup>23</sup> Eratosthenes created a prototype graticule, consisting of seven parallels and at least five meridians, for a better orientation on the map.<sup>24</sup> The last part of Eratosthenes' work consisted of descriptions of individual countries or groups of countries. This was done by comparing their forms with geometrical figures, the so-called *sphragides* (σφραγίδες, 'sealstones'),<sup>25</sup> a method which however was not followed by his successors. Some two centuries later, Strabo wrote his *Geography*, a work of a far

<sup>18</sup> See Strab. *Geogr.* 1.3.13 p. 56 C.

<sup>19</sup> See above p. 90, n. 9, as well as ROLLER 2010, 15–6.

<sup>20</sup> On this issue, see especially GEUS 2002, 263–77; ROLLER 2010, 23–30.

<sup>21</sup> Strab. *Geogr.* 1.4.1 p. 62 C.: πειράται διόρθωσίν τινα ποιείσθαι τῆς γεωγραφίας ("Eratosthenes undertakes a revision of the principles of geography"; trans. JONES 1917–32). In other cases, I give Roller's translations (ROLLER 2010) of Strabo citing Eratosthenes, but in this case Jones' translation seems to me to grasp better the crucial statement of the passage.

<sup>22</sup> These are the numbers reported in Strab. *Geogr.* 1.4.5 p. 64 C. (length) and 1.4.2 p. 63 C. (width). In two other passages, both regarded as undoubtedly referring to Eratosthenes, too, Strabo gives slightly different numbers for the extension of the *oikoumene*: 70,000 and less than 30,000 stades (2.5.6 p. 113 C.); about 70,000 and, again, less than 30,000 stades (2.5.9 p. 116 C.). ROLLER 2010, 146 notes (on 2.5.6) that "Eratosthenes' figure (70,000 stadia, repeated in F34 [sc. 2.5.9]) is actually less than a totaling of the distances cited (see F37 [sc. 1.4.5])", which he calls (*ibid.*) "a typical example of the parts-and-sum problem that had plagued Greek writers since Herodotos".

<sup>23</sup> The division of the *oikoumene* into the three continents of Europe, Asia, and Libya/Africa was established during the fifth century BCE; see H.-G. NESSELRATH, *Platon, Kritis. Übersetzung und Kommentar* (Göttingen 2006) 240 and ERDMANN 2007, 298.

<sup>24</sup> To be understood figuratively here; there is no explicit evidence on whether Eratosthenes' *Geography* included a map or not. On this matter, see ROLLER 2010, 21. For the numbers of parallels and meridians, see GEUS 2002, 273–4.

<sup>25</sup> See Strab. *Geogr.* 2.1.22 p. 78 C.; on the term, see ROLLER 2010, 26–7 with n. 103.

more historical-ethnographical than mathematical-astronomical character, citing with approval Eratosthenes' view of the *oikoumene* and the world. However, Strabo preferred to describe the *oikoumene* continent by continent (Europe, Asia, Africa).

In the second century CE, Ptolemy (Claudius Ptolemaeus) set radically new standards with his *Geography*, a mathematical-cartographical work that proposed new methods for mapping the *oikoumene*. For this purpose, Ptolemy developed a coherent graticule of parallels and meridians. The bulk of his work consists of a list of more than 6,000 toponyms, each located with precise coordinates. He proceeded in a very systematic way, starting with the description of Europe, then Africa, finally Asia. Ptolemy's *oikoumene* no longer corresponds to the model of an island encompassed by water, the origin of which perception he ascribes to the technical difficulties of drawing a map of the world:

"For in the case of an undivided map,<sup>26</sup> because of the need to preserve the ratios of the parts of the *oikoumenē* to each other, some parts inevitably become crowded together because the things to be included are near each other, and others go to waste because of a lack of things to be inscribed. In trying to avoid this, most map-makers have frequently been constrained by the shapes and sizes of the planar surfaces themselves to distort both the measures and the shapes of countries, as if they were not guided by their research. This is the case, for example, with all those who have given the greatest part of the map in the longitudinal and latitudinal dimensions to Europe (because the things inscribed there are so numerous and close together) and who have given the least part in longitudinal dimension to Asia and in latitudinal dimension to Libyē for the converse reason. This is also why they make the Sea of India turn northward after Taprobanē, because the edge of the planar surface blocked their continuing eastward, whereas there was nothing else to inscribe in the part of Skythia above. Again, they made the Western Ocean<sup>27</sup> turn away to the east at its southern end because the edge of the planar surface blocked them in the southern direction, and there, too, neither the bottom of Inner Libyē nor that of India had anything as they continued southward beyond the known parts that could be inscribed on the western coast of Libyē and India. And it is for such reasons as these that the doctrine that the Ocean flows around the whole world has arisen out of errors of drawing, to be turned subsequently into a confused narrative."<sup>28</sup>

As a result, the Indian Ocean on Ptolemy's map<sup>29</sup> of the *oikoumene* is an 'inland sea', since the continents of Libya (Africa) and Asia are linked together by a bridge of unknown land, extending along the southern edge of the map.<sup>30</sup> Similarly, the south-western and southern parts of Africa

<sup>26</sup> i.e. a world map.

<sup>27</sup> i.e. the Atlantic Ocean.

<sup>28</sup> Ptol. *Geogr.* 8.1.2–4; trans. BERGGREN / JONES 2000, 118–9.

<sup>29</sup> A map of the *oikoumene* (maybe even three such maps, exhibiting different map projections) and twenty-six regional maps were undoubtedly part of the work. The extant maps in manuscripts copied around 1300 might, however, rather be reconstructions; on this issue, see DILLER 1940, 66–7; BERGGREN / JONES 2000, 49; BURRI 2013, 48–55 and 522 n. 6.

<sup>30</sup> Ptol. *Geogr.* 7.5.2 and 7.5.4–5.



as well as the northern and the eastern parts of Asia are bordered by *terra incognita* instead of sea.<sup>31</sup>

Getting back to *De mundo*, already at the beginning of the treatise we find examples from the field of geography introduced in order to illustrate that analysing details is of no consequence compared to philosophical studies (1, 391a18–391b3): unlike philosophy, the ‘queen’ among the sciences, geography does not aim at seeing the whole, the cosmos and the greatest things in it, at contemplating the things that exist and at finding out the truth in them. Instead, disciplines such as geography focus on observing single parts (1, 391a22: τ[ὰ] ἐπὶ μέρους), at random. Geographical objects are small and worthless and nothing one would marvel at (1, 391a26–b1: οὐδέποτε γὰρ ἄν ... ἐθαύμαζον), they are no *thau-masia*, compared to cosmological elements. Therefore, persons concerning themselves with geographical questions, describing geographical or chorographical features, e.g. “the nature of a single place or the layout of a single city”<sup>32</sup> (1, 391a19), are to be pitied for their narrow-minded souls and for their incapability of seeing the more sublime things.

It is somewhat surprising, then, that in chapter 3 the author devotes a longish passage of his work to geography. Strictly speaking, geography does not belong to “all these things” (1, 391b4: περὶ τούτων συμπάντων) about which he sets out to talk and to theologize about at the end of chapter 1, but is counted among “all the other things” (1, 391b1–2: πάντα...τὰ ἄλλα). We can anticipate that his geographical description of the earth will be general and will not get lost in details. Exactly for these reasons, it has been judged the least clear and the least substantial part of the treatise.<sup>33</sup> There is certainly some truth to this judgement; on the other hand, the author of *De mundo* repeatedly emphasizes that he only gives an outline of the various subjects connected to his central theme.<sup>34</sup> His introductions to both cosmology and geography are deliberately concise as they are supposed to provide the fictitious addressee and the intended readers/listeners respectively with the basic knowledge needed in order to grasp his cosmological message.

<sup>31</sup> For a visualisation of these features, see the maps in STÜCKELBERGER / GRASSHOFF 2006, vol. 2, 748–51.

<sup>32</sup> Citations from *De mundo* derive normally from Thom’s translation in this volume; my own translations are indicated as follows: trans. RB.

<sup>33</sup> REALE / BOS 1995, 132 (n. 55): “In effetti è questa la parte meno chiara e meno pregnante del *De mundo*.”

<sup>34</sup> E.g. 6, 397b9–13: “It now remains to speak in summary fashion (κεφαλαιωδῶς) about the cause holding the universe together, as has also been done about the rest; for it would be wrong when speaking about the cosmos – even if not in detail, then at least for a knowledge in outline (εἰ καὶ μὴ δι’ ἀκριβείας, ἀλλ’ οὖν γε ὡς εἰς τυπώδη μάθησιν) – to pass over that which is most important in the cosmos.”

## 2. Earth and Water within the Cosmos

The 'earth' (γῆ) is described as part of a system called cosmos, which is preserved by and because of god; other parts of this system are 'heaven' (οὐρανός) and 'natures' (φύσεις)<sup>35</sup> on earth and within heaven (2, 391b9–12).

The earth forms the unmoved and fixed centre of the system (2, 391b12–13: μέσον, ἀκίνητόν τε καὶ ἔδραϊον ὄν), whereas heaven is above the earth (2, 391b14: ὑπερθεν αὐτῆς) and “moving with an eternal movement”, more precisely “in a single revolution and orbit” (2, 391b17–18). The earth is the origin of all living things and apparently the only place containing life in the system called cosmos.<sup>36</sup> Heaven is reserved for gods and divine bodies, *vulgo* the stars, the author adds. Whereas heaven and the cosmos are explicitly called spherical (2, 391b19–20), nothing is said about the earth's shape for now, but later passages demonstrate that the author believes the earth to be spherical, too.<sup>37</sup>

The system presented here is a geocentric one, the roots of which go back to the Pythagorean milieu. In the course of time it had experienced substantial variation and elaboration, culminating in Ptolemy's planetary theory, and was superseded only in Early Modern Times, despite sporadic attempts towards a heliocentric world system, the earliest known suggestion of which is due to Aristarchus of Samos (3rd century BCE). The description of the cosmos in *De mundo* corresponds perfectly to a somewhat simplified version of the Aristotelian geocentric model, including all its essential elements (but not discussing the question of motion). These are, briefly, a terrestrial sphere within a celestial sphere, of which the latter has the same centre as the former and rotates daily from east to west around an axis running through its centre, whereas the former does not move. The stars are fixed to the celestial sphere and thus follow its rotation.<sup>38</sup> The two points where the axis of rotation intersects with the sphere of the fixed stars mark the north and south (celestial) poles.<sup>39</sup> The celestial sphere itself, consisting of the element of ether,<sup>40</sup> is subdivided into eight homocentric

<sup>35</sup> On this term, see note 15 on the Translation.

<sup>36</sup> Although the author assumes, apart from the world known to him (i.e. the *oikoumene*), the existence of further *oikoumenai*/inhabited worlds (see 3, 392b23–5 and below p. 97–98), he does not seem to consider the possibility of 'alien' beings living outside of his *oikoumene*.

<sup>37</sup> See 3, 392b35–393a4; 5, 396b31.

<sup>38</sup> See the first type of stars described in *De mundo*: those that do not wander about, but revolve together with the whole celestial sphere (2, 392a10–11: τὰ μὲν ἀπλανῶς τῷ σύμπαντι οὐρανῷ συμπεριστρέφεται).

<sup>39</sup> See BERGGREN / JONES 2000, 6f.

<sup>40</sup> The author of *De mundo* calls the 'substance' (2, 392a5: οὐσία) of heaven and of the stars ether, which he regards as a fifth element in addition to the four canonical elements of earth, water, air, and fire. This view corresponds to Arist. *Cael.* books 1–2, whereas in

spheres surrounding the terrestrial sphere:<sup>41</sup> the outermost of them is the sphere of the fixed stars. The most prominent fixed stars form the zodiac. With its twelve signs, the zodiac stretches across the middle of the fixed stars like a belt, at an angle to the tropic circles.<sup>42</sup> The sphere of the fixed stars encloses the spheres of the seven heavenly bodies regarded as planets<sup>43</sup> in ancient times: Saturn, Jupiter, Mars, Venus, Mercury, the Sun, and the Moon.<sup>44</sup> Within the ether are the four traditional elements of fire, air, water, and earth at the centre.

According to the author of our treatise, the northern or arctic (celestial) pole is always visible and above us (2, 392a2: ὑπὲρ κορυφῆν), the southern or antarctic pole is always hidden and beneath the earth (a3–4: ὑπὸ γῆν) and thus cannot be seen.<sup>45</sup> Similarly, he explains that each planet has its own orbit, the ‘upper’ orbit always being larger than the ‘lower’ one (2, 392a20–1: ὥστε ἀεὶ τὸν ἀνωτέρω μείζω τοῦ ὑποκάτω εἶναι). Both here and in the following material, the author usually employs the terms ‘above’ and ‘below’ to indicate directions in the cosmos. This ‘anthropocentric’ perspective, too, corresponds to the Aristotelian notion of the cosmos,<sup>46</sup> but it also causes certain inconsistencies in the cosmic model presented in *De mundo* (see below p. 99).

### 3. Geographical Description of Earth and Water

After presenting the cosmological frame, the author focuses on the cosmos’ innermost part(s), situated right next to the element of air: earth and water, i.e. earth and sea (3, 392b14: γῆ καὶ θάλασσα), which he seems to

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books 3–4, as well as in his *Physics*, Aristotle does not seem to suggest a fifth element; see OWEN 1981, 250.

<sup>41</sup> Also in the case of *De mundo*, we certainly have to think of concentric circles, as suggested by Strohm’s translation (see STROHM 1984, 241, line 21), although this is not explicitly said in the text.

<sup>42</sup> The central circle of the belt of the twelve zodiacal signs is the ecliptic, inclined at an angle of roughly 23,5° with respect to the (celestial) equator, intersecting the latter in two diametrically opposite points. The Summer and Winter Tropics are the two circles on the celestial sphere which are parallel to the equator and which intersect the ecliptic, respectively, at its most northerly and its most southerly points (BERGGREN / JONES 2000, 11–12). Whereas in a geocentric system, the ecliptic represents an (imaginary) great circle on the celestial sphere, identical with the annual orbit of the sun through the zodiac, in a heliocentric system, the ecliptic is defined as the plane of the orbit of the earth around the sun.

<sup>43</sup> The second type of stars described in *De mundo*: those that wander about in individual orbits (2, 392a13–16: τὰ δέ, πλανητὰ ὄντα, ... ἐν ἑτέροις καὶ ἑτέροις κύκλοις).

<sup>44</sup> For the order and the nomenclature of the planets used in *De mundo*, see MAGUIRE 1939, 121–2 and note 24 on the Translation.

<sup>45</sup> See also 4, 394b29–32, where the two poles are recalled within the description of the different winds.

<sup>46</sup> See Ralf Elm, “kosmos / Kosmos, Weltordnung”, in HÖFFE 2005, 324–5, at 324.

understand as a unit here.<sup>47</sup> In a brief, much more ‘ecphrastic’ than technical and/or systematic passage,<sup>48</sup> he lists the earth’s main characteristics (reported here in a slightly rearranged order): it is full of living objects, i.e. plants and animals, and it is full of water, which occurs in various hydrological forms; it is ‘variegated’ (3, 392b17: *πεποικίλται*; trans. RB) not only with patches of green and dense woods, but also with mountains, islands and mainland, and cities – founded by “that wise creature, man”, the author adds.

It has been pointed out that Strabo, in describing a chorographical map, also emphasises the *ποικίλματα* (the ‘variety’ or ‘diversity’) of land and explicitly mentions cities among these *ποικίλματα*.<sup>49</sup> We can add that the *ποικιλία* (see also the adjective *ποικίλος*), the variegation and colourfulness, as well as colours in general, are extremely notable and repeatedly mentioned features in Plato’s *Phaedo* (110b–d), where Socrates describes the surface of the real earth as viewed from above. Additionally, in a passage just preceding this description, Plato reports the idea of further inhabited parts of the world (109b), whereas Strabo outlines a similar thought in a passage of his Book 1,<sup>50</sup> which is thus separated from his passage referring to the map – in our text the model of several inhabited worlds follows the ecphrastic description of the earth (see below, and p. 98 n. 53).

Whereas the *oikoumene*, i.e. the inhabited world,<sup>51</sup> is divided into islands and mainland according to the “prevailing account” (3, 392b20: *πολύς λόγος*), the author specifies that the *oikoumene* itself as a whole is one island, surrounded by the so-called Atlantic Sea (3, 392b22: *Ἀτλαντική θάλασσα*).<sup>52</sup> Although nothing is said about the relation between the *oikoumene* and the earth as a whole for the moment, the author’s view of the world at first sight seems to imply a flat earth with the Ocean flowing around it, corresponding to the Homeric model (see above pp. 90–91). That said, he supposes the existence of many other *oikoumenai* lo-

<sup>47</sup> Note the singular form *ἐρήρκεισται* (‘set in place’) in 3, 392b14–15. REALE / Bos 1995, 264 rightly refer to ch. 3 as a characterisation of the two elements of earth and water – or, in the strict sense, *oikoumene* (“terra abitata”) and seas.

<sup>48</sup> For the stylistic character of this passage, see Chandler’s essay, above pp. 84–85.

<sup>49</sup> Strab. *Geogr.* 2.5.17 p. 120 C.: *διὰ γὰρ τῶν τοιούτων ἡπειροῖ τε καὶ ἔθνη καὶ πόλεων θέσεις εὐφυῶς ἐπενοήθησαν καὶ τᾶλλα ποικίλματα, ὅσων μεστός ἐστιν ὁ χωρογραφικὸς πίναξ* (“It is through such natural features that we gain a clear conception of continents, nations, favourable positions of cities, and all the other diversified details with which our geographical map is filled”; trans. JONES 1917–32). See STROHM 1984, 286 (ad b17).

<sup>50</sup> Strab. *Geogr.* 1.4.6 p. 65 C.

<sup>51</sup> On this term see above p. 91, n. 11.

<sup>52</sup> Cf. the translation “Atlantic Ocean” in this volume. For the Greek term see REALE / Bos 1995, 266 (n. 77); DIHLE 1997, 5–6, with n. 4.

cated far away,<sup>53</sup> situated on the other side of the Atlantic Sea (3, 392b23: ἀντιπόρθμους), of various sizes, but all invisible to us. In order to give an impression of the dimensions of the earth, the author compares “the islands in our vicinity” to “these seas” (3, 392b26: ταυτὶ τὰ πελάγη),<sup>54</sup> adding that this relationship is similar to the one between “this *oikoumene* here” (*ibid.*: ἤδε ἡ οἰκουμένη; trans. RB) and the Atlantic Sea (which was said to surround our *oikoumene*, as we remember), and between the other *oikoumenai* and the whole sea respectively (3, 392b27–8: σύμπασαν τὴν θάλασσαν).

Probably we should understand this latter expression as the total of ταυτὶ τὰ πελάγη and the Atlantic Sea together or, as expressed just a little bit further down, as “the whole of the moist element” (3, 392b29–30: ἡ δὲ σύμπασα τοῦ ὑγροῦ φύσις). The passage is not fully explicit, but the proportions indicated remind us, once again, of the description of the earth by Plato in his *Phaedo*, where the known world is said to be just one small part of many other inhabited parts of the earth.<sup>55</sup>

Getting back to our text, we have to imagine, according to the author, these other *oikoumenai* as great islands, surrounded by great seas,<sup>56</sup> in the same way as “this *oikoumene* here” is surrounded by the Atlantic Sea. The whole of the moist element, the surface of which is ‘perforated’ by elevations or “outcrops” of the earth (3, 392b30: τῆς γῆς σπίλ[οι]), i.e. by the so-called *oikoumenai* protruding out of the water, this whole of the moist element would thus mostly (3, 392b32: μάλιστα) be adjacent to the element of air – mostly but not entirely, because of the *oikoumenai* rising up through

<sup>53</sup> Other inhabited parts of the world were also presupposed, among the philosophers, by Plato (see e.g. ΣΤΡΟΗΜ 1984, 286–7 [ad b21]), and among the geographers, by Strabo (see also above p. 91 and note 30 on the Translation). REALE / Bos 1995, 267 (n. 78) rightly point out that the author of *De mundo* presents his idea of further *oikoumenai* as a probability rather than as a dogmatic creed. Strabo expresses himself similarly (Strab. *Geogr.* 1.4.6 p. 65 C.: ἐνδέχεται δὲ ... καὶ δύο οἰκουμένας εἶναι ἢ καὶ πλείους [“it is possible that ... there are two inhabited worlds, or more”; trans. ROLLER 2010, 61]), whereas Socrates, in Plato’s *Phaedo* (108e), opens his disquisition about further inhabited parts with the word πέπεισμαι (“I am persuaded”).

<sup>54</sup> Within ch. 3, this is the first occurrence of the word πέλαγος, with which Pseudo-Aristotle here seems to mean every sea belonging to our *oikoumene* other than the Atlantic Sea. But our author does not distinguish the terms θάλασσα and πέλαγος as consistently as, for instance, Strabo does, who usually uses the word πέλαγος in order to designate parts of a sea (θάλαττα) (see RADT 2006, 280; KOWALSKI 2012, 195–6). The passage at 3, 393a16–17 shows that Ἀτλαντική θάλασσα, Ἀτλαντικὸν πέλαγος, and Ωκεανός are synonyms to Pseudo-Aristotle. On the other side, Strabo also understands Ωκεανός and Ἀτλαντικὸν πέλαγος as synonyms, as *Geogr.* 1.1.8–9 pp. 5–6 C. proves. Ptolemy very precisely differentiates between θάλαττα and πέλαγος: he uses the latter term only for inland seas. For this reason, the Indian Ocean, which he believed to be an inland sea (see above p. 93), is called Ἰνδικὸν πέλαγος (e.g. *Geogr.* 4.7.41; 6.8.2; 7.1.1 etc.).

<sup>55</sup> For this reference to Plato see ΣΤΡΟΗΜ 1984, 287 (ad b26).

<sup>56</sup> Here Pseudo-Aristotle speaks of μέγαρα πελάγη; see above, n. 54.

its surface. This is most probably how we have to understand the difficult passage at 3, 392b29–32:<sup>57</sup> the sphere of the earth at the very centre of the spherical model of the cosmos is encompassed by the sphere of water, and the sphere of water is encompassed by the sphere of air. According to this model, the sphere of water, i.e. the moist element, is next in sequence to the sphere or element of air. But here and there, outcrops of the uneven surface of the earth (islands, mainland/continents, *oikoumenai*) pierce the sphere of the water and thereby abut directly on the sphere of air. Thus, the perception of our inhabited world as an island surrounded by the sea, the idea of further inhabited worlds as islands surrounded by seas, and the spherical model of the elements and their order in the whole cosmos are brought into perfect congruence.

This explanation also helps us to better understand the position of the earth as described in our text. When it is said to be situated in the depths of the very centre of the cosmos (3, 392b32–3: κατὰ τὸ μεσαίτατον τοῦ κόσμου), the author again combines two different perspectives: first, the earth is somewhere deep down and below (I suggest calling this view the ‘above-below perspective’), and second, it is the innermost part of the (spherical) cosmos (‘inside-outside perspective’). Developing the ‘above-below perspective’, the author concludes that “this is the whole of the cosmos that we call the lower part”, by “this” obviously meaning the earth and sea.<sup>58</sup> Whereas this lower part is inhabited by ephemeral beings, the upper part of the cosmos belongs to the gods, which can be identified with heavenly bodies.<sup>59</sup> Again, we would expect the author to speak about an innermost part of the cosmos instead of a lower one, if we maintain the idea of the sphericity of the cosmos, which explicitly is confirmed by what follows: a description of the five elements (earth, water, air, fire, ether), each of which exhibits a spherical shape and has its definite region. The earth is the smallest element, surrounded by the next larger element, i.e. the moist element, etc., and together they comprise the whole cosmos.<sup>60</sup>

<sup>57</sup> The comment of REALE / Bos 1995, 267–8 (n. 79) is very helpful; see also STROHM 1984, 287–8 (ad b30 and b32).

<sup>58</sup> What exactly the author is referring to by τοῦτο (3, 392b34: “this”), is variously interpreted, see FORSTER 1984 ad loc., n. 1 and TRICOT 1949, 183 n. 1, who understand it in the same way as suggested here; cf. STROHM 1984, 288 (ad b35) and REALE / Bos 1995, 268 (n. 80), who interpret the pronoun as a reference to the earth. But further on, at 3, 393a5–8, the lower part of the cosmos is clearly defined as being composed of wet and dry elements, see below p. 100 and n. 62.

<sup>59</sup> See note 33 on the Translation.

<sup>60</sup> For this thoroughly Aristotelian view, see REALE / Bos 1995, 128–32 and Jochen Althoff’s contributions on “aêr”, “aithêr”, “gê”, “hydôr”, and “pyr”, in HÖFFE 2005, 2, 14–5, 228, 270, and 514–5, as well as above pp. 95–96.

The exact role of the moist element, i.e. of water, thus remains ambiguous:<sup>61</sup> at the beginning of chapter 3 it seems to form a part of the earth, even a unity with the earth, whereas in the description of the five elements just mentioned, it is an independent entity having its individual region and being ‘superior’ (‘above-below perspective’) or ‘exterior’ (‘inside-outside perspective’) to earth, but again, at the end of the paragraph (3, 393a5–8), the lower part of the cosmos is characterised as being partly wet, containing rivers, streams and seas (θάλασσαί), and partly dry, consisting of land, continents and islands.<sup>62</sup>

The keyword ‘islands’ is the starting point for the geographical description *sensu stricto*. This begins with a glance at the most important islands in the Mediterranean, goes on with the description of seas and bays of the *oikoumene* island, then offers an account of the islands in the Ocean, and concludes with the islands around the *oikoumene* island. A brief indication of the extensions of the *oikoumene* and a delineation of the continents mark the end of the description.

The author reminds us first that some of the islands are as large as “this whole *oikoumene* here” (3, 393a9–10: ἡ σύμπασα ἡδε οἰκουμένη; trans. RB), surrounded by great seas (3, 393a10–11: μεγάλοις περιρροόμεναι πελάγεσιν) – he is alluding to the other *oikoumenai* mentioned above that are invisible to us – before turning his attention to the smaller ones which are all visible and within our *oikoumene*. He first specifies the most noteworthy (3, 393a12: ἀξιόλογοι) of these: for the western part of the Mediterranean, he lists Sicily, Sardinia, and Corsica, for the eastern part, Crete, Euboea, Cyprus, and Lesbos.<sup>63</sup> Of the less noteworthy islands, he only names the Sporades and the Cyclades (confining himself to the eastern Mediterranean).

<sup>61</sup> The separation of the elements of earth and water is not fully consistent in our treatise. This causes various problems for the interpretation of the text, see especially 3, 392b32 μετὰ δὲ ταύτην (“after this element [sc. water]”, which we naturally would like to refer to the directly preceding element of air), and 34 τοῦτο (for its interpretation see above p. 99, n. 58). STROHM 1984 in some places uses the term “Erd-Wasser-Körper” (e.g. 286 [ad b21], see also 265 “Wasser-Erd-Körper”) in order to handle this ambiguity.

<sup>62</sup> Aristotle admits a certain commingling of the elements of earth and water – in the form of sea and rivers – in  *Mete.*  1.3, 339b10–13; he is aware of the difficulty (see also Jochen Althoff, “hydôr”, in HÖFFE 2005, 270), whereas our author does not seem to take note of it or does not bother to mention it.

<sup>63</sup> It is probable that these are the “so-called seven [sc. islands]” (τὰς λεγομένας ἑπτὰ) of (Ps.) Arist.  *Mir. ausc.*  88.837a31, see STROHM 1984, 290 (ad a9) and REALE / BOS 1995, 271 (n. 86). While in the  *Mirabilia* , these seven islands are mentioned only generally, Strabo ( *Geogr.*  14.2.10 p. 654 C.), explicitly relying on the historian Timaeus of Tauromenium (FGrHist 566 F65), gives the very same list of names (though in a different order) as our text, which were regarded as the seven largest islands (viz. of the Mediterranean). The list in  *De mundo*  could well have been inspired by Strabo’s.

In Apuleius’ translation, in the Syriac version and in the excerpts given by Stobaeus, Euboea has been replaced by the Peloponnese, see LORIMER 1924, 1 n. 2.

Then he turns to the wet parts of the earth, the seas, the description of which actually serves as a framework to delineate the *oikoumene*, an approach also suggested by Strabo.<sup>64</sup> We can anticipate that in the author's depiction of the *oikoumene*, there will be no inland sea: every sea is an influx or a sort of bay of the sea outside the *oikoumene* (3, 393a16: πέλαγος...ἔξω τῆς οἰκουμένης), which is called Atlantic Sea (3, 393a16–17: Ἀτλαντικόν [sc. πέλαγος]) or Oceanus/Ocean (Ὠκεανός), and which surrounds us. In other words: all the seas within the *oikoumene* island are supplied by waters of Oceanus, which sometimes flows through straits, sometimes broadens again to create basins and bays.<sup>65</sup> Thus, the author describes the *oikoumene* island by discussing the 'influxes'<sup>66</sup> of Oceanus into the *oikoumene* island one by one, starting in the west and proceeding anticlockwise.

From our point of view as inhabitants of the *oikoumene* island, towards the west (3, 393a17–18: ἐντὸς δὲ πρὸς δύσεις), at the so-called Pillars of Hercules (Strait of Gibraltar),<sup>67</sup> the Oceanus enters the *oikoumene* through a narrow mouth, and forms an "inner sea" (3, 393a20: τὴν ἔσω θάλασσαν), i.e. the Mediterranean. All the seas given in the general description of the Mediterranean (3, 393a17–b2) – i.e. the 'influx' of the Oceanus into the *oikoumene* from the west – are either parts of it,<sup>68</sup> or they are smaller bays<sup>69</sup> of the main bay called "inner sea" produced by the influx of Oceanus. Similarly, the Pontus (the Black Sea) itself is a bay of the inner sea, connected with the latter through the Hellespont (the Dardanelles) and the Propontis (the Sea of Marmara), and consisting of many parts (3, 393a31: πολυμερέστατος ὤν), the innermost of which is the Maeotis (the Sea of Azov) – a bay of the Pontus.

Now the author continues his description in the east of the *oikoumene* (3, 393b2: πρὸς γε μὴν ταῖς ἀνασχέσει τοῦ ἡλίου), where Oceanus again enters the *oikoumene* island, in the form of the Indian and Persian Gulf as

<sup>64</sup> Strab. *Geogr.* 2.5.17 p. 120 C.: πλεῖστον δ' ἡ θάλαττα γεωγραφεῖ καὶ σχηματίζει τὴν γῆν ("it is the sea more than anything else that defines the contours of the land and gives it its shape"; trans. JONES 1917–32).

<sup>65</sup> All in all, this approach strongly recalls Strabo (*Geogr.* 2.5.18 p. 121 C.: ἡ καθ' ἡμᾶς οἰκουμένη γῆ περίρρητος οὖσα δέχεται κόλπους εἰς ἑαυτὴν ἀπὸ τῆς ἔξω θαλάττης πολλούς ["our inhabited world, being girt by the sea, admits into itself from the exterior sea along the ocean many gulfs"; trans. JONES 1917–32]), but might even go back to Eratosthenes (see DIHLE 1997, 7 with n. 8).

<sup>66</sup> The Galatian Gulf is just an embayment, see below p. 102.

<sup>67</sup> The two mountains Calpe and Abyla, the so-called Pillars of Hercules, located at the Strait of Gibraltar, mark the border between the 'inner sea' (the Mediterranean) and the 'outer sea' (the Atlantic) in geographical literature throughout Antiquity.

<sup>68</sup> Namely the Sardinian, Galatian, Adriatic, Sicilian, Cretan, Egyptian, Pamphylian, Syrian, Aegean, and Myrtoan Seas (3, 393a26–31).

<sup>69</sup> The Major and the Minor Syrtes (3, 393a23–5).



well as the 'Red Sea'.<sup>70</sup> A third 'influx' of Oceanus is "towards the other side" (trans. RB); since it forms the "Hyrcanian or Caspian Sea" (to be identified with the Caspian Sea, see n. 72 on this page), 'the other side' must mean the northern border of the *oikoumene* island.<sup>71</sup> At any rate, Strabo, undoubtedly depending on Eratosthenes, envisioned the Caspian Sea – for which he explicitly gives the alternative name Hyrcanian – as a bay of Oceanus and not as an inland lake, and presents it as "the gulf that extends from the Ocean to the south".<sup>72</sup>

After these three 'influxes' of Oceanus, the author mentions an embayment called Galatian Gulf (the Bay of Biscay) north of the Scythians and the Celtic land,<sup>73</sup> before he comes back to his starting point, the Pillars of Hercules, and thus completes the circle of his *orbis descriptio*.

<sup>70</sup> The localisation and identification of the Indian and Persian Gulf (does the author mean two different gulfs or only one gulf?) and the 'Red Sea' (note that the Red Sea mentioned here is not identical with our notion of the term; for this latter one, see below), especially the geographical relation of the latter to the 'Indian and Persian Gulf' is problematical, see REALE / BOS 1995, 273 (n. 93), who give a useful overview of geographical interpretations for the toponyms mentioned, and DIHLE 1997, 7–8, as well as notes 36 and 37 on the Translation.

It is indeed remarkable that our author does not mention the Arabian Gulf (corresponding to what we call today the Red Sea) as a (southern) influx of Oceanus into the *oikoumene* (see also CAPELLE 1905, 538 n. 4). Strabo lists four large inlets of Oceanus: the Caspian Sea in the north of the *oikoumene*, the Persian Gulf as well as the Arabian Gulf in the south, and the Mediterranean in the west: see *Geogr.* 2.5.18 p. 121 C. This passage just follows the citation given above in n. 65 on p. 101. It does not seem to be taken from Eratosthenes (see GEUS 2002, 260; ROLLER 2010, 286; Dihle suggests, however, that it goes back to him: for the reference see the note just mentioned). Pseudo-Aristotle seems to think of a total of only three inlets (if we leave out the constriction caused by the Galatian Gulf, see below): the Mediterranean, the complex of the 'Indian and Persian Gulf' and 'Red Sea', and the Caspian Sea. On the other hand, he does mention the Arabian Gulf in the passage on islands situated around the *oikoumene* (see below p. 103).

<sup>71</sup> Ἐπὶ θάλασσαν δὲ κέρας (3, 393b5). See also CATAUDELLA 2003, 64: "[S]i tratta dell'altra parte della costa oceanica [...] rispetto a quella descritta immediatamente prima, che è la costa sudorientale [...]: [...] non può esser che la costa nordorientale quella che l'autore si accinge a descrivere [...]." In this volume, the translation for the passage cited is "towards the other promontory". Should the text here be emended from κέρας to πέρας? Nonetheless, in both cases, we would expect a preceding correlative expression with the particle μέν.

<sup>72</sup> Translation by ROLLER 2010, 99 (Strab. *Geogr.* 11.6.1 p. 507 C.: ἔστι δὲ κόλπος ἀνέχων ἐκ τοῦ Ωκεανοῦ πρὸς μεσημβρίαν). For the Caspian Sea thought of as an embayment, see also above pp. 89–90 as well as note 39 on the Translation. The synonymic use of the names Caspian and Hyrcanian is testified by Strab. *Geogr.*, *ibid.*; see also CATAUDELLA 2003, 65 n. 11; ROLLER 2010, 206.

<sup>73</sup> It has been pointed out by DIHLE 1997, 8, that the verb σφιγγω ("bind together, hold together, press together"), used in our treatise (3, 393b9) to express the constriction of the land by Oceanus, forming the Galatian Gulf, seems to recall a passage in Strabo, where the constriction of the continent at the Pyrenees by the Galatian Gulfs – Strabo distinguishes two gulfs of this name – is mentioned. See Strab. *Geogr.* 3.1.3 p. 137 C. and especially 3.4.19 p. 166 C. (τοῦ ἰσθμοῦ τοῦ ὑπὸ τῶν Γαλατικῶν κόλπων σφιγγομένου ["that isthmus

The author treated the islands in the 'inner sea' at the beginning of the geographical excursus, and it is near the end of the excursus that he addresses the islands in the Oceanus. Although theoretically we would have to consider these latter islands, if we strictly adhered the author's earlier definition (see pp. 97–98), as additional *oikoumenai*, they clearly seem to belong to 'this *oikoumene*'.<sup>74</sup> Some of the islands in the Oceanus are larger than the Mediterranean islands: north of the Celts, the two very large British Isles Albion (Britain) and Ierne (Ireland); across from the Indians, Taprobane (Sri Lanka), and by the Arabian Gulf (the Red Sea) an island called Phebol, which seems to be unidentifiable.<sup>75</sup> Other islands in the Oceanus are small and (in our text) nameless: those lying in a circle around the British Isles and Spain, for example.

For the width and length of the *oikoumene* island the author gives the figures "little short of 40,000 stades" and "just about 70,000 stades", respectively, citing "good geographers" (3, 393b18–21) as his source. These figures have been much discussed by scholars insofar as they seem to give a substantial clue for the source of the geographical passage of *De mundo*.<sup>76</sup> Indeed, these numbers seem roughly to fit Eratosthenes' indications of the width and length of the *oikoumene*,<sup>77</sup> but maybe we rather have to admit,

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which is constricted by the Galatian Gulfs"; trans. RB]). For this constriction, see also RADT 2006, 307.

<sup>74</sup> This is even implied by the passage at 3, 393b17–18, where the small islands in the Oceanus are said to be arranged around this *oikoumene*.

<sup>75</sup> See REALE / Bos 1995, 276–7 (n. 100), with an account of previous attempts to identify Phebol at 276. The two scholars suggest that the passage naming Taprobane and Phebol (3, 393b14–6) could be a later interpolation, arguing that it interrupts the logic of the narration. I do not share their opinion. It is true that our author 'jumps' from the north-western corner of the *oikoumene* (British Isles) to the south-eastern end (Taprobane, Phebol) and back again (islands around the British Isles and Spain), yet the passage is clearly structured: first the large islands in the Oceanus are presented, then the small ones. The comparison of the size of the British Isles to the size of Taprobane, which is said to be "not smaller than these" (3, 393b14), occurs also in Strabo's *Geography* (2.5.32 p. 130 C.; see DIHLE 1997, 10).

<sup>76</sup> See especially the recapitulations of the discussion in MAGUIRE 1939, 127; STROHM 1984, 293–4 (ad b18ff.); REALE / Bos 1995, 133–4 and 277–8 (n. 103). See also note 44 on the Translation.

<sup>77</sup> A suggestion made by DIHLE 1997, 7. For the numbers, see above p. 92 with n. 22. A comparison with Artemidorus' calculation (reported in Plin. *HN* 2.112.242; see STROHM 1984, 293–4 [ad b18ff.] and note 44 on the Translation) is problematic: on the one hand, we only have his calculation of the length of the *oikoumene*; on the other, Pliny indicates this length in *passus*, and we neither know Artemidorus' original value in stades for this nor, even if we did, which stade Artemidorus would have used. The attempt made by REALE / Bos 1995, 133–4 to demonstrate that the numbers in *De mundo* correspond to the proportions of length and width of the *oikoumene* as indicated in Aristotle's *Meteorology* with "more than 5 : 3" (2.5, 362b23) is an interesting observation. However, I prefer to take it as a possible additional trace of Aristotelian doctrine in our treatise rather than as a proof of Aristotelian authorship of *De mundo*, as REALE / Bos 1995 do.

with Maguire, that “we have, then, no means of knowing who are intended by the ‘good geographers’”.<sup>78</sup>

The author concludes his geographical excursus with a delineation of the three continents. He does so by applying both the ‘isthmus theory’ and the ‘river theory’, i.e. by designating isthmuses or, alternatively, rivers as borders between the continents.<sup>79</sup> Basically, only the ‘inner’ borders towards the Mediterranean are given.

For Europe, the border points are, “moving in a circle” (3, 393b23: κύκλω), according to the ‘isthmus theory’, 1) the Pillars of Hercules; 2) the “innermost parts of Pontus” (one of these was called Maeotis [Sea of Azov] before, see above p. 101); and 3) the Hyrcanian Sea (Caspian Sea), more precisely, from where a very narrow land neck<sup>80</sup> extends to the Pontus (Black Sea).<sup>81</sup> The author notes that for those who prefer the ‘river theory’, the river Tanaïs (Don) forms the relevant borderline.

The borders of Asia run from the aforementioned land neck between the Black and the Caspian Seas to the isthmus between the Arabian Gulf (Red Sea) and the “inner sea” (the Mediterranean) – in modern terms, to the isthmus of Suez. Again, people who rely on the ‘river theory’ define the edge of the continent as the line drawn from the Tanaïs to the mouths of the Nile.

The boundaries of Libya (Africa) extend from the above-mentioned Arabian isthmus to the Pillars of Hercules, but according to others who follow the ‘river theory’, from the mouths of the Nile to the Pillars of Hercules.

Finally, problematic cases are addressed: Egypt is sometimes regarded as a part of Asia (on the basis of the ‘river theory’), sometimes of Africa (‘isthmus theory’); islands are sometimes treated separately, sometimes they are allocated to the parts of the *oikoumene* closest to them.

In order to sum up the geographical description and to show the reader that now he will change the subject, the author states that the nature and position of the earth and sea (recalling the combination given at the very beginning of the chapter [3, 392b14], γῆ καὶ θάλασσα, see above p. 96)

<sup>78</sup> MAGUIRE 1939, 127.

<sup>79</sup> These theories were also reported by Eratosthenes (Strab. *Geogr.* 1.4.7 p. 65 C.); see also note 46 on the Translation.

<sup>80</sup> For the broader meaning of the word ἰσθμός used here, see Strab. *Geogr.* 1.4.7 p. 65 C.; see also STROHM 1984, 295 (ad b23ff.) and KOWALSKI 2012, 187: any land separating bodies of water can be understood as an isthmus, such as the land between the Black and the Caspian Seas.

<sup>81</sup> This is how I understand the passage here (3, 393b24–5) and below (26–7: “Asia is the part extending from the above-mentioned isthmus of the Pontus and the Hyrcanian Sea...”; trans. RB), considering the point where Europe and Asia touch; the isthmus must be the Caucasus. See also ZELLER 1885, 399–400 n. 1; cf. the translation of the passages in question in this volume.

have now been described, and declares in his didactic manner that we usually call the combination γῆ καὶ θάλασσα *oikoumene*.

#### 4. Conclusion

The chapters on cosmology and on geography in *De mundo* are both well structured, without any striking ruptures in content. Each of them forms a self-contained unit, while at the same time, both of these units are logically well integrated in the treatise. Even though the anonymous author combined several lines of literary, philosophical, and scientific tradition in the chapters in question and in the work as a whole, the treatise is a thoughtfully constructed and original text, and far from being a simple pastiche.<sup>82</sup>

It is probable that the author had rather basic and superficial knowledge of geography and did not get deeply involved with geographical questions.<sup>83</sup> On the one hand, he gives proof of a certain ability of spatial thinking, but this thinking seems to remain in two-dimensional terms, either based on an 'above-below perspective' or as if he was looking at a map (though I do not wish to imply that he had a map at his disposal). On the other, his cosmological concept clearly presents a spherical, three-dimensional model, exhibiting an 'inside-outside perspective'. Our author harmonises the two levels he is thinking in by naturally combining the concepts of the island-shaped *oikoumene*, surrounded by Oceanus, and the terrestrial globe, encompassed by the sphere of water.<sup>84</sup>

Possibly, Pseudo-Aristotle was recalling and reporting his geographical knowledge in chapter 3 rather than closely consulting a particular source which he had at his disposal. He follows the literary geographical tradition, i.e. the descriptive geographical literature, best represented by Strabo, rather than the scientific branch of geographical literature. Indeed, we have pointed out several details which may echo Strabo's *Geography*. At the same time, other passages clearly reflect Eratosthenes; I suggest, with Dihle,<sup>85</sup> that Eratosthenian references in *De mundo* do not go back directly to Eratosthenes' geographical work, but to an intermediary source, which

<sup>82</sup> Cf. CATAUDELLA 2003, 70, for whom ch. 3 exhibits a compilatory character.

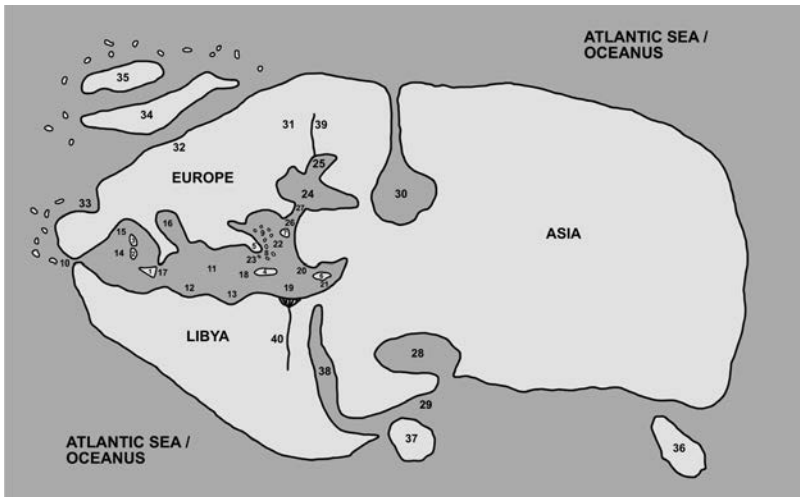
<sup>83</sup> This might be the reason for sporadic lack of clarity in his geographical description, e.g. as far as the Arabian Gulf is concerned (see above p. 102, n. 70).

<sup>84</sup> Similarly REALE / BOS 1995, 271 (n. 87): "la trasformazione del mitico fiume Oceano circondante la terra nel mare Oceano che circonda la terra abitata, era del tutto naturale data la teoria del *De mundo*, che concepisce appunto la terra inglobata dall'acqua."

<sup>85</sup> DIHLE 1997; see also Strohm's observations on possible echos of Strabonian vocabulary in *De mundo* (above p. 97 with n. 49).

could well have been Strabo's *Geography*.<sup>86</sup> This suggestion would entail a post-Strabonian date of composition of *De mundo*.<sup>87</sup>

If we intend to use the geographical data given in *De mundo* in order to find out more about the date and the authorship of the text, we must not forget that these materials do not necessarily represent up-to-date geographical and cartographical knowledge, either of the author's time or of the period to which we attribute (possible) sources. The geographical facts given in our treatise can serve as a *terminus post*, but we should be careful about using them as a *terminus ante* in view of the development of geographical knowledge.



- |  |                               |  |
|--|-------------------------------|--|
| 1 Sicily                                     | 15 Galatian Sea               | 30 Hyrcanian and Caspian Sea (Caspian Sea) |
| 2 Sardinia                                   | 16 Adriatic Sea               | 31 Scythians                               |
| 3 Corsica                                    | 17 Sicilian Sea               | 32 Celtic Lands / Celts                    |
| 4 Crete                                      | 18 Cretan Sea                 | 33 Galatian Gulf (Bay of Biscay)           |
| 5 Euboea                                     | 19 Egyptian Sea               | 34 Albion (Great Britain)                  |
| 6 Cyprus                                     | 20 Pamphylian Sea             | 35 Ierne (Ireland)                         |
| 7 Lesbos                                     | 21 Syrian Sea                 | 36 Taprobane (Sri Lanka)                   |
| 8 Cyclades                                   | 22 Aegean Sea                 | 37 Phebol                                  |
| 9 Sporades                                   | 23 Myrtoan Sea                | 38 Arabian Gulf (Red Sea)                  |
| 10 Pillars of Hercules (Strait of Gibraltar) | 24 Pontus (Black Sea)         | 39 Tanais (Don)                            |
| 11 Inner Sea (Mediterranean)                 | 25 Maeotis (Sea of Azov)      | 40 Nile                                    |
| 12 Minor Syrtis                              | 26 Hellespont (Dardanelles)   |  |
| 13 Major Syrtis                              | 27 Propontis (Sea of Marmara) |  |
| 14 Sardinian Sea                             | 28 Indian and Persian Gulf    |  |
|  | 29 'Red Sea'                  |  |

<sup>86</sup> Eratosthenes' *Geography* did probably not exist intact past the 2nd century CE (see ROLLER 2010, 15).

<sup>87</sup> Strabo probably continued to work on his *Geography* until his death (between 23/24 and 25 CE), and the work was presumably published posthumously (see RADT 2008, 865–7).

# The Cosmotheology of *De mundo*

Johan C. Thom

As indicated in the Introduction, the primary aim of *De mundo* is not to provide a description of the cosmos nor indeed to sing its praises, but to provide an answer to the question regarding god's involvement in the sub-lunary world (usually called providence).<sup>1</sup> The question it tries to address is how it is possible for god to be responsible for the order and preservation of the world without giving up his self-sufficiency and independence, that is, the problem normally described as transcendence *versus* immanence.<sup>2</sup> Its own solution to the problem is to devolve such immanent involvement to god's δύναμις ('power'). The first, descriptive part functions as foil for the latter half in which this question is addressed. The main issue at stake in *De mundo* is therefore theological in nature.<sup>3</sup>

*De mundo* has been described as a remarkable example of eclecticism,<sup>4</sup> and it is true that several different philosophical traditions – including Platonism, Stoicism, and perhaps Neopythagoreanism – left their mark in this work. It would be a mistake, however, to think that the text for this reason lacks conceptual cohesion. Despite some incongruities, *De mundo* as a whole may be considered a relatively coherent attempt to address the problem described above. The author clearly considers his solution

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<sup>1</sup> It is a matter of debate "whether the mere presence of order deriving from a divine principle is sufficient to justify application of the term 'providence' at all"; see SHARPLES 2002, 25, 30, who also refers to Alexander of Aphrodisias's insistence that it is not possible to talk of providence where an effect is entirely accidental.

<sup>2</sup> In *De mundo* god is not strictly speaking located 'outside' the world, but rather in the highest point of the heavens (397b24–7, 398b7). According to BESNIER 2003, 479–80, the opposition in *De mundo* is not between transcendence and immanence, but between god's autarchy and his demiurgic activity. For OPSOMER 2005, 61 n. 47, too, "the issue seems to be not so much that of transcendence, but rather one of activity and causation". SHARPLES 2002, 15 with n. 69 maintains that the description in *De mundo* does not necessarily imply a distinction between god and the heavens, but he also suggests that "whether we are then to think of a soul within the heavens moving them, or a transcendent deity causing the movement of an otherwise inanimate heaven, is perhaps relatively unimportant". In what follows I will continue to use the convenient term transcendence, but this should not be taken to imply an absolute separation between god and the world.

<sup>3</sup> See FESTUGIÈRE 1949, 478.

<sup>4</sup> Cf. ZELLER 1919–1923, 3.1.664–5, 670; STROHM 1970, 268. For important qualifications regarding the concept eclecticism, see M. FREDE, "Eclecticism", *Brill's New Pauly* 4 (2004) 789.

to be 'Peripatetic', despite its deviations from Aristotelian doctrine, since he published this work in Aristotle's name. It is nevertheless a new synthesis, making use of, and responding to, doctrinal elements from other traditions in addition to Aristotelianism.

## 1. Philosophy as Cosmotheology

Philosophy is praised in the introduction (ch. 1) as "a divine and truly god-like matter" because of its ability to view things from a divine perspective, that is, to contemplate and make sense of large-scale relationships between things widely separated in space. Such an all-encompassing view enables philosophy to perceive connections that would not be possible otherwise. Even though we find many details about geographical and climatological phenomena later in chapters 3–4, the author is not interested in such small-scale phenomena for their own sake; people doing so are called "small-minded" "because they are amazed at the incidental" (391a23).<sup>5</sup> He instead wants to focus on "the noblest" and "greatest" things, that is, the cosmos as a whole and the greatest things within it (391a25–6); his aim is "the contemplation of the things that exist" and "to know the truth in them" (391a3–4). The way philosophy accomplishes this task is described by means of several related *topoi* with strong Platonic roots.<sup>6</sup> The first *topos* is that of the heavenly journey of the soul:<sup>7</sup> philosophy, guided by the mind, helps the soul to leave the body in order to explore and travel through "the heavenly place" which the author calls "the sacred region". From this celestial perspective philosophy is able to discern various relationships and to comprehend "the divine things" (τὰ θεῖα) with the divine eye of the soul – the second *topos*.<sup>8</sup> The divine eye refers to the faculty of the soul that is able to perceive and contemplate the true nature of things. By this means philosophy is thus able to interpret the divine things to humans. The act of interpretation itself is called *προφητεῦν*, suggesting a third *topos*, namely the mysteries of nature that can only be revealed to the discerning (391a8–16).<sup>9</sup> Further on in the

<sup>5</sup> For a debate on the merits of inferring "great conclusions from small data" cf. Plut. *De def. or.* 410c–d.

<sup>6</sup> For the Platonic background of this passage see STROHM 1970, 265, 274–5; MANSFELD 1992, 410 n. 63.

<sup>7</sup> See JONES 1926, 97–113; FESTUGIÈRE 1946; id. 1949, 441–58; COURCELLE 1972; KOLLER 1973, 35–57.

<sup>8</sup> The phrase τὸ τῆς ψυχῆς ὄμμα ("the eye of the soul") occurs for the first time in Pl. *Resp.* 533d2, while the phrase τὸ θεῖον ὄμμα ("the divine eye") is first used by the Neoplatonists (cf. Porph. *Plot.* 10.29; Iambl. *VP* 16.70). The combination "the divine eye of the soul" is only found here.

<sup>9</sup> For the mystery cult of nature, see FESTUGIÈRE 1949, 233–8; J. PÉPIN, "Cosmic Piety", in: A. H. ARMSTRONG (ed.), *Classical Mediterranean Spirituality. Egyptian, Greek, Roman.* World

passage Pseudo-Aristotle describes what he does in the *De mundo* as ‘theologizing’ (θεολογεῖν), in which the nature, position, and movement of “the greatest things” are discussed (391b3–5). The use of the term θεολογεῖν is significant here. In Plato (*Resp.* 397a5) and in Aristotle (*Met.* 353a35; *Metaph.* 983b29) θεολογία and θεολογεῖν are used of a mythical speaking of the gods associated with the ancient poets. Aristotle, however, created the neologism θεολογική as a description of one of the three ‘theoretical sciences’, that is, the science dealing with the first and most fundamental principle, which must be divine.<sup>10</sup> In *De mundo* θεολογεῖν is used in this latter sense, namely the relationship between the divine principle and the cosmos; the kind of philosophy advocated in the work may therefore be called ‘cosmotheology’.

## 2. God and the Definition of Cosmos

An important indication of how this perspective will unfold in the text is provided at the beginning of chapter 2. Pseudo-Aristotle first defines “cosmos” as “a system of heaven and earth and the entities contained within them” (391b9–10). This is the normal Stoic definition found in Chrysippus and repeated by Posidonius,<sup>11</sup> which describes the cosmos as a self-contained system. In an alternative definition Chrysippus even identifies the cosmos with god, who thus ensures the cosmos its coherence: “But as an alternative god is called cosmos, according to whom the order [of the cosmos] is established and accomplished” (λέγεται δ’ ἑτέρως κόσμος ὁ θεός, καθ’ ὃν ἡ διακόσμησις γίνεται καὶ τελειοῦται).<sup>12</sup> Pseudo-Aristotle, however, adapts this second definition to fit his own world view: “But as an alternative the arrangement and order of the universe, preserved by god and because of god, is also called cosmos” (λέγεται δὲ καὶ ἑτέρως κόσμος ἢ τῶν ὄλων τάξις τε καὶ διακόσμησις, ὑπὸ θεοῦ τε καὶ διὰ θεὸν φυλαττομένη, 391b10–12). In this definition god is not identified with, but

Spirituality 15 (New York 1986) 408–35; J. C. THOM, *The Pythagorean Golden Verses. Religions in the Graeco-Roman World* 123 (Leiden 1995) 210–2; P. HADOT, *The Veil of Isis. An Essay on the History of the Idea of Nature* (Cambridge MA 2006). An interesting later parallel is found in Plotinus, *Enn.* 2.9.9.40–2: “This cosmos reveals (προφητεύει) the things of god to humans”; see J. F. PHILLIPS, “The Universe as Prophet: A Soteriological Formula in Plotinus”, *Greek, Roman, and Byzantine Studies* 22 (1981) 269–81.

<sup>10</sup> Arist. *Metaph.* 1026a15–32, 1064a28–b3. For a valuable overview of the history of the use of θεολόγος, θεολογία, and θεολογεῖν, see FESTUGIÈRE 1949, 598–605. See also M. von PERGER, “Theology I: Greece and Rome”, *Brill’s New Pauly* 14 (2009) [489–93] 489.

<sup>11</sup> Cf. Chrysippus *SVF* 2.527, vol. 2, 168.11–13 Arnim *ap.* Arius Didymus fr. 31, 465.14–15 Diels = Stob. *Ecl.* 1.21.5, vol. 1, 184.8–10 Wachsmuth; *SVF* 2.529.3–4 *ap.* Cleomedes, *Caelestia* 1.1, lines 4–5; Posidonius fr. 334 Theiler = 14 Edelstein-Kidd *ap.* Diog. Laert. 7.138.

<sup>12</sup> *SVF* 2.527, vol. 2, p. 168.14–15 Arnim *ap.* Arius Didymus fr. 31, p. 465.16–17 Diels = Stob. *Ecl.* 1.21.5, vol. 1, p. 184.11–12 Wachsmuth.



separate from and transcendent to the world.<sup>13</sup> In what follows the author first concentrates on the first definition, but in the second part of the work, from chapter 5 onwards, he shifts his focus to the second. The ultimate aim of *De mundo* is not simply to provide a description of the cosmos as system, but to explain god's involvement in the order and preservation of the world.<sup>14</sup>

Such involvement by god differs from conventional Aristotelian doctrine. According to Aristotle, god is turned away from the world; he is pure thought contemplating himself; "his thinking is a thinking of thinking" (ἔστιν ἡ νόησις νοήσεως νόησις; *Metaph.* 12.9, 1074b34–5).<sup>15</sup> As the first Unmoved Mover, he is the final cause influencing the heavens to move in a cyclical movement as the object of their desire, but he is not in any way concerned with what happens in the sublunary world. In Antiquity both supporters and opponents of Aristotle ascribed to him the view that the heavenly region was influenced by divine providence, but not the sublunary world.<sup>16</sup> The Aristotelian god is therefore transcendent, unlike the demiurge of Plato's *Timaeus*, who is ultimately responsible for the creation of the world and its continued existence. Like Plato, the author of *De mundo* wants to show that god is directly responsible for acting on and maintaining this world, but without giving up his transcendence.

### 3. An Overview of the Cosmos as Backdrop

Before addressing this issue, Pseudo-Aristotle first provides an overview of the cosmos in chapters 2–4, starting from the uppermost region, which is unchangeable, the sphere of the stars and planets, made up of ether (391b14–392a31). He then briefly describes in descending order the regions comprising the changeable, sublunary part of the cosmos, namely that of fire, air, water, and earth (392a31–393a8). This distinction between the supralunary and sublunary parts of the cosmos, and that between the five regions, are standard Aristotelian doctrines.

In the rest of chapter 3 until the end of chapter 4 the author focuses exclusively on the sublunary part of the cosmos. His interest here is to emphasize the diversity of phenomena found on earth. He first describes the land and water masses (oceans, seas, bays, continents, islands) comprising the inhabited world, that is, manifestations of the elements water and earth (393a9–394a6). Next, he provides a systematic listing of meteorological phenomena resulting from the interaction of air, water, and earth. These

<sup>13</sup> For the change in definition see also STROHM 1970, 279; DUHOT 1990, 194.

<sup>14</sup> Cf. FESTUGIÈRE 1949, 478; MORAUX 1984, 77; RUNIA 2002, 305.

<sup>15</sup> Cf. GOTTSCHALK 1987, 1134–5.

<sup>16</sup> See SHARPLES 2002, 22, who cites Atticus fr. 3 des Places; Epiph. *Adv. haeres.* 3.31 = Diehls, *Dox.* 592.9–14.

include various forms of precipitation; winds; different forms of thunder and lightning; rainbows and other optical phenomena in the sky; various types of meteors and comets; different kinds of volcanoes, earthquakes, and other geological phenomena; chasms in the sea and tidal waves.

This diversity and numerous opposing and conflicting phenomena resulting from the mixture of air, water, and earth give rise to the first major question the author tries to resolve (396a27–b1): How it is possible that the world is preserved despite the conflicting phenomena described in chapters 2–4? Why do these phenomena not annihilate one another, thus causing the destruction of the world? This question thus refers to the Peripatetic doctrine of the eternity of the world, one of the polemical issues concerning which Aristotelians were at odds with the Stoics.<sup>17</sup> The polemic is not openly acknowledged in the *De mundo*, but is implicit at several points in the text.<sup>18</sup>

#### 4. Preservation despite Conflicting Phenomena

The author begins to address this problem in chapter 5 by suggesting that nature itself needs opposites and creates consonance (τὸ σύμφωνον; i.e. harmony) between them just like the concord (ὁμόνοια) established between different interest groups in a city (396a33–b8). Harmony between conflicting principles thus appears to result from the constitution of nature. This notion is supported by an ambiguous quotation from Heraclitus: “Conjunctions: wholes and not wholes, agreement and difference, consonance and dissonance; one from all and all from one.”<sup>19</sup> A little further on (396b23–397a5), however, harmony (ἁρμονία) is depicted not as a product of something else (e.g. the constitution of nature or some action) but as an active force that has arranged (διεκόμησεν) the composition of the universe by means of the mixture of opposite principles. It is described as a power (δύναμις) pervading all things, a power that set everything in order. It has created (δημιουργήσασα)<sup>20</sup> the whole cosmos from diverse elements and compelled them into agreement. The agreement (ὁμολογία) or concord (ὁμόνοια) between the opposing elements results from the equality or equilibrium enforced by the cosmic power, which thus ensures preservation (σωτηρία) for the whole. Preservation of the cosmos is one of the

<sup>17</sup> Plato’s position, as expressed in the *Timaeus* (cf. e.g. 28b–c), is famously ambiguous and was hotly debated from the very beginning; see e.g. W. K. C. GUTHRIE, *A History of Greek Philosophy V. The Later Plato and the Academy* (Cambridge 1978) 302–5.

<sup>18</sup> See e.g. on the ‘Weltewigkeitslehre’ in ch. 5 STROHM 1970, 329, 332, 333 and for the rest of *De mundo* STROHM 1970, 268, 277, 282, 289, 323, 325, 344, 349.

<sup>19</sup> Heraclitus DK 22 B 10.

<sup>20</sup> This is a problematic statement for an Aristotelian author because Aristotle taught that the world is uncreated and eternal (see *Cael.* 1.10; 3.2, 301b31–302a9), as opposed to the Platonists who supported the notion of a created world.

dominant themes in the work,<sup>21</sup> and we will encounter it again in chapter 6.

The author again uses Stoic formulations in this section, especially the idea of “a single power pervading all things” (μία ἢ διὰ πάντων διήκουσα δύναμις).<sup>22</sup> The coherence is not, however, caused by a divine immanent *pneuma* permeating all things as is the case in Stoicism, but results from the (mechanical) equilibrium brought about by the cosmic power between opposing principles: the equilibrium itself is a balance of forces within an enclosed space.<sup>23</sup>

The chapter concludes with an encomium on the cosmos praising its beauty, order, stability, and eternity (397a4–b8). The cosmos is announced as “the begetter (γενετήρ) of all things and the most beautiful of all”.<sup>24</sup> From it the lives and continuance of all creatures are derived. In it all the diverse phenomena coexist in an orderly manner; even the cataclysmic events (earthquakes, floods, conflagrations) contribute to the preservation of the cosmos; extreme phenomena help to maintain the balance, purity, and health of the whole. Despite the continuous sequence of generation, flourishing, and decay, and the ongoing change and destruction of individual parts, the principle of preservation keeps the whole indestructible. This encomium contributes to the sense of awe and wonder the author tries to evoke through his description of the cosmos: as we see in the next section, the wonder of god becomes ‘visible’ in the beauty and orderly arrangement of the cosmos.<sup>25</sup>

## 5. The Relationship between God and the Cosmos

At the beginning of chapter 6 there is a significant shift in the argument. The author says he will now speak about that which is most important (κυριώτατον) in the cosmos, namely “the cause holding the universe together” (397b9–13). In this introductory statement he uses the expression *περὶ κόσμου λέγοντας*, “when speaking about the cosmos”, which is a clear reference to the title, and thus to treatise itself, since the phrase *περὶ κόσμου* is not used anywhere else in the work.<sup>26</sup> This phrase therefore

<sup>21</sup> See *Mund.* 396b33–4; 397a31, b5, 16; 398a4, b10; 400a4 (σωτηρία); 397b20, 401a24 (σωτήρ); 397a3 (σωστικός); cf. also 391b12, 396a32, 397b7 (φυλάττω). For the importance of *σωτηρία* see also POHLENZ 1965, 377.

<sup>22</sup> For the notion of a divine power pervading all things in Stoic authors cf. *SVF* 1.158, 161, 533, 537.12–3; 2.323a, 442, 473, 946, 1040; 3.4, etc. For a discussion see THOM 2005, 87–8.

<sup>23</sup> See also DUHOT 1990, 195–6.

<sup>24</sup> The term *γενετήρ* is in the next chapter (397b21–2) used of god, “the begetter of all things in the cosmos.” This forms part of the shift in ch. 6 from order as an inherent part of the cosmos to god as the cause of that order.

<sup>25</sup> See STROHM 1970, 265–7; also Chandler’s essay, esp. §§ 5–6.

<sup>26</sup> It indeed occurs nowhere else in the *Corpus Aristotelicum*; see MANSFELD 1992, 401–2.

marks what follows as a crucial passage in which the cause of the preservation of the cosmos is identified as the main theme of the work. Up to this point the harmony and preservation of the cosmos have been described as either a function of its constitution or as a power apparently inherent in the cosmos. Now, in chapter 6, this role is explicitly attributed to god; god is ultimately “the cause holding the universe together” (ἡ τῶν ὅλων συνεκτικὴ αἰτία), that is, the one preserving it from the forces of chaos. The notion that there is a divine force holding the world together and thus preserving it from chaos was already present in the time of Plato and Aristotle,<sup>27</sup> but the phrase *συνεκτικὴ αἰτία* seems to be a direct reaction to Stoic doctrine, because it is a variant of the formula *συνεκτικὸν αἴτιον* coined by the Stoics.<sup>28</sup> The transcendent Aristotelian god is thus put in place of the immanent Stoic *pneuma* as cohesive cause of the cosmos.

The author refers to “an ancient account” (397b13–20) with which he apparently agrees,<sup>29</sup> according to which everything owes its existence and continued preservation to god; all things have come to be “from god and because of god” (ἐκ θεοῦ πάντα καὶ διὰ θεόν).<sup>30</sup> Nothing is self-sufficient (αὐτάρκης), i.e. can exist in and of itself, if deprived of god’s preservation. The author immediately corrects the wrong inference by “some of the ancients” that this means that everything is full of god,<sup>31</sup> i.e. that god himself is immanently present in the world. The author again takes up an position against Stoic immanentism and pantheism.<sup>32</sup> In what follows he tries to provide an answer to the second major question addressed in the work: How is it possible to consider god to be responsible for the order and preservation of the cosmos while still maintaining his independence and transcendence?

The solution offered by Pseudo-Aristotle to the problem of immanence *versus* transcendence is that one should distinguish between god’s essence

<sup>27</sup> Cf. Arist. *Pol.* 7.4, 1326a32–3; Xen. *Mem.* 4.3.13; see also REALE / BOS 1995, 313 n. 233; DUHOT 1990, 195; OPSOMER 2006, 7. STROHM 1970, 333–4 emphasizes the widespread use of the terminology found here.

<sup>28</sup> See DUHOT 1990, 197–8; MANSFELD 1992, 401; OPSOMER 2006, 7–8.

<sup>29</sup> For the importance of tradition in Plato and Aristotle see STROHM 1970, 334.

<sup>30</sup> Cf. *Mund.* 391b12: ὑπὸ θεοῦ τε καὶ διὰ θεόν (“by god and because of god”).

<sup>31</sup> This view may refer to Thales; cf. Thales *DK* 11 A 22 *ap.* Arist. *De an.* 411a7–8. In *Pl. Leg.* 899b the Athenian stranger gets Clinias to agree that everyone accepts this view.

<sup>32</sup> POHLENZ 1965, 377–8 even speaks of a “Kampfansage” against Stoicism. See also MORAUX 1984, 39. For a brief summary of Stoic doctrine on the relationship between god and the world, see J. C. THOM, “Stoicism”, in: C. A. EVANS / S. E. PORTER (eds.), *Dictionary of New Testament Background* (Downers Grove 2000) [1139–42] 1140: “Stoic theology may be described as a monistic and materialistic pantheism, in which God permeates all of nature, from the cosmos as a whole down to the most lowly physical object [...]. It is monistic, because of its doctrine of a single world order encompassing all that exists, including God [...]. Nothing exists outside the world and its material principles; there is no spiritual world or world of ideas, such as in Platonism – hence the materialism of Stoicism.”

(οὐσία) and his power (δύναμις) (397b19–27). God remains transcendent, separate from the world, in essence; his involvement in the cosmos is confined to his power. So while he is ultimately responsible for the preservation of the cosmos and whatever occurs in it, he does not act directly, but by using his power: “God is really the preserver (σωτήρ) of all things and the begetter (γενέτωρ) of everything however it is brought about in this cosmos, without indeed enduring the hardship of a creature hard at work for itself, but by making use of an untiring power, by means of which he prevails even over things that seem to be far away.” God himself is not in the world, but established in the highest region, and does not do any work himself, because it would not be ‘appropriate’ (πρέποντα) to his dignity.<sup>33</sup> God thus remains separate and acts on the world without expending any effort himself.

This passage (397b19–27) is crucial for our understanding of the cosmotheology of *De mundo* and therefore merits a few explanatory comments.

The term οὐσία, translated as ‘essence’, became an important technical term in Greek philosophy from the time of Plato onwards.<sup>34</sup> It is nonetheless used with varying meanings, including ‘being’, ‘substance’, ‘essence’, and ‘true nature’,<sup>35</sup> all of which are reflected in different translations of *De mundo*.<sup>36</sup> The focus here is on the invisible god being in and by himself, independent and separated from the cosmos, as opposed to his visible actions resulting from his power (δύναμις).<sup>37</sup>

From the perspective of *De mundo*, preservation (σωτηρία) is one of the most pressing needs in the cosmos. The cosmos has to be preserved and sustained to keep it from destruction. In chapter 5 preservation appears to be an inherent function of the order and harmony established in the cosmos.<sup>38</sup> Here, however, this role is ultimately assigned to god: he is the ‘preserver’ or ‘saviour’ (σωτήρ) of all things, because he is the one who

<sup>33</sup> In other passages, too (cf. 398b6–10), the distinction between god and his power is based on what is “dignified” and “becoming”.

<sup>34</sup> See J. RITTER / K. GRÜNDER / G. GABRIEL, “Wesen I: Antike”, *Historisches Wörterbuch der Philosophie* 12 (2004) 621–6.

<sup>35</sup> See *LSJ* s.v. οὐσία, II.

<sup>36</sup> Cf. FESTUGIÈRE 1949, 470: “essence”; FURLEY 1955, ad loc.: “essence”; REALE / BOS 1995, ad loc.: “essenza” (but cf. *ibid.*, 317 n. 239: “la realtà o sostanza o essenza”); STROHM 1970, ad loc. and SCHÖNBERGER 2005, ad loc.: “Wesen”; Bos 1989, ad loc.: “wesen”; GOHLKE 1968, ad loc.: “Wirklichkeit”; FORSTER 1984, ad loc.: “nature”; TRICOT 1949, ad loc.: “nature”; MARTÍN / ALESSO 2010, ad loc.: “sustancia”. The translation “being” is preferred by Smith in his essay included below.

<sup>37</sup> For the contrast between the invisible god and his visible actions scholars cite Xen. *Mem.* 4.3.13–14; see STROHM 1970, 335; REALE / BOS 1995, 114–7. See also *Mund.* 399b18–25.

<sup>38</sup> *Mund.* 396b23–34; see above, pp. 111–112.

maintains the order of the cosmos (cf. 391b10–12).<sup>39</sup> There is thus a movement from the σωτηρία discernible in the visible cosmos to the invisible σωτήρ who is its ultimate cause.<sup>40</sup> God is at the same time called the ‘begetter’ (γενέτωρ)<sup>41</sup> of all things, which is reminiscent of Plato’s demiurge,<sup>42</sup> although it is not clear what ‘begetter’ means in a Peripatetic context which does not allow for a created cosmos. It is probably poetic language referring to god as the cause of everything in existence. The statement made earlier (397b14–15) that all things have come to be “from god and because of god” (ἐκ θεοῦ πάντα καὶ διὰ θεόν) indeed identifies god as efficient cause of the cosmos.<sup>43</sup> God effects all of this without having to act directly himself, however; active involvement in the world is relegated to the power of god instead.<sup>44</sup> The emphatic “god is *really* (ὄντως) the preserver [...] and the begetter” underlines the shift indicated above that took place from chapter 5 to chapter 6.

This distinction between a transcendent god and an immanent divine power is similar to a tendency found in Platonic and Neopythagorean philosophers of the early Imperial period to split the demiurge god into two (or more) principles: a fully transcendent god and a lower principle (variously identified as the world soul, the cosmic intellect, a second or third demiurge, etc.) on which the demiurgic functions devolved.<sup>45</sup> For these philosophers, as for the author *De mundo*, the distinction between different divine principles (in *De mundo* between god’s essence and his power) serves to maintain god’s transcendence, while at the same explains how it is possible that he can be active in the world. There is however an important difference: *De mundo* is more strictly ‘monotheistic’ than the Platonic and Neopythagorean texts; in *De mundo* one single god, acting through his power, is the cause of everything that happens in the cosmos.<sup>46</sup>

<sup>39</sup> Σωτήρ in the sense of ‘preserver’, ‘protector’, was a common epithet of various gods, but especially of Zeus; see SCHWABL 1978, 1055–7. Cf. also W. FOERSTER, “σωτήρ A”, *Theological Dictionary of the New Testament* 7 (1971) [1004–12] 1004–5.

<sup>40</sup> Cf. STROHM 1970, 266.

<sup>41</sup> The term γενέτωρ is used twice in the treatise for god (397b21, 399a31), and the term γενετήρ once for the cosmos (397a4). These are not used elsewhere in Aristotle as description of god (γενέτωρ only in fr. 489.9, 11 as epithet of Apollo).

<sup>42</sup> Cf. also the use of δημιουργήσασα in 396b31; see n. 21 above. For the Platonic connection see OPSOMER 2006, 11.

<sup>43</sup> Cf. MORAUX 1984, 47–8; OPSOMER 2006, 8.

<sup>44</sup> There is some confusion between god and his power in 398a1–6, but it is clear from texts like 398b6–10 that god’s power penetrates through the whole cosmos. Cf. on the confusion between these passages also DUHOT 1990, 203–4; SHARPLES 2002, 25 n. 116.

<sup>45</sup> See OPSOMER 2005. He refers *inter alia* to Eudorus, Numenius, Plutarch, Nicomachus, Alcinoüs, Porphyry, and Plotinus. OPSOMER 2006, 10 suggests that the beginning of this process may be found in *De mundo*.

<sup>46</sup> FESTUGIÈRE 1949, 515–6; GOTTSCHALK 1987, 1136, 1138; OPSOMER 2006, 16–7. For the polytheism of the Platonists, cf. GOTTSCHALK 1987, 1138: “[T]he Platonists, while monotheists with their heads, remained polytheists with their hearts.” Monotheism is however a

The way god's power is transmitted through the cosmos is described in subsequent passages. The author starts by saying that the power is physically transmitted from one body to the next, gradually weakening in proportion to the distance from its origin until it reaches earth. God's preservative and beneficial influence (ὠφέλεια) nevertheless penetrates down to the lowest level (397b27–35). A formulation such as “in as far as the divine naturally penetrates to everything” (καθ' ὅσον ἐπὶ πᾶν διικνεῖσθαι πέφυκε τὸ θεῖον) again sounds Stoic, but the gradual, physical transmission of power envisaged here is very different from the Stoic *pneuma* that permeates everything equally.

The relationship between god and the cosmos is illustrated by way of an extensive comparison with the court of the King of Persia (398a10–b6): the King in his dignity lived invisible to others in a magnificent and extensive palace, surrounded by numerous courtiers and officials who served both to isolate him from the rest of the people, and to keep him informed of events throughout the empire. Such immediate and up-to-date information was possible because of the extensive system of signal-beacons in operation in every part of the empire. We find this comparison in other contemporary philosophers as well: Philo (*Somm.* 1.140–1) and Maximus of Tyre (11.12) interpret the attendants of the King symbolically as a reference to *daimones* or lesser gods who assist god in ordering the cosmos (a notion going back to Plato; cf. e.g. *Ti.* 42d).<sup>47</sup> Such an interpretation is not possible in *De mundo*, however;<sup>48</sup> the author insists that god has no need of assistance from others as human rulers do (398b10–12).<sup>49</sup> Instead, the comparison serves to stress the following points: (a) Like the King, god's dignity requires that he be separated from the cosmos. (b) For the same reason he is not directly responsible for the execution of mundane and menial tasks. (c) Despite his separation from the cosmos, he nevertheless maintains contact with the whole cosmos, just like the Persian king by

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complex issue and has in recent years been the subject of intense scholarly discussion; cf. P. ATHANASSIADI / M. FREDE (eds.), *Pagan Monotheism in Late Antiquity* (Oxford 1999); B. N. PORTER (ed.), *One God or Many? Concepts of Divinity in the Ancient World*. Transactions of the Casco Bay Assyriological Institute 1 (Chebeague ME 2000); R. G. KRATZ / H. SPIECKERMANN (eds.), *Götterbilder - Gottesbilder - Weltbilder: Polytheismus und Monotheismus in der Welt der Antike I. Ägypten, Mesopotamien, Kleinasien, Syrien, Palästina*. Forschungen zum Alten Testament II.17 (Tübingen 2006); S. MITCHELL / P. VAN NUFFELEN (eds.), *Monotheism between Pagans and Christians in Late Antiquity* (Walpole MA 2010); S. MITCHELL / P. VAN NUFFELEN (eds.), *One God. Pagan Monotheism in the Roman Empire* (Cambridge / New York 2010); H. S. VERSNEL, *Coping with the Gods. Wayward Readings in Greek Theology*. Religions in the Graeco-Roman World 173 (Leiden / Boston 2011) 239–307.

<sup>47</sup> For Maximus see Appendix, Text 1. See also Smith's essay, below p. 123.

<sup>48</sup> Pace FESTUGIÈRE 1949, 479 who finds here a reference to the divine heavenly bodies.

<sup>49</sup> Cf. MAGUIRE 1939, 150; STROHM 1952, 164; REGEN 1971, 29.

means of his signal-beacons.<sup>50</sup> (d) Unlike the King, god acts on the cosmos without the help of other beings.

The concept of a physical transmission of power is picked up again in *Mund.* 398b19–27: an initial first movement leads to a chain-reaction by means of which the power is transferred from one region to the next, and so on until it reaches the whole cosmos. The activity of the δύναμις itself is described as nothing other than movement.<sup>51</sup> This passage introduces a new idea, namely that bodies react differently to the initial impulse on the basis of their constitutions. This idea is explored in *Mund.* 398b27–35 by means of two examples: the different results produced when differently shaped objects (a sphere, a cube, a cone and a cylinder) are thrown at the same time and the different movements taken by animals from the land, water and air when they are set free by the same motion. The first example in particular is probably inspired by Chrysippus's famous example of the cylinder to explain the 'freedom' of human action: the cylinder is set in motion by an initial push, but its movement is determined by its own constitution, namely its rounded shape. In the same way human behaviour is 'triggered' by the series of events constituting fate, but the way they react is based on their own individual volitions and inclinations.<sup>52</sup> The examples are used for very different purposes, however: Chrysippus uses it to illustrate human autonomy vis-à-vis fate, while in *De mundo* it shows how one single impulse from god can have many different results.<sup>53</sup>

Several other comparisons are used to explain god's influence on the world; the use of such comparisons is indeed one of the striking features of *De mundo*. God is compared to a chorus-leader who gives the key-note, which is then taken up by the chorus of various celestial bodies, whose revolutions again cause seasonal and other changes on earth (398b26–7; 399a12–21).<sup>54</sup> God's management of the universe (τοῦ τὸ σύμπαν διέποντος, 399a18) results in a single harmony among all. The author returns to the musical metaphor harmony used in ch. 5, but here god is identified as the one responsible for the harmony, which is in line with the general shift between chapters 5 and 6 indicated above.

Other comparisons include the dramatic effects produced when the trigger of a war machine (a catapult) is released (398b13–16); the ability of puppeteers to affect different motions in the puppet by pulling a single string (398b16–22); the different effects produced by the same trumpet signal during a war (399a35–b10); a single keystone holding together the vault

<sup>50</sup> Cf. also Plut. *De gen.* 593c.

<sup>51</sup> MORAUX 1984, 39–40.

<sup>52</sup> Chrysippus *SVF* 2.974 *ap. Cic. Fat.* 42–3; *SVF* 2.1000 *ap. Gell. NA* 7.2.11.

<sup>53</sup> The examples are discussed at length by ДУНОТ 1990, 207–11. For the image of the different movements of a cylinder, a sphere, or a cube cf. Plut. *De Pyth. or.* 404f.

<sup>54</sup> For god as chorus-leader cf. Max. Tyr. 13.3.



of a vast building (399b28–32). These comparisons are used to illustrate either the diverse and multitudinous effects arising from a single impulse from god, or his ability to have effect over a distance.

The fact that the initial impulse is invisible but still able to stir all things into action, is explained by comparing it to the actions performed by the soul: the soul is also invisible but it has far-reaching effects on households and cities and even beyond the city borders (399b10–15).<sup>55</sup> In the same way, god is invisible, but all that take place in the world are in fact his works (ἔργα); he can therefore be seen from the works themselves (399b19–25).<sup>56</sup> It should be noted that god (or his power) is not compared with soul, such as a Platonic world-soul; only the invisibility of his actions is explained by means of the analogy of the soul.

In *Mund.* 400b11–15 god is explicitly said to lead and move all things with his power “where and how he wills” (ὅπου βούλεται καὶ ὅπως), although he himself remains immovable. God is like the immovable law in the souls of citizens, which though fixed and unchangeable has many administrative consequences. God is in fact the law administering the whole cosmos in an unmoved and harmonious manner (400b26–33).<sup>57</sup> A god that wills is however also a god that can change, which is very different from Aristotle’s Unmoved Mover who by definition does not change.<sup>58</sup> In the immediately preceding passage (400a33–b6) the author even referred to an example of episodic intervention into the world: god (τὸ δαιμόνιον) saved two young men and their parents from the lava during an eruption of Aetna because of their piety.<sup>59</sup> We see here a clear move away from the god of philosophy towards the god of popular philosophical religion, that is, from god as a metaphysical principle to a god who can have an effect on people’s lives, even if it is not worked out in detail.<sup>60</sup>

<sup>55</sup> For the invisible soul having visible effects cf. Xen. *Mem.* 4.3.14.

<sup>56</sup> The fact that the invisible god may be seen from his works is a common philosophical topos; see n. 38 above; cf. also Rom 1.19–20; Wis 13.1–9; Cic. *Tusc.* 1.70; Philo *Leg.* 3.97–9; Max. Tyr. 11.11–2, etc.

<sup>57</sup> Cf. Max. Tyr. 11.12. For a critique of the effectiveness of this comparison see DUHOT 1990, 216–9.

<sup>58</sup> See OPSOMER 2006, 15; cf. SHARPLES 2002, 26.

<sup>59</sup> According to OPSOMER 2006, 11, episodic intervention entails an intervention in the world that adapts itself to the ever-changing circumstances and particularities. For a different perspective on this episode cf. DUHOT 1990, 215: “Dieu a ainsi pu ne pas avoir à enfreindre l’ordre naturel des choses. L’‘intervention’ divine est donc susceptible de n’être qu’une image exprimant une organisation préalable: Dieu, prévoyant le courage des jeunes gens, aurait ordonné les événements, et en particulier leur fuite, de telle manière qu’ils fussent sauvés sans que le fonctionnement normal de la nature fût modifié.”

<sup>60</sup> Cf. FURLEY 1955, 334–6; GOTTSCHALK 1987, 1134–5: “The god of the *De mundo* [...] is an Unmoved Mover with a human face”; also DUHOT 1990, 220, 224–5: “Le Ps.-Aristote a aussi la piété en commun avec le Portique [...]”

In chapter 7 the plurality of effects brought about by god is emphasized by all the names attributed to him, but these all derive from the one god. God as the law of the world is therefore also identical with Fate (401a12–b9). Both the use of etymology and the identification of god with fate are very close to Stoic practice.<sup>61</sup>

The author concludes the treatise with a cento from Plato's *Laws* (715e–716a, 730c) (*Mund.* 401b23–9). Interestingly enough the author changed the antecedent of the relative clause in the final sentence from *Ἀλήθεια* (Truth) to *Δίκη* (Justice): “May he who intends to be blessed and happy have a share in it [sc. Justice] right from the beginning.” The mention of Justice here is better suited to the context in which the emphasis is on god's administration of the cosmos, but it perhaps also refers back to the addressee Alexander, “the best of leaders” (391b6).

## 6. Conclusion

To summarize this survey: The author wants to maintain the transcendence of god, but at the same time allow for his immanence. On the one hand, god is described as the creator and preserver of the world, the cohesive cause of the universe, the leader and commander of the cosmos. Everything that happens in the world is his work. God's activity is therefore immanently present in this world: the world depends on god, is ordered by him and receives its existence from him. On the other hand, he is in essence absolutely transcendent, established above this world in the highest region. He does not perform any action himself, because it would be inappropriate to his dignity. To reconcile these extremes, the author introduces the notion of god's power. The exact relationship between god and his power is not made clear,<sup>62</sup> but the power in any case transmits god's will to the lower regions. At times the active force of god's power is explained in a mechanistic, physical manner; e.g. it is set in motion by a single trigger or impulse and moves from one body to the next in a wave-like motion or with a domino effect; at other times a non-physical, intelligible explanation is given, e.g. it affects its environment like the soul or like the law. The latter two comparisons are reminiscent of the role of the world soul in Platonism or of fate as nexus of causality in Stoicism, but neither comparison is explored in any detail.

It is clear that *De mundo* is based on Aristotle and his school in many of its main doctrines. This includes, *inter alia*, the doctrines about the fifth element, the two exhalations, the eternity of the world, the geocentric world

<sup>61</sup> Cf. e.g. FESTUGIÈRE 1949, 491, who refers to Arius Didymus fr. 29.6; SCHWABL 1978, 1355–6; DUHOT 1990, 221–3.

<sup>62</sup> Cf. MORAUX 1984, 40: the author is not a deep-thinking metaphysician or theologian.

with concentric spheres, the division into a supralunary region and the sublunary world, and of course the transcendent god. There are also many similarities between chapter 4 and the first three books of Aristotle's *Meteorology*, although *De mundo* is dependent on Theophrastus rather than Aristotle.<sup>63</sup> The attribution of the text to Aristotle further confirms the author's primary philosophical allegiance. At the same time there are also strong connections with Platonism: the notion of god as father, creator, and preserver of the world is more Platonic than Aristotelian.<sup>64</sup> The distinction between the transcendent god and his power is also similar to the move in Middle Platonic and Neopythagorean texts to split the divine into two or more principles. It is furthermore significant that *De mundo* begins in the first chapter with an allusion to a Platonic version of the heavenly journey of the soul and closes with a quotation of two passages from Plato's *Laws* (715e–716a and 730c). There are at the same time clear indications that the author positioned his work as a Peripatetic alternative to the Stoic doctrine of immanence. The main thrust of the work is the distinction between god who in his essence remains separate from the world and his power which pervades the cosmos and intervenes in the world. The treatise thus suggests an alternative approach to the Platonic world soul as organizing principle; it also provides a solution to god's involvement in the cosmos that is different from the Stoic doctrine of immanence.

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<sup>63</sup> See MORAUX 1984, 20–3; STROHM 1987.

<sup>64</sup> MORAUX 1984, 77.

# The Reception of *On the Cosmos* in Ancient Pagan Philosophy

*Andrew Smith*

A number of facts point to the probability that *On the Cosmos* was widely known amongst philosophers in the Graeco-Roman world. Besides the large number of manuscripts which attest to a lively tradition, there is also a Latin version in the form of an adapted translation ascribed to Apuleius (2nd cent. AD). *On the Cosmos* is also cited explicitly by the Neoplatonist Proclus (412–485 AD) and Ioannes Philoponus (490–570 AD), and chapters 2–5 and part of 6 were included in the anthology of Ioannes Stobaeus (5th cent. AD). In addition to this, modern scholars have detected the extensive influence of the work in passages which do not explicitly name it. But it is not easy to state with any great certainty that a particular passage can be traced back in this way, a task made doubly difficult by the uncertainty about the date of composition of *On the Cosmos*. Moreover most of these passages refer to ideas which are relatively commonplace. Festugière and Moraux<sup>1</sup> have rightly pointed out the shared world-picture of the work and that of much popular philosophy in the Graeco-Roman world of the early imperial period with its eclectic mix of Platonic, Aristotelian, Stoic and Neopythagorean elements. Among the authors in this period possible links with *On the Cosmos* may be detected in Epictetus, Seneca, Pliny and Maximus of Tyre as well as in the more professional philosophical writings of Platonists, Aristotelians and Neopythagoreans, and in the Hermetic writings. Common themes include the unity of the universe, its harmony, the relationship of god to the physical world and divine providence. The study and contemplation of the physical universe is in fact often seen as a means of accessing the divine, just as it is for the author of *On the Cosmos* who near the beginning of his treatise states that he will attempt to ‘theologize’<sup>2</sup> his account of the universe as far as he can. It would not, then, be surprising if the work contributed in some measure, if not to initiating, at least to consolidating this world picture, presenting, as it does, a compact, comprehensive and readable account under an authoritative name.

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<sup>1</sup> A.-J. FESTUGIÈRE, *L'idéal religieux des Grecs et l'évangile* (Paris 1932) 224–30; MORAUX 1984, 44.

<sup>2</sup> 391b4: θεολογῶμεν περὶ τούτων συμπάντων.

We will, therefore, need to take a broad view of ‘reception’ since *On the Cosmos* may not so much have provided a source for original speculation as a mirror or convenient summary for already held beliefs. Nor need it be surprising that the work could appeal to those who held divergent views since it is itself not always clearly consistent, precise or profound in its presentation and so lays itself open to a variety of interpretations.

Its impact may, then, be usefully treated under two headings. Firstly there is the general similarity between the ideas expressed in *On the Cosmos* and those current in the popular philosophical tradition of the first, second and early third centuries AD. We will also note a number of philosophically important themes which individual philosophers either share with *On the Cosmos* or derive from it. Secondly there are the instances where a clear reference is made to the text.

## 1. Common Themes

We will firstly give some examples of themes which *On the Cosmos* shares with other writers between the first and sixth centuries AD. It will also be useful to note where the context and import of *On the Cosmos* differs from that of the authors we cite, not that this may be an argument against a possible connection between *On the Cosmos* and such authors, but in order to demonstrate the often differing ways in which these themes could be exploited or simply absorbed.

Maximus of Tyre provides probably the best instance of ideas which have much in common with *On the Cosmos*. For example the notion that the conflicting elements of the universe are maintained in harmony by god may be found in *Oration* 13<sup>3</sup> where the analogy with choral singing is similar to that found in *On the Cosmos*.<sup>4</sup> But the subject of Maximus’ oration is the relationship of free will to divination, the latter being a topic in which the author of *On the Cosmos* expresses no interest and it is into this context that Maximus inserts his comment about the harmony of the universe. But although we might think that as an Aristotelian our author might even have rejected the notion of divination, he nowhere expresses his views

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<sup>3</sup> Or. 13.3: “But imagine that this universe is a harmony of a musical instrument; god is the player and the harmony itself takes its start from him, makes its way through air, earth and sea, through animals and plants, finally falling upon a multitude of conflicting natures and bringing into order the conflict within them, just as a leading harmony falls upon the multiple voices of a choir and brings order into the confusion among them” (‘Ἄλλ’ ἡγοῦ τὸ πᾶν τοῦτο ἁρμονίαν τινὰ εἶναι ὄργάνου μουσικοῦ, καὶ τεχνίτην μὲν τὸν θεόν, τὴν δὲ ἁρμονίαν αὐτὴν ἀρξαμένην παρ’ αὐτοῦ, δι’ ἀέρος ἰοῦσαν, καὶ γῆς καὶ θαλάττης, καὶ ζώων, καὶ φυτῶν, ἐμπεσοῦσαν μετὰ τοῦτο εἰς πολλὰς καὶ ἀνομοίους φύσεις, συντάττειν τὸν ἐν αὐταῖς πόλεμον· ὡς κορυφαία ἁρμονία, ἐμπεσοῦσα εἰς πολυφωνίαν χοροῦ, συντάττει τὸν ἐν αὐτῇ θόρυβον).

<sup>4</sup> 396b17 and esp. 399a14f: Καθάπερ δὲ ἐν χορῶ κορυφαίου κατάρξαντος.

about it and there is no reason to suppose that Maximus, if he had read *On the Cosmos*, might not have thought its author accepted it. Another oration of Maximus, which deals with the nature of god according to Plato,<sup>5</sup> employs more readily some leading ideas found in *On the Cosmos*. Once more it is an image that appeals to Maximus, that of the Great King who works through his deputies.<sup>6</sup> Another theme of *On the Cosmos*, that the universe is made up of opposites which nevertheless are united to form a single whole (396b7–11), may also be found in Maximus.<sup>7</sup> And the comparison of world order with musical harmony illustrated in the same passage can also be found in *On the Cosmos*.<sup>8</sup> The idea may be traced back to Plato and Aristotle,<sup>9</sup> and may also be found in Plotinus.<sup>10</sup> But it should be noted that in *On the Cosmos* this harmony is not only a description of the structure of the universe but is seen as an active principle, a sort of power. The unity and harmony of the universe is found also in the Neopythagorean tradition, e.g. in Ps. Ocellus<sup>11</sup> and Alexander Polyhistor.<sup>12</sup> Of course, since the dating of both Ps. Ocellus and *On the Cosmos* is debateable we remain unsure who influenced whom or indeed whether there is any direct connection at all. Finally we may add that praise of the universe and of its perfection found throughout *On the Cosmos* is a commonplace, but we should note that the author of *On the Cosmos* does not praise the universe as a god, but purely for its scientific beauty. This accords with his transcendent notion of god using power.

<sup>5</sup> Or. 11, τίς ὁ θεός κατὰ Πλάτωνα.

<sup>6</sup> Or. 11.12b–e. See Appendix, Text 1.

<sup>7</sup> Or. 9.1.c–e. See Appendix, Text 2.

<sup>8</sup> 396b15–7; 399a12–9.

<sup>9</sup> Pl. *Symp.* 187a–c; Arist. *De an.* 407b30–2; *Eth. Eud.* 1235a25–9; *Sen. Ep.* 84.9–10.

<sup>10</sup> *Enn.* 3.2.16.42–4, 17.65–75 in the context of good and evil in the world.

<sup>11</sup> Ps. Ocellus 1–2.1: “For life holds together the housings of animals, but soul is the cause of life. Harmony [holds together] the universe, but god is the cause of harmony. Concord [holds together] houses and cities, but law is the cause of concord” (Συνέχει γὰρ τὰ μὲν σκάνεα τῶν ζώων ζωά, ταύτας δ’ αἴτιον ψυχά· τὸν δ’ κόσμον ἁρμονία, ταύτας δ’ αἴτιος ὁ θεός· τὴν δ’ οἴκωσ καὶ τὰς πόλιας ὁμόνοια, ταύτας δ’ αἴτιος νόμος). This is the only Neopythagorean text actually cited by Philo (*Aet.* 12) but he was probably influenced by others. See DILLON 1977, 156.

<sup>12</sup> Writing his account of Pythagoras’ thought in about 80 BC. Cf. Diog. Laert. 8.25–50, esp. 33 “Justice has the qualities of an oath and for this reason Zeus is called god of oaths. And virtue is harmony and so are health, all that is good and god. And it is for this reason that the universe is held together in harmony; and friendship is harmonious equality” (“Ὅρκιον τ’ εἶναι τὸ δίκαιον καὶ διὰ τοῦτο Δία ὄρκιον λέγεσθαι. τὴν τ’ ἀρετὴν ἁρμονίαν εἶναι καὶ τὴν ὑγίειαν καὶ τὸ ἀγαθὸν ἅπαν καὶ τὸν θεόν· διὸ καὶ καθ’ ἁρμονίαν συνεστάναι τὰ ὅλα. φιλίαν τ’ εἶναι ἑναρμόνιον ἰσότητα).

### 1.1. Power of God

One of the most important metaphysical concepts contained in *On the Cosmos* is the distinction of god from his power. The essence of this is that god is not directly present in the world but is present “by his power” and not “by his being”.<sup>13</sup> This power is less effectively received as it descends down through the successive levels of the physical universe. The distinction of god from his powers is also found in the Neopythagoreans, e.g. Onatas<sup>14</sup> and among Platonists such as Atticus<sup>15</sup> and Epiphanius reporting on Plato.<sup>16</sup> It may be found also in the Peripatetics, perhaps developing the general notion in Aristotle that god moves the world indirectly, for example as in Alexander of Aphrodisias.<sup>17</sup>

Of course there is room for divergence in the way this notion can be interpreted and where the emphasis might be seen. For example, in *On the Cosmos* God is removed from his power even rather more than a Platonist might countenance. After all the Platonic demiurge takes a direct role in the creation of the universe even though he delegates some of his powers to lesser gods (the young gods). And yet god’s power is seen as diminishing in force the further removed it is from the source, an observation that might appeal to a Platonist. Moreover *On the Cosmos* can be vague: in chapter 6 god’s power seems to be more closely identified in its transcendence with

<sup>13</sup> 397b19–20.

<sup>14</sup> *De deo* 139.5–8: “For god himself is intellect, soul and the guiding power of the entire universe. His powers, which are visible and which he is responsible for organizing, are his creations, his actions and his peregrinations throughout the entire universe” (αὐτὸς μὲν γὰρ ὁ θεὸς ἐστὶν νόος καὶ ψυχὰ καὶ τὸ ἀγεμονικὸν τῷ σύμπαντος κόσμῳ· ταὶ δὲ δυνάμεις αὐτῷ αἰσθηταί, ὧν ἐντι νομεύς, τὰ τ’ ἔργα καὶ τὰ πράξεις καὶ ταὶ κατὰ τὸν σύμπαντα κόσμον ἐπιστροφώσεις). But note that a few lines later (see Appendix, Text 3) he criticises monotheism. ROHLFENZ 1965, 381 n. 2 thinks this is aimed at *On the Cosmos*.

<sup>15</sup> Atticus fr. 8.17–21 des Places: “For if there is not a single ensouled power moving through the universe and binding and holding everything together, the universe could be neither rationally nor properly organized” (Εἰ γὰρ μὴ μία τις εἴη δύναμις ἐμψυχος διήκουσα διὰ τοῦ παντός καὶ πάντα συνδοῦσα καὶ συνέχουσα οὐτ’ ἂν εὐλόγως τὸ πᾶν οὔτε καλῶς διοικούμενον εἶναι δύναίτο).

<sup>16</sup> *Adv. haeres.* 1.6 = Diels, *Dox. Graec.* 588.24–7: First cause is god, second cause his power.

<sup>17</sup> E.g. in *Meteor.* 7.9–14: “Their efficient cause and the origin of motion is the motion of the heavenly bodies and the power transmitted to physical bodies from them by their proximity to them. This one would rightly call nature. For this power is the cause of all the things that are believed to occur through and in accordance with nature” (ποιητικὸν δ’ αἰτιον αὐτῶν καὶ τὸ ὡς ὅθεν ἡ ἀρχὴ τῆς κινήσεως ἢ τῶν θείων σωμάτων αἰδίου κινήσεως καὶ ἡ δύναμις ἢ ἀπὸ τῆς γεινιάσεως ἀπ’ ἐκείνων ἐπιγινόμενη τοιοῦτε τοῖς σώμασιν, ἦν καὶ φύσιν ἂν τις εὐλόγως ὀνομάζοι· αὕτη γὰρ ἡ δύναμις αἰτία πάντων τῶν φύσει τε καὶ κατὰ φύσιν γίνεσθαι πεπιστευμένων); and *Quaest.* 47.80–50.27 (ed. Bruns) where Alexander develops Aristotle’s notion of how physical change is transmitted from the eternal heaven to the sublunary world by positing a θεία δύναμις (‘divine power’) which fulfils this role; cf. P. MORAUX, “Alexander von Aphrodisias *Quaest.* 2.3”, *Hermes* (1967) 159–69.

god himself.<sup>18</sup> There is enough room here to accommodate different emphases, although nowhere does *On the Cosmos* identify the power of god in the world with god himself, as the Stoic notion of divinity would demand.

Probably the most frequently cited aspect of this depiction of divine causality is the lengthy comparison made by the author of *On the Cosmos* with a king who sends out his deputies to do his work for him (ch. 6). It is an idea that appeals to Plotinus when dealing with the difficult issue of god's relationship to the universe of which he is the cause. A possible allusion to *On the Cosmos* may be found in Plotinus' phrase ἀπράγμωνι ἐπιστασία βασιλικῇ ("with effortless royal control"),<sup>19</sup> with reference to the way in which the World Soul governs the universe. The description of this control as 'royal' had probably become a commonplace and even a kind of shorthand, possibly inspired by *On the Cosmos*, a development which may account for the use of the same phrase by Philo who frequently refers to one aspect, at least, of god's power as 'royal'.<sup>20</sup> Of course this designation may also owe something to Plato's *Letter* 2.312e1–4 with its reference to god as king, a text which Plotinus frequently invokes.<sup>21</sup> The other aspect of this comparison is the stress on the lack of effort<sup>22</sup> which is described in some detail in *On the Cosmos* 400b9–11. For Plotinus this is founded on the fact that the soul of the universe does not need to use discursive thought and that the body which it manages, being the universe as a whole, is not subject to the same dissolution as individual parts of the universe<sup>23</sup> and so is more easily managed. The idea of effortless causality may be traced back to Plato<sup>24</sup> and Aristotle.<sup>25</sup> Once again it becomes difficult to say whether Plotinus owes the idea to Plato and Aristotle or to *On the Cosmos* or to all three.

In *Ennead* 3.3.2.5 Plotinus explains that the ruling principle weaves all things together while individuals cooperate as in an army where the general gives the commands and the subordinates work with him. This may have been inspired more directly by Aristotle who in *Metaphysics* 1075a13 says that the good of an army is found in its leader and in the order he instils. This is elaborated in *On the Cosmos* (399b2–10) though the source of command is the signal trumpet which is interpreted in different and appropriate ways by each type of soldier. In fact at this point *On the Cosmos* has moved on from the king as agent to the mode of his operation of

<sup>18</sup> 398a3–4: ὡς ἢ ἐν οὐρανῷ δύναμις ἰδρυμένη καὶ τοῖς πλείστον ἀφεστηκόσιν [...] αἴτιος γίνεται σωτηρίας.

<sup>19</sup> *Enn.* 4.8.2.28.

<sup>20</sup> See Appendix, Text 4.

<sup>21</sup> *Enn.* 5.1.8.1–5; 1.8.2.28–32.

<sup>22</sup> See also *Enn.* 2.1.4.31 ἀπονως; 2.9.18.16–17 ἀπόνως; 3.2.2.40–2 ῥᾶστα.

<sup>23</sup> This idea goes back to Plato's *Timaeus*.

<sup>24</sup> *Leg.* 903e3–904a4: θαυμαστή ῥαστώνη τῷ τοῦ παντός ἐπικαλουμένῳ.

<sup>25</sup> *Cael.* 284a15 of the 'entire heavens'.



power: analogies are introduced to demonstrate how variety of result can come from a single cause, like the trumpet. The military analogy is found again in *Ennead* 2.3.13.29: the parts of the universe each contribute to the good of the universe as a whole since they are subordinate to the ruling principle “as soldiers to the general”.

Not unrelated to the ruler paradigm is the comparison of the cosmos with a well-ordered city. This may be found in *On the Cosmos* 396b1–17 with its stress on the admixture of different and opposing types and classes, and 400b6–30 where the formal organisation of the city with officials at different levels fits in more closely with the image of the ruler. The comparison with the city may also be found in the Stoics<sup>26</sup> and Neopythagoreans.<sup>27</sup> Plotinus may have had this parallel in mind when he dismisses the notion that the World Soul’s control of the world might collapse like that of an earthly kingdom or empire.<sup>28</sup> But it is just as likely that he was thinking of a real event, such as the collapse of his own political environment on the death of the emperor Gallienus, which occurred about the time when he was composing his treatise *On the Heavens* (*Enn.* 2.1) in which this remark occurs.

## 1.2. Providence

*On the Cosmos* denies the sort of detailed providential care so characteristic of Stoicism which is partly determined by their doctrine of god’s identity with the universe (pantheism), something which the author of *On the Cosmos* is anxious to distance himself from. On the other hand he does not deny that god’s providence extends to the sublunary world. God is not only the ‘generator’ of the world but also its ‘preserver’.<sup>29</sup> He “prevails over” things of this world even though they appear to be far from him (τῶν πόρρω δοκούντων εἶναι περιγίνεται, 397b24). This is one way of reconciling Platonic and Aristotelian views of providence. As we have already noted he also maintains the notion of the natural balancing of the world’s constituent parts and does not seem to regard this as inconsistent with god as creator and sustainer of the universe. A similar compromise seems to have been maintained by Alexander of Aphrodisias.<sup>30</sup> The insistence by the author of *On the Cosmos* on god’s involvement in the universe, albeit through his power rather than in person, permits him to go some

<sup>26</sup> SVF 2.525, 645, 1127; 3.327.

<sup>27</sup> Diotogenes, *De regno* 72.19–23 (Appendix, Text 5). Cf. Ocellus fr. 2 (Appendix, Text 6); and Ecphantus, *De regno* 81.21–82.3 (Appendix, Text 7).

<sup>28</sup> *Enn.* 2.1[40].4,25.

<sup>29</sup> See 397b20.

<sup>30</sup> See R. W. SHARPLES, “Peripatetics”, in: L. E. GERSON (ed.), *The Cambridge History of Philosophy in Late Antiquity* (Cambridge 2010) [140–60] 156–60.

way, though limited,<sup>31</sup> to accepting the sort of notion of providential care found in Stoic theory; it expresses itself primarily in claiming the utility of what appear to be adverse phenomena. The argument is found in the Stoics. One may, for example, compare *On the Cosmos* on the utility of winds (397a20) with Seneca's comments.<sup>32</sup>

## 2. Named References to *On the Cosmos*

We will finally turn our attention to those passages in which ancient pagan authors acknowledge a direct acquaintance with the text of *On the Cosmos*. The Neoplatonist Proclus in his commentary on Plato's *Timaeus* clearly refers twice to the same passage of *On the Cosmos*.<sup>33</sup> It is interesting to note that on the second occasion<sup>34</sup> he expresses doubt about the Aristotelian authorship of *On the Cosmos*, while there is no hint of such doubt in his first reference.<sup>35</sup> It is a good example of how readily ancient philosophers could use texts for their own purposes according to the context in which they found themselves. Where Proclus doubts the authorship his primary concern is with the exegesis of *Timaeus* 41 on fate. His doxography contains a reference to Aristotle identifying fate with the arrangement of the cosmic cycles, whereas *On the Cosmos*, according to Proclus' interpretation, identifies it with "the Intellect of the universe",<sup>36</sup> thus clearly presenting Proclus with an apparent contradiction which had to be explained. In his earlier reference he is more concerned with the interpretation of the identity of Plato's demiurge, and though mentioning fate, this is not central to his analysis which is largely a dispute amongst Platonists.

Let us look at the two passages in more detail. In the second Proclus is concerned to locate the ontological level at which fate operates. He is himself inclined to emphasize its dual nature, characterized both by its transcendent nature and by its operation within the physical world. For this

<sup>31</sup> i.e. no mention of weather phenomena as warning from god, or that certain evils are not directly part of a divine plan.

<sup>32</sup> *Q Nat.* 5.1–2; 13: "for maintaining the temperate climate of the sky and earth, for summoning and suppressing water, for feeding the fruit of crops and trees which its very turbulence brings, with other causes, to ripeness by attracting nourishment above and moving them so that they do not stagnate" (*ad custodiendam caeli terrarumque temperiem, ad evocandas supprimendasque aquas, ad alendos satorum atque arborum fructus, quos ad maturitatem, cum aliis causis, adducit ipsa iactatio attrahens cibus in summa et ne torpeant permovens*).

<sup>33</sup> 401ab.

<sup>34</sup> *In Ti.* 3.272.20–1 naming the work τὸ περὶ κόσμου βιβλίον.

<sup>35</sup> *In Ti.* 1.305.20–2. Although not citing the name of the book, the reference to the identification of Fate with Zeus must refer to 401b9 and the preceding citation of the Orphic address to Zeus.

<sup>36</sup> In itself an interesting interpretation of the text since *On the Cosmos* nowhere refers to god as 'intellect'. This is an inference from Aristotle's identification of the primal cause as 'intellect'.

reason none of the traditional 'identifications' is adequate. Alexander of Aphrodisias identifies it with nature in its divided state, Aristotle with the order of the cosmic cycles, Theodorus of Asine with Soul in its state of relationship with body, Porphyry with nature pure and simple. The last to be mentioned is *On the Cosmos* who identifies it with the 'god of the all'. The ordering of the list is significant since it is not chronological. I suggest that the order is one of preference. Porphyry is preferred to Theodorus; and *On the Cosmos*, in asserting the divine quality of fate, satisfies Proclus' criticism of Porphyry that he fails to include supernatural aspects of 'fate'. In the earlier reference Proclus' concern is to identify the demiurge, a discussion partly occasioned by the *Timaeus* phrase 'father and maker'. Here we have a purely Platonic discussion which covers the views of Harpocration, Atticus, Plotinus, Porphyry, Amelius and Iamblichus. The inclusion of Aristotle (*On the Cosmos*) seems at first rather odd. But it serves his purpose quite well. For he is cited with approval as confirming the interpretation of Plotinus which Proclus wants to support, that the demiurge of Plato is to be identified primarily with transcendent Intellect but also, in a secondary sense, with the World Soul or encosmic intellect. Proclus sees this meaning in the identification of Zeus with Fate, which suggests that the transcendent Intellect is somehow also present in the world insofar as Fate is a determinant of the physical universe.

There is one other reference in Proclus which in all probability goes back to our text. It is to the relatively non-controversial notion of cosmic change of sea to land and land to sea which, though a commonplace, can be closely paralleled verbally in *On the Cosmos*.<sup>37</sup> On the basis of these secured references we can suppose that Proclus must have had the work to hand when composing his commentary and it is reasonable then to take into account a number of other vaguer allusions.<sup>38</sup>

Ioannes Philoponus,<sup>39</sup> in his polemic against Proclus' arguments that the world had neither temporal beginning nor end, cites with approval

<sup>37</sup> *In Ti.* 1.121.16–18 where he appears to cite *On the Cosmos* 400a27–30 on cosmic changes of sea to land and land to sea. The use of the unusual word θαλασσόω by both authors strongly suggests that he is citing *On the Cosmos*.

<sup>38</sup> E.g. 1.188.18; 252.14; 395.1.

<sup>39</sup> *Aet. mund.* 174.22–175.7: "I don't mean that our consideration of the all and what happens by chance should involve enquiring whether the all subsists as the result of a demiurge or spontaneously and without an efficient cause. For 'there is', as Aristotle says in his treatise *On the Cosmos*, 'an ancient account, native to all people, that all things have come into existence from god and because of god, and that no thing by itself is self sufficient, if deprived of the preservation deriving from him'" (οὐτι λέγω τὸ περὶ παντός και τοῦ τυχόντος οἰεσθαι δεῖν ζητεῖν, εἴτε ἐκ τοῦ δημιουργοῦ ὑπέστη εἴτε ἐκ ταυτομάτου και ποιητικῆς αἰτίας χωρὶς· ἀρχαίως γάρ τις λόγος και πάτριός ἐστιν πᾶσιν ἀνθρώποις, ὡς φησιν Ἀριστοτέλης ἐν τῷ περὶ τοῦ κόσμου λόγῳ, ὡς ἐκ θεοῦ πάντα και διὰ θεὸν ἡμῖν συνέστηκεν, και οὐδεμία φύσις ἐστὶν αὐτῆ καθ' ἑαυτὴν αὐτάρκης ἐρημωθεῖσα τῆς ἐκ τούτου σωτηρίας).

the claim of *On the Cosmos* that it is a universally held belief that the world depends on god for its existence.<sup>40</sup> Philoponus is anxious to show that Plato in the *Timaeus* is to be taken literally as teaching that the world had a beginning in time against the Neoplatonic figurative interpretation of the *Timaeus*. In the course of his general attack on Proclus' position he makes use of Aristotle's criticism of Plato's literalism. In the present passage the citation of *On the Cosmos* is used to confirm the non-negotiable nature of the thesis that god is the efficient cause of the universe, something which all men and Plato must accept if they accept the notion of a supreme god. Philoponus then thinks that a world created by an efficient cause must also entail that it has a temporal beginning. Interesting here is that Philoponus clearly accepts *On the Cosmos* as a genuine work of Aristotle, since he goes on to cite a passage from the *Metaphysics*.<sup>41</sup> The passage is one in which Aristotle quotes Homer to the effect that one ruler is best,<sup>42</sup> a theme which fits in with the emphasis placed by the author of *On the Cosmos* on a single god. It is also indicative of the way in which Aristotle was interpreted that Philoponus in the course of this section of his argument seems to regard god's role in creation as efficient cause and to interpret Aristotle's theology in this way by citing *On the Cosmos*. Although *On the Cosmos* does not refer explicitly to efficient causality the impression could be given that god works in this way, for example at 391b11–12 where he says that the order of the cosmos is maintained "by god and because of god" (ὕπὸ θεοῦ τε καὶ διὰ θεὸν φυλαττομένη). Moreover he nowhere gives any hint of the sort of final causation which Aristotle expressed in his account of god effecting motion in others as ἐρώμενον.<sup>43</sup> But elsewhere the preservation of the universe is attributed to the equilibrium brought about between the elements through harmony and agreement, a theory that could suggest the independence from god of natural motion.<sup>44</sup>

The inclusion of a large piece of *On the Cosmos* in the *Anthology* of Ioannes Stobaeus is a fitting confirmation of the influence of the work. This collection was composed in the early fifth century AD for his son, but he almost certainly had a wider readership in mind. One should note that Stobaeus cites only chapters 2–5 and parts of 6 and 7 thus omitting

<sup>40</sup> 397b13–5.

<sup>41</sup> *Aet. mund.* 178.25–179 (see Appendix, Text 8). The citation from the Orphic hymns in this passage (Philoponus otherwise rarely cites the Orphic hymns in *De aeternitate*) is probably also taken from *On the Cosmos* 401a29–30.

<sup>42</sup> Arist. *Metaph.* 1076a4 citing Hom. *Il.* 2.204.

<sup>43</sup> Arist. *Metaph.* 1072b3. See MORAUX 1984, 47.

<sup>44</sup> See 396b25 (ἄρμονία) and 396b34 (ὁμολογία). The balancing of elements also appears in the *Timaeus* although Plato traces the cause of the universe back to the demiurge. Aristotle, on the other hand, locates the origin of the universe in its own eternal movement. Ancient commentators could, nevertheless, reconcile Plato and Aristotle by reading into him an efficient cause, aided by the sort of ambiguity found in *On the Cosmos*.

the general introductory material, but also the striking comparison of god with a great king working through his agents. It is also worth paying some attention to the way Stobaeus arranges these excerpts. Although it is not easy to reconstruct his exact ordering of excerpts because of the difficulties of the manuscript tradition, the general outline and much of the detail is comparatively clear. As Daniela Taormina and Rosa Piccione have demonstrated in their edition of Iamblichus' letters which are cited by Stobaeus,<sup>45</sup> a clear educational purpose lies behind Stobaeus' arrangement of material and his presentation has a strong Platonic bias. Moreover his choice of material reflects very closely the sort of popular eclectic philosophical outlook we have suggested as the intellectual milieu of *On the Cosmos*; citations from the poets are supplemented with those from Plato, Aristotle and other philosophers, much of it taken from previous collections; 'Pythagoras', the Neopythagoreans and the Hermetic literature are prominent. All of this is updated by Stobaeus with some popular Neoplatonism. *On the Cosmos* would, then, serve his purpose well. Book One contains some general philosophical metaphysical views about god and the universe, subsequent books deal with ethics and everyday living. It is in the first book that we find *On the Cosmos*. Stobaeus' first heading is "On number", a topic which lends itself to metaphysical treatment through Neopythagorean number theory and quickly leads to a subtitle that "god is demiurge of everything and organises the whole with his providence." It is under this rubric that he introduces a passage from the end of *On the Cosmos*<sup>46</sup> which describes how god oversees the order of the universe. A shorter passage<sup>47</sup> is found later<sup>48</sup> in a section headed "On Fate and the cause of things that come into being." It is taken from the very end of *On the Cosmos* and forms an appropriate conclusion to this section after extensive citations from the Hermetic literature and finally a passage from Plato *Republic* 10. We note that the passage from *On the Cosmos* itself concludes with a citation from Plato.<sup>49</sup> Stobaeus has carefully curtailed this to remove the sentence about punishment, which is not relevant to the present heading. The passage itself, as is appropriate to this section of Stobaeus' presentation, is concerned with the more personal aspects of fate and providence as opposed to the more general and universal implications described in the first passage. Stobaeus then presents material covering the transcendent and physical universe from time and Forms down to meteorological phenomena until inserting, as a sole item, chapters 2–5 of *On the Cosmos*

<sup>45</sup> D. P. TAORMINA / R. PICCIONE (eds.), *Giamblico. I frammenti dalle Epistole* (NAPOLI 2010).

<sup>46</sup> 400b5–401a27 at Stob. 1.1.36.

<sup>47</sup> 401b8–27.

<sup>48</sup> 1.5.22.

<sup>49</sup> *Leg.* 715e–716a.

under the heading *περὶ τοῦ παντός*.<sup>50</sup> The following section entitled *περὶ φύσεως καὶ τῶν συμβαινόντων ἐξ αὐτῆς αἰτίων*, as its contents clearly indicate, moves down the hierarchy of being to explicate the purely physical world of becoming. Stobaeus clearly includes chapters 2–5 as a separate chapter which acts as a summary presentation of all the individual aspects of the general universal order which had been covered in previous sections. It is exploited by Stobaeus to provide a comprehensive view of the way in which the various parts of the universe interact as a unified whole, an emphasis which one can agree was fully intended by the original author as one of his leading ideas, but which, of course, is not divorced from but depends on his notion of a transcendent supreme deity, whom we can come to know through the contemplation of the universe for which he is ultimately responsible.

### 3. Conclusion

*On the Cosmos* was clearly a widely known and used handbook which both drew from and helped to establish a view of the universe that appealed to a general audience and could attract the attention of professional philosophers. Although it was used to support a number of different and often contrasting philosophical viewpoints it was probably perceived in antiquity as representing in general terms the sort of consensus view of Platonic and Aristotelian thought which enjoyed a wide appeal in the Roman Empire.

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<sup>50</sup> 1.40.



# The Concepts of οὐσία and δύναμις in *De mundo* and Their Parallels in Hellenistic-Jewish and Christian Texts

*Anna Tzvetkova-Glaser*

The examination of parallels between *De mundo* and Hellenistic-Jewish and Christian texts has formed a part of several studies. The teachings about God's 'essence' (οὐσία) and God's 'power' (δύναμις) mentioned in chapter 6 of the Pseudo-Aristotelian work, certainly offer cues for such an examination, which in turn led some researchers to attribute the work to a Jewish or even Christian author. The first suggestion of a Jewish origin for the text arose within the frame of developing research into Hellenistic-Jewish literature. It was F. Ravaissou who ascribed the work to the Alexandrian Jewish philosopher Aristobulus (2nd cent. BCE).<sup>1</sup> He was led to this view by a note in Eusebius of Caesarea and Clement of Alexandria, that Aristobulus was close to the Peripatetics, and thought that Greek wisdom was rooted in the books of Moses and the prophets.<sup>2</sup> The main reasons for Ravaissou's assumption that Aristobulus was the author can also be found in chapter 6, in which there is an extensive discussion of divine δύναμις which controls the world. As we shall see later on, the parallels between the fragments of Aristobulus and *De mundo* are significant, but so too are their differences.

There was another reason for linking the work to Alexandria: not only do we encounter the concept of δύναμις, but there is also the work's addressee to consider. It was assumed that the recipient Alexander was none other than Philo's nephew Tiberius Julius Alexander (10–70 CE), the procurator of Judea (46–8 CE) and prefect of Egypt (67 CE).<sup>3</sup> According to a further hypothesis, the author was supposedly the Peripatetic Nicolaus of Damascus,<sup>4</sup> but the recipient Alexander, a Jew (either the son of Aristo-

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<sup>1</sup> F. RAVAISSON, *Essai sur la Métaphysique d'Aristote*, 2 vols. (Paris 1837–46; reprint Hildesheim 1963) vol. 2, 238 n. 2, 357–8.

<sup>2</sup> Cf. Eus. *Praep. evang.* 13.12.7: διὰ πάντων ἔστι ἡ δύναμις τοῦ θεοῦ; Clem. Al. *Strom.* 1.15.72. 4; 1.21.150. 1; 5.14.97. 7.

<sup>3</sup> Cf. BERNAYS 1885.

<sup>4</sup> Simpl. *in Cael* p. 3.25–6 cites a work by Nicolaus of Damascus called περὶ παντός.



bulus II or the firstborn of Herod).<sup>5</sup> Further, Pohlenz<sup>6</sup> and Lagrange<sup>7</sup> emphasized the Jewish influence on the work, and identified the author as an Alexandrian Jew. Other researchers assumed that the treatise had its roots in a Christian or Judaeo-Christian environment, and dated it to the 2nd century CE.<sup>8</sup> Even though this hypothesis found hardly any approval, it is clear that the philosophical background of *De mundo* invites one to see parallels with Hellenistic-Jewish or Christian texts.

The purpose of this essay is to compare the theological concepts of the 'essence' and 'power' of God, as expressed in chapter 6 of *De mundo*, to such concepts in certain Jewish and Christian authors (Aristobulus, Philo, Tatian, Theophilus of Antioch, Origen and Nemesius). Because of the particular significance of the terminology used by each of these authors and the theology of their time, the focus of the study will be on the question of God's transcendence and immanence in the world.

## 1. God's Essence and God's Power according to *De mundo*

In chapter 6 the author deals with God's 'essence' / 'nature' (οὐσία) and God's 'power' (δύναμις). He begins by mentioning the idea associated with Thales that the world is full of gods and explains that this notion is unworthy of the nature of God: God's 'nature' (οὐσία) is completely transcendent. What is recognizable in this world though, is his 'power' (δύναμις) (6, 397b16–30). If it were possible to perceive God through the senses, it would be necessary to ascribe some sort of physical corporality to him. But this would be unworthy of God. For the author of *De mundo* God is completely transcendent. It is his power, though, which is immanent in the world. The concept of what is 'appropriate' to God (τὸ πρέπον) plays a central role when the author speaks about God's transcendence.

That the author does view God's power as something physical becomes clear when he claims that it spreads through the world by movement, which begins in the highest heaven and then moves down to the other spheres and the elements contained in them (6, 398b19–27). Therefore, this movement always comes from the same direction. It is only due to the various compositions and natures of each reality that the movement diverges into separate directions, and objects may even end up moving in opposite directions to one another. This doctrine of *motor primus* has one peculiarity: the obvious metaphor, for example, of God as a captain

<sup>5</sup> BERGK 1882.

<sup>6</sup> Cf. POHLENZ 1965, Appendix, 480–1.

<sup>7</sup> LAGRANGE 1927.

<sup>8</sup> M. ADRIANI, "Note sul trattato Περὶ κόσμου", *Rivista di filologia e di istruzione classica* 30 (1952) 208–22.

or coryphaeus, is rejected by the author, insofar as this steering activity is associated with labours on the part of the humans. God himself remains still and immovable according to *De mundo*. The steering quality of God, or rather his power, has no consequences for God himself, who is above any kind of materiality or movement. A suitable comparison for his power is to be found in the laws of a city, which regulate the various activities of its inhabitants. The fact that God's power sets everything in motion and makes sure that this motion is coordinated harmoniously, also shows that God's power is incomparably superior to any analogous power.

Nevertheless, the correlation between δύναμις and κίνησις is not the same for God and the created world. Among the created realities the strongest are those which are most intensely subject to God's moving power, and can initiate other movements accordingly. For God the opposite is true: his power causes the motion of all things, without stirring any movement in God himself. God is a *motor immobilis*. The fact that he is beyond any movement, and therefore beyond any change, is the guarantee that he is 'imperishable' (ἄφθαρτος) as well as capable of initiating movement in a reliable and infinite manner (6, 400b11–15).

According to *De mundo*, then, God's main characteristics are his transcendence, his immobility and imperishability. The author seems to be familiar with the discussions in Aristotle, *Metaphysics* 12.7, and 9,<sup>9</sup> but pays little attention to the issue of God's supposed lack of corporeality. The following picture can be concluded from chapter 6:

- δύναμις is clearly different from οὐσία, since the one is immanent and the other is transcendent;
- God's power is the source of all movement and of all things living;
- God's power is responsible for sustaining the world.

## 2. Hellenistic-Jewish Authors

### 2.1. Aristobulus

Only a few fragments by the Alexandrian philosopher Aristobulus have been preserved: excerpts of varying length, mainly cited by Eusebius, and partly by Clement of Alexandria. We know very little about this Alexandrian philosopher of Jewish origin and faith, but one of the most important pieces of information we have from Eusebius and Clement is that he was very close to the Peripatetics. Aristobulus is also known for having transmitted a "holy discourse of Orpheus" which included the assertion that

<sup>9</sup> Two solutions are proposed there: to understand God as a pure intelligence, or as an impersonal intelligible principle. Aristotle chooses the first option.

“the power of God permeates everything”.<sup>10</sup> It is very probable that this statement was discussed by Aristobulus, not only because of the inherent allusion to Moses and the correction of the name Zeus to θεός,<sup>11</sup> but also because of the emphasis on the transcendence of God, as Christoph Riedweg has shown (fr. 4.58: “God himself is established firm over the vast heaven”).<sup>12</sup> The parallels to *De mundo* have already been subject of research, mainly by Roberto Radice, who wrote a monograph on this topic.<sup>13</sup> Both Riedweg and Radice think that the quotation and the reelaboration of the Orphic discourse is an important proof of the influence of *De mundo* on Aristobulus.<sup>14</sup>

Aristobulus’ main purpose appears to be to demonstrate how Greek philosophy derives from Jewish religion, in a sort of discussion about the πρῶτος εὐρετής.<sup>15</sup> This is probably the very reason why Aristobulus cites and makes use of pagan philosophy. Roberto Radice shows that in the fragments of Aristobulus we read about δύναμις but not about οὐσία. It is therefore possible to recognise some of the most important aspects of the divine essence when Aristobulus speaks about the μεγαλείον of God, which seems to correspond to the notion of πρέπτον in *De mundo*.<sup>16</sup>

The fragment, which shows Aristobulus’ preoccupation with an appropriate description (i.e. without using anthropomorphisms) of God’s operating in the world, presents an exegesis of God’s descent onto Mount Sinai. At first it is explained, in a manner similar to *De mundo*, that God’s nature is beyond any corporeality, and it would therefore be inappropriate to claim he descended onto Mount Sinai. Then Aristobulus reflects on how God’s power permeates the entire world:

“How then shall the Greeks any longer disbelieve the divine appearance on Mount Sinai, when the fire burned, consuming none of the things that grew on the mount; and the sound of trumpets issued forth, blown without instruments? For that which is called the descent on the mount of God is the advent of divine power, pervading the whole world, and proclaiming ‘the light that is inaccessible’. For such is the allegory according to the Scripture. ... Over the whole place of the vision the burning fire was seen by them [sc. the Israelites] all encamped as it were around; so that the descent was not local. For God is everywhere.”<sup>17</sup>

<sup>10</sup> Cf. HOLLADAY 1995, 164, 170–2.

<sup>11</sup> The information that Aristobulus corrected the Orphic discourse and changed “Zeus” into “θεός” has been transmitted by Eus. *Praep. evan.* 13.12.7 (Mras 195). A discussion on the reelaboration of Aristoboulus could be found in RIEDWEG 1993, 77–9.

<sup>12</sup> RIEDWEG 1993, 73–9, 105.

<sup>13</sup> RADICE 1994. The question of the authorship of *De mundo* and in what respects it differs from Aristobulus has been treated also by REALE / Bos 1995 in the introduction.

<sup>14</sup> RADICE 1994, 94–95, RIEDWEG 1993, 91–2.

<sup>15</sup> Cf. fr. 2.

<sup>16</sup> RADICE 1994, 83–4.

<sup>17</sup> Aristobulus fr. 2a ap. Clem. Al. *Strom.* 6.3.32.3–4, 33.1; trans. HOLLADAY 1995, 141–5.

In the continuation of the text, the power of the fire, which in this case burns miraculously without consuming anything, is seen as a special sign of God's power. But Aristobulus does not mention the other special feature of fire which makes it a suitable metaphor of God's power: the ability to transmit its flame to other items without diminishing its own power.

This text clearly shows parallels with, as well as differences from, *De mundo*. A clear analogy exists in the assumption that God's power emanates throughout the world and everything. A clear difference is to be found in the conclusion "God is everywhere". This idea is rejected in *De mundo*, since God's immanence in a physical world would require his having a physical body. Aristobulus does not see such a contradiction. He obviously views God as the framework within which the world exists. The fact that his signs on Mount Sinai can be perceived in such a wondrous way by so many people shows rather that God is omnipresent,<sup>18</sup> while his signs can be perceived in particular situations or particular locations.

Gregory E. Sterling has also studied Aristobulus' relationship to *De mundo*<sup>19</sup> and assumes that Aristobulus makes the same distinction between *ousia* and *dynamis* and that he understands the former only as transcendental, the latter as immanent.<sup>20</sup> But Sterling does not comment on Aristobulus' assertion in fr. 2 that "God is everywhere". I agree with Radice<sup>21</sup> that this is a proof that Aristobulus is not aware of the strict difference between transcendence and immanence.

From the available fragments it seems to me that the author does not differentiate between God's power and his essence, which means that the difference between immanence and transcendence, which is so typical for *De mundo*, is missing from the fragments of Aristobulus.

## 2.2. Philo of Alexandria

Philo of Alexandria is the author to whom we owe most works of Hellenistic-Jewish literature. Born and raised in Alexandria, he enjoyed a profound philosophical and philological education. He applied the allegorical method to biblical exegesis, colouring it with his own philosophical ideas. The research done on Philo's relationship with ancient philosophy, and particularly with Platonism as well as Stoicism, is substantial. Studies concerning Philo's concept of God's power(s) have also been done, e.g. by Cristina Termini<sup>22</sup> and David T. Runia.<sup>23</sup> By looking into some examples,

<sup>18</sup> Cf. RADICE 1994, 87–93.

<sup>19</sup> STERLING 2009 (on Aristobulus, 72–8).

<sup>20</sup> STERLING 2009, 77–8.

<sup>21</sup> RADICE 1994, 91.

<sup>22</sup> TERMINI 2000.

<sup>23</sup> RUNIA 2004; RUNIA 2002, specifically 298–302 on the divine powers and 304–6 on Philo and *De mundo*.

we will try to identify possible parallels with, and differences from, *De mundo* with respect to the question of God's power(s) and God's essence.

Philo rarely stresses the problem of God's οὐσία. In *De specialibus legibus* 1.32 he summarizes the two most important questions concerning God's existence and his nature / essence (τί ἐστὶ κατ' οὐσίαν). Whereas it is possible to answer the first question, adducing the created realities as proofs for God's existence and action in the world, it is not possible to know God's essence. Philo thus accepts the complete transcendence of God's nature.<sup>24</sup> In *De posteritate Caini* 14–16 we read:

"For He [sc. God] has placed all creation under His control, and is contained by nothing, but transcends all. But though transcending and being beyond what He has made, none the less has He filled the universe with Himself; for He has caused His powers (δυνάμεις) to extend themselves throughout the Universe. ... When therefore the God-loving soul probes the question of the essence of the Existent Being, he enters on a quest of that which is beyond matter and beyond sight. And out of this quest there accrues to him a vast boon, namely to apprehend that the God of real Being is apprehensible by no one, and to see precisely this, that He is incapable of being seen."<sup>25</sup>

*De vita Mosis* 2.100 also shows that Philo acknowledges God's transcendence, since 'invisible' and 'imperceptible' are characteristics of the spiritual nature beyond any corporeality.<sup>26</sup> Because of this Philo rejects any kind of anthropomorphic representation of God or claim that he has appeared at a particular location in the world. Like Aristobulus he thinks that the biblical texts concerning God's appearance in some material place can only be understood figuratively.

"The words 'the Lord came down to see the city and the tower' [Gen 11.5] must certainly be understood in a figurative sense. For to suppose that the Deity approaches or departs, goes down or goes up, or in general remains stationary or puts Himself in motion, as particular living creatures do, is an impiety which may be said to transcend the bounds of ocean or of universe itself. No, as I have often said elsewhere, the law-giver is applying human terms to the superhuman God, to help us, his pupils, to learn our lesson. For we all know that when a person comes down he must leave one place and occupy another. But God fills all things; He contains but is not contained. To be everywhere and nowhere is His propriety and His alone. He is nowhere, because He Himself created space and place coincidentally with material things, and it is against all right principle to say that the Maker is contained in anything that He has made. He is everywhere, because He has made His powers (δυνάμεις) extend through earth and water, air and heaven, and left no part of the universe without His presence, and uniting all with all has bound them fast with invisible bonds, that they should never be loosed. ... That aspect of Him which transcends His Potencies (τὸ ... ὑπεράνω τῶν δυνάμεων ὄν) cannot be conceived of at all in terms of place, but only as pure being, but that Potency (δύναμις) of His by which He made and ordered all things, while it is called God in accordance with the derivation of that name, holds the whole in its em-

<sup>24</sup> Cf. TERMINI 2000, 41–3; RUNIA 2002, 291–2 on the absolutely transcendence of the first cause.

<sup>25</sup> Trans. COLSON / WHITAKER 1929.

<sup>26</sup> See the quotation above; also Philo, *Post.* 166 on Exod 33.23: "Thou shalt behold that which is behind Me, but My face thou shalt not see." Cf. RUNIA 2004, 265–6.

brace and has interfused itself through the parts of the universe. But this divine nature which presents itself to us, as visible and comprehensible and everywhere, is in reality invisible, incomprehensible and nowhere."<sup>27</sup>

Not only does Philo dismiss simple anthropomorphism, but also the related idea of God moving about in a fashion similar to his creatures. It is not the ability to cause movement, but rather mobility itself that is unworthy of God, according to Philo. This concept is similar to that expressed in *De mundo*, since it implies changeability. Upon determining that God is unchangeable, immobile, and the creator of all things, Philo directs our attention to the active principle of God, which permeates and holds everything together.

In contrast to *De mundo*, Aristobulus and the Christian authors whom we will comment on shortly, when referring to God Philo uses the notion of δύναμις predominantly in the plural. As C. Termini states, this practice of Philo seems to be the exception among the other Hellenistic-Jewish texts we know.<sup>28</sup>

Philo assumes that there are two main powers of God: the 'creative' (ποιητική) and the 'royal' (βασιλική):

"I should myself say that they are allegorical representations of the two most august and highest potencies (δυνάμεις) of Him that is, the creative and the kingly (τὴν τε ποιητικὴν καὶ βασιλικὴν). His creative potency is called God, because through it He placed and made and ordered this universe, and the kingly is called Lord, being that with which He governs what has come into being and rules it steadfastly with justice. For, as he alone really is, He is undoubtedly also the Maker, since He brought into being what was not, and He is in the nature of things King, since none could more justly govern what has been made than the Maker."<sup>29</sup>

Philo denotes the creative power as 'God' (θεός), whereas the power that rules the world and holds it together, he calls 'Lord' (κύριος). The creative power implies God's mercy and clemency, the royal power, however, God's justice.<sup>30</sup> The fact that Philo distinguishes two divine powers and refers them to the names of God, known in the Old Testament, does not lead him to the conclusion that the powers are immanent and qualita-

<sup>27</sup> Philo, *Conf.* 134–8; trans. COLSON / WHITAKER 1932.

<sup>28</sup> Cf. TERMINI 2000, 27–34. Termini also observes that Philo hardly ever uses ἰσχύς when referring to God. On the contrary in the LXX ἰσχύς is the more frequent *terminus technicus*.

<sup>29</sup> Philo, *Mos.* 2.99–100; trans. COLSON 1935. Cf. also Philo, *Mut.* 28–9: "But the potencies which He has projected into creation to benefit what He has framed are in some cases spoken of as in a sense relative, such as the kingly and the beneficial [τὴν βασιλικὴν, τὴν εὐεργετικὴν], for a king is a king of someone and a benefactor of someone, while the subject of the kingship and the recipient of the benefit is necessarily something different. Akin to this too is the creative Potency [ἡ ποιητικὴ δύναμις] called God, because through this the Father who is begetter and contriver made the universe, so that 'I am God' is equivalent to 'I am the maker and Artificer' [ποιητὴς καὶ δημιουργός]"; trans. COLSON / WHITAKER 1934.

<sup>30</sup> *Spec. leg.* 1.307; *Virt.* 167.

tively different from God's transcendental being. Indeed, he says too that God's powers are not accessible and cognizable according to their nature (κατ' οὐσίαν), but only through their action.<sup>31</sup> Philo does not assume the differentiation which is a typical feature of *De mundo* between the immanent power and the transcendent nature of God. He seems to understand God's powers as transcendental as well.<sup>32</sup> It is a controversial question whether Philo accepts that the divine powers have a hypostatic character,<sup>33</sup> or whether they are only aspects of the divine. Another obvious difference consists in the fact that the immanence of God's powers leads Philo to conclude that "God filled the universe with Himself".<sup>34</sup> On the contrary, the author of *De mundo* rejects the concept that "God is everywhere" as unworthy of him. Unlike the author of *De mundo* Philo does not accept that the operation of God's powers is based principally on movement.

Another interesting question remains, whether Philo identifies God's 'Logos' with his power.<sup>35</sup> There is a connection between both terms for Philo, but it is not presented as systematically as it is in Christian texts. Unlike C. Termini I do not think that Philo understands the logos or the wisdom of God as 'powers' of this kind.<sup>36</sup> In some texts like *De fuga et inventione* 103, for example, the ruler's logos and his creative and royal power are mentioned together, but without further indication that God's δύναμις and his Logos are the same. The systematic identification of Logos and δύναμις can be observed in Christian texts.

### 3. Christian Authors

In the following we want to examine how four early Christian authors apply the terms δύναμις and οὐσία with respect to God, and how they deal with the question of God's immanence and transcendence.

Οὐσία is considered very important in early Christian texts, insofar as it plays a central role in the trinity debate, where discussion revolves around whether God, the Father, the Son / Logos and the Holy Spirit are of equal nature. In addition, οὐσία also plays an essential part in Gnos-

<sup>31</sup> *Spec. leg.* 1.47.

<sup>32</sup> Cf. *Spec. leg.* 1.46, where the divine δυνάμεις are said to be ἀκατάληπτοι κατὰ τὴν οὐσίαν; see on this passage RUNIA 2002, 301.

<sup>33</sup> TERMINI 2000, 56–7 thinks that the divine powers do not have a hypostatic character. In this assertion Termini differs from RADICE 1994, 93. Insofar as Philo speaks of more powers and calls them 'God' and 'Lord' I agree with Cristina Termini.

<sup>34</sup> *Post.* 14.

<sup>35</sup> RUNIA 2002, 296 shows that some passages of *De opificio mundi* lead to the conclusion that the powers are the immanent principle of the Logos, but the author himself observes that in other cases (e.g. *Her.* 133–236) Philo does not maintain a strict difference between Logos and powers on the basis of transcendence and immanence.

<sup>36</sup> Cf. TERMINI 2000, 232.

ticism, or rather in anti-Gnostic polemic with regard to the three human natures (hylic, psychic and pneumatic), which were assumed by Gnostics to exist. Detailed examination of the term οὐσία in early Christian authors (e.g. von Ostheim, Stead)<sup>37</sup> has shown how complex and manifold the application of the term is. It may very well be assumed that the main characteristics of the divine οὐσία mentioned in *De mundo* (immateriality, transcendence, eternity) can be recognized in Christian texts. It can also be proven that several authors, e.g. the so-called Hippolytus, author of *Refutatio omnium haeresium*, Clement of Alexandria, and of course Nemesius, have consciously made use of the Aristotelian categories. We would like to explore here particularly in what kind of relation οὐσία stands to divine power, and whether they are differentiated. Special attention is given to the relationship between God's power and the Logos.

### 3.1. Tatian and Theophilus of Antioch

The first two authors, Tatian and Theophilus of Antioch, belong to the Apologists of the 2nd century CE. Tatian's *Oratio ad Graecos* as well as Theophilus' *Ad Autolyicum* aim to engage in a conscious discourse with ancient philosophical models and with Gnosis. Both texts are known for containing the first Christian testimonials of the doctrine of a creation *ex nihilo*. It is also interesting that neither work is an interpretation of *Genesis* 1 nor a cosmological discussion in the narrow sense of the word. Both texts contain a discussion about δύναμις, in which God's power is differentiated from the power of matter.

#### 3.1.1. Tatian

It is assumed that Tatian's *Oratio ad Graecos* was not written and compiled as a single work, but rather composed of many individual pieces, perhaps homilies, and mainly addressed to Eastern Christians.<sup>38</sup> Tatian himself was most likely from Syria, had the usual philosophical education and spent some time in Rome, probably as a student of Justin. After his break with the Roman community he moved back to Syria. The starting point of the discussion in *Oratio* is the reproach that Christians are supposedly uneducated. Tatian's opponents are therefore all those who adopted the Greek, i.e. pagan, lifestyle. Although it is possible to claim that the work lacks homogeneity, the first six chapters offer a well-contemplated and thorough polemic against pagan philosophy (particularly Stoicism and Platonism).

<sup>37</sup> VON OSTHEIM 2008; G. C. STEAD, *Divine Substance* (Oxford 1977).

<sup>38</sup> Cf. R. C. KUKULA, *Tatians sogenannte Apologie. Exegetisch-chronologische Studie* (Leipzig 1900) 51–61; K. SCHNEIDER, *Studien zur Entfaltung der altkirchlichen Theologie der Auferstehung* (Bonn 1999) 175–203.



The first studies on Tatian's *Oratio* and its relationship with *De mundo* already stressed the problem of God's power. Nevertheless the first approach was to compare the role of δύναμις in *De mundo* and the πνεῦμα ὑλικόν in *Oratio ad Graecos*.<sup>39</sup> Salvatore Di Cristina showed later that the question of the πνεῦμα ὑλικόν is more complicated, although there are some analogies to *De mundo*.<sup>40</sup> Di Cristina pointed out that in Tatian it is not πνεῦμα ὑλικόν, but rather δύναμις that is to be understood as the main expression of the Logos, who is an intermediary between God and the material world.

The reason why Tatian deals with the question whether we should accept or reject the notion that 'matter' (ὕλη) exists independently from God is because he has to discuss the resurrection of the body.<sup>41</sup> The need to explain how dead bodies can be called back to life again, prompts the author to contemplate the origin of matter. In the same way that God created everything in the beginning, Tatian says, he will also be capable of creating new bodies at the end of times.

"God was in the beginning, but the beginning, we have been taught, is the power of the Logos. For the Lord of the universe, who is Himself the necessary ground of all being, inasmuch as no creature was yet in existence, was alone; but inasmuch as all power upon all visible and invisible things was with Him, He has created everything through the power of the Logos."<sup>42</sup>

Tatian ascribes God's δύναμις to the Logos, and stresses that this δύναμις is the only thing which rules over all visible and invisible realities. According to Tatian the creation of the material world is done by the Logos in 'imitation' (μίμησις) of the generation of the Logos by the Father.<sup>43</sup>

He further elaborates on matter and its power:

<sup>39</sup> G. VERBEKE, *L'évolution de la doctrine du Pneuma du Stoïcisme à Saint Augustin. Étude philosophique* (Louvain 1945).

<sup>40</sup> DI CRISTINA 1977.

<sup>41</sup> A similar relationship between the resurrection of the body and the notion of creation *ex nihilo* can be observed in Rabbinic texts, e.g. bSanh. 91a.

<sup>42</sup> Tatian, *Ad Gr.* 5.1 ed. Marcovich: Θεός ἦν ἐν ἀρχῇ, τὴν δ' ἀρχὴν Λόγου δύναμιν παρειλήφαμεν. Ὁ γὰρ δεσπότης τῶν ὄλων, αὐτὸς ὑπάρχων τοῦ παντός ἢ ὑπόστασις, κατὰ μὲν τὴν μηδέπω γεγεννημένην ποίησιν μόνος ἦν· καθὼ δὲ πᾶσα δύναμις ὁρατῶν τε καὶ ἀοράτων [αὐτὸς ὑπόστασις] ἦν σὺν αὐτῷ, τὰ πάντα [σὺν αὐτῷ] διὰ λογικῆς δυνάμεως αὐτός [καὶ ὁ Λόγος, ὃς ἦν ἐν αὐτῷ,] ὑπέστησε. If we accept that Tatian uses the aorist of the transitive verb ὑφίστημι also for the intransitive ὑφίσταμαι (i.e. ὑπέστησε on the place of ὑπέστη; cf. Bauer-Aland, *Wörterbuch zum Neuen Testament*, 6th ed., 1996), the translation of the last proposition should be: "inasmuch as all power upon visible and invisible things was with Him, all things were with Him through the power of the Logos". I prefer to translate the sigmatic aorist ὑπέστησε as a transitive verb, which seems to me more probable from the point of view of grammar and content.

<sup>43</sup> Cf. also DI CRISTINA 1977, 495.

“For matter is not, like God, without beginning, nor, as having no beginning, is of equal power with God; it is begotten, and not produced by any other being, but brought into existence by the Framer of all things alone.”<sup>44</sup>

A parallel to *De mundo* may be conceived in the combination “without beginning” and “equal to God”. God possesses power over everything visible and invisible, because he is without beginning. He is the beginning of all things through his own power; but he and his power never began to exist, since they have always existed and remain without any change, beginning or end. Although Tatian does not cite 1 Cor 1.24, he refers God’s power to the Logos. But precisely because it is a reality, and able to describe the divine nature, *dynamis* is transcendental like God himself.<sup>45</sup> Unlike other Christian authors Tatian does not identify God’s power with the Logos. There is also no consideration of the immanence of the power in contrast to *De mundo*.

### 3.1.2. Theophilus of Antioch

The second early Christian text is book 2, chapter 4 of the work *Ad Autolyicum* by Theophilus of Antioch (end of 2nd cent. CE). Theophilus was, according to his own account, born in Mesopotamia, where he converted to Christianity. We know very little about his life; he was probably the sixth bishop of Antioch. The framework within which the discussion on matter, God, and his power occurs in *Ad Autolyicum* is a deliberation about ancient mythology. Rather like *De mundo*, and as with Aristobulus and Philo, this text also deals with the issue of what is worthy of God. Theophilus, too, rejects the anthropomorphism of myths, and considers it inappropriate to claim that the Most High appeared at a particular location. God cannot be confined to physical space, as He is greater than any imaginable space. Like the author of *De mundo* Theophilus reaches the conclusion that God is not everywhere, but rather that he observes and hears everything.<sup>46</sup> Furthermore, the logical sequence ‘unbecoming-unchangeable-immobile-divine’ can also be identified in Theophilus. He polemicizes against Platonists and the assumption of a pre-existing, chaotic matter, and says:

<sup>44</sup> *Ad Gr.* 5.7: Οὐτε γὰρ ἀναρχος ἡ ὕλη καθάπερ καὶ ὁ θεός, οὔτε διὰ τὸ ἀναρχον [καὶ αὐτῆ] ἰσοδύναμος τῷ θεῷ, γεννητὴ δὲ καὶ οὐχ ὑπὸ τοῦ ἄλλου γεγονυῖα, μόνου δὲ ὑπὸ τοῦ πάντων δημιουργοῦ προβεβλημένη; trans. A. ROBERTS / J. DONALDSON (eds.), *Ante-Nicene Fathers II. Fathers of the Second Century* (Peabody 1995) 67.

<sup>45</sup> DI CRISTINA 1977, 498.

<sup>46</sup> Theoph. *Ad Autol.* 2.3.6–7 ed. Marcovich: Θεοῦ δὲ τοῦ ὑψίστου καὶ παντοκράτορος καὶ τοῦ ὄντως θεοῦ τοῦτο ἐστὶν μὴ μόνον τὸ πανταχόσε εἶναι, ἀλλὰ καὶ πάντα ἐφορᾶν καὶ πάντων ἀκούειν. Ἐτι μὴν μηδὲ τὸ ἐν τόπῳ χωρεῖσθαι· εἰ δὲ μὴ γε, μείζων ὁ χωρῶν τόπος αὐτοῦ εὐρεθῆσεται (μείζων γὰρ ἐστὶν τὸ χωροῦν τοῦ χωρουμένου). Θεὸς γοῦν οὐ χωρεῖται, ἀλλὰ αὐτὸς ἐστὶ τόπος τῶν ὅλων.

“But if God is uncreated and matter is uncreated, God is no longer, according to the Platonists, the Creator of all things, nor, so far as their opinions hold, is the monarchy of God established. And further, as God, because He is uncreated, is also unalterable; so if matter, too, were uncreated, it also would be unalterable, and equal to God; for that which is created is mutable and alterable, but that which is uncreated is immutable and unalterable. ... But the power of God is manifested in this, that out of things that are not, He makes whatever He pleases; just as the bestowal of life and motion is the prerogative of no other than God alone.”<sup>47</sup>

The functions which Theophilus attributes to God’s power are therefore: the creation of all things out of nothing, the bestowal of all living things, and mobility. As in *Oratio ad Graecos*, a particular importance is allocated to ‘unborn’ / ‘unbecome’ with respect to rulership over all things. The claim that some sort of chaotic primal matter could be without beginning would quickly lead to the conclusion, according to Theophilus, that it has to be divine. A consequential discovery would be that God ceases to be the creator of all things; but Theophilus sees a much more convincing reason that matter was created by God, namely the fact that everything which has not become (uncreated) is immobile and unchangeable (a conclusion we also have identified in *De mundo*). Matter, in contrast, was suitable for the creation of the world by being malleable and adaptable to various shapes and features. This flexibility of matter was only possible, according to Theophilus, if one assumed that matter itself was created. This is why flexibility and mobility are exclusively features of that which has become / been created.

Even though the term τριάς appears for the first time in Christian theology with Theophilus, he does not use οὐσία in order to explain God’s nature.<sup>48</sup> Although Theophilus does not comment on God’s being, it is possible to observe some analogies to the concepts expressed in chapter 6 of *De mundo*: the assumption that God, because of his transcendence, is not omnipresent; the logical relation between unchangeability, immobility and divinity (God as *motor immobilis*) and the emphasis on movement as operation of God’s power.

It should be noted though that both Tatian and Theophilus use the Aristotelian term ὕλη as *terminus technicus* for matter. In the case of Theophilus

<sup>47</sup> *Ad Autol.* 2.4.5–7 ed. Marcovich: Εἰ δὲ θεὸς ἀγέννητος καὶ ὕλη ἀγέννητος, οὐκ ἔτι ὁ θεὸς ποιητὴς τῶν ὄλων ἐστὶν κατὰ τοὺς Πλατωνικοὺς, οὐδὲ μὴν μοναρχία θεοῦ δεικνύεται, ὅσον τὸ κατ’αὐτούς. Ἔτι δὲ καὶ ὡς περὶ ὁ θεός, ἀγέννητος ὢν, καὶ ἀναλλοιώτως ἐστὶν, οὕτως, εἰ καὶ ἡ ὕλη ἀγέννητος ἦν, καὶ ἀναλλοιώτως καὶ ἰσόθεος ἦν· τὸ γὰρ γενητὸν τρεπτὸν καὶ ἀλλοιωτὸν, τὸ δὲ ἀγέννητον ἀτρεπτὸν καὶ ἀναλλοιώτον. ... Θεοῦ δὲ ἡ δύναμις ἐν τούτῳ φανεροῦται, ἵνα ἐξ οὐκ ὄντων ποιῆ ὅσα βούλεται, καθάπερ καὶ τὸ ψυχὴν δοῦναι καὶ κίνησιν οὐχ ἑτέρου τινός ἐστιν ἀλλ’ ἡ μόνου θεοῦ. Trans. from: A. ROBERTS / J. DONALDSON (eds.), *Ante-Nicene Fathers II. Fathers of the Second Century* (Peabody 1995).

<sup>48</sup> VON OSTHEIM 2008, 44–5. He mentions only one use of οὐσία by Theophilus, meaning ‘substance’ / ‘element’.

the polemic is directed at the Platonists, in the case of Tatian at Platonists and Stoics to whom he wants to prove that the resurrection of the dead has nothing to do with the Stoic παλιγγενεσία. The Platonists are criticized mainly because of their contradictory assumption of a creator who only orders matter that already exists, which results in a two-principle doctrine. In this train of thought it is superfluous to engage in an argument with Peripatetics, insofar as their conception of primary matter does not differ fundamentally from the Platonists'. Yet it can be observed that both authors make use of Peripatetic logic and terminology.

### 3.2. Origen

Due to his manifold theological and philosophical researches, Origen is regarded as one of the most important and controversial of early Christian theologians. Raised and educated in Alexandria, he was familiar with Alexandrian exegetical methods and knew about the local Hellenistic-Jewish tradition. Also his second place of inspiration, Caesarea in Palestine, proved to be very fruitful for Origen's exegetical work, offering him the opportunity to exchange views with Jewish-Palestinian exegetes, which led to mutual influencing.

Systematic work on Origen's texts is rendered difficult not only because of the complicated history of their transmission, but also because they lack systematic coherence in many places. Origen was probably less interested in a systematic presentation of his teaching, but rather chose to examine problems from various philosophical, philological and theological points of view. This observation is also without doubt valid for the very widespread application of the terms δύναμις and οὐσία in his texts.

In *Princ.* 1.2 Origen cites the most important biblical verses that formulate the *Epinoiai* ('conceptual notions') of the Son. The *Epinoiai* 'wisdom' (according to Prov 8.22–5) and 'power' (according to 1 Cor 1.24: "Christ, God's power and God's wisdom") stand in close relationship with one another in Origen's view.<sup>49</sup> In his explanation of the fact that Christ is called "God's wisdom", Origen already shows that a wisdom apart from God is unthinkable, since such a thought leads to the assumption that wisdom has not always been with God, and that it is not eternal. Furthermore the assumption of a temporal creation of wisdom would imply the idea that God is changeable. Origen rejects this idea as unworthy of God. The creation of wisdom is situated beyond any temporal beginning, and is also not com-

<sup>49</sup> The *Epinoiai* of Christ are interpreted in a similar way in book 1 of the *Commentary on John*; cf. D. PAZZINI, *Cristo Logos e Cristo dynamis nel I libro del Commentario a Giovanni di Origene*, in: R. J. DALY (ed.), *Origeniana quinta* (Leuven 1992) 424–9; J. WOLINSKI, *Le recours aux ἐπίνοιαι du Christ dans le Commentaire sur Jean d'Origène*, in: G. DORIVAL / A. LE BOULLUEC (eds.), *Origeniana sexta* (Leuven 1995) 465–92.

parable to a spiritual beginning, which happens through 'contemplation' or 'cognition'.

"Wisdom, therefore, must be believed to have been begotten beyond the limits of any beginning that we can speak of or understand. And because in this very subsistence of wisdom there was implicit every capacity and form of the creation that was to be, both of those things that exist in a primary sense and of those which happen in consequence of them, the whole being fashioned and arranged beforehand by the power of foreknowledge."<sup>50</sup>

It becomes evident through this text, that God's wisdom, which is to be identified with the Son, contains the creative potential in itself. The text goes on to mention the primary – as well as secondary – existing realities, from which it can be inferred that the creative power can also be transmitted to the creatures. In *Princ.* 1.2.4 Origen makes the claim that not all creatures contain the good by nature, but as accident so that they are in need of Christ's power against death. God's power is defined as follows:

"Now the power of God must mean that by which he is strong, that by which he both established and also preserves and controls all things visible and invisible, and that by which he is sufficient for all things which are the objects of his providence and in all of which it [sc. God's power] is present as if united with them."<sup>51</sup>

The power is identified with God's wisdom and therefore with the hypostasis of the Son. Similarly to the case of wisdom, it is also said about the power that "there is no time in which it has not existed". Otherwise it would have to be assumed that God wanted to, or was able to, create the power at a later time, which again would imply a changeable nature. In order to avoid such misunderstandings, Origen says in *Contra Celsum* that the power corresponds to "the will of God".<sup>52</sup> And to avoid the impression that Father and Son rule different areas, Origen stresses that there is no difference between the will and efficacy of the Son and the Father:

"As regards the power of his works, then, the Son is in no way whatever separate or different from the Father, nor is his work anything other than the Father's work, but there is one and the same movement, so to speak, in all they do; consequently he [sc. Solomon] has called him an 'unspotted mirror'.<sup>53</sup>

<sup>50</sup> *Princ.* 1.2.2: *Extra omne ergo quod vel dici vel intellegi potest initium generatam esse credendum est sapientiam. In hac ipsa ergo sapientiae subsistentia quia omnis virtus ac deformatio futurae inerat creaturae, vel eorum quae principaliter existunt vel eorum quae accidunt consequenter, virtute praescientiae praeformata atque disposita.* Trans. from: G. W. BUTTERWORTH, *Origen. On first Principles* (New York 1966).

<sup>51</sup> *Princ.* 1.2.9: *Intellegenda est ergo "virtus dei", qua viget, qua omnia visibilia et invisibilia vel instituit vel continet vel gubernat, qua ad omnia sufficiens est, quorum providentiam gerit, quibus velut unita omnibus adest.* So too *Cels.* 1.39; 1.49; 2.51.

<sup>52</sup> *Cels.* 3.33.

<sup>53</sup> *Princ.* 1.2.12: *Quoniam ergo in nullo prorsus filius a patre virtute operum inmutatur ac differt, nec aliud est opus filii quam patris, sed unus atque idem, ut ita dicam, etiam motus in omnibus est: idcirco "speculum" eum "immaculatum" nominavit, ut per hoc nulla omnino dissimilitudo filii intellegatur ad patrem.* Butterworth completed the last phrase, adding the subject "Father"

The efficacy of the Son and the Father, or rather their power is not only identical, but, according to this text, also causes 'movement' in all things. This is also the first place in *Princ.* 1.2 where there is a correlation expressed between movement and God's power. It is important for Origen that the efficacy of the Father and the Son pertains equally to material as well as to spiritual realities, and that it is therefore not appropriate to put forward the idea that the Father creates spiritual substances, whereas the Son is responsible for physical matter. Insofar as the Father and Son are two separate hypostases, the power is also not identical with God / the Father. It is part of the divine, though, since it is identifiable with the Son. In contrast with the author of *De mundo*, Origen does not see a contradiction in the idea that God's power is concurrently transcendent and immanent.

In *Contra Celsum* 4.5–6, Origen presents an elaborate discussion of this question, and emphasizes that there is no location where God dwells; only the power through which his plans are implemented, is present. This assertion could be considered to be very similar to that in *De mundo*. Nevertheless, a little later, two features (God's power and the divine itself) are described as "impossible to articulate". This feature is again typical of the transcendent realities, so we should conclude that Origen considers God's power as transcendental.<sup>54</sup> In *Contra Celsum* 6.71 Origen points to the fact that God's power encompasses the world, but not in the same fashion as one body encompasses another, since it is non-physical. In this point we can also see an agreement with what is said in *De mundo*. The fact that Christ is called God's power, indicates according to Origen that he is the 'ruling power', whereas many other powers also have their origin in God.<sup>55</sup> Christ's power is more 'divine' than all other powers,<sup>56</sup> since it is capable of creating life.<sup>57</sup> The ability to create life also implies his capability as a saviour.<sup>58</sup> These characteristics of divine power, the ability to create life and to preserve the created, are mentioned also in *De mundo*.

The idea that a transcendent God reveals himself to humans through his power (hence through his Logos / Son) is present in Origen. He does nevertheless avoid statements which could portray the Son of God as only immanent in the world, and therefore not equal to God. It is probably the reason why Origen emphasizes that God's power is also transcendent.

When using the term οὐσία, Origen remains rather cautious. He is aware of the Aristotelian categories and the various possible interpreta-

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(consequently the Father has called him an "unspotted mirror"). I follow here the German translation of H. GÖRGEMANN / H. KARPP (eds.), *Origenes. Vier Bücher von den Prinzipien*, 2nd. ed. (Darmstadt 1985), who added the subject "Solomon".

<sup>54</sup> *Cels.* 5.48.

<sup>55</sup> *Comm. Jo.* 6.39.

<sup>56</sup> *Comm. Jo.* 10.25.

<sup>57</sup> *Fr. Jo.* 112.1.

<sup>58</sup> *Hom. Jer.* 1.6; *Fr. 1 Reg.* 21.1; *Dial.* 19.22, 23.1.

tions of οὐσία. When Origen explains the adjective ἐπιούσιος in *De oratione* 27.8, he lists the various denotations of the term. The first of these definitions refers to the bodiless creatures, which carry existence within themselves (also οὐσία as pure existence). In reference to the material signification of οὐσία ('substance'), Origen mentions further detailed definitions, which he probably borrowed from a Stoic encyclopaedia.<sup>59</sup> Even though Origen says, that "our daily bread" alludes to a heavenly bread, which again corresponds to the Logos, he does not address the question concerning Christ's or God's οὐσία, as has already been noted by several researchers. C. Marksches thinks that Origen very consciously evaded the task of defining an οὐσία that would combine physical and non-physical realities and be recognizable in Christ.<sup>60</sup>

At another point, Origen says of God's οὐσία that it corresponds to wisdom and is preexistent to all things as well as eternal.<sup>61</sup> In *Contra Celsum* we read, for example, that it should not be assumed that God is part of existence, but that only humans who have received his spirit take part in him.<sup>62</sup>

God is more or less defined as being par excellence, surpassing the limits of human imagination of existence. Even though Origen himself asks the question of whether God can be called οὐσία τῶν οὐσιῶν, or if this can only be said of the Son (*Contra Celsum* 6.64), he avoids a clear answer, since he probably realizes that this question would only lead to a subordination of the Son. Origen stresses that God the Father is 'attainable' (ἐφικτός) by the logos.<sup>63</sup> At one point in the commentary on John Origen differentiates between God's power and his nature, but not in the sense of the Pseudo-Aristotelian work, since he says:

"For one does not apprehend God or contemplate him, and afterwards apprehend the truth. First one apprehends the truth, so that in this way one may come to behold the essence (οὐσία), or the power (δύναμις) and nature (φύσις) of God beyond the essence."<sup>64</sup>

<sup>59</sup> MARKSCHIES 1995, 65–6.

<sup>60</sup> MARKSCHIES 1995, 73–4.

<sup>61</sup> *Expositio in Proverbia*, PG 17, 185A: Οὐσία οὐσα ἢ τοῦ Θεοῦ σοφία, πρὸ αἰώνων γηγένηται, καὶ πρὸ κτίσεως αἰδίου ἦν.

<sup>62</sup> *Cels.* 6.64.

<sup>63</sup> *Cels.* 6.65: εἰ δὲ νοήσαντες τὸ "ἐν ἀρχῇ ἦν ὁ λόγος, καὶ ὁ λόγος ἦν πρὸς τὸν θεόν, καὶ θεὸς ἦν ὁ λόγος" ἀποφαινόμεθα ὅτι τούτῳ τῷ λόγῳ ἐφικτός ἐστιν ὁ θεός, οὐ μόνω αὐτῷ καταλαμβανόμενος ἀλλὰ καὶ ᾧ ἂν αὐτὸς ἀποκαλύψῃ τὸν πατέρα, ψευδοποιήσομεν τὴν Κέλσου λέξιν φάσκοντος: οὐδὲ λόγῳ ἐφικτός ἐστιν ὁ θεός. See also *Fr. Jo.* 1.7: οὐ γὰρ ἄλλη τις ὦν οὐσία παρὰ τὸν λόγον δι' αὐτοῦ ποιεῖ τὰ ὄντα, ἀλλ' αὐτός ἐστιν ὁ ποιῶν, θεός ὦν λόγος.

<sup>64</sup> *Comm. Jo.* 19.6.37: οὐ γὰρ νοεῖ τις τὸν θεὸν ἢ θεωρεῖ αὐτόν, καὶ μετὰ ταῦτα τὴν ἀλήθειαν, ἀλλὰ πρότερον τὴν ἀλήθειαν, ἵν' οὕτως ἔλθῃ ἐπὶ τὸ ἐνιδεῖν τὴν οὐσίαν ἢ τὴν ὑπερέκεινα τῆς οὐσίας δύναμις καὶ φύσις τοῦ θεοῦ.

At this point Origen seems to attribute to God's 'nature' (φύσις) a particular kind of transcendence, which is different from οὐσία. Perhaps he relates οὐσία rather to the Son's nature, who is both human and divine. A little later, though, when he again talks about the Logos, he does emphasize how the Father and the Son do not differ in power and nature. We can therefore see that Origen tried at several points to define the term οὐσία. Despite the many levels and facets of meaning of οὐσία, which he knows from philosophy, he is very cautious about applying the term to God. Most of his definitions are limited to two aspects: absolute being, and absolute wisdom. It is wisdom as *Epinoia* of Christ particularly that allows him to connect non-physical existence with the existence of the material world. A clear differentiation between οὐσία and δύναμις of God in the sense of transcendence and immanence is missing. Following 1 Cor 1.24, Origen systematically identifies God's power with the Logos, and therefore with the second hypostasis. In this train of thought, δύναμις does not correspond to God, but is rather seen as part of the divine.

### 3.3. Nemesius

Nemesius of Emesa is the last author whom we will cite here. We know very little of his life: mainly that he lived around the end of the 4th century CE and the beginning of the 5th century CE, and that he wrote the work *On the Nature of Man*, considered one of the first Christian anthropologies, when he was bishop of Emesa. Moreover, he was strongly influenced by Aristotelianism.

Nemesius uses the terms οὐσία and δύναμις mainly in the framework of his anthropological research. There is hardly any explicit discussion about the 'essence' and 'power' of God. God is repeatedly referred to as the source of life, as the cause of movement, and of everything which happens. Nevertheless, in his work we can recognize important aspects of his idea of οὐσία and δύναμις.

In the first chapter of *On the Nature of Man* Nemesius depicts a kind of *scala creaturarum*, in which the function of growth, nutrition, and procreation of the different beings is mentioned. Nemesius' intention is to prove that the creative power of God permeates everything. Motion plays an important part here. He cites the example of a magnet being capable of attracting metal objects, and even being capable of transmitting its magnetism, as is mentioned in Plato's dialogue *Ion*.<sup>65</sup> Unlike Plato, though, Nemesius does not interpret this as evidence for divine inspiration, but rather in a physical sense: that each movement originates from a *motor primus*, namely from God. And similar to *De mundo* and Theophilus of Antioch, Nemesius understands motion as a sign of having a soul.

<sup>65</sup> Pl. *Ion* 534b–d; Nemes. *Nat. hom.* 1.43.



In chapters 33 and 34, Nemesius deals with human free will and the ability to make decisions. He comes to the conclusion that the ability to make decisions is made use of when humans are entitled to something, or rather when humans have the possibility to accomplish something:

“Those things are called powers through which we are able to do something: for we have the ability of everything that we do; on matters where we do not have power, we perform no actions (πραξις). So action depends on power and power on substance (οὐσία): for action comes from power and power comes from substance and is in substance (οὐσία).”<sup>66</sup>

From this it becomes clear, that Nemesius sees οὐσία as a superior category, which then has an effect on the power and the idea of the possible. There is a correlation between the ‘capacity’ (δυνάμενον), the ‘power’ itself (δύναμις), and the ‘possible’ (δυνατόν).<sup>67</sup> The capacity belongs exclusively to the ‘substance’ (οὐσία), upon which the power and that which is possible, depend. Among all possible things, Nemesius makes a difference between those which are essential (e.g. the breath of a human) and those which are caused by external factors. The necessary possible things are therefore directly dependent on the human ‘substance’ (οὐσία). It becomes obvious that according to Nemesius’ understanding there is a close relation between οὐσία and δύναμις, in which he subordinates δύναμις to οὐσία.

In chapter 4 Nemesius discusses the relation between God and humans, and the possibility of unification between the divine and the human. The reason for this consideration is not only the question about the human and divine nature of Christ, but also the problem of the connection between soul and body. Nemesius mentions the objections of the philosophers (e.g. Porphyry) and of heterodox Christians (e.g. Eunomians), that a unity of ‘beings’ (οὐσίαι) in Christ is impossible. The Eunomians therefore assumed that the unity of God and human did not take place on the level of nature, but rather on the level of powers. Nemesius recognizes a problem therein, since he, as we already noted, assumes that οὐσία and δύναμις are closely tied to, and dependent on, one another. He suggests the following solution: insofar as the divine οὐσία is part of the non-physical realities, it is capable of affecting the human being / nature without any amalgamation. But this effect is only one-way: the divine supports the human without being affected by it. He concludes:

<sup>66</sup> *Nat. hom.* 34: δυνάμεις λέγονται, καθ’ ἃς δυνάμεθά τι ποιῆν. παντός γὰρ, οὐ ποιοῦμεν, δύναμιν ἔχομεν· ὧν δὲ δύναμιν οὐκ ἔχομεν, τούτων οὐδὲ τὰς πράξεις· ἔχεται οὖν ἡ μὲν πράξις δυνάμεως, ἡ δὲ δύναμις οὐσίας· ἡ τε γὰρ πράξις ἀπὸ δυνάμεως καὶ ἡ δύναμις ἀπὸ τῆς οὐσίας καὶ ἐν οὐσίᾳ. English translation: R. W. SHARPLES / P. J. VAN DER EIJK (eds.), *Nemesius. On the Nature of Man* (Liverpool 2008).

<sup>67</sup> *Nat. hom.* 34: δυνάμενον μὲν ἡ οὐσία, δύναμις δὲ ἀφ’ ἧς ἔχομεν τὸ δύνασθαι, δυνατόν δὲ τὸ κατὰ δύναμιν πεφυκὸς γίγνεσθαι. τῶν δὲ δυνατῶν τὰ μὲν ἔστιν ἀναγκαῖα, τὰ δὲ ἐνδεχόμενα.

“So it is better to say, as we said before, that the union of the substances comes about without composition through the proper nature of the incorporeal, the more divine suffering no harm from the lower, while this is benefited by the more divine. For the purely incorporeal nature pervades the whole unchecked, while nothing pervades it. So they are unified because it pervades all, but because nothing pervades it, it remains unmixed and uncompounded.”<sup>68</sup>

Nemesius does not appear to see a contradiction between the transcendent divine being and his immanence in the material world. Similar to Aristobulus and Philo, Nemesius assumes that God, i.e. his οὐσία, is omnipresent. He does not make a difference between God’s nature and his power based on the transcendence of one and the immanence of the other, as it is the case in *De mundo*. The second hypostasis, the Son of God, represents the perfect example of how God permeates human nature. Nemesius lived in the 4–5th centuries CE, during the time of the monophysite dispute, so that this aspect takes on much more significance than it does with the other authors cited here. It was important for Nemesius to emphasize that the divine substance can permeate all material things, without being polluted by it. This is of fundamental importance with regard to the doctrine of Christ’s dual nature.

#### 4. Summary

After this analysis we can conclude that there are indeed parallels between *De mundo* and Jewish and Christian authors. These involve particularly the idea of a divine power that permeates all things material. However, the distinction between a transcendent οὐσία and an immanent δύναμις of God, as it is formulated in *De mundo*, cannot be found in Jewish or Christian texts. The Hellenistic-Jewish authors Aristobulus and Philo identify God’s power or powers with God himself. Both stress that God exists beyond any physicality, but consider that he might permeate the world created by himself. Most Christian authors cited here regard God’s power as *Epinoia* of the Logos, and thus the second hypostasis. The reason for this is particularly 1 Cor 1.24, a biblical verse which Origen cites several times as the basis for his theology. However, Tatian and Theophilus of Antioch, who do not mention 1 Cor 1.24 in this context, also come to the conclusion that God’s power is an aspect of the Logos. Since the power can also be understood as *Epinoia* of the Son, it is possible to regard it as both transcendent and immanent. It is also noteworthy how cautiously the

<sup>68</sup> *Nat. hom.* 3.143–4: βέλτιον οὖν, ὡς προείρηται, κατὰ τὴν οἰκειάν φύσιν τῶν ἀσωμάτων ἀσυγχύτως τὴν ἔνωσιν γίνεσθαι τῶν οὐσιῶν, μηδὲν παραβλαπτομένης τῆς θειοτέρας ἐκ τῆς ὑποδεεστέρας, ἀλλὰ ταύτης μόνον ὠφελουμένης ἐκ τῆς θειοτέρας, ἐπεὶπερ ἡ καθαρῶς ἀσώματος φύσις χωρεῖ μὲν ἀκωλύτως διὰ πάντων, δι’ αὐτῆς δὲ οὐδέν· ὥστε τῷ μὲν χωρεῖν αὐτὴν διὰ πάντων ἠνώσθαι, τῷ δὲ μηδὲν δι’ αὐτῆς μένειν ἄμικτον καὶ ἀσύγχυτον.

authors apply the term οὐσία with respect to God. They reject a qualitative distinction between οὐσία and δύναμις on the basis of transcendence and immanence in order to avoid a possible subordination of the Son to the Father. This was of major importance in anti-Gnostic polemic, as well as in discussions of the Trinity. Nemesius remains loyal to this tendency, but contemplates profoundly the question of interaction between divine and human nature. The reason for this lies in the doctrine of Christ's dual nature, which became more and more important during his time.

# Syriac and Arabic Transmission of *On the Cosmos*

Hidemi Takahashi

## 1. Introduction

*On the Cosmos* is one of a group of non-Christian Greek texts that were translated at a relatively early date (in the sixth century) into Syriac and, it might be remembered, also into Armenian, a fact which no doubt reflects the popularity of the work, at least in certain circles, in Late Antiquity. The work was then translated into Arabic mainly, it seems, from Syriac, and probably, again, at a relatively early date. While the Syriac version is known to us only through a single manuscript, there are several manuscripts representing at least three different Arabic versions of *On the Cosmos*. The account that follows here attempts to provide a summary of what is known about these Syriac and Arabic versions of *On the Cosmos*, together with some indications of the research that waits to be done on these versions.

## 2. Syriac Version of *On the Cosmos*

The Syriac version of *On the Cosmos* is preserved in MS. British Library, Additional 14658 (fol. 107v–122r), a manuscript that has been dated to the seventh century, some five centuries before the oldest Greek witness of the work.<sup>1</sup> This Syriac version, one of the texts that were taken note of by Ernest Renan some years after its arrival at the British Museum in 1843,<sup>2</sup> was published by Paul de Lagarde in his *Analecta syriaca* in 1858.<sup>3</sup> A detailed study of the Syriac text, mainly of the first four chapters and including an annotated translation of Chapter 4, was then made by Victor Ryssel.<sup>4</sup> Further notes and suggested emendations were provided by

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<sup>1</sup> W. WRIGHT, *Catalogue of the Syriac Manuscripts in the British Museum, Acquired since the Year 1838* (London 1870–72) 1157 (no. 987/8).

<sup>2</sup> E. RENAN, *De philosophia peripatetica apud Syros commentatio historica* (Paris, 1852) 26; id., “Lettre à M. Reinaud sur quelques manuscrits syriaques du Musée Britannique contenant des traductions d’auteurs grecs profanes et des traités philosophiques”, *Journal asiatique*, 4e sér., 19 (1858) [293–333] here 321.

<sup>3</sup> DE LAGARDE 1858, 134–58.

<sup>4</sup> RYSSEL 1880–1.

Anton Baumstark in his *Lucubrationes syro-graecae*.<sup>5</sup> For Chapters 5–7, a German translation made by Eduard König was printed with the edition of the Greek text by William L. Lorimer, who used this, as well as Georg Breitschaft’s translation of Chapters 1–3 and Ryssel’s work, in producing his critical edition, and who judged the Syriac version to show the greatest affinity with the excerpts in Stobaeus and the codices (B)CG, though also agreeing with ZAlD and Z in several places from 398b onwards.<sup>6</sup> Nearly eighty years after its use in Lorimer’s edition, the Syriac version has just in the past few years been the subject of a doctoral dissertation by Adam McCollum, which includes an English translation of the Syriac text, as well as a Greek-Syriac index of words.<sup>7</sup> Lorimer’s use of the Syriac version suffered from the fact that he himself did not know Syriac and had to rely on translations provided by others.<sup>8</sup> Given these circumstances, there is still room for reappraisal of the Syriac evidence as an aid for the establishment of the Greek text, and such a reappraisal would need to take into account the advances made in the meantime in the study of Greco-Syriac translations.<sup>9</sup>

Besides its use in the establishment of the Greek text, the Syriac version is worthy of study in itself as a representative of the cultural milieu in which it was produced and for the influence it had on later Syriac works. The heading of the Syriac text as found in the British Library manuscript tells us that this is “a letter of Aristotle the philosopher, which was translated from Greek into Syriac by the excellent Mār Sargīs the priest of the city of Rēš-‘Ainā.” In his preface, the translator refers to the work as a “letter composed by Aristotle the philosopher [and addressed] to Alexander the king on the knowledge of the created things (*hwayyā*).”<sup>10</sup> We learn furthermore from the preface that the translation was made at the request of an unnamed client who himself procured and sent to the translator a copy of the Greek text from which the translation was made.<sup>11</sup> The translator of the work, Sergius of Rēš-‘Ainā (ob. 536), often referred to in the sources as the chief physician (*archiatros*) of that city,<sup>12</sup> is the earliest person known by

<sup>5</sup> BAUMSTARK 1894, 405–36; cf. id., *Geschichte der syrischen Literatur* (Bonn 1922), 167 n. 6.

<sup>6</sup> LORIMER 1933, 25–6.

<sup>7</sup> A. C. MCCOLLUM, “The Syriac *De mundo*. Translation, Commentary, and Analysis of Translation Technique”, Diss. Hebrew Union College, 2009; cf. id., *A Greek and Syriac Index to Sergius of Reshaina’s Version of the De Mundo* (Piscataway 2009); id. 2011.

<sup>8</sup> Cf. F. E. PETERS, *Aristoteles Arabus. The Oriental Translations and Commentaries on the Aristotelian Corpus* (Leiden 1968) 62, n. 1: “... Edward König’s startlingly bad translation of [Chapters] 5-7 ... the latter has led Lorimer into some fantastic Greek variants!”

<sup>9</sup> As an example of what might be achieved in this direction, see D. KING, *The Earliest Syriac Translation of Aristotle’s Categories. Text, Translation and Commentary* (Leiden 2010).

<sup>10</sup> Cf. RYSSEL 1880, 7.

<sup>11</sup> DE LAGARDE 1858, 134; cf. MCCOLLUM 2011, 167–8.

<sup>12</sup> Greek Theodosiopolis, present-day Ra’s al-‘Ain/Ceylanpınar on the Syrian-Turkish border.

name who worked on the translation of secular Greek works into Syriac. He is reported in a near-contemporary historical work to have received his education in Alexandria, and is known as the translator from Greek into Syriac of the medical works of Galen and the mystical works attributed to Dionysius the Areopagite, as well as the author of, among others, two treatises on Aristotelian logic.<sup>13</sup>

Taken together with the fact that it was translated by Sergius of Rēš-'Ainā, the manuscript in which the Syriac version of *On the Cosmos* is found is of interest in giving us some suggestions as to the milieu in which the work circulated in Late Antiquity. The British Library Manuscript Additional 14658 is a manuscript that contains many of the earliest known Syriac translations and original works on philosophy and related subjects, many of them associated with Sergius of Rēš-'Ainā. The first portion of the manuscript contains works relating to Aristotelian logic, including Sergius' two treatises on the subject, as well as the anonymous translations of Porphyry's *Isagoge* and Aristotle's *Categories*. The translation of *On the Cosmos* is immediately preceded (on 99v–107v) by a Syriac adaptation, by Sergius, of Alexander of Aphrodisias' treatise *On the Principles of the Universe*.<sup>14</sup> The later portions of the manuscript contain such items as the Syriac versions of (Ps.-)Isocrates' *Ad Demonicum* and other works on what may be called 'popular philosophy', including the sayings attributed to Plato, Pythagoras and Theano.<sup>15</sup> It would appear that what we find in the manuscript is an attempt to gather together the various secular (non-religious and non-medical) works that were available in Syriac at the time, for use no doubt in a didactic context, and the choice of such Greek works made available in Syriac in and around the sixth century would appear, in turn, to reflect the standard textbooks that were in use in the schools of Late Antiquity. It may be remembered in this connection that *On the Cosmos* was translated not only into Syriac but also into Armenian at a relatively early stage,<sup>16</sup> making it one of a group of secular Greek texts that

<sup>13</sup> On Sergius, see the papers gathered together in H. HUGONNARD-ROCHE, *La logique d'Aristote du grec au syriaque* (Paris 2004); S. BROCK, "Sergios of Resh'ayna", in: id. et al. (eds.), *Gorgias Encyclopedic Dictionary of the Syriac Heritage* (Piscataway 2011) 366.

<sup>14</sup> This has been edited recently by E. FIORI, "L'épitomé syriaque du *Traité sur les causes du Tout* d'Alexandre d'Aphrodise attribué à Serge de Reš'aynā", *Le Muséon* 123 (2010) 127–58; cf. D. KING, "Alexander of Aphrodisias' *On the Principles of the Universe* in a Syriac Adaptation", *Le Muséon* 123 (2010) 159–91. The Arabic version of the same work has been edited by GENEQUAND 2001.

<sup>15</sup> On the Syriac versions of works of 'popular philosophy', see S. BROCK, "Syriac Translations of Greek Popular Philosophy", in: P. BRUNS (ed.), *Von Athen nach Bagdad. Zur Rezeption griechischer Philosophie von der Spätantike bis zum Islam* (Bonn 2003) 9–28.

<sup>16</sup> The Armenian version, apparently attributed (erroneously) in some manuscripts to David the Invincible (Dawit' Anyaŋ'), has been edited under the title "Aristoteli imastasiri T'uŋt' ar Aŋek'santros ŋagawor: Patmut'iwn yaŋags ašxarhi" (the letter of Aristotle the philosopher to Alexander the king: narration about the world), in: *Koriwn vardapet,*

are shared by the Syriac and Armenian traditions, which includes, besides *On the Cosmos*, such works as the Pseudo-Aristotelian *De virtutibus et vitiis* and the Aristotelian logical works, as well as the *Geoponica*, the *Physiologus*, Dionysius Thrax's *Technē grammatikē* and the sayings of Secundus and Menander, a group of texts which again appears to be representative of the standard textbooks used in the schools of Late Antiquity.<sup>17</sup>

The British Library manuscript, the only extant manuscript known to contain the Syriac version of *On the Cosmos*, was probably brought from Iraq to the Monastery of the Syrians (Dair as-Suryān) in the Scete in Egypt by Moses of Nisibis in the tenth century,<sup>18</sup> and remained there until it was acquired by the British Museum. The same Syriac version of the work, however, was evidently still available in northern Iraq in the thirteenth century, where it was used by Severus Jacob Bar Šakkō (ob. 1241), abbot and bishop in the Syrian Orthodox Monastery of Mar Mattai near Mosul, as one of the sources for his *Book of Dialogues*.<sup>19</sup> In the part of that work concerned with the natural sciences (*Dialogues* II.2.3), the 'answers' to Questions 11 (on the celestial spheres) and 13 (on the causes of meteorological phenomena) are taken almost entirely from the Syriac version of *On the Cosmos*, while a sentence based on *On the Cosmos* is also found in the answer to Question 12 (on the elements). The closeness of the wording in Bar Šakkō to that of the version in the London manuscript indicates that it was Sergius of Rēš-'Ainā's version of the work which was known to Bar Šakkō.<sup>20</sup>

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*Mambṛē Vercanoṭ, Dawit' Anyaṭt'. Matenagrut'iwnk'* (Venice 1833) 603–28. On this Armenian version, see F. C. CONYBEARE, *A Collation with the Ancient Armenian Versions of the Greek Text of Aristotle's Categories, De interpretatione, De virtutibus et vitiis and of Porphyry's Introduction* (Oxford 1892) 51–71; A. TESSIER, "[Arist.] Mu 395b: congetture al testo armeno", *Bazmavep* 133 (1975) 376–8; id., "Per la tradizione indiretta del *De Mundo* pseudo-aristotelico: note alla *Versio armena*", *Atti dell'Istituto Veneto di Scienze, Lettere ed Arti* 134 (1975–76) 215–24; id., "Leitfehler nella traduzione armena del *De Mundo* pseudo-aristotelico?", *Bollettino del Comitato per la preparazione dell'edizione nazionale dei classici greci e latini* 27 (1979) 31–40; id., *Il testo di Aristotele e le traduzioni armene* (Padua 1979) 39–122; id., "Some Remarks about the Armenian Tradition of Greek Texts", in: T. J. SAMUELIAN / M. E. STONE (eds.), *Medieval Armenian Culture* (Chico [Ca.] 1984) [415–24] 419–22.

<sup>17</sup> For a comparison of the works translated into the two languages, see H. HUGONNARD-ROCHE, "La tradition gréco-syriaque des commentaires d'Aristote", in: V. CALZOLARI / J. BARNES (eds.), *L'œuvre de David l'Invincible et la transmission de la pensée grecque dans la tradition arménienne et syriaque* (Leiden 2009) [153–73] 166–8.

<sup>18</sup> On the manuscript collection of Moses of Nisibis, see S. BROCK, "Without Mushē of Nisibis, Where Would We Be? Some Reflections on the Transmission of Syriac Literature", *Journal of Eastern Christian Studies* 56 (2004) 15–24.

<sup>19</sup> As was noted by J. RUSKA, "Studien zu Severus bar Šakkū's Buch der Dialoge", *Zeitschrift für Assyriologie* 12 (1897) [8–41, 145–61] 154.

<sup>20</sup> See H. TAKAHASHI, "Fakhr al-Dīn al-Rāzī, Qazwīnī and Bar Shakkō", *The Harp. A Review of Syriac and Oriental Ecumenical Studies* 19 (2006) 365–79.

It may have been the same manuscript as that used by Bar Šakkō which was available to the Syrian Orthodox prelate Gregory Abū al-Farağ Barhebraeus (1225/6–86), who as maphrian, or primate of his church in the areas roughly corresponding to today's Iraq and Iran, resided a few decades after Bar Šakkō in the Monastery of Mar Mattai and who used the Syriac version of *On the Cosmos* as a source in at least three of his works. In composing the *Treatise of Treatises*, probably the earliest of the three works with which we are concerned here, Barhebraeus used al-Ġazālī's *Intentions of the Philosophers* (*Maqāṣid al-falāsifa*) as his main source, but he clearly also made use of a number of other sources, and an examination of the passages dealing with meteorological matters reveals at least three places where the author borrowed materials from *On the Cosmos*. The first of these occurs in a passage concerned with rain, where the notion of cloud being 'pregnant' with rain goes back to *On the Cosmos*.<sup>21</sup> The second instance is less clear, but one suspects that the word 'residue' (*šarkānā*) used in connection with mist was gleaned by Barhebraeus from the same work.<sup>22</sup> The third instance involves a longer passage dealing with volcanic activities, where the place-names mentioned and the forms in which they occur leave little doubt that the passage is based on the Syriac version of *On the Cosmos*.<sup>23</sup> In the last of these instances, Barhebraeus mentions 'the Philosopher' as his source at the end of the passage, which must in this context mean 'Aristotle', suggesting that he believed *On the Cosmos* to be a genuine work of the Stagirite. The second work in which Barhebraeus is known to have used *On the Cosmos* is his theological work, the *Candelabrum of the Sanctuary*. The use of *On the Cosmos* in passages dealing with meteorological phenomena in the Second 'Base' of that work (composed ca. 1266/7) was noticed by Ján Bakoš, who frequently refers to *On the Cosmos* in the footnotes to his edition of that 'base'.<sup>24</sup> While Bakoš does not make any detailed comparison of the text of the *Candelabrum* with the Syriac, as opposed to Greek, text of *On the Cosmos*,<sup>25</sup> even a cursory comparison of the texts makes it clear that it was the Syriac translation by Sergius of Rēš-'Ainā that Barhe-

<sup>21</sup> See H. TAKAHASHI, "Barhebraeus und seine islamischen Quellen. Têgrat têgrātā (Tractatus tractatum) und Ġazālīs Maqāṣid al-falāsifa", in: M. TAMCKE (ed.), *Syriaca. Zur Geschichte, Theologie, Liturgie und Gegenwartslage der syrischen Kirchen. 2. Deutsches Syrologen-Symposium (Juli 2000, Wittenberg)* (Münster 2002) [147–75] 161.

<sup>22</sup> *Treatise of Treatises*, MS. Cambridge University, Add. 2003, 55v 19–20; cf. DE LAGARDE 1858, 141.22–4 (394a 19–21).

<sup>23</sup> MS. Cambridge University, Add. 2003, 57r 4–12; cf. DE LAGARDE 1858, 145.17–146.2 (395b 18–30).

<sup>24</sup> J. BAKOŠ, *Le Candélabre des sanctuaires de Grégoire Aboulfaradj dit Barhebraeus*, *Patrologia Orientalis* 22/4 and 24/3 (Paris 1930–33), 11–2, 14, 113 n. 4, 114 n. 1, 115 n. 4, 117 n. 1–2, 119 n. 2, 125 n. 1, 127 n. 1, 128 n. 4, 132 n. 2, 153 n. 3, 154 n. 4. Cf. TAKAHASHI 2004b, 194–6, 203–6.

<sup>25</sup> Bakoš does make a reference to de Lagarde's edition at 113 n. 4, but seems not to have had access to it.



braeus had access to. Towards the end of his life, Barhebraeus turned to *On the Cosmos* again in composing the parts dealing with meteorological and geographical matters in his major philosophical work, the *Cream of Wisdom* (composed in 1285–6).<sup>26</sup> Barhebraeus used *On the Cosmos* there mainly in the same contexts as those in which he had used it earlier in his *Candelabrum*, but there are some instances where he makes new use of *On the Cosmos*, the most important of these instances being in his description of the Mediterranean Sea.<sup>27</sup>

Influence of *On the Cosmos* may also be detected in Syriac in the *Hexaemeron* of Jacob of Edessa (ca. 640–708), where, for example, the Greek names given for the twelve winds agree more closely with those given in *On the Cosmos* than with those given in Aristotle's *Meteorologica*. The forms in which these names occur, however, and the directions assigned to Caecias and Apeliotes by Jacob, who was capable of reading and using Greek sources in the original language, indicate that what Jacob used here was not the Syriac version of the work by Sergius.<sup>28</sup>

### 3. Arabic Versions of *On the Cosmos*

The Arabic versions of *On the Cosmos* are known to have come down to us in at least five manuscripts.

Istanbul, Süleymaniye Library, Fatih 5323, 86r–108r (716 AH/1316-7 CE, = F)  
 Istanbul, Süleymaniye Library, Ayasofya 4260, 97v–120v (714 AH/1314–15 CE, = Ay)  
 Princeton University Library, Yahuda 308, 295v–305r (677 AH/1278–9 CE, = Y)  
 Istanbul, Köprülü Library, 1608, 182v–189v (17th century, = K)  
 Tehran University Library, 5469, 36v–41v (olim Yazd, Šaiḥ 'Alī 'Ulūmī 64/8, Ğumādā II, 557 AH/1162 CE, = T)

The identification of the texts in the first four of these manuscripts as Arabic versions of *On the Cosmos* was made by S. M. Stern,<sup>29</sup> while the presence of

<sup>26</sup> See TAKAHASHI 2004a, 55 (introduction), 691 (index locorum).

<sup>27</sup> *Cream of Wisdom*, Book of Mineralogy, V.1, TAKAHASHI 2004a, 126–9, 369–84; cf. id. 2003.

<sup>28</sup> J.-B. CHABOT, *Jacobi Edesseni Hexaemeron* (Paris 1928) 84–5; cf. M. WILKS, “Jacob of Edessa's Use of Greek Philosophy in His Hexaemeron”, in: B. TER HAAR ROMENY (ed.), *Jacob of Edessa and the Syriac Culture of His Day* (Leiden 2008) [223–238] 224. We may note in the passage of Jacob the absence of Meses and Phoenicias, which are in the *Meteorologica*, and the inclusion, on the other hand, of Euronotus, Libonotus and Iapyx, names that appear in *On the Cosmos* but not in the *Meteorologica*. In this Jacob was followed, in turn, by Moses Bar Kēphā (833–903) in his *Hexaemeron* (MS. Paris, syr. 311, 57r; Paris, syr. 241, 188v; cf. L. SCHLIMME, *Der Hexaemeronkommentar des Moses Bar Kēphā. Einleitung, Übersetzung und Untersuchungen* [Wiesbaden 1977] 618–9, 654; TAKAHASHI 2004b, 195–6). See further n. 52 below.

<sup>29</sup> STERN 1964 and 1965.

the text in the Tehran manuscript was noted by Fuat Sezgin,<sup>30</sup> and the three different Arabic versions found in the first four manuscripts (F = Ay, K and Y) have been edited in an unpublished dissertation by David Brafman.<sup>31</sup>

The colophon of the text in Y states that it was translated from Syriac by 'Īsā ibn Ibrāhīm an-Nafīsī, who is known to have worked at the court of the Ḥamdānid emir Saif ad-Daula (944–67), the patron also of the poet al-Mutanabbī and the philosopher al-Fārābī, in Aleppo.<sup>32</sup> The content of the manuscript as a whole consists mostly of philosophical works of Ibn Sīnā and al-Fārābī, but also includes Alexander of Aphrodisias' treatise *On the Principles of the Universe* (121r–127v), a work which, as we have seen, had been rendered into Syriac by Sergius of Rēš-'Ainā, as well as the Arabic versions of the *Placita philosophorum* made by Qusṭā ibn Lūqā (268v–291v) and of Iamblichus' commentary on the *Golden Verses of Pythagoras* (303v–308v).<sup>33</sup> In other words, unlike the versions F(Ay) and K, to which we shall turn in a moment, the Arabic version Y has come down to us as part of a philosophical compilation, and the presence of the treatise *On the Principles of the Universe* provides another link between this compilation and the Syriac compilation found in MS. British Library, Add. 14658. It is worth noting, at the same time, that a note at end of the text in Y tells us that this treatise is called the 'Golden Letter', a designation also encountered in F(Ay) and K.<sup>34</sup>

The translators and the exact dates of the remaining versions are unknown. The text of *On the Cosmos* in the Tehran manuscript bears the simple title of a "letter of Aristotle to Alexander on the Cosmos" (*Risālat Aristūṭālīs ila l-Iskandar fi l-'ālam*). The text there is incomplete and breaks off in mid-sentence near the beginning of Chapter 6.<sup>35</sup> The Arabic version represented in this manuscript is the same as that in F and Ay. Unlike in F and Ay, however, there is no indication in T that the treatise is called

<sup>30</sup> F. SEZGIN, *Geschichte des arabischen Schrifttums*, vol. 6 (Leiden 1978) 72; cf. M. T. DĀNĪŠ-PAŽŪH, "Fihrist-i kitābhāna-hā-yi šahristānhā (Tabrīz, Kāšān, Yazd, Iṣfahān)", *Našriya-yi Kitābhāna-yi Markaz-i Dānišgāh-i Tihirān* [Bulletin de la Bibliothèque Centrale de l'Université de Téhéran] 4 (1344 [1966]) [283–480] 448. For the identification of the Tehran manuscript as the manuscript once in Yazd, see SEZGIN, *Geschichte des arabischen Schrifttums*, vol. 3 (Leiden 1970) 271–2 (under no. 13); M. T. DĀNĪŠ-PAŽŪH, *Fihrist-i nusḥa-hā-yi ḥaṭṭī-yi Kitābhāna-yi Markazī wa Markaz-i Isnād-i Dānišgāh-i Tihirān*, vol. 16 (Tehran 1978) 17. I am indebted to Prof. Fuat Sezgin for forwarding to me a photocopy of the text.

<sup>31</sup> BRAFMAN 1985. For further secondary literature relating to the Arabic versions, see RAVEN 2003.

<sup>32</sup> BRAFMAN 1985, 46, 166.

<sup>33</sup> The contents are listed at BRAFMAN 1985, 43–6. Cf. GENEQUAND 2001, 30; DAIBER 1980, 77–8; id., *Neuplatonische Pythagorica in arabischem Gewande. Der Kommentar des Iamblichus zu den Carmina aurea* (Amsterdam 1995) 9–10.

<sup>34</sup> BRAFMAN 1985, 166.

<sup>35</sup> The last words of the text of *On the Cosmos*, at fol. 41v, l. 6–7, are التعلیم مثل علی, corresponding to MS. F, 99v, 15 (BRAFMAN 1985, 103; answering, in turn, to 397b12 δ' ἄκκιβείας).

'Golden', nor does the text there form part of a fictive exchange of letters between Aristotle and Alexander. The manuscript T as a whole consists rather of a collection of scientific and philosophical texts that begins with several astronomical treatises by al-Birūnī, and *On the Cosmos* is immediately preceded and followed there by a part of Heron of Alexandria's *Mechanica* (translated by Qusṭā ibn Lūqā)<sup>36</sup> and a treatise by Qusṭā ibn Lūqā on the elements that constitute the human body.

From the colophons of F and Ay, it can be gathered that these two manuscripts both derive from an archetype copied in 491 AH (1097 CE) from an earlier manuscript.<sup>37</sup> In the manuscripts F, Ay and K, *On the Cosmos* has been integrated into a series of fictive letters purportedly exchanged by Aristotle and Alexander the Great.<sup>38</sup> In F and Ay, the main text of *On the Cosmos* is preceded by a note telling us that the treatise/letter (the Arabic word *risāla* can mean both) is also called 'Golden' (*ḡahabīya*) and was so named after the 'Golden House', a palace adorned with golden furnishings which Alexander discovered in India.<sup>39</sup> The text of *On the Cosmos* in K is likewise preceded by a preface in which Aristotle rebukes Alexander for admiring the Golden House, a structure made by human hands, and exhorts him rather to turn his mind to the marvels of the universe, giving this as the pretext for writing the treatise that follows.<sup>40</sup>

While the texts in F, Ay and K have thus come down to us as parts of a fictive cycle of letters between Aristotle and Alexander, it remains unclear when this epistolary cycle itself originated and when and how *On the Cosmos* was incorporated into this cycle. It is reported in Ibn an-Nadīm's *Fihrist* that Sālim Abū al-'Alā', the secretary of the Umayyad caliph Hišām ibn 'Abd al-Malik (724–34), either himself translated or commissioned a translation of the letters of Aristotle to Alexander,<sup>41</sup> and it has been suggested that the epistolary cycle that we have goes back to this translation.<sup>42</sup> The existence, at the same time, of what now constitutes the preface of *On the Cosmos* in K at a relatively early date is indicated by the presence of what is essentially the same passage, although in a more complete form, in al-Mas'ūdī's *Tanbīh wa-l-išrāf*, a work composed in 956,<sup>43</sup> and the report by Ibn

<sup>36</sup> Cf. F. SEZGIN *Geschichte des arabischen Schrifttums*, vol. 5 (Leiden 1974) 153–4.

<sup>37</sup> BRAFMAN 1985, 38–41; GUTAS 2009, 63.

<sup>38</sup> Lists of contents at BRAFMAN 1985, 35–7, 48–56. A more detailed description of the contents of F Ay can be found at GUTAS 2009, 60–3.

<sup>39</sup> STERN 1964, 195; BRAFMAN 1985, 79 (text), 168 (translation).

<sup>40</sup> Text and translation at STERN 1965, 383–5; text also in BRAFMAN 1985, 118–9.

<sup>41</sup> G. FLÜGEL (ed.), *Kitāb al-Fihrist* (Leipzig 1871) 117.30; B. DODGE (trans.), *The Fihrist of al-Nadīm* (New York 1970) 258. Cf. G. ENDRESS, "Building the Library of Arabic Philosophy: Platonism and Aristotelianism in the Sources of al-Kindī", in: C. D'ANCONA (ed.), *The Library of the Neoplatonists* (Leiden 2007) [319–50] 325.

<sup>42</sup> M. GRIGNASCHI, "Le roman épistolaire classique conservé dans la version arabe de Sālim Abū-l-'Alā'", *Le Muséon* 80 (1967) 211–54; GUTAS 2009, 63–4.

<sup>43</sup> STERN 1964, 197–8.

al-Faḡīh, writing at the end of the ninth century, that al-Marwazī recited to the Abbasid caliph al-Ma'mūn (813–33) a letter in which Aristotle rebuked Alexander for admiring a man-made structure and exhorted him instead to contemplate the universe created by God.<sup>44</sup> It may be that *On the Cosmos* was already present in the epistolary cycle when that cycle was translated into Arabic in the first half of the eighth century; but it may equally be that it was only later, in the early Abbasid period, that it was translated into Arabic and incorporated into the cycle. Even the accounts in al-Mas'ūdī and Ibn al-Faḡīh do not necessarily mean that an Arabic translation of *On the Cosmos* existed at the time, since the letter of rebuke by Aristotle could have existed independently and it may have been the presence of that letter which prompted the translation and incorporation into the cycle of *On the Cosmos*, whose contents accorded with the purport of the letter.

The precise origin of the Arabic versions of *On the Cosmos* can only be determined through a detailed examination of the texts that we have, especially in terms of the vocabulary used and their relationships to the Greek original and the Syriac version, but this is work that still remains to be done.

#### 4. Relationship of the Arabic Versions to the Syriac Version

The colophon of Arabic version Y tells us, as we have seen, that the translation was made from Syriac. From an examination of some passages, Stern concluded that version F was also based on the Syriac version;<sup>45</sup> he was less sure about version K, although he thought it more likely, on balance, that it too was translated from Syriac.<sup>46</sup> Brafman does not take this discussion much further, and does not, in fact, discuss the relationship of version K to the Syriac at all. He does make an attempt to confirm that versions F and Y are based on the Syriac, but his arguments are based not on his own examination and comparison of the Syriac and Arabic texts but on the agreement of several readings of the Arabic versions with the variant readings of the Syriac version as indicated in Lorimer's edition of the Greek.<sup>47</sup>

There are a number of telltale indications that the Arabic versions were made from Syriac. In version F, at fol. 88r, l. 1–2, 'arctic' and 'antarctic' [sc. poles] of the Greek (ἀρκτικός, ἀνταρκτικός, 392a3f.) are rendered as *ḡarbī* and *izā'a al-ḡarbī*.<sup>48</sup> Brafman noted that "the use of the Arabic word *jarbiyah*

<sup>44</sup> STERN 1964, 197.

<sup>45</sup> STERN 1964, 192, 201–2, 204.

<sup>46</sup> STERN 1965, 386–7.

<sup>47</sup> BRAFMAN 1985, 62–3.

<sup>48</sup> In Y, the two terms are rendered *al-quṭb aš-šimālī* and *al-quṭb al-ḡanūbī*, using the usual Arabic words for "northern" and "southern" (fol. 296r, BRAFMAN 1985, 138.16–7). Version

in this sense is otherwise unattested” and that it “is cited by medieval Arabic lexicographers as a very rare word denoting a northwesterly wind.”<sup>49</sup> Here, elementary knowledge of Syriac might have alerted him to the fact that *ġarbī* is related to the Syriac words *garbyā/garbyāyā* (‘north’/‘northern’) and consultation of the Syriac version by Sergius to the fact that that version has *garbyāyā* and *luqbal garbyāyā* at the corresponding place.<sup>50</sup> A more obvious example, this time involving all three Arabic versions, occurs in the description of the Mediterranean Sea (393a24), where all three versions concur in calling the Syrtis Major and Minor ‘islands’,<sup>51</sup> a curious error which is also found in Sergius’ Syriac version.<sup>52</sup>

These examples serve to show the dependence of the Arabic versions on the Syriac version made by Sergius. There are, however, instances also where the Arabic versions agree with the Greek against the Syriac, and the exact nature of the relationships of the three Arabic versions among themselves and to the Syriac version is a matter that requires further investigation. While a detailed examination of the matter is beyond the scope of the present paper, we give an example below which may serve to illustrate the complexity of the situation.

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K, while not giving a specific term for the North Pole, calls the South Pole *markaz al-ġanūb* (“centre of the south”, fol. 183v, 10–1).

<sup>49</sup> BRAFMAN 1985, 213–4.

<sup>50</sup> DE LAGARDE 1858, 136.24–5. As noted by Brafman, the word *ġarbī* occurs again in version F in the form *ar-rīḥ al-ġarbīya* (fol. 94r, 8) answering to the βορέαι of the Greek (394b20). The Syriac has *garbyāyē* at the corresponding place (142.27).

<sup>51</sup> Version F, fol. 90v, 13–4; Y, fol. 297v, BRAFMAN 1985, 142.12–13; K, fol. 185r, 3–4. BRAFMAN 1985, 220, ignoring the Syriac, unnecessarily suggested an emendation of *ġazīratāni* (جزيرتان, “two islands”) to *ḥalīġatāni* (خليجان, “two bays”).

<sup>52</sup> DE LAGARDE 1858, 139.24–7: “It is then divided into two bays, and passes those islands that are called the ‘Syrtis’ (*‘ābar gāzrātā ḥālēn d-meštammhān SWRṬYS*), one of which they call the ‘Great Syrtis’ and the other the ‘Small Syrtis’.” RYSSSEL 1880, 27, attempted to make sense of the Syriac text here by suggesting that the Syriac translator wishes us to understand the words “passes [some] islands” (*‘ābar gāzrātā*) as a parenthesis and “those that are called the ‘Syrtis’ ...” (*ḥālēn d-meštammhān SWRṬYS* ...) as being in apposition to “bays” (*‘ubbīn*). Baumstark’s explanation is more straightforward: *miserum interpretamentum est hominis prorsus indocti, qui Syrtis pro insulis haberet* (BAUMSTARK 1894, 412). Barhebraeus followed Sergius’ Syriac version into error in his *Cream of Wisdom* (Book of Mineralogy, V.1.2), whereas Jacob of Edessa (followed by Bar Kēphā and Bar Šakkō) rightly talks of the Syrtis as gulfs of the Mediterranean (see TAKAHASHI 2004a, 375; id. 2003, paragraph 13 with n. 28; cf. n. 28 above).



<p>(1) [lightning], which falls upon [our senses] before the thunder, although it is produced later, (2) since what is heard is naturally preceded by what is seen, the latter being seen from far away, the former [only] when it approaches hearing, (3) especially when the one is the fastest of things, I mean the fiery [element], and the other is less fast, being airy, arriving at hearing by striking it [lit. in the stroke].</p>	<p>(1) [lightning], which is seen before the thunder, although it is produced after it, (2) since something that is heard is naturally preceded and overtaken by what is seen, because what is seen can be known from a distance, while what is heard [only] when it comes close to hearing. (3) This occurs the more [yattīrā'it hāwvyā hādē] when what is seen is faster than all things [kōll šebwātā], i.e. [when] it is fiery. What is heard is less in its speed in coming to hearing, like something that is moist in its stroke.</p>	<p>(1) Lightning is seen before the thunder is heard, even though it is produced after the thunder. (2) That is, vision precedes hearing, so that the eye sees a distant thing before the ear hears [it], because it only hears it when it is near to hearing. (3) This occurs often [kaṭīran mā yakūna hādā], since the sharpest of things is vision and the fastest of it is in the likes of the light of fire and similar things, while the most languid of things is hearing / everything [kull šai'] (?) / with which moisture is mixed, and delay from hearing (?).</p>	<p>(1) ... and that is lightning, except that the lightning is seen before the thunder is heard, while it is constituted after it. (2) The reason for this is that the thing that comes to the eye arrives at the eye before the hearing of what is heard, because we see a thing from a distance, but only hear its sound when we have come close to it.</p>	<p>(1) You see the lightning before you hear the thunder, but lightning is not produced except before thunder. (2) But vision precedes hearing, so that the eye sees a distant thing, while the ear does not hear [it] until it [the thing] approaches it. (3) The sharpest of things is vision and the fastest of it is in the likes of the light of fire. "When sound is blended by striking wood against wood, you see it occurring falsely, or its physical (viz. visual) contact lingers until the sound is heard."<sup>53</sup></p>
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The last part of the passage is already difficult to understand in the Greek. In the Syriac, the situation is made worse by the rendition of the Greek 'airy' (*aerōdēs*) by 'moist' (*tallil*).<sup>54</sup> The simplest solution to the problem is offered by version Y, namely excision. Whether this is due to the translator or a subsequent copyist is difficult to determine, but this tendency

<sup>53</sup> Rather than attempt a translation of the last part of the passage, I quote, in inverted commas, the translation given by Brafman (p. 226), for the time being (cf. n. 56 below).

<sup>54</sup> For an attempt at explanation, see RYSSSEL 1880, 43, note d, who suggests that the Syriac translator understood ἀερωδῆς in the sense of "misty" (nebelig, trübe); cf. R. PAYNE SMITH, *Thesaurus syriacus* (Oxford 1879–1901) col. 4437.

to omit difficult passages and words is also observed elsewhere in Y. Version F is the only one in which the notion of ‘moisture’ (*billa*) is retained. In this and in other respects F is the most faithful of the three versions to the Syriac Vorlage. We see, for example, that the words *kaṭīran mā yakūna hādā*, though not very satisfactory, must answer to *yattīrā’it hāwyā hādē* of the Syriac, and it may perhaps be that *kull šai’* somehow results from a displacement of *kōll šebwātā* of the Syriac.

Two points may be made concerning version K. The first is the exact agreement of the wording in the sentence “The sharpest of things ... in the likes of the light of fire” in this version and version F. Both Stern and Brafman thought it likely that the three Arabic versions were made independently of one another.<sup>55</sup> The agreement here between F and K speaks against that view, unless, of course, we are dealing with an instance of later contamination. Secondly, the last part of the passage in K, whatever its exact sense, cannot be derived from the Greek or Syriac version of *On the Cosmos* as we know them, leading us to assume either a later interpolation or the use of an additional source by the translator.<sup>56</sup>

Some of the observations made above concerning the three Arabic versions may be confirmed further by comparing the names given to different types of thunderbolts and lightning in the passages that immediately follow those quoted above.

<sup>55</sup> STERN 1965, 391; BRAFMAN 1985, 57.

<sup>56</sup> A possible indirect source will be Arist.  *Mete.* 369b 9–11, which, like the passage here, talks of the delayed perception of the sound of a stroke in explaining the delayed perception of thunder, using the example of oars striking water. A Syriac passage derived from there posits an even longer delay and talks of the oars rising a second time before the sound is heard (Nicolaus Damascenus, *On the Philosophy of Aristotle*, Syriac version, MS. Cambridge University Library, Gg. 2.14, fol. 344r, 11–4). This is then rendered into Arabic, in a translation attributed to Ḥunain ibn Iṣḥāq and Iṣḥāq ibn Ḥunain, as follows (Olympiodorus, *Commentary of Aristotle’s Meteorologica*, Arabic version, ‘A. BADAWI, *Commentaires sur Aristote perdu en grec et autres épîtres* [Beirut 1971] 142.9–11): “This is shown by the fact that when someone sees a sailor striking with his oar, his vision falls on the oar and rises with it from the first stroke, but he does not hear the sound of its stroke. When the oar rises (صعد) a second time (ثانية), then, he hears the sound of the first stroke.” While I am still unable to make any good sense of the passage in K, it is tempting to suggest some emendations on the strength of these parallels, such as reading ثانيا (“second”) for فاسدا (“false”, “corrupt”) and صعوده (“its ascent”) for عوده, corrections which might make the last part of the passage yield a sense approximating to “you see a second fall and a rising from it ... before a sound is heard.”



Greek 395a 21–28 <sup>57</sup>	Syriac 144.12–22	F 95r 5–11	Y 299r, 147.6–11	K 186r 20–186v 2
κεραυνός ("thunder- bolt")	zalqā d-māhē ("flash that strikes")	ṣā'iqā ("thun- derbolt")	lama'ān barqī ("fulminous flash")	ṣā'iqā ("thun- derbolt")
πυροστῆρ ("fire-wind")	PRYSṬYR d-nāhet men l-'el ("prēstēr that descends from above")	al-inṣidā' ("fission, cracking")	ṣā'iqā ("thun- derbolt")	al-muttaṣila ("joining") [?]
τυφῶν ("smoking bolt")	paq'ā ("thun- derbolt", < verb paq', to burst open)	al-qādīf ("hurler") <sup>58</sup>	BQ' (بغا) <sup>59</sup>	–
σκηπτός ("falling bolt")	SQYPYṬWS	–	–	–
ψολόεις ("sooty")	kebritānē ("sul- phurous")	al-qtārī ("smoky")	–	al-inṣidā' ("fission, cracking") [?]
ἀργής ("vivid") [oi ταχέως διᾶττοντες ἀργῆτες (sc. λέγονται)]	rāhōṭē d-lā pāsqīm ("runners that do not divide")	al-'addāf' ("runner")	–	–
ἔλκίαις ("forked")	'qalqlē ("crooked")	al-makwīya ("crooked")	–	–
σκηπτός	SQWPṬWS	al-wāṣila ("arriving")	–	–

F is again the most faithful of the three versions to the Greek and the Syriac in attempting to provide counterparts for all seven names. In calling the swift bolt (*argēs*) the 'runner' ('*addā'*) it follows the error of the Syriac.<sup>60</sup> While the derivation from the Syriac is less clear with some of the other terms, it may be noted that F also follows the Syriac where it translates the word 'smoky' (*aithalōdēs*) of the Greek as 'moist' (*tallil*).<sup>61</sup> The tendency in Y to avoid difficulties in translation by resorting to omission or paraphrase

<sup>57</sup> Cf. the translation by Thom in the present volume together with the accompanying notes.

<sup>58</sup> Written القادف (*sic*) by Brafman in the text (p. 95), but transcribed 'qadhaf' in his commentary (p. 227).

<sup>59</sup> So the word asterisked by Brafman (\*معا\*, without diacritical point on the first letter) should no doubt be read in the light of the Syriac *paq'ā*.

<sup>60</sup> The "runners" of the Syriac corresponds not to ἀργῆτες but rather to διᾶττοντες of the Greek. How ἀργῆτες came to be translated as "undividing" remains a mystery (misconstruction of the word as consisting of privative ἀ- and ῥήγνυμι?).

<sup>61</sup> Greek, 395a25–6; Syriac, 144.18–9: "of the striking flashes, those which are moist (*tallilīn*) are called 'sulphurous'" (cf. RYSSSEL 1880, 44, note c); F95r 8–9: "of the destructive thunderbolts, those with which moisture (*billa*) is mixed are called 'smoky.'" The word

is observed again in the latter half of this passage, where no attempt is made to give the equivalents of the different names.<sup>62</sup> The passage of K is corrupt and curtailed, making it difficult to decide where the three terms mentioned should be assigned in the table, but its agreements with F (*ṣā'iqa* as equivalent of *keraunos/zalqā*; occurrence, though displaced, of *inṣidā*', as well as of *muttaṣila*, from the same root as *wāṣila*) suggest again that the two versions are not completely independent of each other.

## 5. Concluding Remarks

The Syriac and Arabic versions of *On the Cosmos* will be of interest to different people for different reasons. The value of the Syriac version for the critical edition of the Greek text is reasonably clear, but the full exploitation of the Syriac evidence for this purpose is work that has yet to be carried out. The value of the Arabic versions in this respect is less clear, and proper critical editions of these Arabic versions, as well as a more detailed study of the relationships between them and to the Syriac version, will be required before they can be applied to the textual criticism of the Greek text. The Syriac and Arabic versions are also of interest for what they can tell us about the societies that produced them and for the influence they had on later works in the two respective traditions. I have given some instances where the Syriac version of the work was used by later Syriac authors, but one can, I believe, be reasonably certain that these will not be the only instances. Little study seems to have been done on the use of the Arabic versions of the work by later authors, and here too, given the survival of the work in several manuscripts, one might expect future research to reveal cases where these Arabic versions provided sources of material and inspiration for authors in later times.

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'moisture' is also found in K at 186v 1–2: "if it contains moisture (*nadan*) or inflammation, we call it a 'fission'."

<sup>62</sup> Y299r, BRAFMAN 1985, 147.9–11: "There are thunderbolts whose descent is slow, and those which are heavy, and those which are like crooked lines; all of them are called 'thunderbolts' (*ṣawā'iq*)."



# Possible Echoes of *De mundo* in the Arabic-Islamic World: Christian, Islamic and Jewish Thinkers

Hans Daiber

## 1. Introduction

The complex content of *De mundo* was a major challenge for its Syriac and Arabic translators, as well as for readers of the text. The sections on cosmology, geography, meteorology and theology found some echo in Syriac and Arabic writings. Research on these echoes is, however, difficult, not only because of the lack of editions and critical evaluations of the texts, but also because we are faced with the problem that *De mundo* is a composition which draws on texts and traditions which were also transmitted through other channels. The author of *De mundo* used, among other works, both the *Meteorology* of Aristotle and that of Theophrastus. He developed a concept of divine and all-permeating causality, which appears in a similar way in Stoic and especially in Neoplatonic sources translated into Arabic in the 9th century.

Despite this difficulty and despite the fact that Arabic authors of books on cosmology and meteorology, such as Ibn Sinā/Avicenna (980–1037 CE) in his encyclopaedia the *Kitāb aš-Šifā'*, and Ibn Rušd/Averroes (1126–1198 CE) in his commentary on Aristotle's *De caelo*,<sup>1</sup> did not use *De mundo*, we nevertheless detect traces which betray its influence. S. M. Stern, in his article "The Arabic Translations of the Pseudo-Aristotelian Treatise *De mundo*",<sup>2</sup> expresses surprise at the absence of *De mundo* from Muslim writers, since he could identify quotations in only three authors: the geographer Ibn al-Faqīh from the end of the 9th century CE; the historian al-Mas'ūdī from the 10th century CE; and the scientist al-Bīrūnī from the 10th/11th century CE.

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<sup>1</sup> On Ibn Rušd see G. ENDRESS, "Averroes' *De Caelo*, Ibn Rushd's Cosmology and His Commentaries on Aristotle's *On the Heavens*", *Arabic Sciences and Philosophy* 5 (1995) 9–50.

<sup>2</sup> STERN 1964.

## 2. Quotations from *De mundo* in Arabic-Islamic Scientific Literature

We begin with the Iranian geographer Ibn al-Faḡīh. In his *Kitāb al-Buldān* ("Book on the Countries"),<sup>3</sup> he mentions a scholar called al-Marwazī as the source of his report on the correspondence between Aristotle and Alexander the Great and on Aristotle's answer to Alexander's account of the Golden House in India. In his tentative identification of this scholar with Abū Yaḥyā al-Marwazī, Stern follows a suggestion by the editor of Ibn al-Faḡīh, J. de Goeje, who, in turn, was relying on information provided by Ibn an-Nadīm from the 10th century CE on Abū Yaḥyā al-Marwazī. Ibn an-Nadīm mentions him in his catalogue of books (finished in 987 CE) as the author of Syriac books on logic, as a physician in Baghdad and as a teacher of the Nestorian Abū Bišr Mattā Ibn Yūnus.<sup>4</sup> In view both of existing confusions about this name<sup>5</sup> and of Ibn al-Faḡīh's information that al-Marwazī recited Aristotle's reply to Alexander's account of his conquests to the caliph al-Ma'mūn (reigned 813–33 CE), I would propose another solution: the author quoted by Ibn al-Faḡīh is possibly Abū l-'Abbās Ġa'far Ibn Aḥmad al-Marwazī (died 887 CE), who is mentioned by Ibn an-Nadīm<sup>6</sup> as a writer on 'sciences', on 'the rising star' (*an-nāḡim*) and who is said to have written the first ever book on "Roads and Kingdoms" (*al-masālik wa-l-mamālik*).<sup>7</sup> As we know of al-Ma'mūn's interest in science, astronomy and cartography, which resulted in the organization of the 'house of wisdom' (*bait al-ḥikma*) in Baghdad, it is tempting to suggest this identification; Ma'mūn might have been interested in the geographical aspects of al-Marwazī's "Roads and Kingdoms" and could also have received some information from the geographical part of *De mundo*. It is possible that this is somehow reflected in the world map produced by the geographers of al-Ma'mūn. Unfortunately, the surviving later versions (the oldest was copied in 1340 CE) and adaptations<sup>8</sup> give no clear indications. Moreover, it is quite possible that geographical information in *De mundo* was amalgamated with the dominant tradition of Ptolemy's *Geography*.

<sup>3</sup> Ed. M. J. DE GOEJE, *Compendium libri Kitāb al-buldān*. Bibliotheca geographorum arabicorum V (Leiden 1885) 160; trans. STERN 1964, 197.

<sup>4</sup> Ibn an-Nadīm 322, 3–5; trans. DODGE 1970, II 629; on Mattā Ibn Yūnus cf. *EL*<sup>2</sup> VI (1991) 844–6.

<sup>5</sup> Ibn an-Nadīm 322, 6–7; trans. DODGE 1970, II 630 has an article on another scholar with the same name, who was a physician and geometer and who might be identical with Abū Yaḥyā al-Māwardī (mentioned in SEZGIN 1974, V 303).

<sup>6</sup> Ibn an-Nadīm 167, 17–21; trans. DODGE 1970, I 329.

<sup>7</sup> Cf. G. R. TIBBETTS, "The Beginnings of a Cartographic Tradition", in: *Cartography in the Traditional Islamic and South Asia Societies*, ed. J. B. HARLEY and D. WOODWARD (J. E. SCHWARTZBERG / G. R. TIBBETTS / A. T. KARAMUSTAFA [eds.], *The History of Cartography* II/1; Chicago / London 1992) [90–107] 93, n. 10.

<sup>8</sup> See SEZGIN 2000, XII, maps no. 1, 4, 5 and 6; SEZGIN 2000, X 80–173.

The second author who refers to *De mundo* is the historian al-Mas'ūdī. In his *Kitāb at-Tanbīh wa-l-išrāf*<sup>9</sup> from the year 955/6 CE, he reproduces the same text as Ibn al-Faqīh *in extenso* and mentions as the source of his report his own book "On the Branches of Knowledge and Events of Past Ages", which is now lost. The texts of al-Mas'ūdī and Ibn al-Faqīh add a preamble, in which the quotation from *De mundo* is treated as part of the fictitious correspondence between Aristotle and Alexander the Great; it refers to the Golden House, from which the text acquired the title "Golden Letter" or "Golden House".<sup>10</sup> The intention of the letter addressed to Alexander was the exhortation to admire the wonders of the universe, rather than worldly things such as the Golden House, as signs of divine power. This exhortation is the focus of the first chapter of *De mundo* and became, as we shall see, the starting-point for early Arabic texts on the cosmological proof of God.

The third Arabic source which refers to *De mundo* was written by the famous scholar al-Bīrūnī (973–after 1050 CE), who quotes in his book on India, *Fī Taḥqīq mā li-l-Hind*, from the anonymous Arabic translation,<sup>11</sup> which he shortens. The first passage<sup>12</sup> explains the world as the order of the whole of creation, and the heavens as place of the divine stars and the gods.<sup>13</sup> The second passage<sup>14</sup> describes the structure of the cosmos from the ether, the dwelling-place of the gods, down to the earth.<sup>15</sup> The third passage<sup>16</sup> is a quotation from Homer, *Odyssey* 6.42–5, and underlines the concept of the heavens as the eternal dwelling-place of the gods.<sup>17</sup>

### 3. Echoes of *De mundo* in Christian Syriac and Arabic Texts from the 9th Century

The echoes in Bīrūnī share with the texts in Ibn al-Faqīh and al-Mas'ūdī the theological concept of God as the creator of the cosmos, which also proves his existence. This concept reappears in an early treatise on the proof of God from the design of the world; everything in the world mir-

<sup>9</sup> Ed. M. J. DE GOEJE (*Bibliotheca geographorum arabicorum* VIII; Leiden 1893–4) 201–2; trans. STERN 1964, 198.

<sup>10</sup> Cf. STERN 1964, 195–7.

<sup>11</sup> On this translation see the essay by Takahashi.

<sup>12</sup> -Bīrūnī 189, 10–13 = STERN 1964, 202 (following the edition of Sachau); trans. SACHAU 1962, I 310.

<sup>13</sup> Cf. *De mundo* 2, 391b9–16; anonymous Arabic translation in STERN 1964, 201.

<sup>14</sup> -Bīrūnī 189, 14–16 = STERN 1964, 203 (following the edition of Sachau); trans. SACHAU 1962, I 310.

<sup>15</sup> Cf. *De mundo* 3, 393a1–9; anonymous Arabic translation in STERN 1964, 203.

<sup>16</sup> -Bīrūnī 189, 5–8 = STERN 1964, 204 (following the edition of Sachau); trans. SACHAU 1962, I 309–10.

<sup>17</sup> Cf. *De mundo* 6, 400a10–4; anonymous Arabic translation in STERN 1964, 204.

rors the order and wisdom of God, its creator, just as everything betrays its usefulness (*manfa'a*, *maṣlaḥa*, *ṣalāh*). This text is attributed to Ġāḥiz, but was, in fact, written by a Nestorian Christian author from the 9th century CE named Ġibrīl Ibn Nūḥ Ibn Abī Nūḥ an-Naṣrānī al-Anbārī. The work is entitled *Kitāb ad-Dalā'il wa-l-i'tibār 'alā l-ḥalq wa-t-tadbīr*, "Book on the Signs and the Meditation upon (God's) Creation and (His) Rule".<sup>18</sup> The author asks his readers to acquire knowledge of the causes (*asbāb*, *'ilal*)<sup>19</sup> of things and to reflect on the colour of the sky,<sup>20</sup> on the sun and the moon,<sup>21</sup> the stars,<sup>22</sup> heat and cold and their equilibrium (*i'tidāl*), fire and wind,<sup>23</sup> earth, mountains, mines (metals, gold and silver etc.),<sup>24</sup> water and rain,<sup>25</sup> plants,<sup>26</sup> animals,<sup>27</sup> and man, including a section on his senses and facul-

<sup>18</sup> Cf. DAIBER 1975a, 159f. The text has been published several times: Aleppo 1928 and – with the title *al-'Ibar wa-l-i'tibār* – Cairo 1994; see bibliography. Two more editions appeared in Cairo in 1987 (by Mağdī Fathī as-Sayyid, based on the edition Aleppo 1928) and in Beirut in 1992 (without an editor, but also based on the edition Aleppo 1928). It has yet to receive a critical edition based on the mss Berlin Or. Oct. 1501; British Museum (London) 684 (= Or 3886, published by Šābir Idrīs, Cairo 1994); Ambrosiana (Milan) E 205; the fragment in ms. Vatican arabo 1373 (fols. 81–2); as well as on the nearly identical main source, Ġibrīl Ibn Nūḥ Ibn Abī Nūḥ an-Naṣrānī al-Anbārī from the time of the caliph al-Mutawakkil (reigned 847–67), whose work entitled *Kitāb al-Fikar wa-l-i'tibār* is preserved in ms. Aya Sofya 4836, fols. 160–87r. Šābir Idrīs (Cairo 1994) mentions in his introduction (p. 19) a manuscript in the library of Āl Ḥamīd ad-Dīn in Yemen, dated 1347 / 1928–29 and copied by Ḥusain Ibn Aḥmad al-Ġundārī; however, he had no access to this ms. An English translation by M. A. S. ABDEL HALEEM appeared in 1996 (Berkshire), with the title *Chance or Creation? God's Design in the Universe*.

An Italian translation by ANTONELLA CARUSO appeared in 1991 (Istituto Universitario Orientale. Dipartimento di Studi Asiatici. Series Minor. 38; Napoli), with the title *Il libro dei motivi e della riflessione*. On pp. 3–20 the author discusses the mss in London, Milan and Vatican City. Her analysis of the sources (pp. 26–33) does not mention *De mundo* and is incomplete.

<sup>19</sup> Ps.-Ġāḥiz, *Kitāb ad-Dalā'il* ed. ṬABBĀḤ 2,12; ed. IDRIS 30,18; trans. ABDEL HALEEM 2 below ("reasons and purpose").

<sup>20</sup> Ps.-Ġāḥiz, *Kitāb ad-Dalā'il* ed. ṬABBĀḤ 3,16–4,3; ed. IDRIS 31,17–24,7; trans. ABDEL HALEEM 5.

<sup>21</sup> Ps.-Ġāḥiz, *Kitāb ad-Dalā'il* ed. ṬABBĀḤ 4,4–7,5; ed. IDRIS 32,1–5,3; trans. ABDEL HALEEM 5–10.

<sup>22</sup> Ps.-Ġāḥiz, *Kitāb ad-Dalā'il* ed. ṬABBĀḤ 7,6–10,6; ed. IDRIS 35,4–37,6 (om. ed. ṬABBĀḤ 7,6–20); trans. ABDEL HALEEM 10–15.

<sup>23</sup> Ps.-Ġāḥiz, *Kitāb ad-Dalā'il* ed. ṬABBĀḤ 10,7–13,3; ed. IDRIS 37,7–40,4; trans. ABDEL HALEEM 15–20.

<sup>24</sup> Ps.-Ġāḥiz, *Kitāb ad-Dalā'il* ed. ṬABBĀḤ 13,4–15,14; ed. IDRIS 40,5–44,7; trans. ABDEL HALEEM 22–5.

<sup>25</sup> Ps.-Ġāḥiz, *Kitāb ad-Dalā'il* ed. ṬABBĀḤ 15,15–18,19; ed. IDRIS 44,8–46,22; trans. ABDEL HALEEM 25–30.

<sup>26</sup> Ps.-Ġāḥiz, *Kitāb ad-Dalā'il* ed. ṬABBĀḤ 18,31–25,15; ed. IDRIS 46,23–54,7; trans. ABDEL HALEEM 32–42.

<sup>27</sup> Ps.-Ġāḥiz, *Kitāb ad-Dalā'il* ed. ṬABBĀḤ 25,16–43,8; ed. IDRIS 54,8–78,7; trans. ABDEL HALEEM 44–70.

ties.<sup>28</sup> The author stresses that the world – ‘qūsmūs’, in Greek κόσμος = ‘ornament’ (*az-zīna*)<sup>29</sup> – was created by a wise creator and not by chance (*bi-l-‘ara wa-l-ittifāq*); he adds that Aristotle and other philosophers have refuted Diagoras and Epicurus.<sup>30</sup>

The *Kitāb ad-Dalā’il wa-l-i’tibār ‘alā l-ḥalq wa-t-tadbīr*, which still awaits a critical edition and analysis, appears to have been inspired by Christian commentaries on the *Hexaemeron*, the six days of creation by God described in *Genesis*. The Syriac *Hexaemeron* by Jacob of Edessa (ca. 640–708 CE) contains some traces of *De mundo*,<sup>31</sup> including – like the *Kitāb ad-Dalā’il* and in a nearly identical order – a discussion of the four elements, of the earth along with mines, of meteorology, plants, stars, animals and, finally, of man.<sup>32</sup> Jacob of Edessa’s work found an echo in the Syriac *Hexaemeron* (Book IV) written by Moshe Bar Kepha (ca. 813–903 CE).<sup>33</sup> Despite some differences, there is no doubt that both authors share common traits with the *Kitāb ad-Dalā’il*, treating identical topics and giving an identical teleological proof of God from his creation.

In addition, the *Kitāb ad-Dalā’il* has some similarity with another book from the same century, written in Syriac: the *Book of Treasures* by Job of Edessa from 817 CE or about 828 CE.<sup>34</sup> This encyclopaedia deals with almost the same subjects as *Kitāb ad-Dalā’il*; nevertheless, there are differences. The *Book of Treasures* is more extensive; in addition, it contains chapters missing from *Kitāb ad-Dalā’il* and vice versa (e.g. the chapter on plants is missing from the *Book of Treasures*).<sup>35</sup> Here, as I cannot present a detailed comparison between the two works, which would include many other Aristotelian texts,<sup>36</sup> I have selected the topics related to *De mundo*.

<sup>28</sup> Ps.-Ġāḥiẓ, *Kitāb ad-Dalā’il* ed. ṬABBĀḤ 43,9–66,4; ed. IDRĪS 78,8–95,13 (om. ed. ṬABBĀḤ 60,12–66,4); trans. ABDEL HALEEM 72–109.

<sup>29</sup> Ps.-Ġāḥiẓ, *Kitāb ad-Dalā’il* ed. ṬABBĀḤ 74,3f; om. ed. IDRĪS; trans. ABDEL HALEEM 123 below.

<sup>30</sup> Ps.-Ġāḥiẓ, *Kitāb ad-Dalā’il* ed. ṬABBĀḤ 66, 11–16; om. ed. IDRĪS; trans. ABDEL HALEEM 112. On the Greek source cf. DAIBER 1975a, 161f.

<sup>31</sup> See the essay by Takahashi, § 2 (p. 158).

<sup>32</sup> Cf. SCHLIMME 1977, 678–740.

<sup>33</sup> Cf. trans. SCHLIMME 1977, 504–87.

<sup>34</sup> See bibliography, *Book of Treasures* (MINGANA 1935).

<sup>35</sup> In this section Ps.-Ġāḥiẓ, *Kitāb ad-Dalā’il* ed. ṬABBĀḤ 21,4; ed. IDRĪS 49,5f.; trans. ABDEL HALEEM 35 quotes the saying of the ‘Ancients’ (*al-awwālūn*): “art imitates nature” (*aṣ-ṣimā’a taḥkī aṭ-ṭabī’a*), which also recurs in *De mundo* 396b12f.; on this common saying cf. the parallels given in the commentary by STROHM 1984, 325. The anonymous Arabic translation ed. BRAFMAN 100, 9f. and the translation by ‘Isā an-Nafīsī (ed. BRAFMAN 1985, 151,12f.) differ and have the verb *taṣabbaha* instead of *ḥakā*.

<sup>36</sup> MINGANA 1935, in his introduction to his edition and translation of the *Book of Treasures* (XXV), mentions, besides Galen, Aristotle’s *Meteorology*, *Physics*, *De mundo*, *De anima*, *De iuventute et senectute*, *De sensu*, *De somno et vigilia*, *De caelo*, *De generatione et corruptione*, *Metaphysics*.



The *Book of Treasures* (Disc. I.1; 4; 6–9) shares with the *Kitāb ad-Dalā'il* a discussion of the elements, of heat and cold and of the necessity of their divine maker; it also follows *De mundo*,<sup>37</sup> which, like the *Book of Treasures*, stresses the mixture of opposite elements in a single harmony. The proof of the existence of God from the composition of contrary qualities – which from *De mundo* found its way to Christian theologians writing in Greek and Arabic – became one of the standard arguments in early Islamic theology.<sup>38</sup> This argument based on composition differs from the argument based on design in the *Kitāb ad-Dalā'il*. In addition, the *Book of Treasures* (Disc. V.12–26) discusses – like *De mundo*<sup>39</sup> – the heavens; it differs from Aristotle in distinguishing between ether, which is “in the upper regions” (Disc. V.18), and the heavens and the stars, which, according to the author (Disc. V.26), have “no reason, wisdom or soul”. Contrary to *De mundo*,<sup>40</sup> the heavens and the stars are no longer divine and eternal: “(a star) is of the nature of the elements, is not a creator, and is not found both in the heavens and in the earth, while God is infinite, uncreated and one, and is truly capable of doing this, as the heavens are His throne and the earth His footstool” (Disc. V.26 Mingana p. 255).<sup>41</sup> As in *De mundo*,<sup>42</sup> the heavens remain the dwelling-place of God; but they are distinguished from the stars, which are no longer divine, nor are they identified with the fifth element,<sup>43</sup> the αἰθήρ, which, according to *De mundo*, “always runs, being carried around in a circle”.<sup>44</sup> The author of the *Book of Treasures* apparently found (Ps.)[?]Aristotle’s explanation of the stars as the dwelling-place of God and, at the same time, as eternal and divine beings contradictory; emphasizing God’s transcendence, he regarded the stars and the heavens as below him and did not think that they participated in God’s divinity. Instead, Job added, in the last discourse on resurrection and the next world, an ingenious discussion of the angels in heaven as ‘servants’ of God arranged in hierarchical order (Disc. VI.2). Interestingly, Job’s younger contemporary, the famous Christian translator Ḥunain Ibn Ishāq (808–73 CE), in his Arabic version of Artemidorus’s *Book of Dreams*, rendered the Olympic gods as “angels of the sky” (*malā'ika s-samā'*), “angels of the ce-

<sup>37</sup> *De mundo* 393a1–9; 396a26–31.

<sup>38</sup> Cf. DAVIDSON 1987, 146–53.

<sup>39</sup> *De mundo* 392a5–30; cf. also Aristotle, *De caelo* 1.8 and 2.1–2.

<sup>40</sup> *De mundo* 392a5–9; cf. also Aristotle, *De caelo* 1.3 270b5–10.

<sup>41</sup> Cf. the Old Testament, *Isaiah* 66.1.

<sup>42</sup> *De mundo* 391b15f.

<sup>43</sup> Described as Aristotle’s doctrine and critically discussed in *Book of Treasures* Disc. V.12. On the fifth element, the ether, cf. DAIBER 1975b, 66–9.

<sup>44</sup> *De mundo* 392a7: τὸ ἀεὶ θεῖν κυκλοφορούμενην; cf. also Aristotle, *De caelo* I.3.270b23.

lestial sphere" (*malā'ika l-falak*) or "etheric angels" (*malā'ika atīriyya*).<sup>45</sup> Apparently, Ḥunain followed a Christian tradition, which, drawing on the Aristotelian concept of the divine ether, introduced the angels as intermediaries between God and the world. Job used this tradition and, based on it, prepared the ground for the Neoplatonic interpretation of Christian angels as intermediate causes, which in the 11/12th century CE inspired the Muslim theologian Ghazālī, in his commentary on Sura 24 (verse 35), to introduce the concept of angels as mediators between the "Lordly Presence" (*ha rat ar-rubūbiyya*) and the light on earth. Ghazālī made a correlation between the Koranic equation of God with the light (Sura 24, verse 35)<sup>46</sup> and the Plotinian identification of the divine cause with the light of the sun.<sup>47</sup> Plotinus had explained the emanation from the divine One as the light of the sun, following in the footsteps of the Stoic concept of the sun as ἡγεμονικόν, which permeates the organism of the cosmos in a dynamic process of interacting causes, referred to as συμπάθεια; it is also called πνεῦμα.<sup>48</sup> Comparable to this, though in a rudimentary way, the author of *De mundo* speaks of "god who manages the universe" (τοῦ τὸ σύμπαν διέποντος θεοῦ)<sup>49</sup>, who "penetrates to everything" (ἐπὶ πᾶν διικνεῖσθαι πέφυκε τὸ θεῖον)<sup>50</sup>, who as "first cause" (πρώτη αἰτία)<sup>51</sup> distributes his power (δύναμις) to the lower and remote parts "until it permeates the whole"<sup>52</sup> and who is "maintaining the harmony (ἄρμονία) and preservation of the universe".<sup>53</sup> This harmony has one beginning and one end (ἐξ ἑνός τε γίνεται καὶ εἰς ἓν ἀπολήγει)<sup>54</sup> and gives the universe the name κόσμος, "order". The author of *De mundo* adds that God cannot be perceived by man, but "is seen from the works themselves" (ἀπ' αὐτῶν τῶν ἔργων θεωρεῖται).<sup>55</sup>

The same concept reappears in the Arabic *Kitāb ad-Dalā'il* by Ḡibrīl Ibn Nūh and is used as a teleological proof of God from his creation. The *Book*

<sup>45</sup> Cf. G. STROHMAIER, *Von Demokrit bis Dante*. Olms Studien 43 (Hildesheim / Zürich / New York 1996) 227–62 ("Die griechischen Götter in einer christlich-arabischen Übersetzung"), esp. 231–8.

<sup>46</sup> See *Al-Ghazālī, The Niche of Lights*, translated, introduced, and annotated by D. BUCHMAN (Provo UT 1998) 10 and 13f.

<sup>47</sup> Cf. Plotinus, *Enneads* 5.1.6; 4.6f.; cf. H. DAIBER, "God versus Causality" (forthcoming in the proceedings of a conference on "Islam and Rationality", Ohio State University 10–12 November 2011).

<sup>48</sup> Cf. D. E. HAHM, *The Origins of Stoic Cosmology* (Columbus OH 1977) 150–74; L. STORVANES, *Proclus. Neo-Platonic Philosophy and Science* (Edinburgh 1996) 64f.

<sup>49</sup> *De mundo* 6, 399a18.

<sup>50</sup> *De mundo* 6, 397b33f.

<sup>51</sup> *De mundo* 6, 398b35.

<sup>52</sup> *De mundo* 6, 398b22f.

<sup>53</sup> *De mundo* 6, 400a4f.

<sup>54</sup> *De mundo* 6, 399a13.

<sup>55</sup> *De mundo* 6, 399b22f.

of *Treasures* by Job does not have this aim and is limited to a short remark (Disc. I.5) “on the fact that God exists” and “created (the elements) from nothing”. Ġibril Ibn Nūḥ considers God to be one and infinite, a description which follows the Neoplatonic doctrine of τὸ ἕν as ἄπειρον.<sup>56</sup> Already in *De mundo* God was called “one”, who can only be seen through “the power of reason” (λογισμῶ);<sup>57</sup> but he is said to have many names because of “all the effects” (τοῖς πάθεσι πᾶσιν) “which he himself initiates”.<sup>58</sup> Plotinus goes further and denies that the One has any shape or form.<sup>59</sup>

Similar to *De mundo*,<sup>60</sup> and without the consequences of Plotinus’s negative theology, the *Kitāb ad-Dalā’il* lays emphasis on the impossibility of knowing God’s essence (*kunh*) and the possibility of seeing God’s effects in his creation. At the end, the reader is informed that man cannot know God’s essence (*kunh*); “we can only know that he is wise (*ḥakīm*)”, “almighty and generous (*ḡawād*), just as we can see the sky without knowing its substance”<sup>61</sup> or see the sun rising every day without comprehending its truth (*ḥaqīqat amrihā*).<sup>62</sup> As evidence for this, the *Kitāb ad-Dalā’il* inserts a doxographical section showing the disagreement between Greek philosophers about the sun.<sup>63</sup> The recourse to the example of the sun is not accidental and might be inspired by Stoic-Neoplatonic traditions on the importance of the all-permeating sun<sup>64</sup> and by *De mundo*, which emphasizes the role of “the sun that lightens all” (ὁ παμφαῖς ἥλιος), “distinguishing day and night by rising and setting, and bringing the four seasons of the year”.<sup>65</sup> The *Kitāb ad-Dalā’il* expounds these two functions of the sun in the first part of the book on meteorological phenomena, after chapter 1 on the sky and its colour.<sup>66</sup>

Similarly, the *Book of Treasures* contains a few remarks on this (Disc. V.23); in addition, it refers to the sun as an important factor in meteoro-

<sup>56</sup> Cf. e.g. Plotinus, *Enneads* 6.9.6.10–12.

<sup>57</sup> *De mundo* 6, 399a31.

<sup>58</sup> Ch. 7, 401a13.

<sup>59</sup> Cf. e.g. Plotinus, *Enneads* 6.7.17:40. Cf. DAIBER 1975a, 133f.

<sup>60</sup> Cf. also *De mundo* 6, 399b21–5.

<sup>61</sup> Ps.-Ġāḥiz, *Kitāb ad-Dalā’il* ed. ṬABBĀḤ 75,18–21; om. ed. IDRĪS; trans. ABDEL HALEEM 126f.

<sup>62</sup> Ps.-Ġāḥiz, *Kitāb ad-Dalā’il* ed. ṬABBĀḤ 76,4f.; ed. IDRĪS 96,3f.; trans. ABDEL HALEEM 127.

<sup>63</sup> Ps.-Ġāḥiz, *Kitāb ad-dalā’il* ed. ṬABBĀḤ 76,6–17; ed. IDRĪS 96,4–17; trans. ABDEL HALEEM 127f. The text is based indirectly on Aëtius’s *Placita philosophorum* II 13,7; 20,3; 20,2; 20,12; 20,4; 20,5; 20,11; 22,1; 22,3; 21,1; 21,3; 21,4; with two reports (on Anaximenes and on the geometers) not in the Aëtius text: see DAIBER 1980, 398–400.

<sup>64</sup> See n. 48 above.

<sup>65</sup> *De mundo* 6, 399a22–4.

<sup>66</sup> Ps.-Ġāḥiz, *Kitāb ad-Dalā’il* ed. ṬABBĀḤ 4,4–5,14; ed. IDRĪS 32,1–33,33; trans. ABDEL HALEEM 5–9.

logical phenomena, which were excluded – apart from some remarks on water and rain<sup>67</sup> – in the *Kitāb ad-Dalā'il*.

The description of meteorological phenomena in the *Book of Treasures* (Disc. IV.9–V.10) mainly follows Aristotle's *Meteorology*,<sup>68</sup> there are, however, some peculiarities, involving specifications of Aristotelian concepts, which it owes to Theophrastus's *Meteorology*.<sup>69</sup> Here, it is interesting to note that one can find traces of Theophrastus's *Meteorology* in *De mundo*.<sup>70</sup> While it might seem tempting to compare the text of the *Book of Treasures* with the meteorological sections of *De mundo*, the results are disappointing. There are no similarities in the chapter of *De mundo* on earthquakes, which is based on Theophrastus.<sup>71</sup> Moreover, the chapters of the *Book of Treasures* on thunder and lightning, on the halo of the sun and the moon, which are inspired by Theophrastus,<sup>72</sup> offer no convincing similarities with *De mundo*.

In sum, we can conclude that the echoes of *De mundo* during the Islamic age of the 9th and 10th centuries are concentrated on the following matters: the teleological proof of God from his creation; the concept of a transcendent God who can only be known from his actions; the discussion of the elements from which God created the world; the doctrine of the divine ether, combined with an all-permeating divine power and an all-permeating sun as the intermediary between the transcendent God and the world; and, finally, the harmony of the universe, culminating in the order called 'cosmos'.

The doctrines of *De mundo* on meteorology were echoed neither in the *Kitāb ad-Dalā'il* nor in the contemporary *Book of Treasures*.

The geography of *De mundo* became known at the beginning of the 9th century to the geographers of the caliph al-Ma'mūn who were working on his world map; one of them might have been Abū l-'Abbās Ġa'far Ibn Aḥmad al-Marwazī, who is said to have recited to Ma'mūn Aristotle's reply to Alexander's account of his conquests; this reply included an Arabic version of *De mundo*, which was eventually used by al-Marwazī in his lost book on "Roads and Kingdoms". We can interpret this information as evidence for the existence of an early Arabic version of *De mundo* at the beginning of the 9th century, possibly as part of the epistolary cycle containing the correspondence between Aristotle and Alexander the Great and compiled

<sup>67</sup> Ps.-Ġāhiz, *Kitāb ad-Dalā'il* ed. ṬABBĀḤ 16,2–18,19; ed. IDRIS 44,20–46,22; trans. ABDEL HALEEM 26–30.

<sup>68</sup> The translation by MINGANA 1935 sporadically refers to this book.

<sup>69</sup> See DAIBER 1992, 173f.

<sup>70</sup> Cf. DAIBER 1992, 271 (ch. 15.28–35) and the commentary 282; 290–2.

<sup>71</sup> Cf. *De mundo* 4, 396a1–17 and its Theophrastean source translated by DAIBER 1992, 271 (15.27–35; cf. commentary 282) with *Book of Treasures* Disc. IV.12; trans. MINGANA 1935, 187f.

<sup>72</sup> See the references in DAIBER 1992, 174 nn. 20–2.

by Sālim Abū l-'Alā', the secretary of the Umayyad caliph Hišām Ibn 'Abd al-Malik (724–743 CE).<sup>73</sup> There is no evidence, however, that *De mundo* contributed to the political ideology of Ma'mūn or of the so-called "Brethren of Purity" (*Iḥwān aṣ-ṣafā'*) in the 10th century CE.<sup>74</sup>

The echoes of *De mundo* in the Syriac *Book of Treasures* only partly explain those in the *Kitāb ad-Dalā'il*, whose 9th-century CE Christian author, the Nestorian Ġibrīl Ibn Nūḥ, might have used the Syriac *Book of Treasures* of his contemporary Job of Edessa. It is possible that they knew *De mundo* independently of each other; although both books share many topics, their main concerns are different: the *Book of Treasures* is an encyclopaedia, while the *Kitāb ad-Dalā'il* is a theological work. The Neoplatonic concept of a transcendent God is present, although in a slightly different way, in both books. The *Book of Treasures*, however, lays more emphasis on the causality of the elements and, for this reason, long excerpts<sup>75</sup> from it found their way into the medical encyclopaedia *Firdaus al-ḥikma* by Job's younger contemporary 'Alī Ibn Rabban aṭ-Ṭabarī, who converted from Christianity to Islam.<sup>76</sup> The *Book of Treasures* rejected the divinity of the heavens and the stars and replaced it with the concept of intermediate angels, 'servants of God'. By contrast, the *Kitāb ad-Dalā'il* stays closer to *De mundo*, which stresses the function of the all-permeating sun and the harmony of the cosmos.

#### 4. Echoes of *De mundo* in Islamic and Jewish Theology

The abovementioned aspect of *De mundo* reappears in Neoplatonic philosophy, which entered the Islamic world in the shape of the Ps.-Aristotelian

<sup>73</sup> See Takahashi's essay, § 3; cf. also M. GRIGNASCHI, "Les 'Rasā'il 'Aristāṭāliša 'ilā-l-Iskandar' de Sālim Abū-l-'Alā' et l'activité culturelle à l'époque omayyade", *Bulletin d'Études Orientales* 19 (1965–66) (Damascus 1967) [7–83] 69–73 on the text of *De mundo* in ms. Köprülü 1608, fols. 182v–189v, a part of which was edited and translated by Grignaschi, who added a summarizing comparison of the whole text. On the epistolary cycle, see also M. GRIGNASCHI, "La figure d'Alexandre chez les Arabes et sa genèse", *Arabic Sciences and Philosophy* 3 (1993) [205–34] 225; F. DOUFIKAR-AERTS, *Alexander Magnus Arabicus. Zeven eeuwen Arabische Alexandertraditie: van Pseudo-Callisthenes tot Šūrī* (PhD thesis, Leiden 2002) 91–100 and recently D. GUTAS 2009, esp. 63–7. Gutas's article is a review of M. MARÓTH, *The Correspondence between Aristotle and Alexander the Great. An Anonymous Greek Novel in Letters in Arabic Translation* (Piliscsaba 2006). On pp. 108–30 MARÓTH edited the Arabic version of *De mundo* from the mss Fatih 5323 and Ayasofya 4260.

<sup>74</sup> As has been suggested by BRAFMAN 1985, 67–76. The passage in al-Mas'ūdī, *Murāğ ad-dāhab* (ed. De Meynard; Paris 1861) VII 38–43 = ed. Ch. Pellat, Beirut 1973, vol. IV nrs. 2726–28) does not allow the interpretation proposed by Brafman. In this passage, which is more correctly quoted in M. FAKHRY, *A History of Islamic Philosophy* (2nd ed.; London / New York 1983) 10f., Mas'ūdī merely wants to say that the ruler according to al-Ma'mūn requires the assent of his subjects from east to west.

<sup>75</sup> See MINGANA 1935, in the introduction to *The Book of Treasures* XXVI.

<sup>76</sup> On the author, see *El<sup>2</sup>* X (2000) 17f. (D. Thomas).

Theology in the 9th century CE. Its Christian author, an adaptor of Plotinus's *Enneads*, possibly Ibn Nā'ima al-Ḥimṣī from the circle of the Islamic philosopher al-Kindī (801–66 CE), considers God's rule and providence as 'emanations' from the stars.<sup>77</sup> He combines this belief with Aristotelian teleology, which is also mirrored in *De mundo* and which is put forward as the common opinion of ancient philosophers: "the world neither exists by itself nor by chance and instead has its origin in a wise (*ḥakīm*) and eminent (*fā il*) creator (*ṣāni'*)."<sup>78</sup> This is further combined by Ibn Nā'ima al-Ḥimṣī with the Stoic-Neoplatonic concept of *sympatheia*, which was taken up by al-Kindī.<sup>79</sup>

The sources discussed above contributed to the spread of *De mundo*'s theological ideas in the Islamic world from the 9th century CE onwards. Here, it is relevant to mention a theological book on the teleological proof of God's existence, written by the Medinan Zaydī Imam al-Qāsim Ibn Ibrāhīm ar-Rassī (d. 860), the grandfather of the founder of the Zaydī imamate in Yemen. al-Qāsim argued in his *Kitāb ad-Dalīl al-kabīr* that the signs (*āṭār, dalā'il*) of God in his creation – e.g. the making of day and night and of the sun and the stars, the descent of water from heaven and the growth of plants (cf. the Koran, Sura 6, 95–99) – prove his "beautiful and perfect design" (*at-tadbīr al-ḥasan al-muḥkama*).<sup>80</sup> I think this parallel between al-Qāsim Ibn Ibrāhīm and the Christian *Kitāb ad-Dalā'il* is not coincidental and confirms Wilferd Madelung's assumption of Christian influence, which al-Qāsim combined with Mu'tazilite theology.<sup>81</sup>

In addition to al-Qāsim Ibn Ibrāhīm, several Muslim authors carried forward the teleological proof of God, which can be compared with the arguments from design in the *Kitāb ad-Dalā'il*.<sup>82</sup> It is worth mentioning two works which adapted the teleological proof of God's existence from the *Kitāb ad-Dalā'il* and thus preserve indirect echoes of *De mundo*.

<sup>77</sup> Cf. ADAMSON 2002, 197–204.

<sup>78</sup> Ps.-Aristotle, *Theology*, ed. F. DIETERICI, *Die sogenannte Theologie des Aristoteles*. Die Philosophie bei den Arabern im X. Jahrhundert n. Chr. XI (Leipzig 1882; reprint Hildesheim 1969) 168, 8–10; German trans. F. DIETERICI, *Die sogenannte Theologie des Aristoteles*. Die Philosophie bei den Arabern im X. Jahrhundert n. Chr. XII (Leipzig 1883; reprint Hildesheim 1969) 166f.; cf. DAIBER 1975a, 161f.

<sup>79</sup> Cf. ADAMSON 2002, 198 and H. DAIBER, "Magie und Kausalität im Islam" (paper given at a workshop on "Magie im Islam. Zwischen Glaube und Wissenschaft", Göttingen, 11–13 July 2012).

<sup>80</sup> Ed. and transl. B. ABRAHAMOV, *Al-Qāsim B. Ibrāhīm on the Proof of God's Existence*. Islamic Philosophy, Theology and Science V (Leiden / New York 1990) 64,2f./65; cf. 78/79; 84/85; 96/97; 116/117.

<sup>81</sup> See the review of ABRAHAMOV's edition by W. MADELUNG in *Journal of the Royal Asiatic Society* 3rd series 2/2 (1992) 267–70; id., "Al-Qāsim Ibn Ibrāhīm and Christian Theology", *Aram* 3/1–2 (1991) 35–44.

<sup>82</sup> A list of Muslim and Jewish authors can be found in DAVIDSON 1987, 213–36 (ch. VII: "Arguments from Design"). Davidson mentions the *Kitāb ad-Dalā'il* as a source; regrettably, however, he does not refer to *De mundo*.

The theologian Abū Ḥāmid al-Ghazālī (d. 1111 CE) integrated the *Kitāb ad-Dalā'il* in his "Wisdom in the Created Beings of God" (*al-Ḥikma fī maḥlūqāt Allāh*).<sup>83</sup> This was already shown by D. H. Baneth in an article which he published in 1938 in Hebrew.<sup>84</sup> He also demonstrated that, independently of Ghazālī, the Jewish philosopher Baḥya Ibn Paqūda (c. 1050–c.1156 CE) from Saragossa / Andalus used the same source – "either directly or indirectly" – in his *Kitāb al-Hidāya ilā farā'id al-qulūb*, "Book of Direction to the Duties of the Heart", in the second chapter on the meditation upon created things,<sup>85</sup> the aim of which is to prove God's existence from his creation.<sup>86</sup>

In a different manner, Ghazālī included excerpts from the *Kitāb ad-Dalā'il* in a treatise which constantly quotes the Koran as testimony for the indications of God's majesty and almightiness, which man is obliged to know through constant reflection on his creation. Ghazālī's work has the same chapters as the *Kitāb ad-Dalā'il*, though partly in a different order: the chapter on man<sup>87</sup> follows the chapter on heat and cold, earth, water (including water and rain), air and fire, including the section on metals, gold and silver etc.,<sup>88</sup> then follows a chapter on animals<sup>89</sup> and plants;<sup>90</sup> the end, however, is different from the *Kitāb ad-Dalā'il*.<sup>91</sup> Ghazālī reproduces the passages from the *Kitāb ad-Dalā'il* literally, although sometimes he replaces single terms, omits single words and names, or drops whole sentences and passages. The *Kitāb ad-Dalā'il* became an Islamic theological treatise; as in the case of the Jewish philosopher Baḥya Ibn Paqūda, the echoes of *De mundo* are reduced to *spolia* integrated into a teleological proof of God's existence, in which increasing knowledge through reflection on God and his creation becomes the Sufi way to achieve nearness to God.

<sup>83</sup> I use the edition Beirut 1986 (= *Maḡmū'at rasā'il al-Imām al-Ghazālī* I 3–77); a (not complete) description of its contents can be found in H. STIEGLECKER, *Die Glaubenslehren des Islam* (Paderborn / München / Wien 1962) 29–35.

<sup>84</sup> D. H. BANETH, "The Common Teleological Source of Bahye (*sic*) Ibn Paqoda and Ghazālī" (Hebrew), in: F. J. BAER et al. (eds.), *Magnes Anniversary Book* (Jerusalem 1938) 23–30, with English summary on IVf.

<sup>85</sup> Ed. A. S. YAHUDA (Leiden 1912; undated reprint) 93–124; English trans. by M. MAN-SOOR, with S. ARENSON and S. DANNHAUSER, *The Book of Direction to the Duties of the Heart* (London 1973) 150–75. On the *Kitāb ad-Dalā'il* as one of Baḥyā's Arabic sources see MAN-SOOR, Introduction, 35.

<sup>86</sup> On this see D. LOBEL, *A Sufi-Jewish Dialogue: Philosophy and Mysticism in Baḥyā Ibn Paqūda's Duties of the Heart* (Philadelphia PA 2006), ch. 3.

<sup>87</sup> Ġazālī 25–44.

<sup>88</sup> Ġazālī 12–25.

<sup>89</sup> Ġazālī 45–67.

<sup>90</sup> Ġazālī 67–74.

<sup>91</sup> Ġazālī 74–7.

# Disputes over the Authorship of *De mundo* between Humanism and *Altertumswissenschaft*\*

Jill Kraye

The authorship of *De mundo* was one of the most controversial issues in early modern discussions of the Aristotelian corpus, stretching from the fifteenth century, with the rise of humanism, to the end of the eighteenth, on the eve of the era of *Altertumswissenschaft*. Throughout Europe, from Italy in the south to Denmark in the north, a large number of writers, representing virtually every scholarly profession – humanists, philosophers, theologians, historians, scientists, editors, commentators, translators, and bibliographers – contributed to this long-lasting debate. In the first half of this essay, I provide a chronology, in outline form, of the dispute, starting with the ancient and medieval background, then listing, century by century, those who passively accepted, actively defended, tacitly or expressly rejected or remained undecided about the authenticity of *De mundo*. In the second half, I set out the main arguments for and against attributing the treatise to Aristotle and identify the authors who employed them.

## 1. Chronology

### 1.1. Antiquity<sup>1</sup>

A. Apuleius, in the preface to his Latin version of *De mundo*, states that he has followed the authority of Aristotle, the most sagacious and learned of philosophers, and of Theophrastus.<sup>2</sup>

B. The *Cohortatio ad Graecos*, a work of the early third century now believed to be falsely attributed to Justin Martyr, refers to a work of Aristotle,

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\* This essay is based on: J. KRAYE, "Daniel Heinsius and the Author of *De mundo*", in: A. C. DIONISOTTI / A. T. GRAFTON / J. KRAYE (eds.), *The Uses of Greek and Latin. Historical Essays* (London 1988) 171–97; ead., "Aristotle's God and the Authenticity of *De mundo*: An Early Modern Controversy", *Journal of the History of Philosophy* 28 (1990) 339–58. These two articles, which are reprinted in KRAYE 2002, should be consulted for further secondary literature and for more quotations from the primary sources. I have, however, included over 35 additional early modern texts in the present discussion.

<sup>1</sup> See also the Introduction by Thom, § 1.

<sup>2</sup> Apul. *Mund.* 289: *Quare nos Aristotelen prudentissimum et doctissimum philosophorum et Theophrastum auctorem secuti ...*



addressed to Alexander and described as a ‘compendium’ (σύντομος) of his philosophy, in which, controverting Plato’s opinion that God existed in a fiery substance, placed him instead in an aetherial and unchangeable fifth element (cf. *Mund.* 2, 392a5–8).<sup>3</sup>

C. Stobaeus, in his *Eklogai*, includes selections from *De mundo*, divided into 3 separate parts, each time under the heading: “From Aristotle’s Letter to Alexander”.<sup>4</sup>

D. Proclus, in his commentary on Plato’s *Timaeus*, when attributing *Mund.* 7, 401b9, to Aristotle, adds: “if the book *De mundo* is by him”.<sup>5</sup>

E. Philoponus, in his treatise against Proclus, quotes *Mund.* 6, 397b13 twice, stating: “as Aristotle says in *De mundo*” (ὡς φησιν Ἀριστοτέλης ἐν τῷ Περὶ κόσμου).<sup>6</sup>

## 1.2. Middle Ages

A. Maimonides, in a letter of 1199 to Samuel ibn Tibbon, translator of the *Guide of the Perplexed*, dismisses the Arabic version of *De mundo*, known as the *Golden House* or *Golden Letter*, as “idle talk” and classified it as one of the works “which have been attributed to Aristotle but are not by him”.<sup>7</sup>

B. *De mundo* circulated among Byzantine scholars in the milieu of Maximus Planudes.<sup>8</sup>

C. Two Latin translations of *De mundo* were made in the thirteenth century: one by Bartholomaeus of Messina, the other by Nicholas of Sicily.<sup>9</sup>

D. There are very few references to *De mundo* from the thirteenth and fourteenth centuries; but it is cited as a work of Aristotle by: Pietro d’Abano in his *Conciliator differentiarum philosophorum et medicorum* diff. 113 (*Mund.* 6); Thomas Bradwardine in his *De causa Dei* 1.29 (*Mund.* 7); and Pseudo-Thomas Aquinas’s commentary on Boethius’s *De consolazione philosophiae* III.m.9 (*Mund.* 2).

E. *De mundo* was not included by William of Moerbeke in the corpus of Aristotelian scientific and metaphysical treatises which he translated or revised; nor was it mentioned by John of Jandun, when he enumerated

<sup>3</sup> [Justin], *Cohortatio ad Graecos*, PG 6, col. 252.

<sup>4</sup> Stob. *Ecl.* 1.43–6 (cap. 6), 82–3 (cap. 7), and 255–72 (capp. 2–5): Ἀριστοτέλους ἐκ τῆς πρὸς Ἀλέξανδρον ἐπιστολῆς.

<sup>5</sup> Procl. *In Ti.* 3, p. 272, l. 21: εἴπερ ἐκείνου τὸ Περὶ κόσμου βιβλίον.

<sup>6</sup> Philoponus, *Aet. mund.* 174, 179 (see Appendix, Text 8).

<sup>7</sup> STERN 1964.

<sup>8</sup> N. G. WILSON, *Scholars of Byzantium* (London 1983) 236.

<sup>9</sup> LORIMER 1965.

the books of Aristotle essential for the study of natural philosophy in the preface to his *Quaestiones super libros Physicorum*.<sup>10</sup>

### 1.3. Fifteenth Century

A. *De mundo* was cited as an authentic work by Cardinal Bessarion, Marsilio Ficino, Giovanni Pico della Mirandola, Gian Francesco Pico della Mirandola, and Gian Andrea Bussi.<sup>11</sup>

B. Doubts about its authenticity were expressed in the prefaces to the two Latin translations made in this period: one by Rinuccio Aretino, the other by Jacopo Sadoletto.<sup>12</sup>

### 1.4. Sixteenth Century

A. *De mundo* was cited as an authentic work by Giovan Battista Pio, Arsenios, Archbishop of Monemvasia, Juan Ginés de Sepúlveda, Simon Grynaeus, Andrés de Laguna, Jean Fernal, Jacques Charpentier, Andrea Bacci, and Jean Bodin.<sup>13</sup>

<sup>10</sup> S. J. WILLIAMS, "Defining the Corpus Aristotelicum: Scholastic Awareness of Aristotelian Spuria in the High Middle Ages", *Journal of the Warburg and Courtauld Institutes* 58 (1995) [29–51] 46–7.

<sup>11</sup> CARDINAL BESSARION, *In calumniatorem Platonis* (1469), in: L. MOHLER, *Kardinal Bessarion als Theologe, Humanist und Staatsmann*, 3 vols. (Paderborn 1923–42) vol. 2:340–2; MARSILIO FICINO, *Theologia platonica* (1474): M. J. B. ALLEN (ed.) / J. HANKINS (trans.), *Marsilio Ficino. Platonic Theology*, 6 vols. (Cambridge MA 2001–6) vol. 1:200–1 (2.13.4); E. GARIN (ed.), *Giovanni Pico della Mirandola. Disputationes adversus astrologiam divinitricem* (c. 1494), 2 vols. (Florence 1946) vol. 1:432 (4.3); PICO 1508; GIAN FRANCESCO PICO DELLA MIRANDOLA, *Examen doctrinae vanitatis gentium* (1520), in: id., *Opera omnia* (Basel 1573) 1043 (4.7); Giovanni Andrea Bussi's preface to his edition of Apuleius (1469), in: M. MIGLIO (ed.), *Giovanni Andrea Bussi. Prefazioni alle edizioni di Sveynheim e Pannartz prototipografi romani* (Milan 1978) [11–19] 16.

<sup>12</sup> For Rinuccio Aretino's version (before 1450), see D. P. LOCKWOOD, "De Rinucio Aretino graecarum litterarum interprete", *Harvard Studies in Classical Philology* 24 (1913) [51–109] 77; for Jacopo Sadoletto's version (between 1498 and 1511), see LORIMER 1965, 84.

<sup>13</sup> G. B. PIO, *In Carum Lucretium poetam commentarii* (Paris 1514) f. XI; ARSENIOS, Αποφθέγματα φιλοσόφων και στρατηγών (Rome 1519) sig. α6ν; Juan Ginés de Sepúlveda's preface to his Latin translation (1523), in: A. LOSADA, *Juan Ginés de Sepúlveda: a través de su "Epistolario" y nuevos documentos* (Madrid 1973) 591–2; SIMON GRYNÆUS, ... *Scholion doctissimum in Aristotelis libellum De mundo* (Basel 1533), printed together with Budé's translation; ANDRÉS DE LAGUNA (trans.), *Aristoteles. De mundo seu de cosmographia liber unus ad Alexandrum* (Alcalá de Henares 1538); JEAN FERNEL, *De abditis rerum causis libri duo* (Venice 1550) 120, 123–4; JACQUES CHARPENTIER, *Platonis cum Aristotele in universa philosophia comparatio* (Paris 1573) 175, 239; ANDREA BACCI, *Ordo universi et humanarum scientiarum prima monumenta* (1581), in: H. D. SAFFREY, "L'Homme-microcosme dans une estampe médico-philosophique du seizième siècle", *Journal of the Warburg and Courtauld Institutes* 57 (1994) [89–122] 100; JEAN BODIN, *Universae naturae theatrum* (Lyon 1596) 155.

B. Arguments for its authenticity were adduced by Agostino Steuco, Conrad Gesner, Caelio Secondo Curione, Francesco Patrizi da Cherso, Johann Jacob Beurer, Barnabé Brisson, and Bonaventura Vulcanius.<sup>14</sup>

C. Aristotle's authorship was rejected by Erasmus, Juan Luis Vives, Philipp Melanchthon, Pier Vettori, Simon Porzio, Julius Caesar Scaliger, Marc-Antoine Muret, G. A. Buoni, Joachim Camerarius, and Tommaso Aldobrandini.<sup>15</sup>

D. The question of its attribution was said to be undecided by Petrus Alcyonius, Jodocus Angeliaphorus, an anonymous French translator, Francesco Storella, Lodovico Ricchieri, Marco degli Oddi, Pedro Nuñez, Élie Vinet, Pedro Fonseca, Felix Accorombonius, and Antonio Possevino.<sup>16</sup>

E. Guillaume Budé expressed no doubts about the authenticity of *De mundo* in the preface to his translation, nor did Jacques Toussain in his Greek edition; but, according to a report by Pedro Juan Oliver, both of them regarded the treatise as spurious.<sup>17</sup> John Case maintained in his *Thesaurus*

<sup>14</sup> STEUCO 1540; CONRAD GESNER, *Bibliotheca universalis* (Zurich 1545) f. 86r; CAELIO SECONDO CURIONE, *Selectarum epistolarum libri duo* (1553) 84–90; PATRIZI 1571; PATRIZI 1584; BEURER 1587, sig. B3r; BEURER *cod.*, f. 125;

<sup>15</sup> Erasmus's preface to the 1531 Greek edition of Aristotle, in: P. S. ALLEN et al. (ed.), *Erasmus. Opus epistolarum*, 12 vols. (Oxford 1906–58) vol. 9:143 (*Ep.* 2434); JUAN LUIS VIVES, *De Aristotelis operibus censura* (1537), in: G. MAYANS Y SISCAR (ed.), *Juan Luis Vives. Opera omnia*, 8 vols. (Valencia 1782) vol. 3:31; id., *De tradendis disciplinis*, *ibid.*, vol. 6:349; J. L. VIVES (ed.), *Augustinus. De civitate Dei* (Basel 1522) 111; PHILIPP MELANCHTHON, *Initia doctrinae physicae* (1549), in: C. G. BRETTSCHEIDER (ed.), *Philipp Melanchthon. Opera quae supersunt omnia*, 28 vols. (Halle 1834–60) vol. 13, cols. 213–14; VETTORI 1553, 398 (25.13); SIMONE PORZIO, *De rerum naturalium principii libri duo* (Naples 1553) f. VIIr; JULIUS CAESAR SCALIGER, *Exotericarum exercitationum liber quintus decimus de subtilitate* (Paris 1557) sig. \*4r and f. 469v; MARC-ANTOINE MURET, *Variarum lectionum libri VIII* (Venice 1559) f. 15v (2.8); G. A. BUONI, *Del terremoto dialogo* (Modena 1571) f. 6r; JOACHIM CAMERARIUS, *Ethicorum Aristotelis Nicomachiorum explicatio* (Frankfurt 1578) 19; TOMMASO ALDOBRANDINI (ed. / trans.), *Diogenes Laertius. De vitis, dogmatis et apophthegmatis eorum qui in philosophia claruerunt libri X* (Rome 1594) 94, 98.

<sup>16</sup> PETRUS ALCYONIUS (trans.), *Aristoteles. De mundo ad Alexandrum* (Venice 1521) sig. q3r; undated letter from Jodocus Angeliaphorus to Simon Grynaeus, in: W. T. STREUBER (ed.), *Simon Grynaeus. Epistolae* (Basel 1847) 18; *Aristote. Du monde* (Lyon 1542) 5; FRANCESCO STORELLA, *Catalogus ac censura operum quae an Aristotelea sint est dubitatum* (MS Milan, Biblioteca Ambrosiana, S 79 sup.) f. 20r; LODOVICO RICCHIERI, *Lectionum antiquarum libri XXX* (Basel 1542) 305 (8.16); Marco degli Oddi's preface to Giuntine edition of Aristoteles, *Opera quae extant omnia ... Averrois Cordubensis in ea opera omnes qui ad nos pervenire commentarii*, 9 vols. (Venice 1552) vol. 1, f. 10r; PEDRO NUÑEZ, *Oratio de causis obscuritatis Aristoteleae* (Valencia 1554) f. 34r; JOHANNES DE SACRO BOSCO, *Sphaera*, comment. ÉLIE VINET (Paris 1556) sig. b3r; LUCILIO MAGGI [Philaltheus], *In IIII libros Aristotelis De caelo et mundo commentarii* (Venice 1565) 7; PEDRO FONSECA, *In libros Metaphysicorum Aristotelis*, 2 vols. (Rome 1577–89) vol. 1:12; FELIX ACCOROMBONIUS, *Interpretatio obscuriorum locorum et sententiarum omnium operum Aristotelis* (Rome 1590) 455; ANTONIO POSSEVINO, *Bibliotheca selecta* (1593) 94.

<sup>17</sup> GUILLAUME BUDÉ (trans.) *Aristoteles. De mundo* (Paris 1526); JACQUES TOUSSAIN (ed.), *Aristoteles. De mundo* (Paris 1540); OLIVER 1538, 14–15; see also VETTORI 1553, 398, who

*oeconomiae* that *De mundo* was genuine; but in his *Lapis philosophicus* he said that it “does not seem to be by Aristotle”.<sup>18</sup>

F. *De mundo* was said to be either by Aristotle or according to his doctrines by Giulio Sirenio, Étienne Michel, and Paolo Beni.<sup>19</sup>

### 1.5. Seventeenth Century

A. *De mundo* was cited as an authentic work by Muzio Pansa, Robert Balfour, Balthasar Schulz, Johannes Lange, Tommaso Campanella, Pedro Hurtado de Mendoza, Fortunio Liceti, Johannes Zeisold, Henry More, and Jacques Parrain.<sup>20</sup>

B. Arguments for its authenticity were adduced by Gerhard Elmenhorst and Ole Worm.<sup>21</sup>

C. Aristotle’s authorship of *De mundo* was rejected by Obertus Giphanius, Daniel Heinsius, Guillaume Du Val, Samuel Petit, Gabriel Naudé, Thomas Gataker, Georg Horn, J. G. Vossius, Alfonso Pandolfo, Gilles Ménage, Théophile Raynaud, Theophilus Gale, Jacobus Thomasius, and Hermann Conring.<sup>22</sup>

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states that when lecturing in Paris on *De mundo*, Toussain “said that it is was not a legitimate offspring of Aristotle” (*dixisse ipsum Aristotelis partum non esse*).

<sup>18</sup> CASE 1597, 228; JOHN CASE, *Lapis philosophicus* (Oxford 1599) 349: *Liber De mundo non videtur Aristotelis*.

<sup>19</sup> GIULIO SIRENIO, *De fato libri novem* (Venice 1563) ff. 67v–68v; ÉTIENNE MICHEL (ed.), *Aristoteles. Opera...*, 2 vols. (Lyon 1581) vol. 1, cols. 977–8; BENI 1594, 115–17.

<sup>20</sup> PANSA 1601, 185–95; R. BALFOUR (ed.), *Cleomedes* (Bordeaux 1605) 149, 162, 166, 169; BALTHASAR SCHULZ, *Synopsis historiae naturalis De mundo ex Aristotelis ad Alexandrum Magnum libello syntomos conformata et notis quibusdam illustratis* (Wittenberg 1606); LANGE 1606; TOMMASO CAMPANELLA, *De sensu rerum et magia libri quatuor* (Frankfurt 1620) 153; PEDRO HURTADO DE MENDOZA, *Universa philosophia* (Salamanca 1623) 872; FORTUNIO LICETI, *De pietate Aristotelis* (Udine 1645) 9, 11; JOHANNES ZEISOLD, *De Aristotelis, in illis quae ex lumine naturae innotescunt, cum Scriptura Sacra consensu* (Jena 1661) 51; HENRY MORE, *Enchiridion ethicum*, 2nd ed. (London 1669) 13 (1.3); JACQUES PARRAIN, *La morale d’Épicure avec des reflexions* (Paris 1695) sig. ē1v (‘Preface’).

<sup>21</sup> GERHARD ELMENHORST (ed.), *Apuleius. Opera omnia quae extant* (Frankfurt 1621) 69; WORM 1625, 1–29 (‘Prooemium’).

<sup>22</sup> OBERTUS GIPHANIUS, *Commentarii in Politicorum opus Aristotelis* (Frankfurt 1608) 857; HEINSIUS 1609, 68–88, and HEINSIUS 1615, 79–114; GUILLAUME DU VAL (ed.), *Aristoteles. Opera omnia*, 2 vols. (Paris 1619) vol.1:117; SAMUEL PETIT, *Miscellaneorum libri novem* (Paris 1630) sig. Fff4r (4.9); BEVERWYCK 1639, 24–38 (letter by Gabriel Naudé); THOMAS GATAKER (ed.), *Marcus Aurelius. De rebus suis ...* (Cambridge 1652) 279; GEORG HORN, *Historiae philosophicae libri septem* (Leiden 1655) 197; J. G. VOSSIUS, *De philosophorum sectis* (The Hague 1657) 87 (cap. 87); ALFONSO PANDOLFO, *Disputationes de fine mundi* (Bologna 1658) 4; GILLES MÉNAGE (ed.), *Diogenes Laertius. De vitis dogmatis et apophthegmatis eorum qui in philosophia claruerunt, libri X* (London 1664) 190 (ad 7.152); THÉOPHILE RAYNAUD, *Theologia naturalis* (Lyon 1665) 18; THEOPHILUS GALE, *The Court of the Gentiles, Part II: Of Philosophie* (Oxford 1671) 369; JACOBUS THOMASIUS, *Exercitatio de Stoica mundi exustione ...* (Leipzig 1676) 179; C. H. RITMEIER (ed.), *Hermann Conring. Conringiana epistolica, sive Animadversiones variae eruditonis ... Editio nova, priori longe auctior* (Helmstadt 1719) 128–9.

D. The treatise was attributed to the “author of the book *De mundo*” (*Autor libri De mundo*) by Isaac Casaubon, Jacopo Zabarella, Philipp Clüver, Claude Saumaise, Arnold Boate, Balthasar Cellarius, and Ralph Cudworth.<sup>23</sup>

E. Its attribution was said to be undecided by Jacobus Nicolaus Loensis, the Coimbra Commentators, Tommaso Giannini, Pierre Gassendi, Paganino Gaudenzio, Carlo Emmanuele Vizzani, Thomas Stanely, Samuel Rachelius, Robert Boyle, and Silvestro Mauro.<sup>24</sup>

F. Pierre-Daniel Huet treated *De mundo* as a genuine work of Aristotle in his *Demonstratio evangelica*; but in his *Alnetanae quaestiones* he said that it was spurious.<sup>25</sup>

## 1.6. Eighteenth Century

A. Arguments for the authenticity of *De mundo* were adduced by Johann Albrecht Fabricius, Joannes Franciscus Buddeus, Charles Batteux, and Guillaume Emmanuel Joseph Guilhem de Clermont-Lodève.<sup>26</sup>

<sup>23</sup> ISAAC CASAUBON, *Animadversionum in Athenaei Dipnosophistas libri XV* (Lyon 1600) 155; JACOPO ZABARELLA, *De rebus naturalibus libri XXX* (Frankfurt 1606) col. 43; PHILIPP CLÜVER, *Animadversiones in Apulei Platonici librum De mundo ad Gevehartum Elmenhorstium* (Frankfurt 1621) 411; CLAUDE SAUMAISE, *Pliniana exercitationes in Caii Iulii Solini Polyhistoria*, 2 vols. (Paris 1629) vol. 2:1247–8; ARNOLD BOATE, *Animadversiones sacrae ad textum Hebraicum Veteris Testamenti ...* (London 1644) 166 (2.5 ad Isa 30.17); BALTHASAR CELLARIUS, *Epitome theologiae philosophicae seu naturalis, juxta Aristotelem et autorem libri De mundo concinnata, scholasticorum doctrina illustrata, et cum Scripturis collata*, 2nd ed. (Jenna 1661) 199; RALPH CUDWORTH, *The True Intellectual System* (London 1678) 146–9, 167–8, 391–2.

<sup>24</sup> JACOBUS NICOLAUS LOENSIS, *Miscellaneorum Epiphillidum libri X*, in: J. GRUTER, *Lampas, sive Fax artium liberalium* (Frankfurt 1605) 503 (6.12); COLLEGIUM CONIMBRICENSIS, *Commentarium ... in octo libros Physicorum Aristotelis* (Cologne 1609) col. 49; TOMMASO GIANNINI, *De substantia caeli et stellarum efficientia disputationes Aristotelicae* (Venice 1618) 475; B. ROCHOT (ed.), *Pierre Gassendi. Dissertations en forme de paradoxes contre les Aristotéliciens (Exercitationes paradoxicae adversus Aristoteles [1624]), Livres I et II* (Paris 1959) 99 (1.4.4.); GASSENDI 1649, 715; PAGANINO GAUDENZIO, *De Pythagorea animarum transmigratione opusculum* (Pisa 1641) 205; GAUDENZIO 1643a; GAUDENZIO 1643b; GAUDENZIO *cod.*; CARLO EMMANUELE VIZZANI (ed.), *Ocellus Lucanus. De universi natura* (Bologna 1646) 104; THOMAS STANLEY, *The History of Philosophy*, 2nd ed. (London 1687) 367; SAMUEL RACHELIUS (ed.), *Aristoteles. Ethicorum ad Nicomachum libri decem* (Helmstedt 1660) 27; ROBERT BOYLE, *Of the Usefulness of Natural Philosophy* (1662–3), in: *id.*, *The Works*, 6 vols. (London 1772; reprint Hildesheim 1966) vol. 2:50; SILVESTRO MAURO (ed.), *Aristoteles. Opera omnia* (1668), reprint 4 vols. (Paris 1885–7) vol. 1:2.

<sup>25</sup> HUET 1679, 48–9; PIERRE-DANIEL HUET, *Alnetanae quaestiones de concordia rationis et fidei* (Paris 1690) 141.

<sup>26</sup> JOHANN ALBRECHT FABRICIUS, *Decas decadum sive plagiatorum et pseudonymorum centuria* (Leipzig 1689) 68–9; *id.*, *Bibliotheca graeca*, 14 vols. (Hamburg 1705–28) vol. 3:128–9; JOANNES FRANCISCUS BUDDEUS, *Isagoge historico-theologica ad theologiam universam singularesque eius partes* (Leipzig 1727) 289; BATTEUX 1768; GUILLAUME EMMANUEL JOSEPH GUILHEM DE CLERMONT-LODÈVE, *Examen critique des anciens historiens d'Alexandre-le-Grand* (Paris 1775) 296–8.

B. Its authenticity was rejected by Johann Jakob Brucker, Philipp Jacob Spener, Christoph Meiners, Johann Christian Kapp, an anonymous reviewer in the *Göttingische Anzeigen von gelehrten Sachen*, and Johann August Goerenz.<sup>27</sup>

C. Its attribution was said to be undecided by Thomas Crenius and Friedrich Gedicke.<sup>28</sup>

D. Jean Lévesque de Burigny cited Aristotle as the author of *De mundo* in chapter 11 of his *Histoire de la philosophie payenne*; but he denied that it was authentic in chapter 12.<sup>29</sup>

### 1.7. Nineteenth and Twentieth Centuries

A. During the era of *Altertumswissenschaft*, there was a general consensus that *De mundo* was not an authentic work of Aristotle. Scholarship focused instead on establishing the date of its composition (4th century BCE to 2nd century CE) and on identifying its sources (Peripatetic, Platonic, Neopythagorean, Stoic).<sup>30</sup>

B. The authenticity of *De mundo*, nevertheless, continued to be defended by a few scholars, including Charles Louis (also known as Karl Ludwig) Michelet, Paul Gohlke, Giovanni Reale, and A. P. Bos.<sup>31</sup>

As this outline makes clear, the early modern dispute over the authenticity of *De mundo* began to take shape in the fifteenth century, picked up steam in the sixteenth and reached full force in the seventeenth. The debate gradually tailed off in the eighteenth century and was finally resolved in the nineteenth, when it was generally agreed, with only a handful of dissenting voices, that the treatise belonged to the category of Aristotelian *spuria*.

<sup>27</sup> BRUCKER 1729, 121; JOHANN JAKOB BRUCKER, *Historia critica philosophiae*, 2nd ed., 6 vols. (Leipzig 1766–7) vol. 1:799, n. q; PHILIPP JACOB SPENER, *Tabulis hodosophicis B. Dannhaueri praemissa, de impedimentis studii theologici* (Leipzig 1736) 33; CHRISTOPH MEINERS, *Historia doctrinae de vero Deo omnium rerum auctore atque rectore* (Lippe 1780) 454; KAPP 1792; anonymous review of Kapp's edition in *Göttingische Anzeigen von gelehrten Sachen* 2 (1792) 1284–7; JOHANN AUGUST GOERENZ, *De libri Περὶ κόσμου qui inter Aristotelis scripta reperitur auctore* (Wittenberg 1792) 8–9.

<sup>28</sup> THOMAS CRENIUS, *Animadversionum philologicarum et historicarum pars XI* (Leiden 1711) 109–15; FRIEDRICH GEDICKE, *Historia philosophiae antiquae* (Berlin 1782) 239.

<sup>29</sup> LÉVESQUE DE BURIGNY 1724, vol. 1:174 (ch. 11), 243 (ch. 12).

<sup>30</sup> REALE / BOS 1995, 374–99 (annotated bibliography on *De mundo* from 1792 until 1995).

<sup>31</sup> CHARLES LOUIS (Karl Ludwig) MICHELET, *Examen critique de l'ouvrage intitulé Métaphysique* (Paris 1836) 211–12; GOHLKE 1936; GOHLKE 1949, 5–15; A. P. Bos, "Notes on Aristotle's *De mundo* concerning the Discussion of its Authenticity", *Philosophical Inquiry* 1 (1979) 141–53; REALE / BOS 1995.

## 2. Arguments

### 2.1. Testimonia

Ancient *testimonia* played an important role in discussions about the attribution of *De mundo* to Aristotle. The earliest of these, the statement by Apuleius (1.1.A)<sup>32</sup> that he had followed Aristotle and Theophrastus in his Latin translation of *De mundo*, was cited as evidence of the treatise's authenticity by Bussi (1.3.A), Brisson (1.4.B), Vulcanius (1.4.B), Gaudenzio (1.5.E),<sup>33</sup> and Fabricius (1.6.A). For Petit (1.5.C), however, Apuleius's testimony proved instead that *De mundo*, though spurious, nevertheless contained some genuine Aristotelian material, while Heinsius (1.5.C) interpreted it as meaning that the author of *De mundo* had drawn on both Theophrastus and Aristotle.<sup>34</sup> Worm (1.5.B) described Heinsius's reading as distorted;<sup>35</sup> yet his own decoding of the passage was much more far-fetched: Apuleius was supposedly indicating that Aristotle had written the treatise solely for Alexander and that Theophrastus had made it public after the death of both the author and dedicatee.<sup>36</sup>

Both Aulus Gellius, *Noctes Atticae* 20.5, and Plutarch, *Vita Alexandri* 7, included a letter by Alexander the Great to Aristotle, complaining that some of the philosopher's acroamatic lectures, containing recondite material, had been divulged to the public. Patrizi (1.4.B) identified one of these lectures as *De mundo* because of its dedication to Alexander;<sup>37</sup> but Heinsius (1.5.C) and Gaudenzio (1.5.E) denied that the treatise contained anything which Alexander would have wanted to keep secret.<sup>38</sup>

The apparent reference to *De mundo* in *Cohortatio ad Graecos*, attributed until modern times to Justin Martyr (1.1.B), carried with it the authority of a Church Father and therefore served as powerful evidence that the treatise was genuine for Gian Francesco Pico (1.3.A),<sup>39</sup> Charpentier (1.4.A), Steuco

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<sup>32</sup> In this section, authors' names are followed by an indication, in round brackets, of their place in the chronological outline above, where full bibliographical details can be found in the associated footnote; when it is necessary to distinguish between different works by the same author or to specify a precise page, folio or signature reference, this information is provided in a footnote.

<sup>33</sup> GAUDENZIO 1643a, 243.

<sup>34</sup> HEINSIUS 1609, 74.

<sup>35</sup> Naudé likewise found Heinsius "a bit more obscure and impeded than usual in explaining this sentence" (*videtur mihi Heinsius in eius explicanda sententia, paulo quam in reliquis solet fuisse obscurior et impeditior*): BEVERWYCK 1639, 29.

<sup>36</sup> WORM 1625, 23–5.

<sup>37</sup> PATRIZI 1571, ff. 44r–45v.

<sup>38</sup> HEINSIUS 1615, 166–72; GAUDENZIO *cod.*, f. 37r.

<sup>39</sup> PICO 1508, sig. C1r; his Latin translation of the *Cohortatio* was published in 1506–7.

(1.4.B),<sup>40</sup> Gesner (1.4.B), Beurer (1.4.B),<sup>41</sup> Pansa (1.5.A),<sup>42</sup> Worm (1.5.B),<sup>43</sup> and Fabricius (1.6.A). Justin was also cited by Beni (1.4.F), who regarded the treatise as Aristotelian, if not necessarily by Aristotle himself.<sup>44</sup> Although Du Val (1.5.C) and Pandolfo (1.5.C) mentioned Justin's venerable testimony, they still rejected *De mundo* as spurious. Nor did it persuade Storella (1.4.D), Nuñez (1.4.D), Fonseca (1.4.D), Possevino (1.4.D), and Giannini (1.5.E), who all remained undecided as to its authenticity. Heinsius (1.5.C) argued that the doctrine alluded to by Justin did not correspond to *De mundo*, which, in any case, could not be described as a 'compendium' (σύντομος) of Aristotle's philosophy since it contained no logic, ethics or politics.<sup>45</sup> Brucker (1.6.B) likewise dismissed what Justin had to say, on the grounds that he might not be referring to the version of *De mundo* now in circulation or else might have been duped by an ancient, but nonetheless, false ascription of the treatise to Aristotle.<sup>46</sup> Brucker made the same claims about the evidence provided by Philoponus (1.1.E), which had been adduced in support of the authenticity of *De mundo* by Elmenhorst (1.5.B). The doubts expressed by Proclus (1.1.D) do not seem to have been mentioned in the early modern debate.

## 2.2. Lists of Aristotle's Works

Among the torrent of arguments unleashed by Heinsius (1.5.C) to demonstrate the spuriousness of *De mundo* was its absence from the known lists of Aristotle's works: it was not mentioned in *Meteorology* 1.1, where Aristotle enumerated all his writings on natural philosophy;<sup>47</sup> nor did it appear in the long list of Aristotle's books in Diogenes Laertius's *Lives of Eminent Philosophers*, 5.22–7, as had previously been noted by Vettori (1.4.C); and the Byzantine scholar Georgios Pachymeres did not include it in his *In universam fere Aristotelis philosophiam epitome*.<sup>48</sup> Heinsius also pointed out that Ammonius, the supposed author of the *Vita vulgata*, did not cite *De mundo* as evidence of Aristotle's expertise in theology and natural philosophy.<sup>49</sup>

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<sup>40</sup> STEUCO 1540, 170, 176, 182.

<sup>41</sup> BEURER *cod.*, (2).8.

<sup>42</sup> PANSA 1601, 187–90.

<sup>43</sup> WORM 1625, 19–21.

<sup>44</sup> BENI 1594, 117.

<sup>45</sup> HEINSIUS 1609, 72–3.

<sup>46</sup> BRUCKER 1729.

<sup>47</sup> HEINSIUS 1609, 80.

<sup>48</sup> *Ibid.*, 82.

<sup>49</sup> HEINSIUS 1609, 69–70. For the *Vita vulgata*, see DÜRING 1957, 136.



### 2.3. Parallel Passages

Passages in *De mundo* which had close parallels in works securely attributed to Aristotle were a potent argument in favour of its authenticity. Ficino (1.3.A), Sirenio (1.4.F), and Huet (1.5.F), when he still believed the treatise to be genuine,<sup>50</sup> perceived resemblances between Aristotle's treatment of the first unmoved mover in *Metaphysics* 12 and the account of divine power in *De mundo* 6. Ficino (1.3.A), Gian Francesco Pico (1.3.A),<sup>51</sup> and Worm (1.5.B)<sup>52</sup> cited the similarity between *Magna moralia* 2.8, which they interpreted as confirming Aristotle's belief in divine providence, and *De mundo* 7 as proof that the treatise was genuine. Cellarius (1.5.D) also noted the similarity, but for him it merely signalled the agreement between Aristotle and the 'Autor libri *De mundo*' on this matter. Unlike other early modern commentators, Hurtado de Mendoza (1.5.A) interpreted the *Magna moralia* passage as a denial, rather than a confirmation, of divine providence; but for him this was in line with the many other theological errors committed by Aristotle in *De mundo*. *Nicomachean Ethics* 10.8 was also generally read as a statement of divine providence on Aristotle's part and was likewise adduced in conjunction with *De mundo* by authors who regarded the treatise as genuine, including Ficino (1.3.A), Giovanni Pico (1.3.A), Steuco (1.4.B),<sup>53</sup> and Zeisold (1.5.A), as well as Lévesque de Burigny (1.6.D), in the chapter where he attributes the work to Aristotle.<sup>54</sup>

### 2.4. Geography

Heinsius (1.5.C) claimed that the mention of Taprobane (present-day Sri Lanka) in *Mund.* 393b14 was anachronistic, since the island's existence was only revealed to Europeans during Alexander's expedition to India in 324 BCE. So, if *De mundo* was written before then, Aristotle could not have known about Taprobane; and if it was written at the time of the expedition, it would have been in poor taste for him to teach Alexander about a place which the Macedonian king himself had been instrumental in discovering.<sup>55</sup> This argument against the authenticity of *De mundo* was countered by Worm (1.5.B), who observed that Pliny, *Natural History* 6.24, mentions a long-held belief that Ceylon was 'another world' (*alter orbis*).<sup>56</sup> Gaudenzio (1.5.E) also cited this passage from Pliny, corroborating it with a similar report from Solinus, *Collectanea* 53.1 – in reality, merely a rehash of Pliny –

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<sup>50</sup> HUET 1679.

<sup>51</sup> PICO 1508, sig. B1v.

<sup>52</sup> WORM 1625, 5.

<sup>53</sup> STEUCO 1540, 182.

<sup>54</sup> LÉVESQUE DE BURIGNY 1724, vol. 1:174 (ch. 11).

<sup>55</sup> HEINSIUS 1609, 78.

<sup>56</sup> WORM 1625, 8.

and with a reference to Arrian, *Anabasis* 5.1, alluding to the famous story of Bacchus subduing the Indians, which suggested to Gaudenzio that the Greeks would also have known about an island so close to India.<sup>57</sup> According to Batteux (1.6.A), the reference to Taprobane dated the treatise precisely to between 324 BCE and Alexander's death in 323.<sup>58</sup>

Heinsius (1.5.C) also considered the mention of the British Isles at 393b17 to be anachronistic, since Plutarch, *Life of Caesar* 719B, said that they were merely a poetic figment before Julius Caesar's expedition.<sup>59</sup> Conring (1.5.C), too, noted that these islands were unknown to Greeks and Romans before the time of Caesar. Worm (1.5.B) attempted to refute this further geographical argument by again drawing on Pliny, who referred to early Greek and Roman reports about the islands in his *Natural History* 4.16.<sup>60</sup> The same passage was cited by Gaudenzio (1.5.E), who, though uncommitted on the issue of authenticity, frequently sided with Worm against Heinsius. Gaudenzio also referred to the statement of Pytheas of Massalia, recounted by Strabo, *Geography* 2.4.1, that he had visited Britain. He found additional proof, so he believed, in Caesar himself, who wrote, in *De bello Gallico* 6.13, that the Druids had originally come Britain; claiming that the Druids were Pythagorean philosophers, Gaudenzio deduced that the Pythagoreans must have come to Britain long before Caesar and would have passed on their knowledge of the place to other Greeks.<sup>61</sup>

Guilhem de Clermont-Lodève (1.6.A) was aware that description of the Caspian Sea as landlocked in *Meteorology* 2.1 contradicted *Mund.* 393b2–7, where it was said to communicate with the ocean. He was able, however, to explain away this contradiction by claiming that in *De mundo*, which he regarded as a genuine work, Aristotle retracted his earlier account, using new information provided by Alexander's expedition to the East.

## 2.5. Dedicatory Preface

The uncharacteristic dedicatory preface to Alexander the Great in *De mundo* did not cause Sepúlveda (1.4.A) and Laguna (1.4.A), who both translated the treatise into Latin, to question its authenticity; on the contrary, they seized the opportunity to draw flattering parallels between their own dedicatees and Alexander. Budé (1.4.E), who also made a Latin translation of *De mundo*, gave no indication in his edition that he doubted the attribution to Aristotle; however, Oliver (1.4.E) reported that Budé did not regard the treatise as genuine because of its unusual dedicatory preface.

<sup>57</sup> GAUDENZIO *cod.*, f. 39r.

<sup>58</sup> BATTEUX 1768, 133–4.

<sup>59</sup> HEINSIUS 1609, 78.

<sup>60</sup> WORM 1625, 7.

<sup>61</sup> GAUDENZIO 1643b, 60.

This was also the view of Heinsius (1.5.C), who maintained, furthermore, that it would have been inappropriate for Aristotle to dedicate a work of cosmology and theology such as *De mundo* to Alexander, who was much more interested in practical philosophy. If he had wanted to dedicate a treatise to Alexander, he would surely have chosen something like the *Politics*; indeed, both Ammonius<sup>62</sup> and Plutarch, *De Alexandri Magni fortuna aut virtute* 329B, mentioned a lost Aristotelian treatise *On Kingship* (Περὶ βασιλείας) addressed to his royal student, while Diogenes Laertius, *Lives* 5.22, listed a work entitled *Alexander, or a Plea for Colonies* (Ἀλέξανδρος ἢ ὑπὲρ ἀποικῶν).<sup>63</sup> Using Heinsius's own evidence against him, Worm (1.5.B) and Gaudenzio (1.5.E) adduced the works on kingship and colonies as proof that Aristotle had dedicated treatises other than *De mundo* to Alexander.<sup>64</sup>

Batteux (1.6.A) tried to explain the dedication as attempt by Aristotle to show the hostile Athenians that he had a powerful friend in Alexander;<sup>65</sup> but Goerenz (1.6.B) disproved this ingenious theory by pointing out that Alexander was already dead when Aristotle was forced to leave Athens.

## 2.6. Philology

Somewhat surprisingly, philology did not feature prominently in early modern discussions about the authenticity of *De mundo*. The assertion by Worm (1.5.B) that all known manuscripts attributed the treatise to Aristotle is a rare example of a philological argument.<sup>66</sup> A second instance concerns an emendation made by Heinsius (1.5.C) at 391b11–12, from διὰ θεὸν (“because of god”) to διὰ θεῶν (“because of the gods”), on the basis of Stobaeus,<sup>67</sup> which was rejected by Worm because this reading was not found in any manuscript of *De mundo*.<sup>68</sup>

## 2.7. Style and Method

The highly rhetorical and eloquent style of *De mundo*, which contrasted strikingly with the dense and compact prose of Aristotle's other works, and

<sup>62</sup> DÜRING 1957, 136.

<sup>63</sup> HEINSIUS 1609, 70–1.

<sup>64</sup> WORM 1625, 12; GAUDENZIO 1643a, 537.

<sup>65</sup> BATTEUX 1768, 136–40.

<sup>66</sup> WORM 1625, 19.

<sup>67</sup> HEINSIUS 1609, 76; C. WACHSMUTH (ed.), *Stobaeus. Anthologii libri duo priores* (Berlin 1884) 255. Heinsius may have learned about this variant reading from his teacher Joseph Scaliger, who wrote it in the margin of his copy of VULCANIUS 1591, 17; the book is now in the Bodleian Library (Byw.k.1.4).

<sup>68</sup> WORM 1625, 10. Heinsius supported his emendation by citing Apuleius, *De mundo* 290, where the phrase is translated as *deorum recta custodia*; but Worm explained that Apuleius, a sworn Platonist, had used the plural in homage to the leader of his sect.

the treatise's oratorical and historical approach, which differed markedly from his normal philosophical and analytical method, were highlighted by a wide variety of writers who either denied the authenticity of the treatise or remained undecided, including Sadoletto (1.3.B), Erasmus (1.4.C),<sup>69</sup> Vettori (1.4.C), Muret (1.4.C), Buoni (1.4.C), Alcyonius (1.4.D), degli Oddi (1.4.D), Heinsius (1.5.C),<sup>70</sup> Du Val (1.5.C), Naudé (1.5.C),<sup>71</sup> Raynaud (1.5.C), Conring (1.5.C), and Meiners (1.6.B).

For others, however, these discrepancies did not constitute proof that *De mundo* was spurious. Curione (1.4.B) maintained that the treatise corresponded to the description of Aristotle's style by Cicero, *Academica* (2.38.119), as "a golden stream of eloquence" (*flumen aureum orationis*). Patrizi (1.4.B),<sup>72</sup> Beurer (1.4.B),<sup>73</sup> Possevino (1.4.D), and Petit (1.5.C) explained that since *De mundo* was not aimed at students of philosophy, like Aristotle's other works, but rather was specifically designed for Alexander the Great, it was written in a clear and open fashion. Worm (1.5.B) made the same point, adding that it was apparent from the remarks of the ancient Greek commentators, who accused Aristotle of obscurity in some works, while praising his clarity in others, that he did not always write in the same style.<sup>74</sup> Batteux (1.6.A), who gave his French translation of *De mundo* the title *Lettre à Alexandre sur le système du monde* ("Letter to Alexander on the World System"), found it perfectly natural that Aristotle had employed "the epistolary style" (*le style épistolaire*).<sup>75</sup>

## 2.8. Plato and Platonic Doctrines

The conspicuous influence of Plato and Platonism on *De mundo* made it suspect in the eyes of Sadoletto (1.3.B), Toussain (1.4.E),<sup>76</sup> Heinsius (1.5.C),<sup>77</sup> and Meiners (1.6.B). Bacci (1.4.A), however, claimed that Aristotle was deliberately imitating Plato's *Timaeus*, while Worm (1.5.B) argued that the philosopher retained affection for his former teacher, that it was natural for a student to defend and expound his master's doctrines, which, according

<sup>69</sup> See J. KRAYE, "Erasmus and the Canonization of Aristotle: The Letter to John More", in: E. CHANEY / P. MACK (eds.), *England and the Continental Renaissance. Essays in Honour of J. B. Trapp* (Woodbridge 1990) [37–52] 46; reprinted in KRAYE 2002, § XIV.

<sup>70</sup> HEINSIUS 1609, 84–5; HEINSIUS 1615, 127–8.

<sup>71</sup> BEVERWYCK 1639, 33.

<sup>72</sup> PATRIZI 1584, f. 13v.

<sup>73</sup> BEURER 1587, sig. B2v.

<sup>74</sup> WORM 1625, 17–18. See, e.g., C. KALBFLEISCH (ed.), *Simplicius. In Aristotelis Categoriae commentarium*. Commentaria in Aristotelem Graeca 8 (Berlin 1907) 18.

<sup>75</sup> BATTEUX 1768, 121.

<sup>76</sup> OLIVER 1538, 15.

<sup>77</sup> HEINSIUS 1609, 78–9.

to Philoponus,<sup>78</sup> he had written down, and that, in a work addressed to Alexander the Great, he would not have wanted to appear ungrateful.<sup>79</sup>

## 2.9. Divine Providence

Those early modern scholars who firmly believed in the fundamental agreement of ancient philosophy and Christianity were predisposed to accept – or, at any rate, not to reject – *De mundo*, with its attractive account of the operation of divine providence in the universe, as a genuine work of Aristotle. This seems to have been the main motivation for Ficino (1.3.A), Curione (1.4.B), Steuco (1.4.B),<sup>80</sup> Charpentier (1.4.A), Sirenio (1.4.F), Pansa (1.5.A),<sup>81</sup> Liceti (1.5.A), Zeisold (1.5.A), Worm (1.5.B), Rachelius (1.5.E), Boyle (1.5.E), Lévesque de Burigny (1.6.D), and Batteux (1.6.A).

Like these authors, Bessarion (1.3.A) regarded *De mundo* as authentic; but, unlike them, he cited it to show that Aristotle's philosophy was incompatible with Christianity, because a passage in chapter 6, 397b20–30, indicated that God had not created the universe directly but had instead operated by means of a celestial force. Similarly, Hurtado de Mendoza (1.5.A) treated another passage in chapter 6, 398a1–6, as proof that Aristotle thought it was beneath God's dignity to administer earthly affairs and therefore denied his direct intervention in the world.

More commonly, the emphasis on divine providence in *De mundo* was seen as a compelling reason for rejecting the attribution to Aristotle. This argument gained ground in the seventeenth and eighteenth centuries and was employed by Giphanius (1.5.C), Heinsius (1.5.C),<sup>82</sup> Naudé (1.5.C),<sup>83</sup> Vossius (1.5.C), Gale (1.5.C), Spener (1.6.B), and Brucker (1.6.B).

## 2.10. Hebrew Origin

The statement at 397b13–16: “There is indeed an ancient account, native to all people, that all things have come into existence from god and because of god”, was used by both Pansa (1.5.A)<sup>84</sup> and Huet (1.5.F)<sup>85</sup> to support their view that all pagan philosophy, including that of Aristotle, ultimately derived ultimately from the Hebrews. Worm (1.5.B) gave a more circuitous explanation for what he perceived to be the Mosaic elements in *De mundo*,

<sup>78</sup> G. VITELLI (ed.), *Philoponus. In Aristotelis Physicorum libros quinque posteriores commentaria*. Commentaria in Aristotelem Graeca 17 (Berlin 1888) 521.

<sup>79</sup> WORM 1625, 11–12.

<sup>80</sup> STEUCO 1540, 166.

<sup>81</sup> PANSO 1601, 190.

<sup>82</sup> HEINSIUS 1609, 76; HEINSIUS 1615, 96.

<sup>83</sup> BEVERWYCK 1639, 34.

<sup>84</sup> PANSO 1601, 195.

<sup>85</sup> HUET 1679.

stating that Aristotle had learned about God from his teacher Plato, who was well versed in Jewish and Egyptian theology.<sup>86</sup>

### 2.11. Aristotle's Old Age

The manifest differences – stylistic, methodological and doctrinal – between *De mundo* and the rest of the Aristotelian corpus were sometimes discounted by suggesting that the treatise was written by an older and wiser Aristotle, who, at the end of his life, decided to change his ways. This line of argument was pursued by Steuco (1.4.B),<sup>87</sup> Pansa (1.5.A),<sup>88</sup> Case (1.4.E),<sup>89</sup> Gassendi (1.5.E),<sup>90</sup> and Boyle (1.5.E). With regard to style, at least, Kapp (1.6.B) found it implausible that Aristotle, in old age, would abandon a lifetime's habit of concision and brevity.<sup>91</sup>

A variation on this theme was the theory that Aristotle wrote *De mundo* when he was facing accusations of impiety from the Athenians, just before his exile and death in 322, in order to prove his belief in divine providence. First put forward by Lange (1.5.A),<sup>92</sup> it was later taken up by Batteux (1.6.A)<sup>93</sup> and Guilhem de Clermont-Lodève (1.6.A), only to be demolished by Goerenz (1.6.B), not only because Alexander was already dead when charges were levelled against Aristotle, but also because the philosopher was not, in fact, accused of denying providence.

### 2.12. Other Candidates for Authorship

In the seventeenth century, a convention arose among those who regarded the treatise as spurious of referring to the “author of the book *De mundo*” (1.5.D). Other early modern scholars, however, attempted to reassign it to another ancient philosopher. Vettori (1.4.C), in his edition of the *Rhetorica ad Alexandrum*, had convincingly reattributed the work to Anaximenes of Lampsacus, and this encouraged degli Oddi (1.4.D) to suggest that *De mundo*, which was also addressed to Alexander the Great, might likewise be by the same author. The statement by Apuleius (1.1.A) in the preface to his translation of *De mundo* that he had followed both Aristotle and Theophrastus led Rinuccio (1.3.B) and Heinsius (1.5.C)<sup>94</sup> to consider, but then reject, the possibility that Theophrastus had written the treatise. Al-

<sup>86</sup> WORM 1625, 4.

<sup>87</sup> STEUCO 1540, 176.

<sup>88</sup> PANSA 1601, 190.

<sup>89</sup> CASE 1597.

<sup>90</sup> GASSENDI 1649, 715.

<sup>91</sup> KAPP 1792, 350.

<sup>92</sup> LANGE 1606, 256.

<sup>93</sup> BATTEUX 1768, 136–40.

<sup>94</sup> HEINSIUS 1609, 74.

cyonius (1.4.D) thought that the freely flowing style of *De mundo* was more like Theophrastus than Aristotle but that the doctrines expounded in it, with a few exceptions, conformed to what Aristotle had written elsewhere.

Another candidate for authorship was Posidonius, to whom Diogenes Laertius, *Lives* 7.138 and 152, attributed two definitions also found in *De mundo*: 391b9–10 of the cosmos and 395a32 of the rainbow. This was first noticed by Aldobrandini (1.4.C), who regarded Posidonius as a possible author of the treatise, as did Thomasius (1.5.C), Giannini (1.5.E), and Vizzani (1.5.E), while Pandolfo (1.5.C) went further and actually attributed it to him. Naudé (1.5.C) reckoned that Posidonius's account of the ebb and flow of tides, as reported by Strabo, *Geography* 1.3.11, resembled *Mund.* 396a25–7 so closely that he wondered whether they were written by the same author.<sup>95</sup> In the nineteenth century, attempts to identify elements from Posidonius in *De mundo* became part of the 'Pan-Posidonianism' of the era.<sup>96</sup>

Vettori (1.4.C) assigned the treatise to Nicholas of Damascus, citing Simplicius, who mentioned that he had written a work entitled *On Everything in the Universe* (Περὶ πάντων τῶν ἐν τῷ κόσμῳ).<sup>97</sup> This attribution was accepted by Porzio (1.4.C); but Muret (1.4.C) observed that since Nicholas had lived at the time of Augustus, he was unlikely to have dedicated a treatise to Alexander the Great, who had been dead for three centuries. Worm (1.5.B) also dismissed the testimony of Simplicius, because the title he cited did not fit with the content of *De mundo*, which was not about 'everything in the universe' since there was nothing about, plants, metals, birds, fish, reptiles and other animals, nor indeed about mankind.<sup>98</sup> Nonetheless, Nicholas was still mentioned as a contender for the authorship of *De mundo* by Sirenio (1.4.F), Conring (1.5.C), and Loensis (1.5.E); and his name continued to be proposed in the epoch of *Altertumswissenschaft* until Hermann Usener dealt the final blow to this theory.<sup>99</sup>

The view generally accepted today that *De mundo* was written by an eclectic philosopher around the turn of the first century BCE and CE was the conclusion reached by Heinsius (1.5.C), the most acute early modern commentator on the treatise.<sup>100</sup> Kapp (1.6.B) gave *De mundo* an earlier date, stating that it was written not long after Aristotle's death; but he, too, believed that the author had combined Peripatetic doctrines and opinions with those of Pythagoras, Plato, and Zeno. The result was a "popular

<sup>95</sup> BEVERWYCK 1639, 36.

<sup>96</sup> LORIMER 1925, 127–34.

<sup>97</sup> J. L. HEIBERG (ed.), *Simplicius. In Aristotelis De caelo commentaria*. Commentaria in Aristotelem Graeca 7 (Berlin 1894) 3.

<sup>98</sup> WORM 1625, 14–15.

<sup>99</sup> BERNAYS 1885, 281–2.

<sup>100</sup> HEINSIUS 1609, 87–8.

philosophy" (*Volksphilosophie*), accommodated to the understanding of the people and designed to free them from superstition by setting them on the path to a fulfilled life, in which they recognized one God and felt his power and majesty.<sup>101</sup>

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<sup>101</sup> KAPP 1792, 353–5.





## *D. Appendices*



## Related Texts

*Andrew Smith*

### 1. Maximus of Tyre, *Oration* 11.12b–e

“I want to explain to you what I mean by a clearer image. Imagine a great empire and a mighty kingdom where all show deference to a single soul, that of the very best and most revered king. The border of this empire is not the river Halys, nor the Hellespont nor the Maeotian lake nor the shores of the ocean, but the heavens above and the earth below. The heavens are like a wall drawn up around in a circle, that cannot be breached and shelters everything within, the earth is like a prison and the shackles of criminals, the Great King himself, unwavering like the law, confers the preservation that is vested in him on those who obey him. And of those who share in his rule many are the visible gods and many the invisible, some swirling around the entry portals themselves, like ushers and related kings, fellow diners and participants of the feasts, the others are their servants and still lower in rank than these. You behold the succession and ranking of rule descending from God as far as the earth.”

βούλομαι δέ σοι δεῖξαι τὸ λεγόμενον σαφεστέρα εἰκόνι. Ἐννόει μεγάλην ἀρχὴν, καὶ βασιλείαν ἐρωμένην, πρὸς μίαν ψυχὴν βασιλέως τοῦ ἀρίστου καὶ πρεσβυτάτου συμπάντων νενευκότων ἐκόντων· ὅρον δ' τῆς ἀρχῆς οὐχ Ἄλυν ποταμόν, οὐδὲ Ἑλλήσποντον, οὐδὲ τὴν Μαιώτιν, οὐδὲ τὰς ἐπὶ τῷ ὠκεανῷ ἥιονας, ἀλλὰ οὐρανόν, καὶ γῆν, τὸν μὲν ὑψοῦ, τὴν δ' ἔνερθεν· οὐρανὸν μὲν οἷον τεῖχος τι ἐληλαμένον ἐν κύκλῳ, ἀρρηκτον, πάντα χρῆματα ἐν ἑαυτῷ στέγον· τὴν δ' οἷον φρουρὰν καὶ δεσμούς ἀλιτρῶν σωμάτων. Βασιλέα δ' αὐτὸν δὴ τὸν μέγαν ἀτρεμοῦντα, ὥσπερ νόμον, παρέχοντα τοῖς πειθομένοις σωτηρίαν ὑπάρχουσιν ἐν αὐτῷ· καὶ κοινωνοὺς τῆς ἀρχῆς πολλοὺς μὲν ὄρατοὺς θεοὺς, πολλοὺς δ' ἀφανεῖς, τοὺς μὲν περὶ τὰ πρόθυρα αὐτὰ εἰλουμένους, οἷον εἰσαγγελέας τινὰς καὶ βασιλεῖς συγγενεστάτους, ὁμοτραπέζους αὐτοὺς καὶ συνεστίους, τοὺς δ' τούτων ὑπηρέτας, τοὺς δ' ἔτι τούτων καταδεεστέρους. Διαδοχὴν ὄρας καὶ τάξιν ἀρχῆς καταβαίνουσιν ἐκ τοῦ θεοῦ μέχρι γῆς.

## 2. Maximus of Tyre, *Oration* 9.1c–e

“Let us firstly consider what is essential to the daemonic nature as follows. What does not suffer affections is the opposite of what does, mortal the opposite of immortal, irrational of rational, what is devoid of perception to what can perceive and the ensouled to what is without soul. Then everything that has a soul must be composed of a mixture of two of these: it must be either without affections and immortal, or immortal and with affections, or with affections and mortal, or irrational and able to perceive, or ensouled and without affections. And nature gradually makes its way through these, descending in sequence from the most honourable to the least honoured. And if you remove any of these, you cut nature in two. Just as in a harmony of notes the middle reconciles the two ends of the scale. For the middle makes the transition from the highest to the lowest note melodious for both the ear to hear and the hand to play emphasising the sounds in the middle of the scale.”

οὕτωςι πρῶτον θεασώμεθα τὸ ἀναγκαῖον τῆς δαιμόνων οὐσίας. Τὸ ἀπαθές τῷ ἐμπαθεῖ ἐναντίον, καὶ τὸ θνητόν τῷ ἀθάνατῳ, καὶ τὸ ἄλογον τῷ λογικῷ, καὶ τὸ ἀναίσθητον τῷ αἰσθητικῷ, καὶ τὸ ἔμψυχον τῷ ἀψύχῳ. Πᾶν τοίνυν τὴν ψυχὴν ἔχον ἑκατέροις συγκεκρατημένην· ἢ γὰρ ἀπαθές τὸ ἀθάνατον, ἢ ἀθάνατον ἐμπαθές, ἢ ἐμπαθές θνητόν, ἢ ἄλογον αἰσθητικόν, ἢ ἔμψυχον ἀπαθές· καὶ διὰ τούτων ὁδεύει ἡ φύσις κατὰ βραχὺ ἀπὸ τῶν τιμιωτάτων ἐπὶ τὰ ἀτιμώτατα καταβαίνουσα ἐξῆς· ἐὰν δέ τι τούτων ἐξέλης, διέκοψας τὴν φύσιν· ὥσπερ ἐν ἀρμονίᾳ φθόγγων τὴν πρὸς τὰ ἄκρα ὁμολογίαν ἢ μέση ποιεῖ· ἀπὸ γὰρ τοῦ ὀξυτάτου φθόγγου ἐπὶ τὸ βαρύτερον ταῖς διὰ μέσου φωναῖς ἐπερειδομένην τὴν μεταβολὴν ἐμμελῆ ποιεῖ καὶ τῆ ἀκοῆ καὶ τῆ χειρουργία.

## 3. Onatas, *De deo* 139.5–8 (*ap.* Stob. 1.1.39)

“For god himself is intellect, soul and the guiding power of the entire universe. His powers, which are visible and which he is responsible for organizing, are his creations, his actions and his peregrinations throughout the entire universe. And so god himself cannot be perceived by sight or any other sense, but may be contemplated only by reason and thought. But his works and actions are clear and perceptible to all men. But I also think that god is not one, but that the greatest and purest who rules over the universe is one, but that there are many other gods who differ in power. But he who is greater than them in might, greatness and virtue rules over all of them. He would be the god who encompasses the entire universe. The others are the ones who run through the heavens along with the revolution of the universe, in service, as the saying goes, to the first and intelligible

[god]. But those who say there is only one god and not many are wrong. For they do not see the greatest honour of the divine superiority; I mean ruling and leading one's peers and being most powerful and superior to the rest, whereas the other gods relate to the first and intelligible god as do members of a chorus to their conductor, soldiers to their general, captains and officers to their commander and superior officer, since their nature is to follow and be obedient to the man who leads them well."

αὐτὸς μὲν γὰρ ὁ θεὸς ἐστὶν νόος καὶ ψυχὰ καὶ τὸ ἀγεμονικὸν τῷ σύμπαντος κόσμῳ· ταὶ δὲ δυνάμεις αὐτῷ αἰσθηταί, ὧν ἐντι νομεύς, τὰ τ' ἔργα καὶ τὰ πράξεις καὶ ταὶ κατὰ τὸν σύμπαντα κόσμον ἐπιστροφώσεις. ὁ μὲν ὧν θεὸς αὐτὸς οὔτε ὄρατὸς οὔτε αἰσθητός, ἀλλὰ λόγῳ μόνον καὶ νόῳ θεωρατός· τὰ δ' ἔργα αὐτῷ καὶ ταὶ πράξεις ἐναργεῖς τε καὶ αἰσθητὰ ἐντι πάντεσιν ἀνθρώποις. δοκέει δέ μοι καὶ μὴ εἶμεν ὁ θεός, ἀλλ' εἶς μὲν ὁ μέγιστος καὶ καθυπέρτερος καὶ ὁ κρατέων τῷ παντός, τοὶ δ' ἄλλοι πολλοὶ διαφέροντες κατὰ δύναμιν· βασιλεύει δὲ πάντων αὐτῶν ὁ καὶ κράτει καὶ μεγέθει καὶ ἀρετᾷ μέζων. οὗτος δὲ κ' εἶη θεὸς ὁ περιέχων τὸν σύμπαντα κόσμον, τοὶ δ' ἄλλοι θεοὶ οἱ θέοντες εἰσι κατ' οὐρανὸν σὺν τᾷ τῷ παντός περιαγήσει, κατὰ λόγον ὀπαδέοντες τῷ πράτῳ καὶ νοατῷ. τοὶ δὲ λέγοντες ἓνα θεὸν εἶμεν, ἀλλὰ μὴ πολλῶς, ἀμαρτάνοντι· τὸ γὰρ μέγιστον ἀξίωμα τῆς θείας ὑπεροχῆς οὐ συνθεωρεῦντι. λέγω δὴ τὸ ἄρχεν καὶ καθαγέεσθαι τῶν ὁμοίων καὶ κράτιστον καὶ καθυπέρτερον εἶμεν τῶν ἄλλων. τοὶ δ' ἄλλοι θεοὶ ποτὶ τὸν πρῶτον θεὸν καὶ νοατὸν οὕτως ἔχοντι ὥσπερ χορευταὶ ποτὶ κορυφαῖον καὶ στρατιῶται ποτὶ στραταγὸν καὶ λοχίται καὶ ἐντεταγμένοι ποτὶ ταξιάρχαν καὶ λοχαγέταν, ἔχοντες φύσιν ἔπεσθαι καὶ ἐπακολουθῆν τῷ καλῶς καθηγεομένῳ.

#### 4. Philo of Alexandria

*De Abrahamo* 121.1–6

"But the truth is that the one in the middle, as anyone standing very close to the truth would say, is the father of everything who in the holy scriptures is called by his proper name 'he who is'. Those on each side are the powers nearest to him who is, namely the creative power and the royal power. The creative power is called god, for by means of this he established and organized the universe; the royal power is called 'Lord' since it is right that he who has created should rule and hold sway over what came into being."

ἀλλ' ἐστὶν, ὡς ἂν τις ἐγγύτατα τῆς ἀληθείας ἰστάμενος εἴποι, πατήρ μὲν τῶν ὄλων ὁ μέσος, ὃς ἐν ταῖς ἱεραῖς γραφαῖς κυρίῳ ὀνόματι καλεῖται ὁ ὧν, αἱ δὲ παρ' ἐκάτερα αἱ πρεσβύταται καὶ ἐγγυτάτω τοῦ ὄντος

δυνάμεις, ἡ μὲν ποιητική, ἡ δ' αὖ βασιλική· προσαγορεύεται δὲ ἡ μὲν ποιητικὴ θεός, ταύτη γὰρ ἔθηκε τε καὶ διεκόσμησε τὸ πᾶν, ἡ δὲ βασιλικὴ κύριος, θέμις γὰρ ἄρχειν καὶ κρατεῖν τὸ πεποιηκὸς τοῦ γενομένου.

*De Abrahamo* 143.1–145.1

“In my opinion that one is he who truly is, who supposed that it was fitting that he should be present to bestow blessings through his own actions, but hand over to the powers who serve him to fashion on their own the opposite so that he might be conceived as being primarily the cause of all good and of no evil. I think that those kings too do this who imitate the divine nature, when they extend their favours by their own actions but meet out punishments through others.”

ὅς κατὰ γε τὴν ἐμὴν ἔννοιαν ἦν ὁ πρὸς ἀλήθειαν ὢν, ἀρμόττον ὑπολαβῶν εἶναι τὰ μὲν ἀγαθὰ παρῶν δι' αὐτοῦ χαρίζεσθαι, μόναις δ' ἐπιτρέπειν ταῖς δυνάμεσι καθ' ὑπηρεσίαν τὰ ἐναντία χειρουργεῖν, ἵνα μόνων ἀγαθῶν αἴτιος, κακοῦ δὲ μηδενὸς προηγουμένως νομίζεται. τοῦτό μοι δοκοῦσι καὶ τῶν βασιλέων οἱ μιμούμενοι τὴν θεῖαν φύσιν πράττειν, τὰς μὲν χάριτας δι' ἑαυτῶν προτείνοντες, τὰς δ' τιμωρίας δι' ἐτέρων βεβαιοῦντες.

*De mutatione nominum* 15.3–7

“And so ‘the Lord was seen by Abraham’ [Gen 17.1] must not be supposed to mean that the cause of all shone forth and was made manifest. For what human mind is capable of reaching the greatness of his appearance? But it was one of the powers around him, the royal power, that was made manifest.”

ὥστε τὸ ὄφθη κύριος τῷ Ἀβραὰμ λέγεσθαι ὑπονοητέον οὐχ ὡς ἐπιλάμποντος καὶ ἐπιφαινομένου τοῦ παντὸς αἰτίου. τίς γὰρ ἀνθρώπειος νοῦς τὸ μέγεθος τῆς φαντασίας ἱκανὸς ἐστὶ χωρησαί· ἀλλ' ὡς μιᾶς τῶν περὶ αὐτὸ δυνάμεων, τῆς βασιλικῆς, προφαινομένης.

*De somniis* 1.163.1–2

“Then the name of his bounteous power is God, that of his royal power is Lord.”

χαριστικῆς μὲν οὖν δυνάμεως θεός, βασιλικῆς δὲ κύριος ὄνομα.

*De fuga et inventione* 95.2–3

“The creative power, through which he who creates crafted the universe by his word, is primary, the royal power, through which he who has created rules what has come into being, is secondary.”

ἄρχει ἡ ποιητική, καθ' ἣν ὁ ποιῶν λόγῳ τὸν κόσμον ἐδημιούργησε· δευτέρῃ δ' ἡ βασιλική, καθ' ἣν ὁ πεποιηκῶς ἀρχεῖ τοῦ γενομένου.

*De Vita Mosis* 2.99.3–5

“His creative power is called God, through which he has established, made and ordered this universe, the royal power is called Lord, by which he rules what has come into being and securely oversees it with justice.”

ὀνομάζεται δ' ἡ μὲν ποιητικὴ δύναμις αὐτοῦ θεός, καθ' ἣν ἔθηκε καὶ ἐποίησε καὶ διεκόσμησε τόδε τὸ πᾶν, ἡ δ' βασιλικὴ κύριος, ἣ τῶν γενομένων ἀρχεῖ καὶ σὺν δίκῃ βεβαίως ἐπικρατεῖ.

*De plantatione* 86.1–5

“And so the titles we have mentioned indicate the powers around that which is. For the power by which he rules is Lord, that by which he bestows benefits is God. This is the reason why the name of God is used for the whole creation narrative according to the most blessed Moses.”

αἱ τοίνυν λεχθεῖσαι προσρήσεις τὰς περὶ τὸ ὄν ἐμφαίνουσι δυνάμεις· ἡ μὲν γὰρ κύριος καθ' ἣν ἀρχεῖ, ἡ δὲ θεός καθ' ἣν εὐεργετεῖ· οὐ χάριν καὶ τῇ κατὰ τὸν ἱερώτατον Μωυσῆν κοσμοποιία πάσῃ τὸ τοῦ θεοῦ ὄνομα ἀναλαμβάνεται·

*Quod Deus sit immutabilis* 109.4–111.1

“For it is said by god in person ‘you have found favour with me’ [Exod 33.17], manifesting himself without anyone else [present]. And so in this way he who is deems on his own account the supreme wisdom of Moses worthy of his favour, but the wisdom which is an image of this and is secondary and more a species of it [he deems worthy of his favour] through his subservient powers, according to which he is both Lord and God, ruler and benefactor.”

λέγεται γὰρ ἐκ προσώπου τοῦ θεοῦ ὅτι εὗρηκας χάριν παρ' ἐμοῦ δεικνύντος ἑαυτὸν τὸν ἄνευ παντὸς ἑτέρου. οὕτως ἄρα τὴν μὲν κατὰ Μωυσῆν ἄκραν σοφίαν ἀξιοῖ χάριτος ὁ ὢν αὐτὸς δι' ἑαυτοῦ μόνου, τὴν δ' ἀπεικονισθεῖσαν ἐκ ταύτης δευτέραν καὶ εἰδικωτέραν οὖσαν διὰ τῶν ὑπηκόων δυνάμεων, καθ' ἃς καὶ κύριος καὶ θεός, ἀρχων τε καὶ εὐεργετης ἐστίν.

δεικνὺς ms δεικνύντος Colson and Whittaker



## 5. Diotogenes, *De regno* 72.19–23

“Of the most honourable things in nature god is the best, of the most honourable things on earth and amongst men the king is the best. And as god is to the universe, the king is to the city; and as the city is to the universe, the king is to god. For a city which is composed of many different elements imitates the ordered structure and harmony of the universe, the king with his rule which is beyond criticism and being himself the embodied spirit of the law is transformed into a god amongst men.”

τῶν μὲν οὖν φύσει τιμιωτάτων ἄριστον ὁ θεός, τῶν δὲ περὶ γᾶν καὶ τῶς ἀνθρώπων ὁ βασιλεὺς. ἔχει δὲ καὶ ὡς θεὸς ποτὶ κόσμον βασιλεὺς ποτὶ πόλιν· καὶ ὡς πόλις ποτὶ κόσμον βασιλεὺς ποτὶ θεόν. ἅ μὲν γὰρ πόλις ἐκ πολλῶν καὶ διαφερόντων συναρμοσθεῖσα κόσμου σύνταξιν καὶ ἁρμονίαν μεμίματα, ὁ δὲ βασιλεὺς ἀρχὰν ἔχων ἀνυπεύθυνον, καὶ αὐτὸς ὢν νόμος ἔμψυχος, θεὸς ἐν ἀνθρώποις παρεσχαμάτιστα.

## 6. Ocellus fragment 2

“I think that he calls justice among men the mother and nurse of the other virtues. For without this it is not possible for modesty, courage and wisdom to exist. For harmony is the peace of the whole soul together with good balance. And its power would become clearer if we examine the other states; for these have a benefit that is partial and directed to a single thing, whereas it extends to the entire system and is multiple. In the universe, then, there exist providence, harmony and justice, whose nature the gods decree, which manage the governance of all there is; in the city peace and good order are given their rightful name; in the household there is the common purpose of husband and wife, the goodwill of servants to masters, the care exercised by masters towards their attendants; in the body and soul, firstly life which men most desire, health and well-being, and wisdom which one should realize comes amongst men from knowledge and justice. If whole and parts themselves rear and preserve concord and what works to mutual agreement, surely we would all agree that the mother and nurse of all and everything [do the same].”

δοκεῖ μοι τῶν ἀνδρῶν τὴν δικαιοσύνην ματέρα τε καὶ τιθηνὰν τᾶν ἀλλὰν ἀρετῶν προσεῖπέν· ἄτερ γὰρ ταύτας οὔτε σώφρονα οὔτε ἀνδρείον οὔτε φρόνιμον οἶόν τε ἡμεν· ἁρμονία γὰρ ἐστὶ καὶ εἰρήνη τᾶς ἀφ᾽ ἑαυτῆς μετ᾽ εὐθυμίας. δηλοφανέστερον δὲ καὶ γένοιτο τὸ ταύτας κράτος ἐτάξουσιν ἡμῖν τὰς ἄλλας ἕξιας· μερικὰν γὰρ ἔχοντι αὐταὶ τὴν ὠφέλειαν καὶ ποθ᾽ ἕνα, ἃ δὲ ποθ᾽ ὅλα τὰ συστάματα καὶ ἐν πλάθει. ἐν κόσμῳ μὲν οὖν αὐτὰ τὴν ὅλων ἀρχὰν διαστραταγοῦσα πρόνοιά τε καὶ

ἀρμονία καὶ δίκαια γενῶν τινός θεῶν οὕτω ψαφισαμένων· ἐν πόλει δὲ εἰρόνια τε καὶ εὐνομία δίκαιως κέκληται· ἐν οἴκῳ δ' ἐστὶν ἀνδρός μὲν καὶ γυναικός ποτ' ἀλλάλως ὁμοφροσύνα, οἰκετῶν δὲ ποτὶ δεσπότης εὐνοια, δεσποτῶν δὲ ποτὶ θεράποντας καδεμονία· ἐν σώματι δὲ καὶ ψυχῇ πρῶτα μὲν ἅ πασιν ἀγαπατοτάτα ζωῆ, ἃ τε ὑγίεια καὶ ἀρισιότης, σοφία τ' ἐκ τῆς ἐπιστάμας τε καὶ δικαιοσύνας γενομένα ἰστέον παρ' ἀνθρώποις. εἰ δ' αὐτὰ τὸ ὅλον καὶ τὰ μέρη οὕτω παιδαγωγῆται τε καὶ σφίξει ὁμόφρονα καὶ ποτάγορα ἀλλάλοις ἀπεργαζομένα, πῶς οὐ <κα> μάρτηρ καὶ τιθηνὰ πασῶν τε καὶ πάντων παμφαφεί λέγοιτο; ἢ τριάς πρώτη συνέστησεν ἀρχὴν μεσότηα καὶ τελευτήν.

### 7. Ecpphantus, *De regno* 81.21–82.3

“Those sociable things in the city which possess some common purpose imitate the concord of the universe. And no city would be habitable without the organisation of ruling principles. To achieve this organisation, that which rules and that which is ruled requires laws and political governance. And it is a sort of well-adaptedness and concord of many elements brought into tune with persuasion that would conserve the common good which arises from them. And the one who gives the lead in virtue is both called and is a king, since he has the friendship and commonality with those beneath him which god has towards the universe and what is in it.”

ἃ δ' ἐν τῇ πόλει φιλία κοινῶ τινος τέλεος ἐχομένα τῶν τοῦ παντὸς ὁμόνοια μιμᾶται· ἄνευ δὲ τῆς περὶ τῆς ἀρχῆς διατάξις οὐδεμία ἂν πόλις οἰκοῖτο· εἰς δὲ ταύταν νόμων τε δεῖται καὶ τινός προστασίας πολιτικῆς τό τε ἄρχον καὶ τὸ ἀρχόμενον. ἀποσφίξει δ' ἂν τὸ ἐκ τούτων κοινὸν ἀγαθὸν εὐαρμοστία τις καὶ τῶν πολλῶν ὁμοφωνία μετὰ πειθοῦς συμφδοῖσα. ὁ κατ' ἀρετῶν ἐξάρχων καλέεταί τε βασιλεὺς καὶ ἔντι, ταύταν ἔχων φιλίαν τε καὶ κοινωσίαν ποτὶ τὸς ὑπ' αὐταυτον, ἄνευ ὁ θεὸς ἔχει ποτὶ τε τὸν κόσμον καὶ τὰ ἐν αὐτῷ.

### 8. Philoponus, *De aeternitate mundi* 178.25–179.21

“But Plato doesn’t hold the same opinion. For in his letter to Dionysius [Ep. 2.312e1–4] about the cause of the universe he says that ‘it is in relation to the king of all and on his account that everything exists, and that fact is the cause of all that is beautiful’. And in book 4 of the Laws [715e8–716a2] he says again ‘God, who as the old saying has it, holds in his hands beginning, end and middle of all that is, as he moves through the cycle of nature, goes straight to his end’, meaning by the old saying either that of Orpheus who said

Zeus was born first, Zeus is last, ruler of the thunderbolt;  
Zeus is the head, Zeus the middle; from Zeus all things are made,

or the common assumption of all men about the god who is set over all that he is the cause of all. In fact Aristotle, as we recalled just a little earlier, in the book written precisely *On the Cosmos* says that ‘there is an ancient account, native to all people, that all things have come into existence from god and because of god, and that no thing by itself is self-sufficient, if deprived of the preservation deriving from him’. And the same author again, in book 12 of the *Metaphysics* [1072b3] in proving that there is one cause and principle of all things adds to make his meaning clear Homer’s words

The rule of many is not good; let there be one ruler.”

ἀλλ’ οὐ ταῦτα δοκεῖ τῷ Πλάτῳ· αὐτὸς γὰρ ἐν τῇ πρὸς Διονύσιον ἐπιστολῇ περὶ τοῦ πάντων αἰτίου φησὶν περὶ τὸν πάντων βασιλέα πάντα ἔστιν καὶ ἐκείνου ἕνεκα πάντα καὶ ἐκεῖνο αἴτιον πάντων καλῶν καὶ ἐν τῷ τετάρτῳ τῶν νόμων πάλιν ὁ μὲν δὴ θεός, ὡς περὶ ὁ παλαιὸς λόγος, ἀρχὴν τε καὶ τελευτὴν καὶ μέσα τῶν ὄντων ἀπάντων ἔχων εὐθείαν περαίνει κατὰ φύσιν περιπορευόμενος ἀρχαῖον καλῶν λόγον εἴτε τὸν Ὀρφέως (φησὶν γὰρ ἐκεῖνος

‘Ζεὺς πρῶτος ἐγένετο, Ζεὺς ὕστατος ἀργικέραυτος,  
Ζεὺς κεφαλή, Ζεὺς μέσα, Διὸς δ’ ἐκ πάντα τέτυκται’)

εἴτε τὴν κοινὴν ἀπάντων ἀνθρώπων περὶ τοῦ ἐπὶ πάντων θεοῦ ὑπόληψιν ὡς αἰτίου πάντων ὄντος. ὁ γοῦν Ἀριστοτέλης, ὡς καὶ μικρῶ πρόσθεν ἐμνήσθη μεν, ἐν τῷ γεγραμμένῳ αὐτῷ περὶ τοῦ κόσμου βιβλίῳ ἀρχαῖόν τινα λόγον καὶ πάτριον εἶναί φησιν πᾶσιν ἀνθρώποις, ὡς ἐκ θεοῦ πάντα καὶ διὰ θεὸν ἡμῖν συνέστηκεν καὶ οὐδεμία φύσις ἔστιν αὐτὴν καθ’ ἑαυτὴν αὐτάρκης ἐρημωθεῖσα τῆς ἐκ τούτου σωτηρίας· καὶ πάλιν ὁ αὐτὸς ἐν τῷ λάμδα στοιχείῳ τῆς μετὰ τὰ φυσικὰ πραγματείας μίαν εἶναι τὴν πάντων αἰτίαν καὶ ἀρχὴν ἀποδείξας Ὀμήρῳ συναπεφθέγγατο εἰπὼν ‘οὐκ ἀγαθὸν πολυκοιρανίη, εἷς κοίρανος ἔστω’.

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## 1. Abbreviations

ANRW	<i>Aufstieg und Niedergang der römischen Welt</i>
EF <sup>2</sup>	<i>Encyclopedia of Islam</i> . 2nd ed.
DK	<i>Die Fragmente der Vorsokratiker</i> , ed. H. DIELS / W. KRANZ
FGrHist	<i>Die Fragmente der Griechischen Historiker</i> , ed. F. JACOBY
LSJ	<i>A Greek-English Lexicon</i> , ed. H. G. LIDDELL / R. SCOTT / H. S. JONES
MH	<i>Museum Helveticum</i>
PG	<i>Patrologia Graeca</i>
RE	<i>Real-Encyclopädie der classischen Altertumswissenschaft</i>
SVF	<i>Stoicorum veterum fragmenta</i>

## 2. Editions, Commentaries, Translations of Ancient Texts

### a. *De mundo*

BATTEUX 1768	CHARLES BATTEUX (trans.), <i>Aristoteles. Lettre à Alexandre sur le système du monde</i> (Paris 1768)
BEKKER 1831	I. BEKKER (ed.), <i>Aristotelis opera</i> (Berlin 1831)
BOS 1989	A. P. BOS (trans.), <i>Aristoteles. Over de kosmos</i> (Meppel 1989)
FORSTER 1914	E. S. FORSTER (trans.), <i>De Mundo</i> (Oxford 1914)
FORSTER 1984	E. S. FORSTER (trans.), "On the Universe", in: J. BARNES (ed.), <i>The Complete Works of Aristotle I</i> (Princeton 1984)
FURLEY 1955	D. J. FURLEY (ed. / trans.), "[Aristotle] On the Cosmos", in: E. S. FORSTER / D. J. FURLEY (trans.), <i>Aristotle. On Sophistical Refutations; On Coming-to-Be and Passing-Away; On the Cosmos</i> (Cambridge MA 1955) 333–409
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KAPP 1792	JOHANN CHRISTIAN KAPP (ed.), <i>Aristoteles. De mundo liber</i> (Altenburg 1792)
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## Source Index (selection)

- |                             |                                |                            |
|-----------------------------|--------------------------------|----------------------------|
| Alexander of                | 371a15–18: 61                  | Cleomedes                  |
| Aphrodisias                 | <i>Ph.</i>                     | 152: 79                    |
| <i>In Mete.</i> 7.9–14: 124 | 236b35: 83                     | 154: 79                    |
| Apuleius                    | 265a13: 83                     | 158.8: 79                  |
| <i>Mund.</i> (Latin         | <i>Pol.</i> 1253a2–3: 85       | 160.5: 79                  |
| version)                    | <i>Rh.</i> 1393a23–b4: 81      | 162.24: 79                 |
| preat.: 4                   | <i>Top.</i> 149b33: 86         | 162.25–164.28: 79          |
| 289: 181                    | Atticus                        | 166.28–9: 79               |
| Aristobulus                 | fr. 8.17–21: 124               |                            |
| fr. 2a: 9, 136              | Aulus Gellius                  | David of Armenia           |
| fr. 4.58: 9, 136            | <i>NA</i> 20.5: 188            | <i>In cat.</i> : 4         |
| Aristotle                   |                                | Demetrius                  |
| <i>Cael.</i>                | Barhebraeus                    | <i>On Style</i> 234: 74    |
| 270b22–3: 59                | <i>Cream of Wisdom</i> :       | Diogenes Laertius          |
| 284a15: 125                 | 158                            | 1.122: 80                  |
| 297b24–30: 91               | <i>Treatise of Treatises</i> : | 5.22: 192                  |
| <i>De an.</i> 407a6: 83     | 157                            | 5.22–7: 189                |
| <i>Eth. Nic.</i>            | Bar Kepha, Moshe               | 7.138: 196                 |
| 1125a8: 79                  | <i>Hexaameron</i> : 173        | 7.152: 196                 |
| 1125a13–14: 79              | Bar Šakkō                      | 8.33: 123                  |
| <i>Hist. an.</i>            | <i>Book of Dialogues</i> :     |                            |
| 7–10: 82                    | 156                            | Empedocles                 |
| 591a23: 83                  | II.2.3: 156                    | <i>DK</i> 31 B 21.9–11: 8, |
| 598a7: 83                   | <i>Biblici libri</i>           | 64                         |
| <i>Metaph.</i>              | <i>Prov</i> 8.22–5: 145        | Epicurus                   |
| 983b29: 58, 80,             | <i>Rom</i> 1.19–20: 64         | <i>Ep. Hdt.</i> 68: 83     |
| 109                         | 1 Cor 1.24: 143, 145,          | <i>Ep. Pyth.</i>           |
| 1026a15–32: 58              | 149, 151                       | 84: 74                     |
| 1052a28: 83                 | Bīrūnī, al-                    | 116: 75                    |
| 1064a28–b3: 58              | <i>Fī Tahqīq mā</i>            | Euripides                  |
| 1072b3: 129                 | <i>li-l-Hind</i> : 171         | <i>Bacch.</i> 1138: 84     |
| 1074b34–5: 110              |                                | <i>Med.</i> 1251: 64       |
| 1075a1–15: 76               | Caesar                         |                            |
| 1075a13: 125                | <i>BGall.</i> 6.13: 191        | Heraclitus                 |
| 1076a4: 129                 | Case, John                     | <i>DK</i> 22 B 10: 8, 63,  |
| <i>Mete.</i>                | <i>Lapis philosophicus</i>     | 111                        |
| 1.1: 189                    | 349: 185                       | <i>DK</i> 22 B 11: 8, 65   |
| 2.5: 59                     | Chrysippus                     | <i>DK</i> 22 B 50: 86      |
| 339b10–13: 100              | <i>SVF</i> 2.527: 58, 109      | <i>DK</i> 22 B 51: 86      |
| 342a36: 62                  | Cicero                         | Herodotus                  |
| 349b20–25: 62               | <i>Acad.</i> 2.38.119: 193     | 1.202–3: 89                |
| 353a35: 109                 | Cleanthes                      | Homer                      |
| 354a: 89                    | <i>Hymn to Zeus</i> 15–16:     | <i>Il.</i>                 |
| 354a2–5: 60                 | 64                             | 1.499: 8, 63               |
| 362b23: 103                 | Clemens Alexandrinus           | 2.204: 129                 |
| 368b33: 83                  | <i>Strom.</i> 6.6.53.5: 85     | 8.555–61: 71               |

- 15.192: 8, 64  
*Od.*  
 5.64: 8, 65  
 6.42–5: 8, 64, 171  
 7.115: 8, 65  
 7.116: 8, 65  
 11.109: 63  
 11.589: 65  
 11.590: 65
- Ibn al-Faqīh  
*Kitāb al-Buldān*: 170
- Isocrates  
*Letter to Dionysius*  
 2–3: 77  
*Panegyricus* (or. 4)  
 1: 75  
*Philippus* (or. 5)  
 25–6: 77
- Jacob of Edessa  
*Hexaameron*: 158,  
 173
- Job of Edessa  
*Book of Treasures*:  
 173  
 Disc. I.1: 174  
 Disc. I.5: 176  
 Disc. IV.9–V.10:  
 177  
 Disc. V.12–26:  
 174  
 Disc. V.18: 174  
 Disc. V.23: 176  
 Disc. V.26: 174
- Lycurgus  
*Leoc.* 95–6: 64
- Mas'ūdī, al-  
*Kitāb at-Tanbīh*  
*wa-l-išrāf*: 171
- Maximus of Tyre  
 11.12: 63, 116  
 13.3: 122
- Nemesius of Emesa  
*Nat. hom.*  
 1.43: 149  
 3.143–4: 151  
 34: 150
- Nicomachus  
*Ar.* 1.19.5: 83
- Onatas  
*De deo* 139.5–8: 124
- Origenes  
*Cels.*  
 3.33: 146  
 4.5–6: 147  
 6.65: 148  
 6.71: 147  
*Commentarius in*  
*Johannem*  
 19.6.37: 148  
*Expositio in*  
*Proverbia*: 148  
*Princ.*  
 1.2: 145  
 1.2.2: 146  
 1.2.9: 146  
 1.2.12: 146  
*Orphica fragmenta*  
 fr. 31: 8, 65  
 fr. 378.35–6: 66  
*Orphic Hymn*  
 29: 84
- Pherecydes  
 fr. 68 Schibli: 84
- Philo  
*Conf.* 134–8: 139  
*Mos.*  
 2.99–100: 139  
 2.100: 138  
*Mut.* 28–9: 139  
*Post.*  
 14: 140  
 14–16: 138  
*Somm.*  
 1.140–1: 63, 116  
*Spec. leg.*  
 1.32: 138  
 1.47: 140
- Philodemus  
*Rhet. P. Herc.*  
 1015/832: 7
- Philoponus  
*Aet. mund.:* 4  
 174: 182  
 174.22–175.7:  
 128  
 178.25–179: 129  
 179: 182
- Plato  
*Cra.* 410b: 59  
*Criti.* 109c: 65
- Grg.* 508a: 64  
*Ion* 534b–d: 149  
*Leg.*  
 715e–716a: 8, 66,  
 119, 130  
 730c: 8, 66, 119  
 903e3–904a4:  
 125  
*Letter* 2.312e1–4: 125  
*Phd.*  
 109b: 97  
 110b: 91  
 110b–d: 97  
*Phdr.*  
 246e–247a: 65  
 247c: 58  
*Plt.* 272e: 65  
*Resp.*  
 397a5: 109  
 533d2: 58, 108  
 616c–617d: 66  
 621b: 66  
*Ti.*  
 22c–d: 64  
 24e–25a: 59  
 28c: 63  
 41a5: 86  
 42d: 116
- Pliny  
*HN* 6.24: 190
- Plotinus  
*Enn.*  
 2.1.4.31: 125  
 2.3.13.29: 126  
 2.9.9.40–2: 109  
 2.9.18.16–17: 125  
 3.2.2.40–2: 125  
 3.3.2.5: 125
- Plutarch  
*Alex.* 7: 188  
*Caes.* 719B: 191  
*De Alex. fort.* 329B:  
 192  
*De def. or.*  
 410c–d: 108  
 432d–437d: 62  
*De fac.* 927c10: 83  
*Quaest. conv.* 742f3:  
 83
- Porphyry  
*Plot.* 10.29: 108
- Posidonius  
 fr. 334 Theiler: 58

Proclus	391b24: 83	393b9: 102
<i>In Ti.</i>	391b25: 77	393b14: 90, 190
1.121.16–18: 128	392a2: 96	393b17: 191
3: 4, 182	392a3: 83, 161	393b18–21: 103
3.272.20–1: 127	392a3–4: 96	393b23: 104
(Ps.) Aristotle	392a5: 77, 95	393b26–7: 104
<i>Mag. mor.</i>	392a6–7: 84	394a4–6: 82
1187a3: 83	392a8: 83	394a5: 77
<i>Mir. ausc.</i>	392a9: 83	394a6: 77
837a31: 100	392a9–16: 82	394a7–8: 82
<i>Mund.</i>	392a10: 83	394a8: 76f.
391a1: 74, 79	392a10–11: 95	394a9: 83
391a1–2: 75	392a13–16: 96	394a28: 83
391a3: 74	392a14: 83	394a30: 83
391a3–4: 108	392a15–16: 83	394a31: 77
391a5: 78	392a20–1: 96	394a35: 83
391a6: 78	392a31–2: 82	394b5–7: 82
391a7: 78	392a32: 77	394b11–12: 76
391a7–8: 78	392a35: 83	394b13–16: 82
391a8–16: 108	392b10: 72	395a16–20: 163
391a10: 79	392b14: 96, 104	395a 21–8: 166
391a16: 78	392b14–15: 82,	395a25–31: 82
391a18: 79	97	395a28–9: 76
391a18–391b3:	392b14–17: 84	395a32: 196
94	392b16: 17	395b5: 83
391a19: 94	392b17: 97	395b7: 83
391a22: 94	392b20: 97	395b17: 82
391a23: 79, 108	392b22: 97	395b25: 83
391a23–4: 79	392b23: 98	395b34: 17
391a25–6: 79,	392b26: 98	395b36: 77
108	392b27–8: 98	396a14–15: 83
391a26–b1: 94	392b29–30: 98	396a19–20: 83
391b1–2: 94	392b29–32: 99	396a25–7: 196
391b3–4: 77, 79	392b30: 98	396a27–8: 76
391b3–5: 109	392b32: 98, 100	396a32: 78
391b4: 15, 94,	392b32–3: 99	396a33–b1: 78
121	392b34: 80, 99	396a34: 77
391b5–6: 74	393a5–8: 99	396b2: 77
391b5–8: 76	393a9–10: 100	396b2–4: 85
391b6: 76, 119	393a9–15: 82	396b4–7: 85
391b9: 78	393a10–11: 100	396b5: 77
391b9–10: 109,	393a12: 100	396b7–11: 123
196	393a16: 101	396b19–20: 86
391b9–397b8: 4	393a16–17: 98	396b20–2: 8, 86
391b10–12: 109	393a17–18: 101	396b23: 77
391b10–19: 80	393a20: 101	396b23–397a5:
391b11–12: 129,	393a23: 82f.	111
192	393a26: 83	396b24–5: 78
391b12: 113	393a28: 82	396b25–6: 78
391b12–13: 95	393a31: 101	396b31: 115
391b17–18: 95	393b2: 101	396b33–397a8:
391b19–20: 95	393b5: 102	86
391b20: 77	393b8: 82	397a2–3: 76

- 397a4: 115  
 397a4–b8: 112  
 397b9–10: 76  
 397b9–13: 94,  
 112  
 397b11: 76  
 397b12: 76  
 397b13: 80, 182  
 397b13–16: 194  
 397b13–20: 113  
 397b14: 59  
 397b14–15: 115  
 397b16–30: 134  
 397b19–20: 124  
 397b19–27: 114  
 397b20–30: 194  
 397b21: 115  
 397b21–2: 63,  
 112  
 397b24: 126  
 397b26: 8  
 397b27–35: 116  
 397b33: 175  
 398a1–6: 194  
 398a3–4: 125  
 398a7: 77  
 398a10–35: 81  
 398a10–b6: 116  
 398a15–16: 81  
 398a16–18: 81  
 398a23–6: 81  
 398a32: 17  
 398b1–3: 81  
 398b4: 80  
 398b6–8: 80  
 398b10–12: 116  
 398b10–16: 63  
 398b13–16: 117  
 398b14–15: 17  
 398b16–19: 81  
 398b16–22: 117  
 398b19–27: 117  
 398b22: 175  
 398b27–35: 117  
 398b35: 175  
 399a13: 175  
 399a14: 122  
 399a14–8: 81  
 399a18: 117, 175  
 399a19: 64
- 399a22–4: 176  
 399a31: 115, 176  
 399a35–b10: 117  
 399b10–15: 118  
 399b19–25: 118  
 399b22: 175  
 399b25–8: 8  
 399b28–32: 118  
 400a4: 175  
 400a10–14: 8  
 400a19: 8  
 400a27–8: 72  
 400a28: 72  
 400a33–b6: 118  
 400b5–6: 8  
 400b6–401a27: 4  
 400b7–8: 17  
 400b9–11: 125  
 400b11–15: 118,  
 135  
 400b24: 81  
 400b26: 77  
 400b26–33: 118  
 401a1–2: 8  
 401a4: 8  
 401a7: 8  
 401a10–11: 8  
 401a12–b9: 119  
 401a13: 176  
 401a25: 76  
 401a27: 81  
 401a27–b7: 8  
 401b8–27: 4  
 401b9: 182  
 401b23–9: 119  
 401b24–9: 8  
 401b29: 78
- Pr.* 913b1: 83  
 (Ps.) Ġāhiz  
*Kitāb ad-Dalā'il*  
*wa-l-i'tibār:* 172f.  
 (Ps.) Ocellus  
 1–2.1: 123  
 Ptolemaeus  
*Geogr.*  
 7.5.4: 89  
 8.1.2–4: 93  
*Tetr.* 1.1.1: 83
- Seneca  
*QNat.* 5.13: 127  
 Sergius of Rēs-Ainā  
*Mund.* (Syriac  
 version): 154–156,  
 158  
*Sibylline Oracles*  
 1–2: 78  
 Simplicius  
*In Phys.* 10.992.4: 83  
 Sophocles  
*OT* 4–5: 8, 65  
 Stobaeus  
*Ecl.*  
 1.1.36: 4  
 1.5.22: 4  
 1.21.5: 109  
 1.40: 4  
 1.43–6: 182  
 1.82–3: 182  
 1.255–72: 182  
 Strabo  
 1.1.8–9: 98  
 1.3.11: 196  
 1.4.1: 92  
 1.4.6: 59, 98  
 2.4.1: 191  
 2.5: 59  
 2.5.17: 97, 101  
 2.5.18: 101  
 3.4.19: 102  
 4.7.41: 98  
 6.2.3: 64  
 11.6.1: 102  
 13.4.14: 62  
 Tatianus  
*Ad Gr.*  
 5.1: 142  
 5.7: 143  
 Thales  
*DK* 11 A 22: 63  
 Theophilus  
*Ad Autol.*  
 2.3.6–7: 143  
 2.4.5–7: 144  
 Xenophon  
*Cyr.* 8.2.10: 63  
*Lac.* 1.1: 75  
*Symp.* 8.9: 65

## General Index

- Abū Bišr Mattā Ibn Yūnus (9th/10th cent. CE): 170  
Abū l-'Abbās Ġa'far Ibn Aḥmad al-Marwazī (9th cent. CE): 161, 170, 177  
Abū Yaḥyā al-Marwazī (9th cent. CE): 161, 170  
Accorombonius, Felix: 184  
Achaëa: 62  
Aeolian Islands: 62  
al-Bīrūnī: *see* Bīrūnī, al-  
Alcyonius, Petrus: 184, 193, 196  
Aldobrandini, Tommaso: 184, 196  
Alexander of Aphrodisias (2nd/3rd cent. CE): 107, 124, 126, 128, 155, 159  
Alexander Polyhistor (1st cent. BCE): 123  
Alexandria: 137, 145, 155  
'Alī Ibn Rabban aṭ-Ṭabarī (8th/9th cent. CE): 178  
– *Firdaus al-ḥikma*: 178  
al-Qāsim Ibn Ibrāhīm ar-Rassī: *see* Qāsim, al- Ibn Ibrāhīm ar-Rassī  
Amelius Gentilianus (3rd cent. CE): 128  
Anaxagoras (5th cent. BCE): 63, 80  
Angeliaphorus, Jodocus: 184  
angels: 174f., 178  
anthropomorphism: 136, 138f., 143  
Antiochus of Ascalon (2nd/1st cent. BCE): 9  
Aparctias: 61  
Apeliotes: 60, 158  
Apuleius of Madaura (2nd cent. CE): 3f., 7, 16, 90, 100, 121, 181, 183, 188, 192, 195  
Arabian Gulf: 104  
Aratus of Soli in Cilicia (4th/3rd cent. BCE): 76  
Argestes: 60  
Aristarchus of Samos, astronomer (3rd cent. BCE): 95  
Aristeas (2nd or 1st cent. BCE): 9  
Aristobulus, Jewish philosopher (2nd cent. BCE): 9f., 133–139, 143, 151  
Aristotelianism: 3, 5, 7, 108, 110, 120f., 124, 126, 131, 145, 149, 179, 187, 196  
Aristotle (4th cent. BCE): 3–8, 14, 16, 21, 58–61, 63, 69, 71, 73, 76, 79–83, 85–87, 89–91, 95f., 100, 103, 108–111, 113, 115, 118–120, 123–125, 127–130, 135, 154f., 157f., 160f., 165, 169f., 173f., 177, 181–196, 208  
Arius Didymus, court philosopher of Augustus (1st cent. BCE): 9, 15, 58f., 65, 70, 109, 119  
Arrian of Nicomedia (1st/2nd cent. CE): 191  
Arsenius: 183  
Artemidorus of Ephesus, Geographer (1st cent. BCE): 60, 103, 174  
Asia: 6, 13, 92–94, 104  
astronomy: 69, 170  
Athens: 64f.  
Atlantic Sea: 98, 101  
Atlantis: 59  
Atticus, Platonist (2nd cent. CE): 110, 124, 128  
audience: 3, 15, 69, 73f., 76, 78  
Aulus Gellius (2nd cent. CE): 188  
Averroes: *see* Ibn Rušd / Averroes  
Avicenna: *see* Ibn Sīnā / Avicenna  
  
Bacchus: 191  
Bacci, Andrea: 183, 193  
Baghdad: 170  
Baḥya Ibn Paqūda (11th/12th cent. CE): 180  
– *Kitāb al-Hidāya ilā farā'id al-qulūb*: 180  
Balfour, Robert: 185  
Barhebraeus, Gregory Abū l-Faraḡ (13th cent. CE): 157f., 162  
Bar Kepha, Moshe (9th cent. CE): 162  
– *Hexaemeron*: 158, 173  
Bar Šakkō, Severus Jacob (13th cent. CE): 156f., 162  
Bartholomaeus of Messina: 182  
Batteux, Charles: 186, 191–195  
Bay of Biscay: 60  
Beni, Paolo: 185, 189  
Bessarion: 183, 194  
Beurer, Johann Jacob: 184, 189, 193



- Bīrūnī, al- (10th/11th cent. CE): 160, 169, 171
- Black Sea: 104
- Boate, Arnold: 186
- Bodin, Jean: 183
- Boeotia: 62
- Boreas/Boreae: 61
- Boyle, Robert: 186, 194f.
- Bradwardine, Thomas: 182
- Brethren of Purity* (Iḥwān aṣ-ṣafāʾ): 178
- Brisson, Barnabé: 184, 188
- Britain: 60
- Brucker, Johann Jakob: 187, 189, 194
- Budé, Guillaume: 184, 191
- Buddeus, Joannes Franciscus: 186
- Buoni, G. A.: 184, 193
- Bura: 62
- Bussi, Gian Andrea: 183, 188
- Caecias: 60, 158
- Caesarea in Palestine: 145
- Camerarius, Joachim: 184
- Campanella, Tommaso: 185
- Cappadocia: 58
- cartography: 91, 170
- Casaubon, Isaac: 186
- Case, John: 184, 195
- Caspian Sea: 5f., 60, 89, 102, 104, 191
- celestial sphere: 95, 156
- Cellarius, Balthasar: 186, 190
- Charpentier, Jacques: 183, 188, 194
- Christianism: 133, 194
- Chrysippus (3rd cent. BCE): 9, 58, 64–66, 109, 117
- Cicero (1st cent. BCE): 7, 193
- Clüver, Philipp: 186
- Cleanthes (4th/3rd cent. BCE): 65
- Clement of Alexandria (2nd/3rd cent. CE): 84, 133, 135, 141
- Cleomedes (between Posidonius and Ptolemy): 70, 79
- Coimbra Commentators: 186
- Conring, Hermann: 185, 191, 193, 196
- Corsica: 100
- cosmic harmony: 10, 12, 14, 121–123, 175, 177f.
- cosmic order: 66, 131
- cosmic power: 112
- cosmology: 94, 105, 169
- cosmos: 3, 10, 13f., 58, 64, 71, 80–82, 85–87, 94–96, 99, 107–110, 113, 115, 126, 171, 196
- as order: 47, 87, 123, 177
- cosmotheology: 94, 109, 114
- Crenius, Thomas: 187
- Crete: 100
- Crimea: 59
- Cudworth, Ralph: 186
- Curione, Caelio Secondo: 184, 193f.
- Cyclades: 100
- Cyprus: 100
- David of Armenia, commentator of Aristotle (6th cent. CE): 4, 15
- degli Oddi, Marco: 184, 193, 195
- Delphi: 58, 62
- demiurge: 110, 115, 124, 127f.
- De mundo*
- Arabic versions: 153, 158f., 161f., 165, 167, 177, 182
- Armenian version: 153, 155
- as a handbook: 15, 131
- as a letter: 74
- authorship: 3, 8, 89, 106, 127, 157, 181–186, 188–196
- dating: 7f., 89f., 106, 187
- didactic character and purpose: 69, 73f., 76–78, 80f., 85, 87
- language: 69, 72, 78, 80, 87
- Latin version: 16, 121, 181–183
- rhetorical strategies and purpose: 73
- sources: 8, 73, 89, 187
- style: 6, 69, 72f., 87, 192
- Syriac version: 153–155, 157f., 161f., 165, 167
- Derveni Papyrus (4th cent. BCE): 65
- Diagoras of Melos (5th cent. BCE): 173
- Dicaearchus (4th cent. BCE): 90
- *Circumnavigation of the Earth*: 90
- Diogenes Laertius (1st half of 3rd cent. CE): 69, 189, 192, 196
- Diotogenes, Pythagorean philosopher (4th cent. BCE / 2nd cent. CE): 126, 206
- disorder (*akosmia*): 47
- divination: 122
- Don: 60, 104
- Du Val, Guillaume: 185, 189, 193
- Earth/earth: 89, 95f., 99–101, 104
- eclecticism: 107, 130
- Egypt: 104, 133
- Elmenhorst, Gerhard: 185, 189
- Emesa: 149
- Empedocles (5th cent. BCE): 8, 49, 64
- Ephialtes: 58

- Epictetus (1st/2nd cent. CE): 121  
 Epicurus (4th/3rd cent. BCE): 70, 74f.,  
 79, 83, 173  
 Erasmus: 184, 193  
 Eratosthenes of Cyrene (3rd cent. BCE):  
 7, 15, 59f., 90–93, 101–106  
 essence (*ousia*) of god: 114f., 133f., 137f.,  
 140, 145  
 Euboea: 100  
 Eudoxus of Cnidus (4th cent. BCE): 64,  
 90  
 Euronotus: 61  
 Europe: 6, 13, 92f., 104  
 Eurys/Euri: 60  
 Eusebius of Caesarea (3rd/4th cent. CE):  
 133, 135
- Fabricius, Johann Albrecht: 186, 188f.  
 Fate/fate: 13f., 119, 127f.  
 Fates: 66  
 Fernal, Jean: 183  
 Ficino, Marsilio: 183, 190, 194  
 five elements: 13  
 Fonseca, Pedro: 184, 189  
 free will: 64, 122, 150
- Gale, Theophilus: 185, 194  
 Galen (2nd/3rd cent. CE): 155, 173  
 Gassendi, Pierre: 186, 195  
 Gataker, Thomas: 185  
 Gaudenzio, Paganino: 188, 190, 192  
 Gedicke, Friedrich: 187  
 geocentrism: 95  
 geography: 11, 13, 69, 89f., 94, 105, 158,  
 169f., 177  
 Gesner, Conrad: 184, 189  
 Ghazālī, Abū Ḥāmid al- (11th/12th cent.  
 CE): 175, 180  
 Giannini, Tommaso: 186, 189, 196  
 ʿĪbrīl Ibn Nūḥ Ibn Abi Nūḥ an-Naṣrānī  
 al-Anbārī (9th cent. CE): 172f., 176f.  
 Giphanius, Obertus: 185, 194  
 Gnosticism: 141  
 god: 14, 63–65, 113, 115, 118f., 124, 129f.,  
 135, 139, 143f., 147, 149, 175, 197  
 – as leader and commander of the  
 cosmos: 12, 119  
 – as preserver of the cosmos: 3, 95, 110,  
 119, 126  
 – as the begetter: 14, 119, 126, 171  
 – as Unmoved Mover: 5, 110, 118, 134f.,  
 144  
 – involvement in the cosmos: 5, 10, 12,  
 107, 110, 116, 121, 125f., 136  
 – located in heaven: 12, 14  
 – maintaining the cohesion of the  
 cosmos: 12, 14f., 58, 87, 107, 119, 139  
 – names and functions: 13  
 God Father: 140, 146, 148  
 Goerenz, Johann August: 187, 192, 195  
 Golden House: 160, 170f.  
 Grynaeus, Simon: 183  
 Guilhem de Clermont-Lodève,  
 Guillaume Emmanuel Joseph: 186,  
 191, 195
- harmony: 111, 113, 117, 123, 174  
 Harpocrator of Argos (2nd cent. CE):  
 128  
 heaven: 95  
 heavenly bodies: 59, 63, 99  
 Heinsius, Daniel: 185, 188, 190, 192–196  
 heliocentrism: 95  
 Helius: 63f.  
 Hellenistic Judaism: 9f., 65, 133  
 Hellespont: 101  
 Heraclitus (6th/5th cent. BCE): 8, 39, 55,  
 63, 65, 86, 111  
 Hermeticism: 121, 130  
 Herodotus (5th cent. BCE): 59, 89, 91  
 Hesiod (c. 700 BCE): 80  
 Hierapolis: 62  
 Hippolytus of Rome (2nd/3rd cent. CE):  
 141  
 Ḥiṣām Ibn ʿAbd al-Malik (7th/8th cent.  
 CE): 160, 178  
 Holy Spirit: 140  
 Homer (8th cent. BCE): 6, 8, 64, 71, 90,  
 92, 129, 171, 208  
 Horn, Georg: 185  
 Huet, Pierre-Daniel: 186, 190, 194  
 Ḥunain Ibn Ishāq (9th cent. CE): 165  
 Hurtado de Mendoza, Pedro: 185, 190,  
 194  
 hymnic register: 65, 80f., 84
- Iamblichus of Chalcis (3rd/4th cent.  
 CE): 128, 130, 159  
 Ibn al-Faḡīḥ (9th/10th cent. CE): 161,  
 169–171  
 Ibn an-Nadīm (10th cent. CE): 160, 170  
 Ibn Nāʾima al-Ḥimṣī (9th cent. CE): 179  
 Ibn Ruṣd / Averroes (12th cent. CE): 169  
 Ibn Sīnā / Avicenna (10th/11th cent. CE):  
 159, 169

- immanence: 107, 113, 115, 119f., 134,  
 137, 140, 143, 147, 151  
 immanentism: 113  
 India: 160, 170, 190  
 Indian Gulf: 101  
 Indian Ocean: 93  
 Ioannes Philoponus: *see* Philoponus,  
 Ioannes  
 Ioannes Stobaeus: *see* Stobaeus, Ioannes  
 Iran: 157  
 Iraq: 157  
 Ireland: 60  
 ʿIsā ibn Ibrāhīm an-Nafīsī (10th cent.  
 CE): 159, 173  
 Isidorus Gnosticus (2nd cent. CE): 84  
 islands: 100  
 Isocrates (5th/4th cent. BCE): 75, 77
- Jacob of Edessa (7th cent. CE): 158, 162  
 – *Hexaemeron*: 158, 173  
 Job of Edessa (9th cent. CE)  
 – *Book of Treasures*: 173, 178  
 John of Jandun: 182  
 Judea: 133  
 Jupiter: 96  
 Justice: 13, 66  
 Justin Martyr (2nd cent. CE): 141
- Kapp, Johann Christian: 187, 195f.  
 Kindī, al- (9th cent. CE): 179  
 King of Persia: 7, 63, 81, 116
- Laguna, Andrés de: 183, 191  
 Lange, Johannes: 185, 195  
 language: 72, 85f.  
 Lesbos: 100  
 Lévesque de Burigny, Jean: 187, 190, 194  
 Libonotus: 61  
 Libya (Africa): 6, 13, 92f., 104  
 Liceti, Fortunio: 185, 194  
 Lips: 60  
 Loensis, Jacobus Nicolaus: 186, 196  
 Logos: 140–143, 148, 151  
 – as intermediary between God and the  
 world: 142  
 Lord (*kyrios*): 139
- Maeotis: 101  
 Maimonides: 182  
 Maʿmūn, al- (reigned 9th cent. CE): 161,  
 170, 177f.  
 Mār Sargīs: *see* Sergius of Rēš-ʿAinā  
 Mars: 96
- Marwazī, al-: *see* Abū l-ʿAbbās Āʿfar  
 Ibn Aḥmad al-Marwazī; Abū Yaḥyā  
 al-Marwazī  
 Masʿūdī, al- (10th cent. CE): 160f., 171,  
 178  
 Mauro, Silvestro: 186  
 Maximus of Tyre (2nd cent. CE): 4, 116,  
 121–123, 201f.  
 Maximus Planudes: 182  
 Mediterranean Sea: 100, 104, 158, 162  
 Megasthenes (4th/3rd cent. BCE): 58, 60  
 Meiners, Christoph: 187, 193  
 Melanchthon, Philipp: 184  
 Ménage, Gilles: 185  
 Mercury: 59, 96  
 Mesopotamia: 143  
 meteorology: 11, 13, 156–158, 169, 177  
 Michel, Étienne: 185  
 Michelet, Charles Louis: 187  
 Middle Platonism: 7, 9, 120  
 monotheism: 115  
 Moon: 96  
 More, Henry: 185  
 Moses: 133, 136  
 Mount Sinai: 136f.  
 Muret, Marc-Antoine: 184, 193, 196  
 Muses: 58
- natures (*physeis*): 95  
 Naudé, Gabriel: 185, 193f., 196  
 Nemesius of Emesa (4th/5th cent. CE):  
 134, 141, 149–152  
 Neoplatonism: 58, 130, 169, 175, 178f.  
 Neopythagoreanism: 5, 9, 107, 115,  
 120f., 124, 126, 130, 187  
 Nicholas of Sicily: 182  
 Nicolaus of Damascus (1st cent. BCE): 8,  
 133, 165  
 Nile: 104  
 North Pole: 95  
 Notus: 61  
 Nuñez, Pedro: 184, 189  
 Nymphs: 58
- Oceanus: 5f., 13, 60, 89, 91f., 101–103  
*oikoumenai*: 97f., 103  
*oikoumene*: 59, 91–93, 97f., 100f., 103, 105  
 Old Testament: 139  
 Oliver, Pedro Juan: 184, 191  
 Olympus: 58, 63  
 Onesicritus of Astypalaea (4th cent.  
 BCE): 60, 90  
 oracle of Trophonius: 62

- Origen of Alexandria (2nd/3rd cent. CE): 134, 145–149, 151
- Orphic myth: 65
- Ossa: 58
- Otus: 58
- Pachymeres, Georgios: 189
- Paganino, Gaudenzio: 186
- Pan: 58
- Pandolfo, Alfonso: 185, 189, 196
- Pansa, Maurizio: 185, 189, 194f.
- pantheism: 113, 126
- Parmenides (6th/5th cent. BCE): 80
- Parnassus: 58
- Parrain, Jacques: 185
- Patrizi da Cherso, Francesco: 184, 188, 193
- Pelion: 58
- Persian Empire: 63, 76
- Persian Gulf: 101
- Petit, Samuel: 185, 188, 193
- Phaëton: 64
- Pherecydes of Syrus (6th cent. BCE): 80, 84
- Phidias: 7, 64
- Philodemus of Gadara (1st cent. BCE): 7
- Philo of Alexandria (1st cent. BCE/1st cent. CE): 7–9, 63f., 116, 118, 123, 125, 134, 137–140, 143, 151, 203
- Philoponus, Ioannes of Alexandria (6th cent. CE): 4, 15, 121, 128f., 182, 189, 194, 207
- philosophical letter: 74
- philosophy: 10, 13, 15, 58, 71, 74, 76–78, 87, 94, 108, 118, 136f., 141, 194
- popular philosophy: 3, 121f., 130, 155, 197
- Pico della Mirandola, Gian Francesco: 183, 188, 190
- Pico della Mirandola, Giovanni: 183, 190
- Pietro d'Abano: 182
- Pillars of Hercules: 101, 104
- Pio, Giovan Battista: 183
- planets: 59
- Plato (5th/4th cent. BCE): 8, 57, 59, 63, 66, 74f., 91, 97f., 109–111, 113–115, 119f., 123, 125, 127–130, 149, 155, 182, 193, 196, 207
- Platonism: 5, 7, 58, 107f., 115, 119, 121, 124, 126f., 131, 137, 141, 145, 187, 193
- Pliny the Elder (1st cent. CE): 103, 121, 190f.
- Plotinus (3rd cent. CE): 109, 115, 123, 125f., 128, 175f., 179
- Plutarch of Chaeronea (1st/2nd cent. CE): 7, 9, 15, 115, 188, 191f.
- pneuma*: 113, 116, 175
- poeticism: 15, 84
- Pontus: 101, 104
- popular philosophical religion: 118
- Porphyry (3rd cent. CE): 115, 128, 150, 155
- Porzio, Simon: 184, 196
- Posidonius (2nd/1st cent. BCE): 5f., 8f., 58, 60, 89, 109, 196
- Possevino, Antonio: 184, 189, 193
- power (*dynamis*) of god: 9, 12, 14, 63, 81, 111, 114f., 119f., 123–125, 133–137, 139f., 142–145, 147–149, 151, 175, 177, 190, 197
- as Christ: 147
- as *epinoia* of the Son: 145, 151
- as Logos: 140, 149
- as source of movement: 135
- as wisdom of God: 146
- Proclus (5th cent. CE): 4, 83, 121, 127–129, 182, 189
- prophets: 133
- Propontis: 101
- providence: 107, 121, 126, 179, 190, 194f.
- (Ps.) Aristotle: *see* Aristotle
- (Ps.) Aristotle, *De mundo*: *see* *De mundo*
- (Ps.) Aristotle and Alexander the Great, correspondence: 4, 74, 159–161, 170f., 177, 188
- (Ps.) Dionysius the Areopagite (5th/6th cent. CE): 155
- (Ps.) Ephantus of Syracuse (probably 3rd or 2nd cent. BCE): 9, 126, 207
- (Ps.) Ġāḥiz: *see* Ġibril Ibn Nūḥ Ibn Abī Nūḥ an-Naṣrānī al-Anbārī
- (Ps.) Justin (3rd cent. CE): 189
- *Cohortatio ad Graecos*: 4, 181f., 188
- (Ps.) Ocellus (1st cent. BCE?): 9, 123, 126, 206
- Ptolemy, Claudius (2nd cent. CE): 89, 91, 93, 95, 98
- *Geography*: 170
- Pythagoras: 130, 155, 196
- Pythagoreanism: 95
- Pytheas of Massalia (4th cent. BCE): 90, 191
- Pythia: 62

- Qāsim, al- Ibn Ibrāhīm ar-Rassī (9th cent. CE): 179  
 Quṣṭā ibn Lūqā (9th/10th cent. CE): 159f.
- Rachelius, Samuel: 186, 194  
 Raynaud, Théophile: 185, 193  
 Red Sea: 60  
 rhetoric: 70  
 Ricchieri, Lodovico: 184  
 Rinuccio Aretino: 183, 195  
 Rome: 141
- Sadoleto, Jacopo: 183, 193  
 Sālīm Abū al-'Alā' (8th cent. CE): 160, 178  
 Saragossa: 180  
 Sardinia: 100  
 Saturn: 96  
 Saumaise, Claude: 186  
 Scaliger, Julius Caesar: 184  
 Schulz, Balthasar: 185  
 sea: 96, 104  
 Sea of Azov: 59  
 Seneca (1st cent. CE): 121, 127  
 Sepúlveda, Juan Ginés de: 183, 191  
 Sergius of Rēš-'Ainā, priest of the city of Rēš-'Ainā (5th/6th cent. CE): 154–159, 162  
*Sibylline Oracles*, oracular utterances in hexameter verse attributed to the ancient Sibyls (probably 2nd cent. CE): 78, 86  
 Sicily: 62, 100  
 Sirenio, Giulio: 185, 190, 194, 196  
 Socrates (5th cent. BCE): 65, 97f.  
 Son: 140, 146, 148  
 Sophocles (5th cent. BCE): 8  
 soul: 118  
 – eye of: 58  
 – heavenly journey: 58, 108  
 – World Soul: 125f., 128  
 South Pole: 61, 95  
 Spener, Philipp Jacob: 187, 194  
 sphere of air: 99  
 sphere of earth: 99  
 sphere of water: 99  
 Sporades: 100  
 Stanley, Thomas: 186  
 stars: 95  
 statue of Athena: 64  
 Steuco, Agostino: 184, 188, 190, 194f.  
 Stobaeus, Ioannes (5th cent. CE): 4, 15f., 72, 100, 121, 129–131, 154, 182, 192
- Stoicism: 5, 7, 9, 63f., 89, 107, 109, 112f., 116, 119–121, 125–127, 137, 141, 145, 169, 175, 179, 187  
 Storella, Francesco: 184, 189  
 Strabo (1st cent. BCE/1st cent. CE): 59f., 62, 64, 90, 92f., 97f., 100–106, 191, 196  
 style: 73, 80  
 sublimity: 71, 80  
 Sun/sun: 59, 63, 96, 175  
*sympatheia*: 179  
 Syria: 141
- Taprobane (Sri Lanka): 6, 60, 90, 190  
 Tatian (2nd cent. CE): 134, 141–145, 151  
 terrestrial sphere: 95  
 Thales (7th/6th BCE): 63, 80, 113, 134  
 Theano: 155  
 theologize (*theologeîn*): 13, 15, 58, 77, 94, 109, 121  
 Theophilus of Antioch, Christian apologist (2nd cent. CE): 134, 141, 143f., 149, 151  
 Theophrastus (4th/3rd cent. BCE): 4, 6, 9, 58, 60, 120, 177, 181, 188, 195f.  
 – *Meteorology*: 169, 177  
 Thomasius, Jacobus: 185, 196  
 Thrascias: 61  
 Tiberius Julius Alexander (1st cent. CE): 8, 133  
 Toussain, Jacques: 184, 193  
 transcendence: 107, 113, 115, 119f., 123f., 134, 138, 140, 143, 147, 149, 151, 174, 177f.  
 trinity: 140, 152  
 Truth: 66
- unity of the universe: 121, 123  
 universe: 76–80, 82, 85, 87, 124, 130, 194
- Venus: 59, 96  
 Vettori, Pier: 184, 189, 193, 195f.  
 Vinet, Élie: 184  
 Vives, Juan Luis: 184  
 Vizzani, Carlo Emmanuele: 186, 196  
 Vossius, J. G.: 185, 194  
 Vulcanius, Bonaventura: 184, 188
- water: 100  
 William of Moerbeke: 182  
 wisdom: 140  
 wonder: 85, 87  
 Worm, Ole: 185, 188–194, 196
- Xenophon (5th/4th cent. BCE): 75

Zabarella, Jacopo: 186  
Zeisold, Johannes: 185, 190, 194  
Zeno: 196

Zephyr/Zephyri: 60  
Zeus: 63, 65f., 128, 136  
zodiac: 96



## About the Authors of this Volume

*Dr. Renate Burri* is currently working on a book project about early post-byzantine manuscript production in the East and West with a fellowship from the Gerda Henkel Foundation. Her research interests include the history of the sciences, especially ancient geography / cartography, manuscript studies and reception studies.

Selected publications: *Die Geographie des Ptolemaios im Spiegel der griechischen Handschriften* (Berlin/Boston 2013). – German translation of five speeches by Dion of Prusa (or. 54, 55, 70–72), in: Dion von Prusa, *Der Philosoph und sein Bild*. SAPERE 13 (Tübingen 2009). – Book III of Ptolemy's *Geography* (critical edition of the text, German translation with notes) in: Klaudios Ptolemaios, *Handbuch der Geographie*, Griechisch-Deutsch, ed. by A. Stückelberger / G. Graßhoff (Basel 2006).

*Assoc. Prof. Clive Chandler* teaches in the Classics Section of the School of Languages and Literatures at the University of Cape Town. His research interests lie in the intellectual history of Greece (especially, but not exclusively, Epicurean philosophy), rhetoric, and ancient commentaries on Homer. He is currently working on a study of Madness in Ancient Greek Literature.

Selected publications: articles on Greek and Roman literature, rhetoric, and *Philodemus On Rhetoric Books 1 and 2: Translation and Exegetical Essays* (New York 2006)

*Prof. Dr. Hans Daiber* was holder of the chair of Oriental Languages at the Johann Wolfgang Goethe-Universität Frankfurt am Main. His main fields are Arabic and Islamic Studies, including Islamic philosophy, theology, history sciences and the field of Greek / Syriac / Arabic / Latin translations as well as analyzing and describing Arabic manuscripts.

Selected publications: *Aetius Arabus* (Wiesbaden 1980); *Das theologisch-philosophische System des Mu'ammār Ibn 'Abbād as-Sulamī (gest. 830 n. Chr.)* (Beirut 1975). 16 monographs and more than 100 articles. Editor of *Islamic Philosophy, Theology and Sciences* and of *Aristoteles Semitico-Latinus*. Latest publication: *Islamic Thought in the Dialogue of Cultures. A Historical and Bibliographical Survey* (Leiden / Boston 2012).

*Emeritus Prof. Dr. Jill Kraye* is an Honorary Fellow and former Librarian of the Warburg Institute, University of London. She specializes in the history of Renaissance philosophy and humanism, with a particular interest in the later influence of the ancient philosophical schools. She is an editor of the *Journal of the Warburg and Courtauld Institutes* and *The International Journal of the Classical Tradition*.

Selected publications: *Classical Traditions in Renaissance Philosophy* (Aldershot / Burlington VT 2002); *The Cambridge Companion to Renaissance Humanism* (Cambridge 1996); *Cambridge Translations of Renaissance Philosophical Texts*, 2 vols. (Cambridge 1997).

*Emeritus Prof. Dr. Andrew Smith* was Professor of Classics, University College Dublin. He is Associate Director of the Plato Centre, Trinity College Dublin, and joint editor of a series of philosophical commentaries on Plotinus.

Selected publications: *Porphyry's Place in the Neoplatonic Tradition* (The Hague 1974), *Porphyrii Philosophi Fragmenta* (Stuttgart / Leipzig 1993), *Philosophy in Late Antiquity* (London / New York 2004), *Boethius, On Aristotle 'On Interpretation'* (trans., London 2010-11), *Plotinus, Porphyry and Iamblichus: Philosophy and Religion in Neoplatonism* (London 2011).



*Assoc. Prof. Dr. Hidemi Takahashi* teaches in the Graduate School of Arts and Sciences at The University of Tokyo. His main field of research is in Syriac Studies, especially the reception of the Greek sciences in Syriac and the works of the thirteenth-century author Gregory Barhebraeus.

Selected Publications: *Aristotelian Meteorology in Syriac. Barhebraeus, Butyrum sapientiae, Books of Mineralogy and Meteorology* (Leiden 2004); *Barhebraeus. A Bio-Bibliography* (Piscataway 2005)

*Prof. Dr. Johan C. Thom* is Professor of Classics in the Department of Ancient Studies at Stellenbosch University. His research interests are ancient philosophy and the relationship between early Christianity and the Hellenistic-Roman world. He is working on a new edition with commentary of the Pythagorean *akousmata*.

Selected publications: *The Pythagorean Golden Verses: Text, Translation, and Commentary* (Leiden 1995); *Philodemus: On Frank Criticism* (with D. Konstan et al.; Atlanta 1998); *Cleanthes' Hymn to Zeus: Text, Translation, and Commentary* (Tübingen 2005)

*Dr. Anna Tzvetkova-Glaser* is lecturer of Ancient Greek at the Faculty of Theology of the University of Heidelberg. Among her scholarly interests are early Christian literature (especially Origen) and the relationship between Judaism and Christianity in the first centuries AD. She has also worked on Augustine's polemic against the Semi-Pelagians.

Selected publications: *Pentateuchauslegung bei Origenes und den frühen Rabbinen*, ECCA 7 (Frankfurt 2010); many articles and translations.

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