

Doxography and Philosophical Method: Avicenna's Treatment of Presocratic Opinions

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1 How to *Acquire* Knowledge in the Aristotelian Tradition?

Among the many fundamental questions every philosopher and scientist has to answer, I would like to focus on the following two: first, how knowledge should be acquired; and second, how knowledge should be communicated. Both questions, it seems to me, need to be taken into consideration if we want to evaluate and assess the approach taken by historical thinkers and scientific authors, such as for instance Avicenna (d. 428/1037), towards doxography. The reasons for this are that the first of these two questions (that about acquiring knowledge) may receive two separate answers, and that these two answers inform, without necessarily conforming to, the answers given to the second question (that about communicating knowledge).

The two answers to the first question that are relevant for my investigation here are the following: one can acquire knowledge either (a) by doing research oneself or (b) by reading papers of colleagues and supervisors. By “doing research,” I understand an active, inquisitive engagement with what the physical world has to offer.¹ It may include all activities that scientists nowadays engage in when they work in their laboratories or in the field: inspecting objects, gathering data, keeping notes, comparing results, and making inferences. This is, by and large, what Aristotle described at the very end of the *Posterior Analytics* in chapter 11.19:

So, from perception, there comes memory, as we say; and from memory, when it occurs often in connection with the same item, [there comes] experience (*empeiria*), for many memories are a single experience; and from experience, or from every universal which has come to rest in the soul (the one apart from the many, that which is one and the same in all

¹ This includes material and corporeal as well as immaterial and incorporeal offerings; among the latter one may count the soul and accidents, for example.

these items), [there comes] a principle of craft or of knowledge—of craft if it is about what comes about, of understanding if it is about what is.

ARISTOTLE, *An. post.* II.19, 100a3–9, tr. BARNES, modified

In this much-debated passage, Aristotle is concerned with the acquisition not primarily of knowledge (or craft) as such but of the *principles of* that knowledge (or craft). Such principles form the (provisional) endpoint of an investigation that began with the sensible perception of natural phenomena. Thus, one of the answers to the first question above—that about how knowledge should be acquired—could be labelled adequately an *empirical* or *inductive inquiry*, being an investigation on the basis of, and beginning from, the data received through sense perception of particular physical phenomena and events.² Moreover, the reference to “physical phenomena” suggests that this way of acquiring knowledge is particularly at home in the natural sciences and that it is the method Aristotle prefers within the field of natural philosophy.

To my knowledge, this has never been contested with regard to works such as *De partibus animalium* or to such scientific fields as astronomy. Indeed, in the *Prior Analytics*, Aristotle even states “that it is for astronomical experience (*astrologikên empeirian*) to provide the principles of the science of astronomy, for when the phenomena had been grasped sufficiently, astronomical demonstrations were discovered thereby.”³ Subsequently, Aristotle expands this particular assertion, applying the empirical method expressed in it to science in general: “Such it is concerning any other craft or science whatsoever. Thus, when the facts concerning each subject have been grasped, we are already prepared to bring the demonstrations to light.”⁴

In recent years, this first answer about Aristotle’s epistemic methodology, viz. that the principles of knowledge are to be acquired empirically through sense perception and induction, regained ground within the community of scholars investigating Aristotle’s philosophy⁵—ground it had lost during the

2 Although the term “induction” (*epagôgê*) does not occur in the above quotation, Aristotle relies on it, only little later, when he states that “it is, thus, clear that it is necessary that we come to know the primary [principles] through induction” (*An. post.* II.19, 100b3 f.).

3 Aristotle, *An. pr.* I.30, 46a19–22, tr. Smith, mod.

4 Aristotle, *An. pr.* I.30, 46a22–24, tr. Smith, mod.

5 The literature, providing numerous different interpretations, is vast; some more prominent pieces, which are regularly discussed by recent contributions, are: Bolton, “The Material Cause”; “The Epistemological Basis of Aristotelian Dialectic” (followed by reactions from Brunschwig and Devereux); Hamlyn, “Aristotle on Dialectic,” Smith, “Dialectic and Method in Aristotle.” Much of the current discussion pertains to ethics; a good overview in this regard, with references to recent literature, are Frede, “The *endoxon* Mystique” and Kar-

second half of the twentieth century through influential publications by Gwilym Ellis Lane Owen, Wolfgang Wieland, and Terence Irwin, all of whom refer to even earlier interpretations by Jean-Marie Le Blond and Augustin Mansion.⁶ It is due to their shared conviction that “the characteristic method of Aristotle’s philosophical works is dialectical,” as Irwin put it, and in particular that “dialectic leads to first principles,” as Irwin paraphrases Aristotle’s *Topics*, that these scholars recently have been labelled in the literature as the “friends of the *endoxa*” or “friends of the dialectic.”⁷ While admitting that empirical and inductive research may have been relevant for Aristotle in his biological works, for example, Owen and others argued that in Aristotle’s—one may daresay—“more philosophical works,” it is not the observation of *physical* phenomena that forms the beginning of a scientific inquiry but the engagement with *doxographic* phenomena, i.e. with the accounts and opinions received from earlier scientists alongside the known questions and problems an entirely sufficient theory has to answer to and resolve. It is particularly in the *Nicomachean Ethics*, Owen argues, that the Greek term *phainomena* refers not (or not primarily) to “empirical observations” and “observed facts” but to the *legomena* and *endoxa*, i.e. to commonly held and reported opinions.⁸

Thus, in addition to the first answer to our above question about how knowledge ought to be acquired, viz. that one engage in an *empirical* or *inductive inquiry* and examine the data gathered through sense perception, a second answer recommends a different method: an *endoxic* or *dialectical inquiry*—it is through an engagement with, or a critical examination of, established and widespread opinions advanced by reputable members of the scientific community that we acquire knowledge of the principles and form a deeper understanding of the truth. (The following table, Table 12.1, illustrates these two methods of knowledge acquisition in Aristotle.)

bowski, “*Endoxa*, Facts, and the Starting Points of the *Nicomachean Ethics*”; for the *Physics*, cf. the interesting direction taken by Quarantotto, “The Role, Structure and Status of Aristotle’s *Physics* 1,” esp. 1f., and the paradigmatic discussion in Bolton, “Aristotle’s Method in Natural Science.”

6 Owen, “Τιθέναι τὰ φαινόμενα”; Wieland, *Die aristotelische Physik*; Irwin, *Aristotle’s First Principles*; Le Blond, *Logique et méthode chez Aristote*; Mansion, *Introduction a la Physique Aristotélécienne*.

7 Irwin, *Aristotle’s First Principles*, 27, 30; Irwin’s reference to the *Topics* is to the famous passage 1.2, 101b3f. For the two labels, cf. Frede, “The *endoxon* Mystique,” 186 and Rapp’s comment in Aristotle, *Rhetorik*, vol. 1, 253.

8 Owen, “Τιθέναι τὰ φαινόμενα,” 84f.; cf. also Nussbaum’s fundamental and often discussed criticism in her “Saving Aristotle’s Appearances.” Furthermore, it should be noted that not only the term *phainomenon* is rich in meaning—the term *endoxon*, too, may be more inclusive, even of “empirical” features, than sometimes has been assumed. My thanks to Christian Pfeiffer, who raised my awareness of this point.

TABLE 12.1 Aristotle's two methods of knowledge acquisition

	knowledge acquisition (i.e. inquiry)
physical phenomena	induction
doxographic phenomena	dialectics

Both of these answers to the first question find their textual support in Aristotle. As already mentioned, the empirical and inductive approach is borne out by central passages, for example, in Aristotle's *Prior* and *Posterior Analytics* as well as the first chapter of *Physics* I, whereas the dialectical and endoxic approach is announced in the *Topics* and subsequently confirmed by the presence of doxographical material often listed at the beginning of a new topic in Aristotle's works or by whole *books* in these works filled with examinations of earlier accounts, esp. *De anima* I and *Metaphysics* A, M, and N as well as *Physics* I together with certain parts of books III and IV. Indeed, Owen explicitly seeks to corroborate his interpretation by taking recourse to Aristotle's investigation of place in *Physics* IV.1–5, claiming that the empirical and inductive method is “plainly ... not at home in the *Physics*”; instead, it is the dialectical *endoxa* that guide Aristotle in the *Physics* so much so that, thereby, “the *Physics* ranks itself not with physics, in our contemporary sense of the word, but with philosophy.”⁹

In this article, I shall abstain from any engagement with these two interpretations of what Aristotle's preferred or characteristic method was or may have been, either in general or in particular disciplines and fields. Instead, I shall acknowledge the unanimously agreed existence of two different recommendations Aristotle gives and procedures he occasionally or systematically follows, both of which are best illustrated with references to *Physics* I: on the one hand, the opening chapter of the *Physics* asserts that one, first, should attempt to determine the “principles, causes, and elements” and that, in order to do so, one should investigate the “compounded things” and “advance from the universals to the particulars.”¹⁰ The common interpretation of these words is to align the

9 Owen, “Τιθέσθαι τὰ φαινόμενα,” 84, 88; Owen's treatment of the discussion of place in the *Physics* in particular is severely criticised by Frede, “The *endoxon* Mystique,” 201f.

10 Aristotle, *Phys.* I.1, 184a11, 21–25, tr. Judson/Quarantotto.

“compounded things” with the “universals,” so as to derive the principles of natural things from an inductive investigation of the jumbled up sensory data we receive from complex natural entities or “wholes.”¹¹ On the other hand, what Aristotle, then, does in much of the first book is to investigate dialectically the received opinions of Parmenides, Melissus, Democritus, Heraclitus, Antiphon, Lycophron, Plato, Anaximander, Empedocles, and Anaxagoras—and to derive from his critical examination of their accounts his own view on matter, form, and privation as the fundamental principles of natural things. In the *Physics*, at least, it seems that Aristotle could not have been less clear on which of the two methods he thinks one ought to adopt in the quest of acquiring knowledge through engaging with *phainomena*.

2 How to *Communicate* Knowledge in the Aristotelian Tradition?

The dichotomy between inductive and endoxic forms of knowledge acquisition in Aristotle influences how Peripatetic philosophers—i.e. philosophers in the tradition of Aristotle—work and write. The Muslim philosopher and scientist Avicenna, active in the first half of the fifth/eleventh century, is one such example of a Peripatetic philosopher, and I shall now turn to an analysis of the ways in which he reacts to the materials he received.¹²

Upon first sight, there is good reason to believe that Avicenna actually follows and adopts the two above-mentioned methods that are characteristic of Aristotle’s works. One of these reasons emerges from the preface of Avicenna’s own major work on physics included in his *magnum opus* known as *The Healing* (*al-Šifāʾ*)—this physical work Avicenna called, following the traditional title of Aristotle’s *Physics* (*physikê akroasis*), his *Lecture on Nature* (*al-Samāʿ al-ṭabīʿī*):

The procedure of ours is to commence the discussion on the teaching of natural philosophy in the manner on which our opinion has settled and

11 There is also another historically influential interpretation of Aristotle’s advice to proceed “from the universals to the particulars,” apparently taking its cue from Aristotle’s *Meteorology* I.1, 338a20–339a9. I have discussed this interpretation, with particular attention to Philoponus, in *The Elements of Avicenna’s Physics*, 56–61.

12 The materials he received in Arabic translation include (with some exceptions) virtually all Greek philosophical and scientific writings that we know were composed up to the seventh century; for an overview of available material on the *Physics*, cf. Lammer, *The Elements of Avicenna’s Physics*, 20–34.

which our inquiry has determined, and to make the order in this correspond to the order according to which the philosophy of the Peripatetics proceeds.

AVICENNA, *Lecture on Nature*, preface, §1, 3,4–6

Since Avicenna decided to follow in his own physics the traditional order of Aristotle's *Physics*, as the above passage illustrates, it is by no means surprising that in the very first chapter of his *Lecture on Nature*, Avicenna gives an account of his method—just as Aristotle had done. Moreover, while expounding that method, Avicenna mentions, among other things, Aristotle's famous example of the child who calls “all men fathers and all women mothers” and also refers to the so-called “indiscriminate particular”—a concept developed by Aristotle's commentator Philoponus (d. 574) precisely to explain the *inductive inquiry* Aristotle was said to recommend in the opening chapter of the *Physics*.¹³ In addition to this, we perceive Avicenna, a few chapters later, starting off a *doxographical* “investigation of what Parmenides and Melissus have said regarding the principles of existence,” seemingly imitating the structure of Aristotle's *Physics*.¹⁴ Taken together, then, we apparently find in Avicenna's *Lecture on Nature* materials that conform to both methods which Aristotle recommended or employed. Consequently, Avicenna's explicit declaration that he intends to follow in his own treatise on physics *the order* of Aristotle's *Physics* can reasonably be interpreted as an announcement thereby also to follow *the method(s)* of Aristotle's *Physics*, and so to develop the fundamentals of natural philosophy by way of discussing and investigating *the same set of phenomena* as Aristotle (and his commentators) had done: natural objects perceived through sense perception (as recommended in *Physics* 1.1) and earlier opinions received through textual transmission (as carried out, for example, in *Physics* 1.2–6).

There is another reason that seems to support this impression. This time, however, the reason emerges not accidentally from the order of Avicenna's works (or from any possibly rhetorical announcement at their beginning) but systematically from the psychological underpinnings of his very own epistemology. In his psychology—his *Book on the Soul* (*al-Nafs*) from his major *The Healing*—Avicenna states that we attain explanatory knowledge in two ways.¹⁵ The first of these is through what he calls “intuition” (*ḥads*). According to Avicenna's theory of intellection, “intuition” is achieved once the soul has been

13 Aristotle, *Phys.* 1.1, 184b12–14; Philoponus, *In Phys.* 10.28–11.23; Avicenna, *Lecture on Nature* 1.1, 9.17–11.9.

14 Avicenna, *Lecture on Nature* 1.4, 26.3 f.

15 Avicenna, *Book on the Soul* v.6, 219.20–220.1.

properly prepared to receive intelligible forms; it is the ultimate goal of the empirical inquiry based to a large extent, even though not necessarily exclusively, on what he calls “(methodic) experience” (*tağriba*), a complex form of induction.¹⁶ (The Arabic term *tağriba* was used by the Graeco-Arabic translators to render Aristotle’s *empeiria*, for example, in the above-quoted passages from *Prior Analytics* I.30 and *Posterior Analytics* II.19.)

The second way for attaining explanatory knowledge, according to Avicenna in this passage from his *Book on the Soul*, is through the “teaching” (*ta’līm*) of someone else who already has acquired that knowledge through his own research, i.e. through his previous preparation of his own soul that lead him up to “intuition.” A capable teacher, who has acquired knowledge of the principles and of the truth, can provide that knowledge to his disciples through teaching (on his part) bringing about learning (on the part of his disciples). It is in this way, that Avicenna himself learned from his own master Aristotle—and Aristotle may have learned, some things, from the Presocratics, whom he had discussed in the doxographical chapters of, for example, the *Physics*.¹⁷

Finally, of course, it is well known that Avicenna was a physician, too, and so we may naturally think of him as someone engaged in the empirical investigation of natural phenomena such as the symptoms of diseases and the effects of drugs.¹⁸ On the other hand, we know that he composed in particular two voluminous works, now lost, which probably focused on the arrangement, presentation, and discussion of some of (or: all?) the theories transmitted from the Greek to the Arabic tradition and in which he judged between the “western” and the “eastern” opinions, viz. *The Available and the Valid* (*al-Ḥāṣil wa-l-maḥṣūl*) and *The Fair Judgment* (*al-Inṣāf*).¹⁹ Thus, in Avicenna, too, it seems that we are justified in assuming not only that there are two primary ways for acquiring knowledge, viz. (a) doing research and (b) reading papers of col-

16 For more complete accounts of this notion in Avicenna and its historical background, cf. Janssens, “‘Experience’ (*tajriba*) in Classical Arabic Philosophy;” McGinnis, “Scientific Methodologies in Medieval Islam,” “Avicenna’s Naturalized Epistemology and Scientific Method,” Langermann, “From My Notebooks”; cf. also Lammer, *The Elements of Avicenna’s Physics*, 45–51. On the notion of “intuition,” cf. Gutas, “Intuition and Thinking.” In addition, Avicenna makes it clear that it is also through an engagement with doxographical materials as well as through other means, such as the constant pondering over certain issues, that we prepare our souls for the reception of intelligible forms; cf. esp. Gutas, *Avicenna and the Aristotelian Tradition*, 201–220.

17 For more information about how Avicenna understood his own position within and his contribution to the history of philosophy, cf. Gutas, *Avicenna and the Aristotelian Tradition*, 227–248, 323–334; cf. also Gutas, “Avicenna’s Philosophical Project.”

18 cf. Alpina, “Exercising Impartiality to Favor Aristotle.”

19 Cf. Gutas, *Avicenna and the Aristotelian Tradition*, 94–100, 144–155.

TABLE 12.2 Avicenna's two methods (?) of knowledge acquisition

	knowledge acquisition (i.e. inquiry)
physical phenomena	induction
doxographic phenomena	<i>tağriba</i> and <i>hads</i>
	dialectics?
	(open question) ^a

- a Avicenna's position towards knowledge acquisition through a dialectical inquiry into earlier opinions (beyond the mere acknowledgement of the existence of occasional doxographical parts in his works) is yet to be determined.

leagues and supervisors, but also that Avicenna, much like Aristotle, integrated both methods, the inductive and the endoxic, into his own works. (The above table, Table 12.2, illustrates the two methods of knowledge acquisition which one, consequently, might expect in Avicenna.)

Yet, this assumption is superficial and, although to some degree justified as we have seen, does not apply to Avicenna's extant main works, least to the works contained in his celebrated *Healing*—and this now is precisely why I have emphasised at the beginning of this article that if we want to evaluate and assess the approach taken by historical figures such as Avicenna towards doxography, we should also incorporate and consider their views on the second of our questions, viz. how knowledge should be *communicated*.

Indeed, there is evidence which strongly suggests that in his major works, Avicenna adopted a method starkly different from that of Aristotle (whichever it may have been). There is, first of all, the seemingly innocent biographical account that he composed his works, and especially his *Lecture on Nature*, upon request of his own disciples and of other figures. This information helps to explain the recurring reference in the text to “teaching and learning” (*ta'lim wa-ta'allum*) as the preferred method to grasp the principles of natural things.²⁰ The expression “teaching and learning,” in turn, is a reference to the opening line of Aristotle's *Posterior Analytics* (mentioning *didaskalia* and *mathê-*

20 *Nota bene* the mention of “teaching” in the passage from Avicenna, *Lecture on Nature*, preface, §1, 3.4–6, quoted above, 306–307.

sis). There is good reason to think that Avicenna considered the *Posterior Analytics*—not altogether different from how Jonathan Barnes, and now for instance also David Bronstein, does—as a work that describes not how knowledge should be acquired but how acquired knowledge should be communicated and how a science which had been attained beforehand should now be structured, i.e. how it should be developed und unfolded demonstratively on the basis of better known universal premises leading through appropriate middle terms to more particular conclusions.²¹ While all sciences rely on their respective principles, it is—according to Avicenna—the science of metaphysics, which as a universal science and first philosophy, explains the fundamentals and establishes the principles that are subsequently employed in the more particular sciences. Science as a whole is a hierarchically structured universal endeavour that proceeds along a demonstrative path, following the method elaborated in Aristotle's *Posterior Analytics*, from the universals to the particulars.²² It is this demonstrative path from what is better known and universal to what is lesser known and particular that is so characteristic of “teaching and learning”—and that is, thus, the key to understanding Avicenna's major works, in particular those comprised by his *Healing*.

Ultimately, this also indicates that part of the above mentioned “evidence” for Avicenna's presumed adherence to an endoxic method in his major works—viz. his statement from his *Book on the Soul* that explanatory knowledge can be acquired “through teaching”—must be read differently: Avicenna does not mean the teaching of established opinions which *a student of nature receives* (and then has to assess and evaluate) but the teaching of the established truth which *a teacher delivers*. This corresponds well with the context of that very passage, for it is concerned with the acquisition of the middle terms of a demonstrative syllogism as part of his psychological theory of intellection. So, here, too, in referring to “teaching,” Avicenna is concerned with the unfurling of knowledge and the demonstration of truth—in short: it is about com-

21 Cf. Barnes, “Aristotle's Theory of Demonstration,” esp. 138: “the theory of demonstrative science was never meant to guide or formalise scientific research: it is concerned exclusively with the teaching of facts already won; it does not describe how scientists do, or ought to, acquire knowledge: it offers a formal model of how teachers should impart knowledge”; cf. now also Bronstein, *Aristotle on Knowledge and Learning*, esp. 32, 177–185; for Avicenna, cf. Hasnawi, “La Physique du *Šifā'*,” esp. 75 f.; Bertolacci, *The Reception of Aristotle's Metaphysics in Avicenna's Kitāb al-Šifā'*, esp. 213–302.

22 In this regard, Avicenna is heir to a long—i.e. already ancient—tradition of engaging with Aristotle's theory of science, which put a particular emphasis on some of Aristotle's own remarks (such as in *Met. E.1*), as has already been shown by a number of scholars; see Lammer, *The Elements of Avicenna's Physics*, 100–105 for a survey and further references.

municating knowledge deductively by way of demonstration, not acquiring it inductively by way of research (nor receiving it dialectically through common opinions). Of course, if a teacher communicates the truth properly, his student acquires the truth—but this acquisition on the basis of a demonstrative teaching is clearly and importantly different from the acquisition of first principles on the basis of the investigative examination and assessment of data and phenomena, regardless of whether these are natural events and observations or received opinions and *endoxa*.²³

What all this means is not that Avicenna simply denied the importance of inductive and endoxic inquiries.²⁴ The point is rather that at this stage in his life, at which he was composing his major works, he himself was convinced that he had already mastered the philosophical sciences (almost) to the degree humanly possible. In other words, Avicenna already completed his research—he had both investigated the natural world *and* read the accounts of earlier scientists. Thus, he was done with acquiring knowledge—and now he intended to impart it through teaching.

The question which I want to ask now is: what does this background, i.e. the fact that Avicenna in his major works is *communicating* rather than acquiring knowledge, mean for our assessment of the way in which he deals with the doxographical materials which he, too, traditionally received from the works he read and, in particular, from the works he explicitly declared as his model in his writing, viz. Aristotle's works.

In short, I would like to explore what happens to doxography and to the doxographical material transmitted to someone and received by someone when this someone considers his task to be that of communicating knowledge (rather than acquiring it)—in particular when, additionally, this person is as deeply rooted in the Aristotelian tradition and steeped into Aristotle's works as Avicenna was. (The following table, Table 12.3, illustrates the topic of my investigation.)

23 It is an open question to what extent Avicenna generally accepts or recommends the endoxic method as a way to acquire knowledge. This is a crucial question which needs to be explored in the context of Avicenna's own theory of dialectics, i.e. with regard to the contents of his own *Topics (al-Ġadal)*. I shall not address this question in this paper, as I am more concerned not with the potential merits on the receiving side of teaching but with the conceptual side of the teacher as such. Thus, Avicenna's general stance towards the endoxic method in knowledge acquisition is labelled an "open question" in my tables above and below; see also the *post scriptum*.

24 After all, teaching is explicitly mentioned as only one of two methods, the other being "intuition" (*hads*), a particularly structured inductive inquiry, as has just been noted.

TABLE 12.3 The topic of this article on Avicenna

	knowledge	
	acquisition (i.e. inquiry)	communication (i.e. teaching)
physical phenomena	induction <i>tağriba</i> and <i>ḥads</i>	deduction/ demonstration
doxographic phenomena	dialectics? (open question)	?

3 Avicenna and the Doxography of *Physics* I

So far, I hope to have provided enough reason for the esteemed reader to be or not to be surprised to see Avicenna devoting an entire chapter of his *Lecture on Nature*, viz. chapter 1.4, to the discussion of Presocratic opinions, referring (implicitly or explicitly) to the opinions of Parmenides, Melissus, Thales, Anaximenes, the atomists, and Anaxagoras as well as “the other doctrines mentioned in the books of the Peripatetics.”²⁵ Let me now examine this chapter and investigate how it relates to method and contents of the remainder of the first book of Avicenna’s *Lecture on Nature*.²⁶

The main doxography which Avicenna produces in chapter 1.4 of his *Lecture on Nature*, before subsequently discussing it, is the following:

Those doctrines [that are usually discussed at this point in a book on physics]²⁷ are, for example, the doctrine ascribed to Melissus and Parmenides that the existent is one and unmoving, and then Melissus says that it is infinite and Parmenides says that it is finite; or, for example, the doctrine of the one who says that it is one, infinite, susceptible to motion, and either water or air or something other than that; or the one who makes the principles infinite in number and either indivisible parts dispersed in the void or small bodies homogeneous with what is from them [in terms of] waterness or fleshness²⁸ or airiness or something other than that all being

25 Avicenna, *Lecture on Nature* 1.4, § 1, 26.10.

26 For a first brief reflection on Avicenna’s method in chapter 1.4 of his *Lecture on Nature*, cf. Hasnawi, “La Physique du *Šifāʾ*,” 75 f.; see also fn. 46 below.

27 See below, 318.

28 Reading *māʾiyya wa-laḥmiyya* with Mss or. 4 and or. 84 as well as McGinnis and Āl Yāsīn for *māʾiyya* in Zāyid (but see the latter’s *apparatus*).

mixed with the whole; or the other doctrines mentioned in the books of the Peripatetics.

AVICENNA, *Lecture on Nature* 1.4, § 1, 26.6–10

The first obvious feature of Avicenna's treatment of the Presocratics' theories on principles is that he is rather brief and succinct, and does not even care to provide names other than those of Melissus and Parmenides. The second obvious feature, in comparison to Aristotle's more detailed engagement, is that Avicenna treats the theories he has related apparently with much less respect:

As for²⁹ the doctrine of Melissus and Parmenides, neither do we get it (*fa-innā ġayr muḥaṣṣilīn laḥū*) nor is it possible for us to determine their aim (*ġaraḍihimā*) in it nor do we believe that they have reached the foolishness and stupidity which the outward meaning of their words indicates.

AVICENNA, *Lecture on Nature* 1.4, § 2, 26.11 f.

These words, forthright though they are, may not be as contemptuous as they seem. First of all, Avicenna could be regarded here as *excusing* Melissus and Parmenides of the stupidity of their words—their *Arabic* words, of course, that must be. So, it is possible to read his remark here as an apologetic statement of awareness of the sometimes adverse conditions of textual transmission. His knowledge about the ancient philosophers stems from Arabic translations often not even produced directly from the Greek. The texts at his disposal could very well have suffered from incorrect translation or scribal errors in multiple stages, or may altogether be the results of contaminated, inauthentic, or deliberately modified sources, if we think of the Plotinian *Theology of Aristotle* or Ps.-Ammonius' *Doxography*. Indeed, in one of his letters, Avicenna explicitly calls the *Theology of Aristotle* “somewhat suspect,” doubting its authenticity and, thereby, displaying his sensitivity to questions of textual transmission.³⁰ In want of more, and more reliable, textual evidence, Avicenna has no other choice than to take the Eleatics' account in accordance with “the outward meaning of their words,” i.e. “at face value,” as Jon McGinnis captured this expression in his corresponding translation.

In our present case, however, we are dealing with a doxographical account that was available to Avicenna in what probably was a quite accurate trans-

29 As a textual aside: some manuscripts seem to read *amma*, where others read *inna*. McGinnis and Āl Yāsīn opt for the former, Zāyid for the latter, which is also found in the two manuscripts at my disposal (Mss or. 4 and or. 84).

30 Cf. Avicenna, *Letter to Kiyā*, tr. by Gutas, *Avicenna and the Aristotelian Tradition*, 58.

lation of Aristotle's *Physics* and precisely *not* with a work comparable to the *Theology of Aristotle*.³¹ Yet, even then, it seems, Avicenna rightly remains confused about Parmenides' and Melissus' actual positions concerning principles, as no reasonable position could ever have emerged from Aristotle's doxography. Indeed, Avicenna's present perplexity about his Eleatic predecessors is all too understandable. While he knows Parmenides and Melissus primarily as proponents of monism, he is told in *Physics* 1.5 that Parmenides also "makes hot and cold principles (*archas poiei*), and these he calls fire and earth."³² It seems that, after all, Parmenides believed (not very monistically) in more than one principle—and Avicenna explicitly states his confusion about this: "they also talk about natural things and about their having more than one principle; for example, Parmenides' talk of 'earth and fire!'"³³

What Avicenna does not—and surely could not—know is that Aristotle has drawn this latter information now from the *second* part of Parmenides' poem (that on mere opinion) and not from the first part (that on truth). In fact, in his famous poem, Parmenides actually criticises this dualistic position.³⁴ It is in itself a curious move by Aristotle to have used this material in his doxography without caution, thereby creating this ostensible inconsistency in Parmenides' thought in the first place. Consequently, Avicenna's confusion, again, is justified—even though he apparently could not resist the temptation of stating his bewilderment with typical utter confidence. Yet, even his severe rhetoric could be explained differently, as Avicenna may have been instigated by Aristotle's own rather blunt judgement expressed in *Physics* 1.2:

So, to investigate whether it [sc. the principle] is one in this way is like ... solving an eristic argument, which is just what both arguments contain, both Melissus' and Parmenides'. For they assume falsehoods, and are non-syllogistic (*asylogistoi*). Or rather, the argument of Melissus is crude and

31 We do not know which translation(s) exactly Avicenna was using or relying on primarily when writing his *Lecture on Nature*. For a review of the evidence about the Arabic translations of the *Physics* and on Avicenna's knowledge of these various translations, see Lammer, *The Elements of Avicenna's Physics*, 9–19, 37–41 and now also Arnzen, *Aristotle's Physics VIII*, cxci–cxv.

32 Aristotle, *Phys.* 1.5, 188a20–22, tr. Judson/Quarantotto; cf. Parmenides, DK 28 B8, ll. 50–59. For their monism, cf. Aristotle, *Phys.* 1.2, 184b15 f.: μίαν εἶναι τὴν ἀρχὴν ... ὡς φησι Παρμενίδης καὶ Μέλισσος.

33 Avicenna, *Lecture on Nature* 1.4, § 2, 26.13.

34 E.g. Parmenides, DK 28 B8, ll. 50–52.

contains no difficulty—grant him one absurdity and the others follow: this is not very hard.

ARISTOTLE, *Phys.* I.2, 185a5–12, tr. JUDSON/QUARANTOTTO, mod.

However, despite both his confusion and Aristotle's example of a blunt attack, Avicenna provides two, perhaps earnest, attempts at determining the aim Parmenides and Melissus had been pursuing in their accounts.³⁵ He, first, states that it seems that "the existent" (*to on, al-mawǧūd*) which according to Parmenides and Melissus is "one and unmoving" may be the Necessary Existent—Avicenna's modal version of Aristotle's Unmoved Mover, being his philosophical account of God and one of his great contributions to the history of philosophy. God, Avicenna states, is of course "infinite, unmoving, and of infinite power."³⁶ That would accommodate Melissus' view that the Existent—now, however, written with a capitalised "E"—is infinite, one, and unmoving. Parmenides' assertion that it is finite, in turn, could only be understood if it was meant to characterise God as the finite "endpoint at which all things terminate," i.e. if God is the ultimate final cause.³⁷ In other words, Avicenna appears to attempt to look *through* the Arabic terminology he was offered to grasp what the original Greek idea had been that drove these two Eleatics to the nonsense which the outward meaning of their Arabic words now is indicating.

A second attempt describes a different aim. Maybe Parmenides and Melissus intended not to talk about the Necessary Existent but to show that existence *qua* existence is different from essence. According to the example provided by Avicenna, "humanity is an essence which is not itself an existent nor is existence a part of it; instead existence is extrinsic to its definition."³⁸ That is to say, Avicenna surmises that Parmenides and Melissus may have hinted towards the essence-existence distinction—Avicenna's second great achievement in the history of philosophy. "It seems," Avicenna writes, "that the one who said that it is finite meant that it is defined in itself and none of the natures that get lost in the many, whereas the one who said that it is infinite meant that it applies to infinitely many things."³⁹

35 Despite his attempts to interpret the views of Parmenides and Melissus, it may be worth noting that Avicenna does not display any interest in reaching beyond the doxography contained in Aristotle's *Physics* by, for example, adding material from other sources that may help understanding or contextualising Parmenides and Melissus ideas.

36 Avicenna, *Lecture on Nature* I.4, § 2, 26.14–27.1.

37 Avicenna, *Lecture on Nature* I.4, § 2, 27.1.

38 Avicenna, *Lecture on Nature* I.4, § 2, 27.4.

39 Avicenna, *Lecture on Nature* I.4, § 2, 27.5 f.

However, Avicenna continues, if neither the essence-existence distinction nor the Necessary Existent was what Parmenides and Melissus had in mind (and of course Avicenna could hardly have thought that it was), then “it is not possible for me to refute them” (*fa-laysa yumkinunī an unāqīdahumā*).⁴⁰ The reason he, then, provides for his inability to refute them is interesting; he states the following:

That is because the syllogism through which we would refute their doctrine would certainly be composed of premises, and it is necessary that those premises are either in themselves more evident than the conclusion—but I find nothing more evident than this conclusion—or that they are conceded by the opponent—but it is not possible for me to know⁴¹ which premises those two should accept.

AVICENNA, *Lecture on Nature* I.4, § 3, 27.9–12

In the following Avicenna employs some features of Aristotle’s objections against Parmenides and Melissus, in order to illustrate that the premises of the refuting syllogism, indeed, would be more evident than its conclusion, which is not allowed in demonstrative reasoning.⁴² Yet, already after a few lines, he ends his brief engagement with the two Eleatics and turns to the “remaining groups,” whose doctrines he had mentioned above anonymously (viz. Thales, Anaximenes, Anaxagoras, and the atomists), announcing that he shall now provide but “a sparse pointer (*išāra ḥafifa*) towards the corruption of their doctrine,”⁴³ together with a promise to investigate the details of their errors in future writings: Thales and Anaximenes (who disregarded the importance of the specific difference) should be discussed in the treatise concerned with generation and corruption, whereas Anaxagoras’—and perhaps Anaximander’s—position (which sets the possibility of scientific knowledge at naught) also should be discussed, if at all, in the treatise on generation and corruption, just as the atomists, too.

40 Avicenna, *Lecture on Nature* I.4, § 3, 27.9. Since Avicenna probably did not think that Parmenides and Melissus anticipated these two cornerstones of his own philosophy, it may well be more appropriate to consider his two attempts at interpreting their words as attempts of developing or appropriating their views.

41 Reading *a’rifu* with Mss or. 4 and or. 84 as well as Zāyid for *a’ruḍu* in McGinnis and Āl Yāsīn.

42 Cf. also Aristotle’s above-mentioned complaint that Parmenides and Melissus are “non-syllogistic” (*asylogistoi*) at *Phys.* I.2, 185a10.

43 Avicenna, *Lecture on Nature* I.4, § 2, 28.5.

That is about it, i.e. that is all Avicenna has to say about five chapters and four-and-a-half Bekker pages of detailed doxographical discussion in the first book of Aristotle's *Physics*—a discussion which was absolutely essential in Aristotle's analysis, as it resulted in the important and ground-breaking insights that “principles must be opposites” and that they are “not more than two or three” in number.⁴⁴

Instead of these two Aristotelian insights, Avicenna provides merely a brief conclusion to close his own chapter 1.4. This brief conclusion, however, will prove almost equally—though differently—informative. He states:

Since we have reached this point, let us close this chapter. This chapter was included in our book by accident (*dāḥil fī kitābinā bi-l-ʿaraḍ*). So, he who wishes to retain it, retain it, while he who wishes to not retain it, do not retain it.

AVICENNA, *Lecture on Nature* 1.4, § 6, 28.16f., tr. MCGINNIS, mod.

At first, this is puzzling: What does this mean: “This chapter was included in our book *by accident*”? Why does Avicenna explicitly allow (or advise?) the future copyist to omit this chapter in its entirety? It seems as if this chapter does not really belong to the content of Avicenna's *Lecture on Nature*, i.e. it seems to be no integral or *essential* part that would be relevant for his own discussion of the principles of natural things: “accidental” in the sense of “not essential,” so that nothing would be lost, even if all future scribes followed his permission to skip (“not retain”) chapter 1.4 while copying his *Lecture on Nature*. In order to understand this concluding remark fully, we need to turn to the opening remark of the chapter. There he wrote:

Once we reached this point (*hādā l-mablaḡ*), some of our companions have asked us to discuss the doctrines of the Ancients concerning the principles of natural things that are considered to be false. It has been customary to proceed by mentioning them at the beginning of natural philosophy before the discussion of nature (*qabla l-kalām fī l-ṭabīʿa*).⁴⁵

AVICENNA, *Lecture on Nature* 1.4, § 1, 26.5f.

44 Aristotle, *Phys.* 1.5, 189a9f.; 1.6, 189b27f.

45 Reading *fī l-ṭabīʿa* with Leiden Mss. or. 4 and or. 84 as well as Zāyid for McGinnis' and Āl Yāsīn's *fī l-ṭabīʿiyya*.

TABLE 12.4 The order of topics treated in Aristotle's *Physics* I–II and Avicenna's *Lecture on Nature* I

Aristotle	I.1	I.2–6	I.7–9	II.1–2	II.3	II.4–6	II.7–9
	Method	<i>Presocratics</i>	Principles	Nature	Causes	Chance/Luck	Causes, Science
Avicenna	I.1	I.2–3	I.4	I.5–8	I.9–12	I.13	I.14–15
	Method	Principles	<i>Presocratics</i>	Nature	Causes	Chance/Luck	Causes, Science

This introductory remark apparently is meant to explain what “by accident” is supposed to mean in the concluding paragraph.⁴⁶ Yet even so, one surely wonders what Avicenna means by “this point.” While this current passage states that the proper place for an elaboration on false, Presocratic doctrines is “before the discussion of nature,” this does not dictate that any such chapter has to be included at all nor that it must be included *immediately* before the discussion of nature as the principle of motion in natural bodies. That is clear already from Aristotle, who had his engagement with Presocratic theories in the *first half* of *Physics* I (before identifying matter and form as principles) and not towards the end immediately before book II (which, then, discusses nature). So, maybe “before the discussion of nature” merely indicates that *if* such a chapter were to be included, it should be *somewhere* before the discussion of nature. In effect, then, “this point” would mean that Avicenna, having already discussed the principles of natural things in chapters I.2–3, now has no place available for the insertion of the traditional (“customary”) discussion of Presocratic doctrines other than the present one right before his own discussion of nature in chapter I.5. (The above table, Table 12.4, illustrates this situation.)

This is all entirely reasonable, it seems. Nonetheless, it is also apparent that “this point” now, at which Avicenna enters into a discussion of the Presocratic opinions, is still an odd choice, to say the least. In the last sentence of the preceding chapter I.3, Avicenna announced that “nature” should be the next subject; he even ended the chapter with the very word “nature”:

46 This has already been noted by Hasnawi, “La Physique du *Šifāʾ*,” 75. Moreover, hinting at a brief passage in *The Lecture on Nature* I.2, in which Avicenna advises his readers “not to confound the demonstrative disciplines with dialectics,” Hasnawi made a case for Avicenna’s derogatory perspective on (“statut dérogoatoire”) and his reserved stance towards the dialectic approach (“réserve à l’égard de la démarche dialectique”). My interpretation confirms—and, in fact, goes beyond—Hasnawi’s reading of *The Lecture on Nature* I.4, even though currently I would like to abstain from broader claims about Avicenna’s views on dialectics as a means to acquire knowledge, which I have labelled an “open question” (see fn. a above, 309).

It is necessary to attend to those principles that are most adequately called “causes.” Of these, let us make known the efficient principle common to natural things—and this is nature.

AVICENNA, *Lecture on Nature* I.3, § 12, 25, 14f.

This announcement is apparently picked up by the first word of chapter I.5, “we say” (*naqūlu*), by which Avicenna instantly commences a discussion of the efficient principles of natural bodies. One of these principles is none other than “nature,” which Avicenna thereupon discusses in detail throughout the following chapters. In other words, chapter I.5 immediately focuses on the concept of nature as “the efficient principle common to natural things” and, thus, naturally follows upon, and directly connects to, the last words of chapter I.3.

Yet, in between these two chapters—I.3 and I.5—we find the brief chapter I.4, claiming that some of his companions requested a treatment of Presocratic doctrines here at “this point” which, as we said, apparently was the only available place left to suit the customary order. However, since this place, too, is a rather ill choice, we might perhaps say that there was actually *no* adequate place for chapter I.4 *anywhere* in Avicenna’s *Lecture on Nature*. In fact, we have reason to believe that Avicenna himself did not want to include a discussion that corresponds to Aristotle’s doxographical inquiry from *Physics* I at all and that, moreover, a refutation of Presocratic theories of the principles was never meant to be part of his project in *The Lecture on Nature*—at least not before his companions came around and requested it.

Further structural considerations support the impression that the doxographical discussion in chapter I.4 does not fit into Avicenna’s agenda in *The Lecture on Nature*. Had Avicenna really intended to follow the order of Aristotle’s *Physics*, as he announced in the preface, then he would have placed chapter I.4 directly after the methodological considerations in I.1, i.e. before expounding the principles in I.2–3. Yet, of course, in the same preface Avicenna also states that he will deviate from the Peripatetic order whenever he sees fit.⁴⁷ However, even so, the misplace of I.4 seems to be the *only* major structural alteration in all the fifteen chapters that constitute the first book of his *Lecture on Nature* compared to the order of the first two books of Aristotle’s *Physics* (cf. Table 12.4 above).⁴⁸ In effect, the only alteration in terms of order and structure

47 Cf. Avicenna, *Lecture on Nature*, preface, § 2, 3, 8–4.3.

48 Cf. also Hasnawi, “La *Physique* du Šifā’,” 67: “le contenu du premier traité d’Avicenne correspond *grosso modo* à celui des livres I et II de la *Physique* d’Aristote.”

really was placing the discussion of Presocratic theories of principles directly at that ill-fitting spot between his account of principles and his definition of nature.

So, why, we may ask, did Avicenna rearrange the order of topics here? Under the assumption that Avicenna generally was not inclined to modify the topical structure of *Physics* I–II, we could imagine the following scenario: Avicenna first wrote a chapter on method that corresponds to *Physics* I.1. Then, he turned to the doxographical inquiry in *Physics* I but did not regard these—for reasons still to be determined—as being worthy of inclusion into his *Lecture on Nature*. Consequently, he decided to skip them and, without further ado, to write the two chapters that correspond to the positive account of *Physics* I.7–9, by expounding matter, form, and privation, so as to reach eventually the definition of nature in *Physics* II.⁴⁹ At one point, however, perhaps immediately after he had written the final words of chapter I.3, i.e. after having introduced the topic of chapter I.5, his companions and disciples approached him and urged him to add a chapter on the doxographical contents of *Physics* I nonetheless, either because they regarded it as customary to implement these matters before reaching the topics of *Physics* II or because they wanted to hear what their master had to say about these chapters whose discussion they were themselves unable to comprehend and, as shown above, were justifiably confused about. Thus, it happened that, even though it did not suit his book, Avicenna sat down to write the chapter after all, and it was inserted at the only place possible, i.e. at a place where it could least harm his overall argument about the principles of natural things: *after* his argument about principles and *before* the next topic begins—even if this meant to disrupt what otherwise would have been a rather smooth and seamless transition from chapter I.3 to what would then become I.5.

If we want to believe this story, we need to ask and answer the question why Avicenna should have planned *not* to include a chapter on the doxographical inquiry in *Physics* I. First of all, there are the above-mentioned textual and doctrinal issues. Since Avicenna simply, and justifiably, did “not get ... the doctrine

49 It should be noted that although Avicenna apparently follows Aristotle's *Physics* in the order of topics, he is greatly independent in his entire discussion of the principles of natural things. Of course, he adheres to many of Aristotle's conclusions, such as matter and form as the constituents of bodies, his entire presentation, and many of his doctrinal details, are either novel or further developed from Aristotle and his commentators. So, even if Avicenna may follow Aristotle with regard to the topics, it needs to be understood that he cannot be said to have adopted his predecessor's approach; cf. Lammer, *The Elements of Avicenna's Physics*, 111–212.

of Melissus and Parmenides,” any refutation would have amounted to no more than fumbling in the dark. Thus, Avicenna might have chosen to avoid such an uncertain and fruitless endeavour.

More importantly, however, such a refutation also would have run counter Avicenna’s agenda not only in his *Lecture on Nature* but also in his entire *Healing*—of which his *Lecture on Nature* is one of twenty-two parts.⁵⁰ In other words, Avicenna may not only have chosen to avoid engaging with earlier opinions on the principles of physics, because it would *not be beneficial* or fruitful—he actively may have decided that it should be left aside, because it is, in fact, *harmful*. As already briefly noted above, Avicenna considers science and philosophy to have an inherent hierarchical structure.⁵¹ In fact, he wrote his *Healing* upon request by his students and, before penning the first word, warned them that he will *not* engage in “close textual analysis and commentary” and, instead, will compose a “comprehensive work” of what he has “readily in [his] mind.”⁵² It is important to understand, then, that Avicenna’s plan was precisely to write a *new* work (i.e. he did not want to rewrite Aristotle’s *Physics* or write a commentary that follows it) and that he wrote it for a certain purpose (viz. he wrote it for his students for the purpose of education). This warning needs to be taken seriously, as it means nothing less than that Avicenna frees himself from certain strictures of tradition, in order to create something novel. In this spirit and in following the scientific theory Avicenna found in Aristotle’s *Posterior Analytics*, which explains how knowledge is to be communicated and how a scientific exposition should be structured (if it is to be successful), he intended to present and to teach the contents of the discipline of physics in a demonstrative manner, thereby also literally following Aristotle’s famous advice from *Physics* 1.1 to “advance from the universals to the particulars,” because this is “the direction of intellectual learning and teaching.”⁵³ However, regarding the

50 It would be worthwhile to investigate whether the following remarks pertain only to *The Lecture of Nature* or also to (i) the other parts of *The Healing* or even to (ii) his other seven *summae* of philosophy, i.e. to the seven complete presentations of philosophy that he wrote during his career in addition to the monumental *The Healing*. For at least some first thoughts on (i), see the *post scriptum* below, 325 ff.; for extensive information on Avicenna’s other *summae*, cf. Gutas, *Avicenna and the Aristotelian Tradition*, esp. ch. 2.

51 Cf. above, 310.

52 Avicenna, *al-Madhal*, preface, 2.2–14, tr. by Gutas (*Avicenna and the Aristotelian Tradition*, 31f.), mod.

53 Avicenna, *Lecture on Nature* 1.1, §1, 7.15; cf. also Avicenna, *Lecture on Nature* 1.1, §3, 8.8: “the direction of intellectual learning and teaching” (*al-ta’allum wa-l-ta’līm al-’aqlī*), in comparison to Aristotle, *An. post.* 1.1, 71a1 f.: Πᾶσα διδασκαλία καὶ πᾶσα μάθησις διανοητικῆ, translated into Arabic as *kull ta’līm wa-kull ta’allum dīhnī*; cf. also Lammer, *The Elements of Avicenna’s Physics*, 62–72.

doctrines of Melissus and Parmenides, we have just seen Avicenna claiming that “it is not possible for [him] to refute them,” because, taking their words at face value, any conclusion demonstrating their theory’s being utterly mistaken would be better known than the premises which would have to be employed in the syllogism towards that conclusion, as we have seen. If that is right, then any engagement in their refutation would not only be fruitless but would constitute no less than a violation of Aristotle’s and Avicenna’s shared standards of demonstrative reasoning and would, thus, *disrupt* “the direction of intellectual learning and teaching” that defines Avicenna’s *Healing* (and especially his *Lecture on Nature*), thus marring—from the very beginning—the execution of his intention to create a novel instruction of physics.

Although Aristotle agreed in these standards about demonstrative reasoning, the difference is that he, unlike Avicenna, did not decide to implement and realise the scientific programme of his *Posterior Analytics* in his other works. For Aristotle, then, it was unproblematic to investigate and refute the theories of Parmenides and Melissus—in fact, it may have been required and was certainly rewarding in his intended course of *acquiring knowledge by inquiry*. For him, probing earlier opinions of venerable members of the scientific community constituted an essential part of his agenda. Avicenna, on the other hand, desired to *communicate knowledge by teaching*—and teaching ought to develop demonstratively. Any task that is essentially undemonstrative jeopardises the success of such an effort and should be avoided. This could pertain to endoxic or dialectical inquiries in general or to the examination of earlier opinions on such fundamental topics as principles in particular—but it certainly, especially, and most clearly pertains to the opinions of Melissus and Parmenides which, Avicenna thought, could in no way be integrated into his demonstrative path of exposition, precisely because it is “not possible ... to refute them” (and of course, Avicenna means “refute them *demonstratively*”). That is not to say that Avicenna generally had no interest in doxography, but that he had no interest in doxography in *those works* in which he wished to explain his own philosophy in detail.⁵⁴

In his ground-breaking study of Avicenna’s metaphysics of *The Healing* and its debt to Aristotle’s *Metaphysics*, Amos Bertolacci arrived at a similar conclusion. Bertolacci stated: “in his reworking of the Aristotelian corpus [Avicenna] gives a subordinate methodological role to the ‘dialectical’ procedures used by Aristotle, such as the survey of the predecessors’ opinions, and the discussion

54 Moreover, it remains to be seen how successful Avicenna eventually was in realising such an ambitious scientific project in and throughout his oeuvre.

of *aporiai* (i.e. unsolvable or unsolved problems).⁵⁵ Our analysis of Avicenna's physics of *The Healing* corroborates Bertolacci's findings from the metaphysics. Yet, while Bertolacci sensitively spoke of a "subordinate methodological role," our verdict on Avicenna's attitude, at least in respect of *Lecture on Nature* I.4, must be more sharp: here in this work, at this place of his exposition, and in this very chapter, Avicenna had absolutely no interest in any form of doxographical activity, as it would mean to violate his intentions and, as we have seen, actively disrupts his apparently already penned formulations that were meant to be the transition from chapter I.3 to I.5.⁵⁶ In addition, Avicenna also saw no *need* for it, because he personally had acquired the knowledge of principles through earlier acts of inquiry (presumably both inductively, i.e. by means of *tağriba*, and dialectically, i.e. by means of *endoxa*) and he also presented that knowledge already in the preceding chapters I.2–3, so that at "this point" he can clearly dispense with an endoxic inquiry that *once*—almost one and a half millennia ago—had served the purpose of establishing these principles. Yet, when his companions, then, urged him to reconsider his decision and to add a chapter nonetheless, he did consent to them—but only reluctantly; and it is this reluctance which is so very noticeable throughout chapter I.4: first, Avicenna claims that, judging from the outward appearance of their word, the theory of Melissus and Parmenides is just nonsense. Second, he complains that even if one tried to make sense of their words, one could not refute them demonstratively. Third, having argued against the Eleatics a bit and upon reaching the Milesians, he expresses his weariness by kindly requesting from the reader to be content with what is merely "a sparse pointer towards the corruption of their doctrine."⁵⁷ Fourth, just having started with his hastened run, perfunctorily gesturing at some of the many issues in the doctrines of Thales, Democritus, Anaxagoras, and the atomists, he finally, and rapidly, loses his interest completely and stops, rather abruptly, only a few lines later, stating:

Since we have reached this point, let us close this chapter. This chapter was included in our book by accident (*dāhil fi kitābinā bi-l-'araḍ*). So, he who wishes to retain it, retain it, while he who wishes to not retain it, do not retain it.

AVICENNA, *Lecture on Nature* I.4, § 6, 28.16f., tr. MCGINNIS, mod.

55 Bertolacci, *The Reception of Aristotle's Metaphysics in Avicenna's Kitāb al-Šifā'*, 214.

56 In fact, one may even go so far as to wonder whether chapter I.4 was inserted *much* later, i.e. after Avicenna had already started—or even finished—his discussion of nature and his disciples realised that he had not discussed the Presocratic theories of *Physics* I.

57 Avicenna, *Lecture on Nature* I.4, § 2, 28.5.

All this indicates that from the very beginning, Avicenna had no interest in writing chapter I.4 and that, while he was writing it, he was dissatisfied with it. He explicitly left it to the future copyist to decide over the fortune of the chapter, i.e. whether it ought to be retained or omitted (maybe even hoping for the latter), as it just accidentally happened to be included in his *Lecture on Nature*—upon the pleading request of his disciples—and does not form an essential component of his demonstrative exposition of, and his didactic elaboration on, the principles of nature anyway.

4 Conclusion

My intention in this paper was to approach doxography from a different angle. If Aristotle counts as a doxographer insofar as his works contain doxographical sections and doxographical material, or employ doxography for certain ends, and if, further, Avicenna stands in the Aristotelian tradition pledging his allegiance to the Aristotelian works and even their structure, then Avicenna is already—through kin liability, as it were—a doxographer too. In addition to that, I have provided further reasons why he reasonably could be counted as a doxographer of sorts and mentioned his two lost works devoted to listing, arranging, and discussing the opinions of earlier and other thinkers. In light of this evidence, then, my question was: what happens to doxography in the works of Avicenna? Given the reformulations of methodology and his focus on a demonstrative-deductive communication of knowledge, instead of an empirical-inductive acquisition of knowledge, I reformulated the question as follows: what happens to doxography in the course of *communicating* knowledge?—And the answer, now, is: Avicenna displays no genuine interest in doxographical materials, even though the works comprised by his major monograph *The Healing* are meant to follow Aristotle's works (and do so more closely than some of Avicenna's other writings), which do contain—and more importantly: *employ*—these materials prominently. Avicenna, however, has no need for doxography while setting out his own philosophy, because it would undermine his “way from teaching and learning.”⁵⁸

This, however, does not mean that we should conclude that Avicenna is never interested in other opinions. It also does not *simply*, and by itself, entail that he does not like dialectics (as mentioned, Avicenna's position towards the merits of dialectics as a means of acquiring knowledge and forming the

58 Avicenna, *Lecture on Nature* I.1, §1, 7.15.

TABLE 12.5 Avicenna's methods of both knowledge acquisition and knowledge communication

	knowledge	
	acquisition (i.e. inquiry)	communication (i.e. teaching)
physical phenomena	induction	deduction/ demonstration
doxographic phenomena	<i>tağriba</i> and <i>hads</i> dialectics? (open question)	<i>no genuine interest</i>

mind is still an open question). Yet, it means, I think, that the picture is more nuanced—and that we should not approach the doxographical attitude of a philosopher who is *communicating* knowledge by the same set of rules and measures that we are used to employ when we investigate those who are engaged in *acquiring* knowledge. (The above table, Table 12.5, illustrates this result of my investigation.)

5 *post scriptum*

The *Physics*, however, is not the only work in our *Corpus Aristotelicum* that is particularly marked by an extensive discussion of Presocratic theories. There are also Aristotle's *De anima* and the *Metaphysics*, both of which begin with an entire book evaluating the doctrines of Aristotle's predecessors. In addition, much of *Metaphysics* M and N contain similar material. So, it would be worthwhile to see whether the result established above on the basis of a reading of Avicenna's *Lecture on Nature* bears potential for a wider application and, indeed, for describing a universal feature of Avicenna's method in composing his *Healing* (or even his other works). Although this is not the place for a complete investigation of this question, let me briefly indicate some features of Avicenna's treatment (or lack) of Presocratic doxographical materials in his *Book on the Soul* (*al-Nafs*) and his own *Metaphysics* (*al-Ilāhiyyāt*).⁵⁹

59 In this paper, I shall leave aside the questions whether subsequent chapters in *The Lecture on Nature*, e.g. on place and time, are doxographical and if so how they relate to chapter I.4 in particular, and to Avicenna's method as presented in this paper in general. While I do not think that subsequent chapters harm the above analysis, a proper investigation surely would be worthwhile. It should be added moreover that the same worthwhile

Turning to the *Book on the Soul*, we immediately have to fear that we might have to let go of our hypothesis that Avicenna generally sees no avail in Aristotle's at least occasionally endoxic method, for already the not at all brief chapter 1.2 is devoted "to a report of what the ancients said about the soul and its substance and [to] a refutation of it." What is more, the penultimate chapter of the work, chapter v.7, again is entitled to be "on enumerating the doctrines transmitted from the ancients on the topic 'soul' and on its acts" and seems, to some degree at least, to resume the previous discussion in chapter 1.2.

However, if we inspect how Avicenna concludes chapter 1.1 and how he begins chapter 1.3, we once more get the impression that these chapters merge seamlessly. The first chapter states that it has successfully pointed towards the fact that "the existence of soul as something other than the body, nay even other than body" (*wuġūd al-naḥs šayʿan ġayr al-ġism bal ġayr ġism*), while the third chapter begins with a statement that "you know from what has been presented to you before that the soul is not body" (*innaka taʿrifu mimmā tuqaddimu laka an al-naḥs laysat bi-ġism*), as if nothing, let alone an entire chapter of eight pages, existed in between.⁶⁰ In fact, chapter 1.2, which corresponds in many aspects to Aristotle's *De anima* 1, does not seem to contribute anything to the line of thought Avicenna started in chapter 1.1 and continued in chapter 1.3.⁶¹ This impression is supported, not to say proven, by the fact that in the psychological section of his later *Eastern Philosophy* (*al-Ḥikma al-mašriqiyya*), which by and large relies on the contents of *The Healing*, Avicenna, indeed, dispenses with the historical surveys altogether and, thus, skips what used to

investigation would have to be carried out about several chapters in other works on natural philosophy from Avicenna's *The Healing*, e.g. his *On the Heavens and the Earth* and *On Generation and Corruption*, vis-à-vis the corresponding chapters in Aristotle's works. Regarding Avicenna's *On the Heavens and the Earth*, for example, Cerami has recently noted that "the analysis and refutation of the predecessors' doctrines, scattered in the Aristotelian *DC* throughout books III and IV, are gathered together and placed after what one may call the positive discussion of Avicenna's treatise" ("The *De Caelo et Mundo* of Avicenna's *Kitāb al-Šifāʿ*," 283).

60 Avicenna, *Book on the Soul* 1.1, 13.18–20; 1.3, 22.3.

61 Cf. Alpina, "The *Soul of*, the *Soul in Itself*, and the *Flying Man* Experiment," 209. It is to be said, though, that in his impressive and convincing analysis, Alpina argues that chapter 1.2 still offers some *negative* contribution to Avicenna's overall argument of 1.1 and 1.3: as the first chapter shows that the soul is *not* body, the second chapter shows what else the soul is *not*, so that in the third chapter, Avicenna can turn to a positive account. ("The *Soul of*, the *Soul in Itself*, and the *Flying Man* Experiment," 204, esp. 206 fn. 55). By the same token, it is evident that the negative account of chapter 1.2 is not *essential* to Avicenna's argument in any way and, thus, could be dispensed with easily (i.e. chapter 1.2 of *The Book on the Soul* is "not essential" in the same sense as chapter 1.4 of *The Lecture on Nature* was explicitly said to be included only "by accident," as discussed above, 317).

be chapter I.2 of his *Book on the Soul*.⁶² Avicenna's way of presentation in the *Eastern Philosophy* emphasises the close "argumentative connection" between the contents of chapter I.1 and I.3 of his *Book on the Soul*, as has concordantly been asserted by Dag Nikolaus Hasse, Dimitri Gutas, and Amos Bertolacci.⁶³ It thus seems that, although Avicenna apparently sees some reason for discussing Presocratic opinions in his *Book on the Soul*—after all he did not openly declare his lack of interest as he did in *The Lecture on Nature* nor did he skip the doxography as in the *Eastern Philosophy*—his endoxic discussion is nonetheless somewhat secluded from his own systematic elaboration on the soul and its capacities. Only at the beginning, in an, again, apparently ill-fitting place, and at the very end of the work, after his account, does he add such a discussion.

A similar picture emerges from Avicenna's approach in his *Metaphysics*, whose way of dealing with the doxographic material contained in Aristotle's *Metaphysics* has been studied by Bertolacci.⁶⁴ Interestingly, Avicenna's work does not contain a chapter or book at its beginning that would correspond to book A of Aristotle's *Metaphysics*.⁶⁵ Avicenna merely announces, for example in chapters I.4 and III.1, that he will later have to go into the "false opinions" (*al-ārā' al-bāṭila*) in the context of discussing number and "engage in resolving the doubts" of those who erred.⁶⁶ This discussion, which primarily draws upon books M and N of Aristotle's *Metaphysics*, later constitutes chapters VII.2–3.

Interestingly, book VII, again, is somewhat isolated in the course of Avicenna's *Metaphysics*. Avicenna has just provided in depth his revolutionary causal theory in book VI and will begin book VIII with the remark that, since "we have reached this point" (*hādā l-mablağ*), we should finally think of concluding the book. Consequently, the words in chapter VIII.1 are the beginning of the end of Avicenna's *Metaphysics* and, thus, the beginning of a thematic

62 This was already noted in Hasse's *Avicenna's De anima in the Latin West*, 85. Likewise, Avicenna's *Eastern Philosophy* contains nothing that corresponds to chapter v.7, i.e. to the second doxographical chapter of *The Book on the Soul*. I am grateful to Tommaso Alpina for discussing this matter with me and for sharing in advance some material from his recent monograph *Subject, Definition, Activity: Framing Avicenna's Science of the Soul* ahead of its publication.

63 Hasse, *Avicenna's De anima in the Latin West*, 85; cf. Gutas, "Avicenna's Eastern ('Oriental') Philosophy," 173, Bertolacci, *The Reception of Aristotle's Metaphysics in Avicenna's Kitāb al-Šifā'*, 235 fn. 73; cf. also, again, the somewhat more nuanced but still concurring analysis in Alpina, "The Soul of, the Soul in Itself, and the Flying Man Experiment."

64 Cf. Bertolacci, *The Reception of Aristotle's Metaphysics in Avicenna's Kitāb al-Šifā'*, 232–245.

65 In fact, Avicenna's *Metaphysics* is, overall, the result of a massive and ingenious rearrangement of the contents of metaphysics as a science of being *qua* being, as Bertolacci is known to have shown.

66 Avicenna, *Metaphysics* I.4, § 6, 27.2; Avicenna, *Metaphysics* III.1, § 10, 95.14, tr. Marmura.

cluster that Avicenna would not have liked to be disrupted: the knowledge of the First Principle (*ma'rifat al-mabda' al-awwal*). That Avicenna inserts his doxography on the false opinions of number at this point, after book VI and before book VIII, is reminiscent of the situation we have found in *The Lecture on Nature*, in which he added the doxography, as we said above, where it could least harm his overall argument. So, in the *Metaphysics*, too, he effectively outsourced the doxography, even though he felt the need to add it *somewhere* (where it does not hurt too much).⁶⁷ In addition to that, Avicenna from time to time mentions and deals with his Greek and Arabic predecessors in his *Metaphysics*, as Bertolacci's appendix B illustrates conveniently.⁶⁸ Nonetheless, it is clear throughout that Avicenna simply does not use *endoxa* in any systematic way as a means to arrive at a correct doctrine or to learn something from them. Sometimes, Avicenna has to refute a competing view just in order to support and defend his own theory (which is even important from the viewpoint of teaching, as only a robust lecture is a convincing lecture). Other times, the discussion of alternatives may even help to clarify some aspect of his own view.⁶⁹ Generally, however, Bertolacci's judgement about Avicenna's use of earlier opinions in the metaphysics is, in my opinion, correct, it supports the above analysis, and easily can be applied to the situation in physics: "Avicenna accepts the dialectical methodology employed by Aristotle, but subordinates it to apodictic patterns, and adjusts it to his own philosophical agenda"⁷⁰—and "adjusting" may well include "omitting" and "cutting short" (when inappropriate).

67 Admittedly, given the fact that Avicenna actually announced the investigation of the "false opinions" on numbers, I am convinced that he had good doctrinal (and historical) reasons for implementing book VII—reasons which a close reading of its contents will quickly reveal. This, then, is a small difference to the situation of chapter 1.4 of *The Lecture on Nature*. Yet, my argument about ill-fitting places in the overall structure remains, especially since book VII of the *Metaphysics* also interferes with Avicenna's apparent plan to discuss the causes (including his important theory of efficient causality) in book VI and the *continuation* of the discussion of causes in book VIII, now focusing on their finitude and, thus, on God as the ultimate source of all causality, especially with regard to efficient causality.

68 Bertolacci, *The Reception of Aristotle's Metaphysics in Avicenna's Kitāb al-Šifā'*, 559–580.

69 Cf. Bertolacci, *The Reception of Aristotle's Metaphysics in Avicenna's Kitāb al-Šifā'*, 239 f.

70 Cf. Bertolacci, *The Reception of Aristotle's Metaphysics in Avicenna's Kitāb al-Šifā'*, 215. Moreover, Bertolacci has shown that Avicenna's reserved stance towards endoxic and dialectic material in Aristotle's works has a long history going back at least to Alexander of Aphrodisias; cf. Bertolacci, *The Reception of Aristotle's Metaphysics in Avicenna's Kitāb al-Šifā'*, 245–259.

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