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Pneuma and the Pneumatist School of Medicine

Summary

The Pneumatist school of medicine has the distinction of being the only medical school in antiquity named for a belief in a part of a human being. Unlike the Herophileans or the Asclepiadeans, their name does not pick out the founder of the school. Unlike the Dogmatists, Empiricists, or Methodists, their name does not pick out a specific approach to medicine. Instead, the name picks out a belief: the fact that pneuma is of paramount importance, both for explaining health and disease, and for determining treatments for the healthy and sick. In this paper, we re-examine what our sources say about the pneuma of the Pneumatists in order to understand what these physicians thought it was and how it shaped their views on physiology, diagnosis and treatment.

Keywords: Pneumatist; pneuma; heat; soul; pathology; diagnosis; therapy

Die Pneumatische Schule der Medizin hat das Alleinstellungsmerkmal, die einzige medizinische Schule der Antike zu sein, die nach dem Glauben an einen Bestandteil des menschlichen Körpers benannt ist. Anders als die Herophileer oder die Anhänger des Asklepiades orientiert sich deren Name nicht am Gründer der Schule, und anders als bei den Dogmatikern, Empirikern oder Methodikern kommt der Name nicht vom jeweiligen medizinischen Ansatz. Stattdessen beruht der Name auf einer Überzeugung: der Tatsache, dass Pneuma von höchster Wichtigkeit ist, um Gesundheit wie Krankheit zu erklären und über Behandlungsweisen zu entscheiden. In diesem Beitrag untersuchen wir, was die Quellen über Pneuma und die Pneumatische Schule sagen, um zu verstehen, wie diese Mediziner Pneuma verstanden, und wie das ihre Ansichten zu Physiologie, Diagnostik und Therapie formte.

Keywords: Pneumatische Schule; Pneuma; Hitze; Seele; Pathologie; Diagnose; Therapie

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I Introduction

People ask, why does Hippocrates everywhere throughout the work (*sc. The Nature of the Child*) credit the pneuma with the creation of the child ...? Was he a Pneumatist? We say he was not a Pneumatist.¹

John of Alexandria

The Pneumatists (οἱ Πνευματικοί) have the distinction of being the only medical school in antiquity named for a belief about a part of a human being. Unlike the Herophileans (οἱ Ἡροφίλειοι), Erasistrateans (οἱ Ἐρασιστράτειοι) and Asclepiadeans (οἱ Ἀσκληπιάδειοι), their name does not pick out the founder of the school. Unlike the Dogmatists (οἱ Δογματικοί) or Rationalists (οἱ Λογικοί), the Empiricists (οἱ Ἐμπειρικοί) or Methodists (οἱ Μεθοδικοί), their name does not refer to a method of practicing medicine. Instead, they are called "Pneumatists" because they appealed to pneuma in their explanations of human physiology, health and disease, and they did so distinctively, since at the time of the school – roughly between the first and second centuries CE – it was no less common to talk about pneuma in medicine than it was to talk about blood or bones. What, then, is distinctive about the pneuma of the Pneumatist school? Call this this question, 'the Pneumatist question.' In this chapter, we set out to answer it.

Ever since Max Wellmann's original study on the topic, *Die pneumatische Schule bis auf Archigenes* (1895), most scholars have taken the same kind of approach to answering the Pneumatist question. The approach goes something like this. Since the writings of the Pneumatist doctors are lost and all we have are fragments and testimonies, one first

1 John of Alexandria, *In Hippocratis De natura pueri commentarium* 49, (174,11–14 Bell et al.): ζητοῦσιν ὅτι πῶς ὁ Ἱπποκράτης πανταχοῦ ἐν ὄλῳ τῷ συγράμματι αἰτιᾶται τὸ πνεῦμα τῆς δημιουργίας τοῦ

παιδός (...); πότερον πνευματικὸς ὑπῆρχε; φασί, ὅτι οὐκ ἦν πνευματικὸς. Translations are ours for the most part, and those which are not are noted.

has to increase the available evidence. One starts with the fragments and testimonies of physicians our sources call Pneumatist, determines, often speculatively, a set of doctrines that belong to this group, and then based on perceived similarities, classifies material from other medical and philosophical writings as “sources for the Pneumatist school” or as “hidden Pneumatist works.” The Pneumatist question is then answered using this expanded corpus.²

We think this approach involves serious problems, which we will discuss in more detail in a moment. Fortunately, we think, this approach is also unnecessary. As we will show, we can say a lot about the Pneumatists’ views on pneuma by closely examining the extant fragments and testimonies, without relying on speculative evidence. And so before we discuss problems with the more common approach, we want to make the case for our approach and say something about our aims for this study.

First, concerning the scope of the study: we are only including fragments and testimonies in which the Pneumatists are explicitly mentioned (the “Pneumatic school,” as it used to be called: οἱ πνευματικοί, ἡ πνευματικὴ ἀρεσις, and related phrases). We include fragments and testimonies of physicians explicitly called “Pneumatist” by our sources (a short list): Athenaeus of Attalia (whom Galen calls the founder of the school), Claudius Agathinus of Sparta, Herodotus, Magnus and Archigenes of Apamea.³ We exclude several physicians: some from Wellmann’s original list (Theodorus, Leonides, Apollonius of Pergamum, and Heliodorus), and others (Aretaeus, Antyllus and Philumenus) who are not so called by any ancient sources.⁴ We also include fragments and testimonies of the school’s anonymous adherents, usually designated by phrases like “followers of X” (οἱ ἄπ’ X or οἱ περὶ X), where the context makes clear that “followers of X” is synonymous with “Pneumatists.”⁵ By including these sources, we are not suggesting that they offer *reliable* evidence for the Pneumatist school; we are, however, claiming

2 This is roughly the approach adopted by (explicitly or not, and usually following Wellmann): Allbutt 1921, 90, 224–287, esp. 247, 265–268; Verbeke 1945, 191–206, esp. 196–201; Kudlien 1962, 427 and Kudlien 1968; von Staden 1989, 107; Oberhelman 1994; Kupreeva 2014, 176. Nutton 2013, 211 is reluctant to include the Anonymus Londinensis and Aretaeus into the school; however, his suggestion that the Pneumatist school could be “an ahistorical, classificatory term” (Nutton 2013, 386, n. 30) is unlikely. Galen reports that the Pneumatist physician, Herodotus thought all medical schools were less respectable than the Pneumatist (Galen, *De simplicium medicamentorum facultatibus* 1.29, K. 11.432); Galen also reports that Magnus professed to be a Pneu-

matist (Galen, *De differentiis pulsuum* 3.2, K. 8.646). Kollesch 1973 is sceptical that Ps.-Galen, *Definitiones medicae*, is, as is often claimed, a work of the Pneumatist school (this is compatible with the claim that certain definitions come from Pneumatist doctors).

3 We are currently preparing editions, translations and commentaries of the fragments and testimonies of members of this school. Sean Coughlin is preparing the complete fragments of Athenaeus of Attalia; Orly Lewis is preparing a selection of fragments of Archigenes of Apamea.

4 On the first set (before and including Archigenes), see Wellmann 1895, 13–18; on Antyllus, see Grant 1960, 158–161.

5 On these phrases, see von Staden 1989, xx–xxi.

that these passages *count as* evidence for the Pneumatist school. Concerning the Pneumatist school itself: we do not start from the assumption that everyone our sources call “Pneumatist” shares a consistent theory about pneuma (or anything else). Our approach is rather to collect and present (i) all the evidence from our sources concerning why these doctors were called Pneumatist; and (ii) passages from the fragments where these physicians appeal to pneuma in physiology, pathology, diagnosis and therapy. Our hope is that this parsimonious approach avoids some of the difficulties inherited from Wellmann.

As we mentioned, we think there are serious difficulties inherent in Wellman’s approach. One of these is the reliance on speculative connections between the Pneumatist school and contemporary intellectual movements to determine what the Pneumatists’ views were. Of the several attempts to reconstruct the Pneumatists’ views on pneuma, most follow Wellmann by connecting them to the Stoics. The Pneumatists, Wellmann claims, can be distinguished from other doctors because they adopted a Stoic conception of pneuma, especially a three-fold division of pneuma into hectic, natural, and psychic pneuma, which they then adapted to Hippocratic physiology and Hippocratic medicine more generally.⁶ Wellmann goes on to reconstruct the role of (Stoic) pneuma in all aspects of Pneumatist medical theory, from fever to pulse diagnosis.⁷ Scholars since Wellmann have remained faithful to this reconstruction, modifying it here and there depending on their aims. Verbeke, for instance, adds that the Pneumatists wanted to use pneuma to explain something missed by both the Stoics and Hippocratics: the origin of vital heat. According to Verbeke, the Pneumatists answer this question by appealing to pneuma’s oscillation (its “dynamic tension”), which causes friction, in turn heating the body.⁸ Vivian Nutton, who is more sceptical of Wellmann’s approach than Verbeke, nevertheless claims that, like the Stoics, Athenaeus explored parallels between the cohesive role of pneuma in the macrocosm and the microcosm.⁹ Nearly every reconstruction we have encountered accepts something like Wellmann’s general Stoic/Pneumatist picture, with minor additions or clarifications.

For scholars who have worked on or around the Pneumatist school, Wellmann’s approach is tempting, since it allows one to read the Stoics’ beliefs about pneuma into

6 Wellmann 1895, 148. Wellmann distinguishes between older Stoics and post-Antiochean Stoics, claiming Stoics after Antiochus tried to approximate a Platonic-Aristotelian philosophy. One might make finer distinctions. See, e.g., Lapidge 1973, 276–278. Wellmann 1895, 104–110, also appeals to similarities, first noted by Valentin Rose, between extracts from the Pneumatists in Oribasius and the passages in the Ps.-Galenic Commentary on Hippocrates’ *Humeurs*. Mattern 2008, 208, n. 32, citing Schubring

1965, xlvii–xlix, says the text was proven to be a renaissance forgery in 1915 by Kalbfleisch as he set to edit the text. Garofalo 2005, 446, says this happened in 1918.

7 Wellmann 1895, 131–231.

8 Verbeke 1945, 194 (based on a fragment of Antyllus preserved in Oribasius, who is not called a Pneumatist by any ancient source).

9 Nutton 2013, 208.

the comparatively obscure sources we have for the Pneumatists. We think, however, that the approach is problematic for the following reasons: (1) very few fragments of the Pneumatist doctors discuss pneuma; (2) it is unclear what kind of school the Pneumatists were and how they understood their relation to one another; and finally, (3) our sources for the Pneumatists are almost always hostile.

The first and perhaps most puzzling problem is that pneuma is almost never mentioned in the verbatim fragments of the physicians called Pneumatist. This was already noted by Robert James' in his medical dictionary of 1743, when he wrote "of all (Athenaeus) wrote we have nothing remaining, except two or three chapters in the collections of Oribasius, from which we learn nothing that can explain this opinion relating to the spirit, much less anything that can discover its use with regard to the practice of physic."¹⁰ We need not adopt James' extreme pessimism, but the fact remains that any reconstruction will depend largely on second-hand reports from sources whose reliability cannot be independently verified. Many scholars have followed Wellmann's somewhat desperate solution by trying to fill the void with sources like Antyllus, Aretaeus and the author(s) of the Ps.-Galenic *Medical Definitions*. These figures never refer to themselves as Pneumatists, and they are never called Pneumatist by our sources; but, after Wellmann, the scholarly consensus has been that their views are similar enough to justify the appropriation. This solution obviously increases the amount of material we have to work with. In Aretaeus' case, it even adds a relatively complete treatise to the otherwise fragmentary Pneumatist corpus. The fact remains, however, that our sources never call them Pneumatist, and it seems to us methodologically unsound to claim that they are. The motivation to christen them Pneumatists in the first place was precisely our lack of evidence about the school's doctrines. We avoid such circularity and stick with authors named Pneumatist in our sources.

The second problem concerns the agreement of opinions among individual Pneumatist physicians. In his study, Wellmann began from the assumption that the Pneumatists share common views concerning physiology and pathology in virtue of the fact that they are members of the same school; however, we ought to be cautious. Some physicians called Pneumatist by one source are said to belong to other schools by other sources. Agathinus, for instance, is called a Pneumatist by Galen, while the author of the *Medical Definitions* says that he founded a school called *episynthetic*.¹¹ Magnus is called a Pneumatist by Galen, and Archigenes by both Galen and the Ps.-Galenic *Introduction*.

10 James 1743, vol. 1, s.v. "Athenaeus."

11 Wellmann attempts to deal with this evidence by claiming that Agathinus, whom he takes to be a student of Athenaeus, combined orthodox Pneumatism with Empiricist and Methodist ideas (Wellmann 1895, 12), to create yet another school, the

episynthetic. There is no evidence for this in our sources, beyond one remark in Ps.-Gal. *Def. Med.* 14 (K. 19.353): "Agathinus of Lacedaemon seems to have invented a fourth school, which is called episynthetic (ἐπισυνθετική), but some call eclectic (ἐκλεκτική), others hectic (ἑκτική)."

However, the Methodist Caelius Aurelianus says Magnus is “from our school” (“*ex nostris*”), and seems to also include Agathinus and Archigenes in this category.¹² Furthermore, even if an affiliation gives us reason to think they shared some views in common (and this is not an implausible claim), it is not clear what those views are. Heinrich von Staden and more recently David Leith have both pointed out that “school” (*hairesis*) at this time covers a range of meanings, but none of them imply anything as monolithic and cohesive as is often assumed. The Pneumatists seem to have been a loose-knit group who sometimes refined and sometimes rejected the explanations and therapies of other members of their school. Eclecticism seems to have been the rule among them.¹³

The third problem concerns the hostile nature of our sources. The Pneumatists’ views are often presented in rhetorical and didactic contexts and it is tricky to untangle them from their presentation. One of our most important sources is Galen, and he can be either apologetic or hostile to the Pneumatists, depending on the views he is discussing and his dialectical aim. Sometimes he presents members of the Pneumatist school as part of a consensus on questions about human physiology, and places them among the greatest ancient physicians and philosophers. Other times, particularly when he places the Pneumatists among the Stoics, he goes to great lengths to show how they were mistaken. The same kind of thing also occurs in the Ps.-Galenic *Introduction*. The author is more straightforwardly hostile to the Pneumatists, but he is also apparently hostile to just about everyone who is not a “true follower” of Hippocrates. The presentation is artificial and constrained by a set of didactic standards in much the same way that Galen’s discussion of the various medical sects is constrained in his *On Sects for Beginners*. Both authors also portray the Pneumatists as followers of the Stoics, but their reason for doing so may just as well be to discredit them as it is to state the doctrines they hold. As historians, we should be cautious about continuing ancient polemics. Certainly, we get glimpses of the Pneumatists’ views from these sources, but we must also keep in mind that they may not be free from distortion, selective emphasis, and contradiction.

For all these reasons, what we want to do in this paper is examine the evidence concerning the medical context in which Pneumatism arose, focusing on physiology, diagnosis and treatment. The first part of the paper deals with the extant sources that

12 Caelius Aurelianus, *Celeres passiones* 2.10.58 (Bendz 166,11–13); for Ps.-Galen, see T3, 213 below. Galen refers to the same list of people along with Athenaeus as πνευματικοί (Gal. *Diff. Puls.* 3.6, K. 8.674). John of Alexandria (sixth/seventh century CE) mentions Empiricists and Methodists who follow Agathinus (*In Hippocratis Epidemiarum librum VI commentarii*, fr.12, Duffy 52,6–7). The case of Magnus is curious. Galen reports he *professed himself*

(προσποιούμενος) to be from the Pneumatist school at Gal. *Diff. Puls.* 3.2 (K. 8.646), the only such report we have. As Glenn Most has suggested to us, Galen seems to be implying that, on his view, Magnus is not a Pneumatist, but merely pretending.

13 Von Staden 1982; Leith 2016. See, for instance, Galen’s report of Archigenes’ arguments against Magnus on the causes of a swift pulse at Gal. *Caus. Puls.* 1.7 (K. 9.18–22).

discuss the Pneumatists' views regarding pneuma's roles in physiology – the functioning of the living body and its parts. The second part looks at the pathological and clinical aspects of pneuma in Pneumatism. We conclude with some remarks on the relation between the Pneumatists and the Stoics.

2 Physiology

2.1 Compositional pneuma

A key piece of evidence comes from Galen's commentary on the Hippocratic *Airs Waters Places*.¹⁴ The passage was not considered by Wellmann, and it is, we think, the clearest report of the Pneumatists' view on pneuma which we have.

Galen's aim in this passage is to distinguish those physicians who accept the central claim of *Airs Water Places*, namely that medicine requires knowledge of the seasons and climate, from those who do not. He says many doctors reject this belief, naming Erasistratus, Herophilus, the Methodists, Praxagoras and Phylotimus. He singles out Athenaeus and his followers as doctors who accept the central claim, but he says they differ from Hippocrates in how they describe the elements. First, Galen says Athenaeus thinks the elements are hot, cold, moist and dry, rather than fire, air, water and earth, something attributed to Athenaeus by the author of the Ps.-Galenic *Introduction* (see T2 below) as well as by Galen himself in *On the Elements according to Hippocrates*.¹⁵ Second, he says Athenaeus believed two of these elements, the hot and the cold, "are those through which effects are achieved," a claim attributed to Athenaeus in the *Introduction* (cited in T2 below).¹⁶

Galen goes on to say that some doctors claim that pneuma is the cause of things and believe that, in saying this, they are following Hippocrates:

T1

وزعم أنثيناوس أنه وأصحابه اتبعوا بقراط في هذا القول وأنّ الرّيح هي مركّبة من الأخلط الأولى الحارّ والبارد وأنّ الرّيح إذا كانت معتدلة ربّت أبدان الحيوان وبقراط

14 Galen's commentary on the Hippocratic *De aere, aquis, locis* survives only in Arabic. The citations are from the forthcoming edition by Gotthard Strohmaier at the *Corpus Medicorum Graecorum* at the Berlin-Brandenburg Academy of Sciences and Humanities. The English translations are based on German translations produced by Strohmaier and were made in consultation with Strohmaier through an examination of his Arabic text. We are grateful

for his assistance and for granting us permission to cite his forthcoming edition. Our thanks to Oliver Overwien, Or Hasson and Donna Shalev for help with the Arabic.

15 Ps.-Galen, *Introductio seu medicus* 9 (Petit 21,14-21 = K. 14.698); Galen, *De elementis ex Hippocratis sententia* 6.27 (De Lacy 110,10-15 = K. 1.465).

16 Ps.-Gal. *Intro.* 9 (Petit 21,14-21 = K. 14.698).

يسمّيها الحرارة الغريزية.

Athenaeus claimed that he and his adherents followed Hippocrates with this statement and that the pneuma is composed of the primary basic components, the hot and the cold, and that the pneuma, when balanced, makes the bodies of living creatures grow, and that Hippocrates calls it “the innate heat.”

Galen, *In Hippocratis de aere aquis locis librum commentarii* (ed. Strohmaier), *ad Hipp. Aer.* 10.1 (Jouanna 211,12–212,2 = L. 2.42)

In this text, Galen tells us two things about Athenaeus’ understanding of pneuma: its composition and its role in the body. First, Athenaeus is reported to believe pneuma is composed of the hot and the cold. Shortly before this passage, Galen remarks that Athenaeus considers the hot and the cold to be those elements which “act and through which effects are achieved” (يفعلان ويفعل بهما), reading *bi* as “by means of”). So, we can also infer that Athenaeus believed pneuma is composed of those elements that are active. Second, pneuma’s role in the body is to be an agent or active cause, particularly of growth. Pneuma is, therefore, something different from the passive matter of the body. It is something present in that matter, but it is not itself a part of it. Instead, it is a cause acting on it.

How exactly pneuma facilitates growth is not explained. The ambiguity allows for a broad understanding of the role of pneuma here: from facilitating digestion required for the body’s development to determining the process of this development (e.g. shape, size, timing, etc.). Its role in disease shows that the presence and activity of pneuma is not restricted to the periods of infancy and adolescence in which the body grows, but it continues throughout the person’s life.¹⁷ All this depends, however, on the hot and cold being balanced – if the pneuma is too cold or too hot the process is hindered. From a later passage in this work, we learn that pneuma can also be affected by the wet and the dry, causing diverse malfunctions.¹⁸ It is possible that the wet and the dry are also (passive) constituents of the pneuma and simply come out of balance in certain conditions, but our sources do not say so explicitly.

Be that as it may, Athenaeus presumably thought that the disruptive imbalance in pneuma’s qualities causes not only a deficient process of growth or activity, but in extreme cases no activity whatsoever and death. Pneuma thus emerges as the principle maintaining life. This is corroborated by Galen’s later statement in the course of discussing the role of pneuma in disease that: “some call these doctors who claim that things (الأشياء) are governed by pneuma ‘Pneumatists.’”¹⁹ The “things” seem to be life

17 On this see section 3.1 below.

below, n. 53.

18 Gal. *Hipp. Aer.* (ed. Strohmaier), *ad Hipp.*

19 *Ibid.*

Aer. 10.1 (Jouanna 211,12–212,2 = L. 2.42), and see

and the functions pertaining to animal life as well as disease, i.e. malfunctioning of the body.

The conflation of pneuma with the notion of “innate heat” (T1) also points to the idea that life depends on the pneuma in the body. The fact that the term “innate heat” (ἔμφυτον θερμόν and similar phrases) is not common in the writings attributed to Hippocrates need not trouble us. We are dealing here with Athenaeus’ interpretation of Hippocratic ideas, probably influenced by centuries of scholarship and reception, which often altered and distorted the original ideas.²⁰ Moreover, the core idea that heat is essential for life and body functioning is not alien to the Hippocratic works. With this comparison between pneuma and “innate heat” in Hippocrates, Athenaeus might be trying to justify a claim that he is not straying from the Hippocratic theory – they differ only in terminology.

A passage from the Ps.-Galenic *Introduction* echoes the views reported by Galen with some additional information.

T2 κατὰ δὲ τὸν Ἀθήναιον στοιχεῖα ἀνθρώπου οὐ τὰ τέσσαρα πρῶτα σώματα, πῦρ καὶ ἀήρ καὶ ὕδωρ καὶ γῆ, ἀλλ’ αἱ ποιότητες αὐτῶν, τὸ θερμόν καὶ τὸ ψυχρὸν καὶ τὸ ξηρὸν καὶ τὸ ὑγρὸν, ὧν δύο μὲν τὰ ποιητικὰ αἴτια ὑποτίθεται, τὸ θερμόν καὶ τὸ ψυχρὸν, δύο δὲ τὰ ὑλικά, τὸ ξηρὸν καὶ τὸ ὑγρὸν, καὶ πέμπτον παρεισάγει κατὰ τοὺς Στωϊκοὺς τὸ διηκὸν διὰ πάντων πνεῦμα, ὅψ’ οὗ τὰ πάντα συνέχεσθαι καὶ διοικεῖσθαι.

According to Athenaeus the elements of a human being are not the four primary bodies, fire, air, water and earth, but their qualities, hot, cold, dry and wet, of which he posits that two, the hot and cold, are productive causes, and two, the dry and wet, are material. And he introduces a fifth in accordance with the Stoics: the pneuma which permeates everything, by which all things are held together and regulated.

Ps.-Gal. *Intro.* 9 (Petit 21,14–21 = K. 14.698)

According to this passage, Athenaeus considered pneuma to be a fifth element (στοιχεῖον) in addition to the four qualities. Calling pneuma an “element” is perhaps a non-standard use of the term, which usually is reserved for the simplest parts out of which something is composed and which are not themselves composed of anything else. Nevertheless,

20 The phrase ἔμφυτον θερμόν appears at Hippocrates, *Aphorisms* 1.14 and 15 (L. 4.466) and it seems to have been discussed widely in the first and second centuries CE. Hipp. *Aph.* 1.14 is first cited in Galen, *Adversus Lycum* 1 (Wenkebach 4,14–15 = K. 18A.198).

The subject of the work is the correct interpretation of the phrase ἔμφυτον θερμόν in the aphorism. See also Galen, *De temperamentis* 1.7 (Helmreich 28,20 = K. 1.554).

there is no reason to think the author is confused: thinking of pneuma as something analogous to the fifth or celestial element but present within a living thing goes back at least to Aristotle's *De generatione animalium*.²¹

Setting aside the question of terminology for the moment, this passage, along with Galen's commentary on Hippocrates' *Airs Water Places* (T1) suggests that Athenaeus believed pneuma is present and working at the compositional level of the body. By "compositional", we mean that it is responsible for regulating the composition of the other elements. It is that "by which they all are held together and regulated." The compositional pneuma is not akin to the pneuma, familiar to us from other medical sources, which flows through vessels and other passages in the body.²² Neither is it on a par with the other four elements. The author of the *Introduction* does not tell us whether Athenaeus thought this pneuma has its own mixture and composition. From Galen's testimony (T1), we learn that Athenaeus thought a person's pneuma is composed of hot and cold. But pneuma is nevertheless presented here (T2) as distinct from these four qualities. In other words, the hot and cold here (and dry and wet) are part of the body's constitution and mixture. Inside this mixture and its material product (i.e. the body) the pneuma is present too – it "permeates" this body and is itself composed of the hot and cold.

This passage (T2), therefore, establishes pneuma's causal role in the body. It is something different from the other four elements, insofar as it is that "by which all things (i.e., all the parts of the body) are held together and regulated." Athenaeus is thinking about pneuma in a way similar not just to the Stoics, but also to other entities posited by Aristotle and Galen. "Pneuma" is whatever it is that gives coherence and regularity to the human body, just as "nature" or "soul" is the name given to the cause of the same thing in an Aristotelian or Galenic framework.²³ Pneuma, which permeates "through everything" (διὰ πάντων), is presented as something distinct from the (mixture of) the qualities. In fact, it seems pneuma *must be* distinct if it is to have the causal role it does. If bodies are the kinds of things that require something to hold them together and regulate them – something suggested by the fact that living bodies differ from dead ones – then whatever it is that does this will be distinct, in the same way that whatever acts on something is distinct from that on which it acts.²⁴ The compositional pneuma, therefore, is

21 The *locus classicus* of the idea that pneuma in animal bodies is like the astral or fifth element is Aristotle, *De generatione animalium* 2.3, 736b35–38. Galen also often says Athenaeus has the same view about the elements as Aristotle and the Stoics, suggesting the relevant disagreement is not about the causal role of soul or nature, as opposed to the body, but about whether the soul or nature is equivalent to pneuma or not. See T9 below, 227, and references there. On the Stoics on pneuma as a fifth element, see Jannone

1964, 284–285, and Lapidge 1973, 277–278.

22 See the chapters by Lewis and Leith, Leith, Singer and Rocca in the present volume.

23 On analogies between Aristotelian formal causes and Stoic cohesive causes, see Frede 1980, 243; Hankinson 1998, 241; on Aristotle and Stoics on soul as cohesive cause see Coughlin 2020, 254–261.

24 As Galen claims it is in the case of the Stoics. See Galen, *De causis contentivis* 1.3 (Lyons 53,15–18).

not simply a part or component of the body. A person's body and the same person's pneuma are two distinct "entities," each with its own independent composition.

From the testimony of the author of the *Introduction*, therefore, we learn that pneuma for Athenaeus is acting on and inside a human being, and furthermore that the human body depends on the pneuma for its cohesion and regulation, i.e., for its existence as a living body. It is noteworthy that Galen refers to pneuma in Athenaeus' sense (the sense we are calling compositional) as "connate" (σύμφυτον) and "vital" (ζωτικόν) pneuma. When Galen and other medical authors refer to "vital pneuma," they are usually talking about a kind of pneuma that moves through the arteries. The compositional pneuma, however, is not identical with this arterial pneuma, even though it shares the name. In one passage where Galen speaks about the compositional pneuma, he distinguishes "vital pneuma" in the Pneumatist's sense from "vital pneuma" in the sense of a bodily part which flows through the arteries. In these contexts, he calls the arterial pneuma, "material (ὕλικόν) pneuma" and reserves "vital" for the compositional pneuma. We think this corroborates the author of the *Introduction's* report and adds evidence that the compositional pneuma of the Pneumatists is not something that exists simply at the level of a bodily part, but that on which life and a living body depend.

The author adds further information on this point a few lines later, where he also broadens the range of people who hold this belief from Athenaeus to other Pneumatists:

Τ3 Ἱπποκράτης μὲν οὖν διὰ τριῶν κενώρηκεν, εἰπὼν στοιχεῖα ἀνθρώπου ἴσχοντα, ἰσχόμενα, ἐνορμώντα, δι' ὧν τὰ πάντα τῶν μετ' αὐτὸν περιείληφε στοιχεῖα καὶ τὴν κατὰ στοιχείων φυσιολογίαν τε καὶ αἰτιολογίαν τῶν παρὰ φύσιν· οἱ δὲ μετ' αὐτὸν οὐκ οἶδ' ὅπως μίαν οὔσαν τὴν θείαν ταύτην καὶ ἀληθῶς Ἀσκληπιοῦ ἰατρικὴν τριχῆ διανειμάμενοι καὶ διασπάσαντες τὰ ἐν αὐτῇ συμφυῆ μέρη, οἱ μὲν μόνοις τοῖς χυμοῖς τῶν τε κατὰ φύσιν τὴν σύστασιν καὶ τῶν παρὰ φύσιν τὴν αἰτίαν ἀνέθεσαν, ὡς Πραξαγόρας καὶ Ἡρόφιλος. οἱ δὲ τὰ στερεὰ σώματα τὰ ἀρχικὰ καὶ στοιχειώδη ὑποθέμενοι, τὰ τε φύσει συνεστῶτα ἐκ τούτων καὶ τῶν νόσων τὰς αἰτίας ἐντεῦθεν λαμβάνουσιν, ὡς Ἐρασίστρατος καὶ Ἀσκληπιάδης· οἱ δὲ περὶ Ἀθήναιον καὶ Ἀρχιγένην μόνῳ τῷ διήκοντι δι' αὐτῶν πνεύματι καὶ τὰ φυσικὰ συνεστάναι τε καὶ διοικεῖσθαι καὶ τὰ νοσήματα πάντα, τούτου πρωτοπαθοῦντος γίνεσθαι ἀπεφήναντο, ὅθεν καὶ πνευματικοὶ χρηματίζουσι.

Hippocrates, then, put forward three (components), saying the elements of a human being are things contained, things containing and things imparting impulse, by means of which he embraced all the elements of those who came after him, as well as elemental physiology and aetiology of things contrary to nature. But those who came after him – I do not know why – divided this divine and

truly Asclepeian medicine, which is really one, into three and dispersed the parts that make it up. (i) Some people assigned exclusively to the humours the composition of things in accordance with nature and the cause of things contrary to nature, like Praxagoras and Herophilus. (ii) Others posited the solid bodies as the primary and elemental things, and believed that things are composed out of these and the causes of diseases are from them, as Erasistratus and Asclepiades. (iii) And those around Athenaeus and Archigenes claim that all the natural things are composed and governed by means of the pneuma alone which pervades through them, and all diseases are generated when it (*sc.* the pneuma) is first-affected, for which reason they are called Pneumatists.

Ps.-Gal. *Intro.* 9 (Petit 21,21–22,17 = K. 14.698–699).

The author returns here to a reference he made earlier in the chapter to an obscure passage in *Epidemics* 6. In the *Epidemics* 6 passage, the Hippocratic author mentions that one should observe “things that are containing, impelling, or contained (τὰ ἴσχοντα, ἢ ὀρμῶντα, ἢ ἐνισχόμενα).”²⁵ What the author of *Epidemics* 6 means by these three terms is unclear; however, by the time of the *Introduction*, our sources show that these three terms were associated with three types of homoiomerous parts of the human body: solids (τὰ στερεά) are containing parts; liquids (τὰ ὑγρά), like the humours mentioned in T₃, “contained”; and pneumata (πνεύματα), the “impelling.” This three-fold division is taken to be a genuine Hippocratic belief about the composition of the body above the level of the elements.

There is no evidence that any of the Pneumatists appealed to this passage from *Epidemics* 6.²⁶ It confirms, nonetheless, several points made by Galen in his commentary on *Airs, Waters, Places*. First, it confirms that the Pneumatists think pneuma forms and governs natural things, i.e., that pneuma is responsible for the generation of offspring and the continued order and functioning of the body. Second, it states they believed that pneuma accomplishes its functions by pervading the body. Third, it states they believed diseases are generated when the pneuma is first-affected (πρωτοπαθοῦντος), a technical term, which refers to the first part of a sympathetic pathological relation.²⁷ Finally, fourth, it shows that it is specifically because they believe pneuma is a certain type of cause whose disruption brings about disease that “they” (i.e. Athenaeus, Archigenes and those who adopted their teachings) are called Pneumatists.

25 Hippocrates, *Epidemics* 6.8.7 (L. 5.346.5–6).

26 Galen also opposes the focus on pneuma to the focus on solid parts with regards to disease, but he makes no reference to the threefold division men-

tioned in the Ps.-Gal. *Intro.* 9 (see below, p. 220–221).

27 Galen, *De locis affectis* 1.3.2, 1.6.1 (Gärtner 260,18, 282,5 = K. 8.31, 8.48) and Gärtner 2015, 543, n. ad 260, 17–20.

The passages discussed above allow us to begin to answer the question raised at the beginning of this chapter: what is distinctive about the pneuma of the Pneumatist school? As noted at the outset, the idea that pneuma is essential for life and the functioning of the body was not in itself unique. However, the Pneumatists appear to have differed from other medical authors on two points. First, they seem to have focused their theory of the causes of health and disease on pneuma rather than on other components of the body. The claims of later authors regarding pneuma governing everything may or may not reflect original Pneumatist ways of speaking, but something in their original words led others to interpret their ideas in this way. As we shall see in Section 2, their clinical methods corroborate this interpretation. The contrast which the author of the *Introduction* makes between the Pneumatists and those who focus on fluid or solid parts emphasizes the uniqueness of their approach. The fact that we do not find names like “Solidists” (Στερεωτικοί) or “Liquidists” (Υγροτικοί) for the other groups suggests the emphasis was part of their approach rather than an evaluation imposed on them by an interpreter.²⁸ Second, as far as our sources attest, no other medical authors explain the living body with the notion of “compositional pneuma” attributed to the Pneumatist physicians. In other medical authors, pneuma was something moving through hollow channels and parts. Such a pneuma, however, was also part of the theory of Pneumatist physicians, and it is to it which we now turn.

2.2 Cardio-arterial pneuma

From as early as the fifth century BCE we find concrete evidence for the idea that air, often called pneuma, flows through vascular passages in the body. Following the identification of two distinct vascular systems – arteries and veins – the arteries were generally considered pneumatic vessels, in charge of transmitting pneuma through the body. The main source of this arterial pneuma was the heart, to which they were connected via the aorta stemming from the left artery.²⁹ Some authors went so far as to claim that the arteries contain *only* pneuma and that blood is confined to the veins, at least under natural healthy circumstances.³⁰ From Galen we learn that Archigenes and his followers took part in the ensuing debate concerning whether or not the arteries naturally contain blood. In fact, Galen tells us that they had “much” to say on the matter, arguing against

28 On these other groups, see Leith 2015, 485, n. 50.

29 On the cardio-arterial system and the motion of air, see Harris 1973; Debru 1996; Lewis 2017 and the chapters by Lewis and Leith, Leith, Singer and Rocca in this volume.

30 Particularly Praxagoras and Erasistratus: Galen, *De dignoscendibus pulsibus* 4.2, 4.3 (K. 8.941–942, 8.950);

De plenitudine 11.11 (Otte 72.6–10 = K. 7.573–574 = frs. 12–14 Lewis = frs. 9, 85, 84 Steckerl); *De venae sectione adversus Erasistratum* 3 (K. 11.153 = fr. 198 Garofalo). For Praxagoras, see the chapter by Lewis and Leith, for Erasistratus, the chapter by Leith, both in this volume.

the view of a solely pneumatic arterial content held by physicians such as Praxagoras of Cos and Erasistratus of Ceos (both of the late fourth and early third centuries BCE).³¹

The pulse theories of the Pneumatists' offer further indications for their belief that arteries hold some pneuma in their cavities. The Pneumatists engaged extensively with ongoing debates regarding the definition, physiology, taxonomy and diagnostic significance of the pulse.³² Their views on these matters offer several indications for their consideration of pulsation as related to a flow of air in and out of the heart and arteries, as was common in antiquity. Athenaeus referred to it specifically as a "transpiration" (διαπνοή) of the heart and arteries, a term which referred to the flow of air in and out of the body.³³ Like other physicians, the Pneumatists referred to the pulse as a "motion" and an "expansion and contraction" of both heart and arteries.³⁴ Galen tells us explicitly that they believed that during their contraction (systole), the arteries draw in pneuma and that they expel it when expanding (diastole), which was opposite to the view held by physicians such as Galen, Herophilus and Praxagoras.³⁵ Another passage from Galen is suggestive. Galen complains that when Agathinus refers to the δύναμις of the pneuma in his discussion of pulsation, he does not explain to which of the pneumata he is referring – the connate (σύμφυτον), compositional one, or the one found inside the perforations (εὑρυχωρία) of the arteries.³⁶ Such a statement, the exasperation it conveys and the contents of the ensuing discussion, strongly imply that Pneumatist physiology identified these two kinds of pneuma (the one inside the arterial *walls* and the one inside the *perforations* of the arteries). Had they thought that there was pneuma only inside the walls of the arteries, no clarification would have been necessary.

The source of the pneuma moving through the hollow cavities of the heart and arteries was probably external air, which entered through respiration and transpiration. Our sources are surprisingly sketchy on the Pneumatists' ideas concerning these processes. Athenaeus' definitions of the pulse and regimen instructions offer some clues, however. He defined the pulse as a "visible transpiration (διαπνοή) of the heart on its own and of the arteries, which is apparent to the senses," or alternatively, as the "diastole and systole in accordance with the transpiration (διάπνοια) of the heart and arteries."³⁷ The terms διαπνοή and διάπνοια referred to the flow of air in and out of the body. In the narrower, technical sense, it referred particularly to the process of transpiration:

31 Gal. *Dig. Puls.* 4.2, 4.3 (K. 8.940, 8.950).

32 Much of Galen's *Diff. Puls.* and *Dig. Puls.* engage with the ideas of Pneumatist physicians, in particular Archigenes; (see also Lewis [forthcoming] on Archigenes and Gal. *Diff. Puls.* 1.3 (K. 8.786) where Galen states that Agathinus contributed much to the art of the pulse).

33 See below on this page and the next.

34 Gal. *Diff. Puls.* 4.11–14 (K. 8.750–757).

35 *Ibid.* 4.2 (K. 8.712–713). For Herophilus' and Praxagoras' views, see the chapter by Lewis and Leith, for Erasistratus, see the chapter by Leith – both in this volume.

36 Gal. *Dig. Puls.* 4.2 (K. 8.936–937), and see below, p. 222.

37 Gal. *Diff. Puls.* 4.14 (K. 8.756–757).

the entering and exiting of air through pores in the skin and arterial walls.³⁸ Athenaeus uses *διάπνοια* and its cognates not only with regards to the pulse. He uses the term also for the ventilation of places, that is, for flow of air in and out of settlements. Cities, for instance, are more congested than the countryside, and are thus not well-ventilated (*ἀδιάπνευστον*).³⁹ These climate conditions affect the bodies surrounded by this air, whether the air is standing and stifling, or blowing and ventilating. He refers to the moistening of bodies through both paths: “through respiration and transpiration” (*διὰ τε τῆς ἀναπνοῆς καὶ τῆς διαπνοῆς*) that is, through respired air entering via the mouth and nose to the windpipe, and transpired air entering through the pores.⁴⁰ Athenaeus’ description of the motion of the heart and arteries as a *διαπνοή* probably does not mean that he thought that the pulse was not related to air deriving from *respiration*, i.e. entering through the vascular pathways of the windpipe, bronchi and pulmonary vessels. By using *διαπνοή* he was emphasising not the direction of the breath (i.e. as opposed to *ἀναπνοή*), but the function, namely, ventilation – the cooling and balancing of the heat in the heart and arteries.⁴¹

Another matter on which our sources are particularly sketchy, is the function of this cardio-arterial pneuma. The evidence refers almost solely to vital functions of pneuma and appears to concern rather the compositional, connate pneuma in the substance of the parts, which Galen actually once calls “vital” (*ζωτικόν*) pneuma with reference to the Pneumatist theory.⁴² Did the Pneumatist physicians believe that the “flowing” pneuma nourishes the compositional, connate pneuma by providing it with pneumatic substance which seeped into the matter of the parts?⁴³ Did they believe it somehow reaches the muscles and nerves so as to facilitate motion, as Herophilus and Erasistratus thought? The extant evidence offers no clear answers. A few points are worth noting, however. First, at this point in time the nerves’ role as the conveyors of motion and sensation to the parts was well established. It is thus highly unlikely that these physicians thought that arteries (and the pneuma inside them) directly assist in these activities. Second, their pathological theory stresses the change in the compositional pneuma which affects the parts in which it acts and harms their respective functions (see below, p. 221–222). This suggests that the activities of these parts (e.g. motion in the case muscles) depend not on a flow of pneuma reaching them through hollow cavities (whether of

38 On the concept of transpiration, see Debru 1996, 178–183, 187–198; Thivel 2005.

39 Oribasius, *Collectiones medicae* 9.5, 9.12 (Raeder 2.8, 17–24, 2.12, 25–14, 18).

40 Orib. *Coll. med.* 9.12 (Raeder 2.13, 10–12).

41 A third definition by Athenaeus points to the relation between pulsation and heat: “(the pulse is) a motion by a natural and involuntary diastole of the

heat in the arteries and the heart being moved out of itself and into itself and co-moving the heart and arteries.” Gal. *Diff. Puls.* 4.14 (K. 8.756).

42 Gal. *Dig. Puls.* 4.2 (K. 8.936–937).

43 Such a view was probably held by the Ps.-Aristotelian author of the short treatise of *On Pneuma* (see the chapter by Gregoric in this volume, as well as Gregoric, Lewis and Kuhar 2015).

arteries or nerves), but rather on the compositional pneuma inside the substance of the parts and its particular mixture (κρᾶσις) in each part. This brings to mind Ps.-Aristotle, *On Pneuma*,⁴⁴ but also Galen and his description of the transmission of sensory and motor faculties through the continuity of matter. For Galen, the material substratum is almost always the brain-matter which extends through the nerves like “heartwood” and it allows the faculty or sensory impulses to travel through it between the brain and the parts.⁴⁵ For the Pneumatists, however, the pneuma itself has unique effects in each of the particular parts. This pneuma is *present* in each of the parts and does not flow to it from a certain centre. They might have thought that this compositional pneuma, which pervades through the body’s solid parts, is connected to an “intellectual” or “psychic” centre. There are also some hints that the concept of a “vital tension” (ζωτικὸς τόνος), which a few sources report was used by the Pneumatists to explain things like the strength of the pulse and the cohesion of the body, is closely related to pneuma. Namely, that it is the compositional pneuma, extending from the heart through the arteries to the bodily parts, which constitutes and thus provides this “vital tension.”⁴⁶ Our sources, however, are mostly silent on this point.

2.3 (Pathological) pneuma produced during digestion

In addition to the compositional and arterial pneumata we have discussed, the Pneumatists refer to a third kind: a pneuma generated during digestion. In our sources this pneuma appears as a harmful substance, which causes pain and disrupts the body’s normal activity.⁴⁷ Faulty digestion (on account, for instance, of the presence of the wrong amount of heat) causes pneumatisation ([ἐμ]πνευμάτωσις), a unnatural accumulation of pneuma in the stomach that cannot naturally exit through belching or flatulence.⁴⁸ This pneuma mixes with the undigested food in the stomach to produce a kind of porous mass (ὄγκος ὑπόχωνος) which could not easily exit the stomach by natural means.⁴⁹

44 Gregoric, Lewis and Kuhar 2015, 120–121 and see also the chapter by Gregoric in the present volume.

45 Galen, *De placitis Hippocratis et Platonis* 7.3.5, 7.4.1–25 (De Lacy 440,15–19, 448–452 = K. 5.602, 5.611–617) and see the chapter by Singer in this volume.

46 See, e.g., Gal. *Diff. Puls.* 3.2 (K. 8.647); *Loc. Aff.* 5.1 (K. 8.301–302); for Archigenes: Aëtius of Amida, *Libri medicinales (= Tetrabiblos)* 8.50 (Olivieri 2.478,25–27).

47 This idea was not uncommon in antiquity; see for example in Diocles of Carystus, Gal. *Loc. Aff.* 3.10 (K. 8.185–189 = Diocl. fr. 109 vdE), and the chapter by Lewis and Leith in this volume; and in Galen,

e.g.: *De symptomatum causis* 3.6 (K. 7.239–42); *De sanitate tuenda*. 6.10.24 (Koch 189,2–4 = K. 6.430), and van der Eijk 2020 and Gärtner 2015 721–722, notes *ad* 324.3 and 324.4.

48 For Archigenes: Aët. *Lib. med.* 9.27 (Zervos 329,2–330,32); for Athenaeus: Orib. *Coll. med.* 1.2 (Raeder 1.7,1–16).

49 The idea seems to be that this mass of semi- or entirely uncooked food was too airy to naturally exit as excrement and too solid in order to allow the pneuma to escape through belching or flatulence, which were “blocked” or “stopped” (ἐποχή, ἐπέχεθαι: Aët. *Lib. med.* 9.27, Zervos 330,3–9).

Enclosed in a confined area, the pneuma causes the stomach to inflate and become distended (διατείνόμενον) and the pressure it exerts causes pain and discomfort; particularly if more food is taken in before this mass is expelled. At times, the pain spreads to other parts of the body, such as the head and back. Archigenes refers to headaches caused in this manner as “pneumatic headaches” (κεφαλάλγουντες πνευματικῶς) and he describes certain pains as “distended” (διατείνων).⁵⁰ It can also cause more severe affections, such as apoplexy and dizziness, which involve sensory, motor and cognitive disruptions – presumably since they cause a *dyskrasia* of the compositional pneuma in the relevant body parts.⁵¹ It is unclear whether any of the Pneumatists think that pneuma is produced during natural digestion too and that it becomes harmful only when a large amount is produced or its qualities are particularly strong. Our sources offer no evidence about this, and there is thus no evidence suggesting that such a pneuma produced during digestion contributes anything to the natural functioning of the body, as in the theories of the Stoics and Galen.⁵²

3 Pathology and clinical methods

Our investigation so far has shown that the pillar of Pneumatist physiology, and what distinguishes it from the theories of other medical authors, was the idea of a pneuma working on the compositional level, inside the actual substance of the body’s parts. The living being’s natural growth and maintenance depends on the existence within them of this pneuma. It comes as no surprise, therefore, that the Pneumatists’ pathological theory and clinical methods consider pneuma, in particular the compositional pneuma, as a distinct object of diagnosis and therapy, in a way absent from other authors. In particular, they consider an “imbalance” (*dyskrasia*) of pneuma as the underlying cause of disease, believe that the pulse can indicate the condition of pneuma and some of their treatments are aimed at restoring the natural condition of pneuma as a requirement for the healthy functioning of the body.

In what follows, we introduce the role of pneuma in the pathological theory and then discuss Pneumatist diagnostic and therapeutic methods. We discuss these matters

50 Galen, *De compositione medicamentorum secundum locos* 2.1 (K. 12.537–538) for “pneumatic headaches.” For “distended pain,” see *Loc. Aff.* 2.8.2 (Gärtner 330,9 = K. 8.91), cf. *Aët. Lib. med.* 9.27 (Zervos 330,6–10).

51 For headaches and back pains, see: *Aët. Lib. med.* 9.27; for dizziness, see *ibid.* 6.7 (Olivieri 2.134,29–135,1); for apoplexy, see *ibid.* 6.27 (Olivieri 2.170,26–27), where the “summoning of the pneu-

mata” is mentioned and by the same means as are listed in the case of headaches and back pains in *ibid.* 9.27 (lines 30–44), on which see below, p. 225.

52 The Stoics and Galen claimed that this “digestive pneuma” contributed to the production of the vital pneuma active in the body: Gal. *Hipp. Epid.* 6.5.5 (Wenkebach 270,26–29 = K. 17b.246–247 = *SVF* 2.782); Gal. *PHP* 7.3.28 (De Lacy 444,33–446,1 = K. 5.608).

insofar as they contribute to answering the main question of this paper: what is distinctive about the pneuma of the Pneumatist school? Our discussion therefore focuses only on the place of pneuma in the Pneumatists' clinical methods, and it is not intended to be taken as a comprehensive exploration of their clinical theories.

3.1 Pneuma and disease – *dyskrasia* of pneuma

Athenaeus' theory places the compositional, connate pneuma (الروح الغريزي) at the centre of pathological processes. External causes such as weather conditions, poisons and drugs affect the compositional pneuma: they cause a "bad mixture" (سوء مزاج, *dyskrasia*) of the pneuma by making the pneuma hotter, colder, moister or dryer than it naturally is.⁵³ The changes in the qualities of the pneuma affect the "capacity" (*dynamis*) of the pneuma and hence its effects on the parts of the body in which it is present. Excessive moisture, for instance, can make the pneuma "heavy" (βαρύς) and undermine its performance.⁵⁴ When the qualitative change in the pneuma is significant it brings about disease. It does so by changing the "natural mixture" (مزاج طبيعي) of the body part in which it is present ("it changes them through its own change and assimilates them to itself").⁵⁵

The idea that diseases arise from bodily changes (brought about by external or internal causes) which affect the performance of pneuma is not new. However, Hippocratic and Hellenistic authors focus on the blockage of the motion of pneuma through hollows and cavities in the body (e.g. vessels, heart or brain). This means that pneuma cannot reach the places in which it is required and disease arises as a result. Accordingly, their treatments aim at unblocking the passage, not at treating the pneuma as such. By contrast, in the Pneumatist theory it is the effect of pneuma present and acting inside the actual matter of the part which causes the pathology. Galen opposes it in particular to the view (which he himself holds) that external and internal causes affect the substance of the body parts *directly*, with no intermediate medium such as pneuma.⁵⁶ Galen's theory emphasises the quality of the mixture of parts as physiological and pathological agents, ensuring healthy functioning or acting as the cause of illness.⁵⁷ Psychic pneuma

53 Gal. CC 2.1, 2.3–4 (Lyons 54); *Hipp. Aer.* (ed. Strohmaier), *ad Hipp. Aer.* 10.1 (Jouanna 211,12–212,2 = L. 2.42). For *dyskrasia* of pneuma in the Greek fragments (δυσκρασία τοῦ πνεύματος): Gal. *Dig. Puls.* 4.2 (K. 8.944).

54 Orib. *Coll. med. (libri incerti)* 41 (Raeder 4.147,1–6).

55 Gal. CC 2.3 (Lyons 54,17–18); cf. Gal. *Hipp. Aer.* (ed. Strohmaier), note *ad Hipp. Aer.* 10.1 (Jouanna 211,12–212,2 = L. 2.42); on the effects on the *dy-*

namis see below, p. 222–225.

56 Gal. *Hipp. Aer.* (ed. Strohmaier), note *ad Hipp. Aer.* 10.1 (Jouanna 211,12–212,2 = L. 2.42). For Galen's view see in particular his explanation of diseases of homoiomerous parts in Galen, *De differentiis morborum* 4, 5 (K. 6.843–844, 6.848–855).

57 On the possibility that Galen attributed some pathological role to qualitative changes in the pneuma, see van der Eijk 2020.

is important for sensory and motor functions; and vital pneuma is required to maintain life, but Galen does not treat either of them as objects of diagnostic or therapeutic measures. He stresses that the activities and faculties are dependent on bodily parts and their mixtures, and these are the ones which need to be diagnosed and treated.⁵⁸ He does not incorporate into his theory the concept of “innate pneuma,” but rather that of an “innate heat” which is the vital principle. This innate heat is aided by the so-called “vital pneuma” only to the extent that the latter tempers the heat and thus maintains it. It is this innate heat, moreover, rather than the pneuma, which determines the size, speed and other characteristics of the pulse. For the Pneumatists, however, changes in the pneuma were an essential part of disease, and as we shall see below, it appears to have a more active role in pulsation.

Athenaeus introduces the idea of pneuma, in its imbalanced state, as the “cohesive cause” of diseases: “the cohesive cause (of the disease) is the pneuma, which has gone too far towards either heat, cold, dryness or wetness” (وسببها الماسك هو الروح إما لأنه سخن) (بأكثر من المقدار وإما لأنه بارد وإما لأنه يبس وإما لأنه رطب).⁵⁹ The causes that bring about the initial change in pneuma, i.e. external causes and the changes they cause inside the body (e.g. humoural changes) he calls antecedent and preceding causes respectively.⁶⁰ For it is the pneuma which not only causes the disease but “holds it together” and sustains it, so to speak: unless the pneuma is brought back to balance, the disease remains. This mirrors the physiological theory according to which “natural things are composed and governed by means of pneuma.”⁶¹ In accordance with this underlying pathological theory, pneuma is a prominent part of the diagnostic and therapeutic methods aimed at identifying and eliminating disease. Identifying the disease entails also the identification of the condition of the pneuma (and the anatomical location in which it was harmed and harmful); treatment entails correcting the *dyskrasia* of the pneuma and restoring its balance.

3.2 Pneuma as an object of diagnosis

The important evidence for the Pneumatists’ diagnostic consideration of pneuma derives from their pulse theory, in particular with regard to their notion of “fullness” (πληρότης) of the pulse, and distinction between “full” (πλήρης) and “empty” (κενός) pulses. Agathinus’ definition of the full and empty pulses includes an explicit reference to pneuma. Galen cites it verbatim:

58 See van der Eijk 2014; van der Eijk 2015.

59 Gal. CC 2.4 (Lyons 54,23–25). On cohesive causes, still the best discussions are in Frede 1980 and Han-kinson 1998; see now also Coughlin 2020.

60 Gal. CC 2.1–6 (Lyons 54–56), translated by Lyons slightly modified.

61 Ps.-Gal. Intro. 9 (Petit 22,13–15 = K. 14.699). See above, p. 213–214.

T4 τοῦ μὲν πλήρους τεταμένον καὶ ἐξεριστικὸν δι' ὅλου τὸ πνεῦμα παριστάν-
τος, τοῦ δὲ κενοῦ διαρρέον καὶ ταῖς ἀντιβάσεων ἐναφανιζόμενον, ὡς ῥήξει
τινὸς ὑδατίνης πομφόλυγος εἰκέναι.

The full pulse presents the pneuma taught and resistant throughout, whereas the empty pulse (presents) the pneuma flowing and disappearing under resistance (*sc.* upon the pressure from the fingers), so that it seems like a bursting of some wet bubble.

Gal. *Dig. Puls.* 4.2 (K. 8.936)⁶²

Galen remarks that this account does not indicate whether Agathinus was referring to the “connate pneuma (τὸ σύμφυτον πνεῦμα), that is, the vital (ζωτικόν) (pneuma), which, on their (*sc.* the Pneumatists’) account, extends through the bodies,” or rather to the “airy and material (ὕλικόν) pneuma, which is in the cavities (εὐρυχωρία) (of the arteries).”⁶³ Elsewhere Galen distinguishes three main views regarding the physiological and clinical significance of the full and empty pulses:

T5 εὐρίσκω γὰρ τοὺς νεωτέρους ἰατροὺς, τοὺς μὲν, ὅταν ὁ τῆς ἀρτηρίας χι-
τῶν ὅπως ἔχει συστάσεως μηνῦσαι θελήσωσι, τῷ τε τοῦ πλήρους ὀνόματι καὶ
τῷ τοῦ κενοῦ κατὰ τοῦτο χρωμένους, τοὺς δ' ὅταν τὴν ἐν τῇ κοιλότητι πε-
ριεχομένην οὐσίαν. καὶ ταύτης οἱ μὲν τὸ ποσὸν διὰ τῶν ὀνομάτων δηλοῦσθαι
νομίζουσιν, οἱ δὲ τὸ ποιὸν, οἱ δ' ἀμφοτέρω. Ἀρχιγένει δ' ὡς εἰκεν, οὐκ ἀρ-
κεῖ μόνον ταῦτα, προσεπεισάγει δ' ἡμῖν καὶ τὸ τῆς τοῦ πνεύματος δυνάμεως
σημαινόμενον.

I find that the young physicians use the terms “full” and “empty” when they want to communicate either (i) the state of the composition of the wall of the artery; or (ii) the substance contained inside the artery’s cavity. Of these, some think that (ii.a) the terms indicate the quantity, some (ii.b) the quality, some (ii.c) both. But Archigenes, it seems, is not satisfied with these alone but introduces for us the additional meaning (iii), namely with reference to the *dynamis* of the pneuma.

Gal. *Diff. Puls.* 2.3 (K. 8.575)⁶⁴

⁶² Cf. Gal. *Dig. Puls.* 4.2 (K. 8.937–938).

⁶³ Gal. *Dig. Puls.* 4.2 (K. 8.936–937).

⁶⁴ Cf. Gal. *Diff. Puls.* 3.6 (K. 8.678, 8.683); *Dig. Puls.* 4.3 (K. 8.947).

Despite the ambiguity concerning Agathinus' view, Galen places him in a particular group. According to Galen, it is possible to deduce (τεκμαίρεσθαι) from the Pneumatist opinion as a whole, that Agathinus meant the vital pneuma, that is, the structural pneuma in the arterial walls rather than cavities.⁶⁵ Galen thus places Agathinus firmly in the first group, which considers the fullness and emptiness of the pulse as indicative of the composition of the arteries and the connate pneuma inside their walls. We have just seen that Agathinus' pupil, Archigenes, connects the fullness and emptiness of the pulse to the *dynamis* of the pneuma. From another passage in Galen we learn that this refers to the very same pneuma as Agathinus, for we are told that this third interpretation of the fullness or emptiness of the pulse "makes known the *dynamis* of its (*sc.* the artery's) connate pneuma" ([τὸ] τοῦ συμφύτου πνεύματος αὐτῆς τὴν δύναμιν γνωρίζον).⁶⁶ Unlike his master, Archigenes does not mention the pneuma in his definition of the full and empty pulses:

Τ6 ἔστι δὲ πλήρης σφυγμὸς ὁ ναστοτέραν ἐπιδεικνὺς τὴν ἀρτηρίαν καὶ τὴν ὑπόπτωσιν αὐτῆς διασεσαγμένην ἐγχύλωσ, κενὸς δὲ ὁ πομφολυγώδη τὴν ἔγερσιν τῆς ἀρτηρίας ποιούμενος, ὥστε κατὰ τὸν ἐπιπιεσμὸν τῶν δακτύλων κενεμβάτησιν ὑποπίπτειν.

Full pulse is the one which presents the artery rather replete and its impact upon the fingers as stuffed with fluid; and the empty pulse makes the rising of the artery bubbly, so that the emptiness falls upon the pressure of the fingers.

Gal. *Dig. Puls.* 1.3 (K. 8.931)⁶⁷

Whereas Agathinus incorporates the condition of the pneuma into his description of the full and empty pulses and the tactile perception they produce, Archigenes' definition refers only to the artery itself and its feel to the touch, not to the pneuma inside it. According to Archigenes, one does not sense the pneuma as such; instead, the haptic sensation of the artery indicates the condition of the pneuma and allows to diagnose it. Our fragmentary evidence does not reveal the exact correlations between the degree of fullness and the conditions of the pneuma's *dynamis*, but there are some clues, nonetheless. Several passages in Galen tell us that Archigenes opposed *dynamis* to substance (*ousia*) and considers fullness or emptiness with regard to *dynamis* in a metaphorical sense, namely, to refer to a *quality* rather than a quantity. Archigenes compares this to the way the term "full" is used to describe the capacity of wines. One way to understand this metaphor is that, according to Archigenes, when we describe a pulse as "full," we

65 Gal. *Dig. Puls.* 4.2 (K. 8.937).

66 Gal. *Dig. Puls.* 4.3 (K. 8.947).

67 Cf. *Diff. Puls.* 1.5 (K. 8.509).

mean to say that it reflects a strong capacity, as opposed to a poor and weak capacity which would result in an “empty” pulse.⁶⁸ The idea seems to be that a full (i.e. strong and sufficient) capacity of the pneuma will result in a smooth and uniform motion, which allows a smooth flow of the fluid (ἐγγύλωσις) inside it (namely blood mixed with some non-compositional pneuma). This stream of matter will be apparent in the motion, in so far as the swelling during the diastole will be prominent. In the opposite case the pneuma does not flow smoothly with the blood, but hits the walls irregularly, like bubbles exploding upon a solid surface. With some caution we may consider this to be suggestive of the way in which the compositional pneuma “governs” the activities of the body. The condition of compositional pneuma in the arteries directly affects the pulse, presumably since it is the compositional pneuma inside the parts – namely its *dynamis* – which facilitates and maintains the distinctive activity of each part. In the case of the arteries this activity is pulsation, the expansion and contraction of the arteries required for moving respired pneuma through the body. It is the pneuma which “possesses” the *dynamis* of the parts.

Our evidence suggests that the Pneumatists recognise more minute and particular distinctions in the *dynamis* of the pneuma and that *dynamis* in this respect also refers to particular physical effects of the pneuma. In his discussion of the fullness of the pulse, Archigenes says the following (cited verbatim by Galen): “heaviness in capacity characterizes the full pulse in such cases as are the names of the bad-mixture of the pneuma” (τὸ ἐν δυνάμει καρῶδες ἐπὶ τῶν τοιούτων τὸν πλήρη σφυγμὸν χαρακτηρίζει, ὀνόματα ὄντα τῆς δυσκρασίας τοῦ πνεύματος).⁶⁹ Archigenes seems to be saying that the different *dyskrasiai* of the pneuma are named with respect to the particular physical condition of the pneuma and its effects, for example, causing heaviness. Such an idea is reflected in Athenaeus’ reference to conditions in which the pneuma is “heavy” (βαρύς).⁷⁰ It is possible that this concept is related to the notion of the powers (*dynameis*) of drugs which caused different physical effects on the body. We know that Archigenes distinguishes different degrees of changes in the qualities of the pulse, for instance in the case of its size.⁷¹ It would make sense that he identifies different degrees of fullness or emptiness and correlates them to a distinct *dynamis* of the pneuma.

Questions remain concerning the role of pneuma in altering the pulse, but these must await a dedicated study. What is important for our present purpose is that these sources show that these physicians consider pneuma to be an agent affecting the pulse

68 Gal. *Diff. Puls.* 3.6 (K. 8.671; 8.677–681, 8.683), *Dig. Puls.* 4.2 (K. 8.944–945).

69 Gal. *Dig. Puls.* 4.2 (K. 8.944).

70 See p. 220.

71 See Gal. *Diff. Puls.* 2.7–10 (K. 8.602–620) and Lewis [forthcoming].

and hence consider it to be an object of the diagnostic process.⁷² By examining the pulse, these physicians believe one can identify the condition of the pneuma, namely of the connate (i.e. the vital and what he have been calling “compositional” pneuma). This suggests that the physiological Pneumatist theory is incorporated into their clinical method, as well as diagnostic and therapeutic theory.

3.3 Pneuma as an object of treatment

There are two types or manifestations of pneuma as an object of treatment in the theories of the Pneumatist physicians. The first is the pneuma arising in the digestive system and whose presence as such is disruptive. This pneuma is a part of treatment in so far as it has to be expelled. In order to achieve this, physicians induce belching, vomiting and stools by regimen and pharmacological means such as baths, drugs and remedies they applied externally. Some of these are described by Archigenes as means to “summon the pneuma” (τὸ πνεῦμα προσκαλεῖν), i.e. to draw it out of the stomach and body.⁷³ Pathological pneuma is a fairly common idea in antiquity.⁷⁴ Where the Pneumatist therapeutic theory stands out is in its concern with a second kind of pneuma, namely the connate, compositional pneuma required for healthy bodily functions. We have seen that under certain circumstances this pneuma may undergo a qualitative alteration that incapacitates it or makes it, and thus the body, dysfunctional; in such cases it must be restored to its natural, healthy state. Take for example the following passage, which discusses Archigenes’ therapeutic method of using sponges:

T7 Περὶ ἀποσπογγισμοῦ Ἀρχιγένους. Ἀποσπογγισμὸν παραλαμβάνομεν ἐπὶ μὲν τῶν ἄλλων μερῶν ἥτοι τὸν ἐπικείμενον ῥύπον ἀπονίψαι ἢ ἰχῶρα ἢ αἶμα ἢ πύον ἢ αὐτὰ τὰ φάρμακα ἢ ὑπὸ δήξεως ἢ κνησμοῦ ἐνοχλούμενα τὰ σώματα παρηγορεῖν πειρώμενοι· ἐπὶ δὲ τοῦ προσώπου νεαροποιῆσαι καὶ ἀναζωπυρῆσαι τὸ πνεῦμα βουλόμενοι, ὥστε ἐπὶ τῶν λειποθυμούντων ὕδωρ παραλαμβάνομεν, θέρους μὲν ψυχρὸν, γαλακτῶδες δὲ χειμῶνος

On sponging from Archigenes. When using sponging on other parts (besides the face) we are either trying to clean dirt which covers the part, or serum, blood or pus, or the substances themselves, or we are attempting to soothe the bodies themselves which are disturbed by a bite or an itch. Whereas when using sponging on the face our wish is *to renew and rekindle the pneuma*, so that in the

72 Affecting the pulse not only in a mechanical manner of a stream of air flowing through a vessel, but also in a functional, teleological manner, as something which activates and directs the motion from

within the arterial matter itself.

73 Aët. *Lib. med.* 6.27 (Olivieri 2.170,26–27); 9.27 (Zervos 330,14–15).

74 See n. 47 above.

case of people who have fainted we use cold water in summer and tepid water in winter.

Aët. *Lib. med.* 3.170 (Olivieri 1.344,14–20)

The pneuma at play here is clearly not the pathological pneuma arising from imperfect digestion – in the case at hand the pneuma does not need to be expelled, but rather “renewed” or “rekindled.” This implies a belief in the existence of a natural, useful pneuma, which has come into harm’s way and needs to be brought back to its natural condition. It must have previously undergone some alteration which rendered it (or, if we think back to the pulse theory, its *dynamis*) weak and dysfunctional.

Importantly, the application of the remedy to the face is opposed here to the application to a particular part: in the latter case the location of application seems to be determined by a local problem in that part; whereas the treatment applied to the head is not directed by the condition of the face itself, but a more “holistic” condition, namely, of the pneuma. The reference to the case of fainting implies a pneuma which keeps the person vital and active. It is not obvious why the face was the desired location. The head is also the part to which Pneumatist physicians apply remedies in the case of mental affections such as memory loss and apoplexy.⁷⁵ The motivation for focusing on the face/head may have been non-theoretical – just as most of us are unable to explain the “scientific reason” behind the traditional method of reviving a fainted person by throwing cold water over them (generally substituted today, after much public education, by the method of raising the person’s legs).⁷⁶

The present fragment further reveals the tight connection between pneuma and heat in the Pneumatist theory.⁷⁷ We learn that in some cases the means for recovering and “renewing” (νεαροποιεῖν) the pneuma is by rekindling (ἀναζωπυρεῖν) its fire. Pneuma thus requires some heat in order to function. Moreover, it is not a new surge of heat which is required for rekindling, but rather cold or tepid water. In other words, the pneuma and its fire can suffer not only by being overcooled, but also overheated. This makes sense in light of their idea of *dyskrasia* of the pneuma, which can arise from an excess of either component of the mixture – the hot or the cold. The exact relation between heat and pneuma in the Pneumatist theory cannot be pursued further here, but it is noteworthy that this idea of rekindling by means of cooling is familiar from

75 For example: Gal. *Loc. Aff.* 3.5 (K. 8.150), Alexander of Tralles, *Therapeutica* 1.15 (Puschmann 1.557,18–559,4), Aët. *Lib. med.* 6.27 (Olivieri 2.170,20–171,1) and see Lewis 2018.

76 On this see also Lewis 2018, 171–172.

77 See 210–211 above. See also Gal. *Dig. Puls.* 4.3 (K. 8.949–950) for evidence for the connection between pneuma and heat in their theory.

authors who explain the body with the notion of “innate heat,” which is maintained not (only) by the addition of heat, but (also) by tempering it.⁷⁸

Another example that suggests a therapeutic aim of restoring pneuma to its proper condition appears in Archigenes’ treatment of lientery. His recommendation includes, among other remedies, the use of *dropax*, a kind of warm embrocation, which Archigenes often recommends.⁷⁹ He explains its use in the following terms:

T8 ὁ δρῶπαξ δύναιται τονῶσαι τὸ ἐνδεδικὸς πνεῦμα καὶ ἀνακαλέσασθαι πρὸς τὴν ἐπιφάνειαν καὶ ἀναμνήσαι τῶν ἰδίων ἔργων.

The dropax can strengthen the deficient pneuma, revive the appearance and remind of one’s own activities.

Archigenes, *Fragmenta* (Brescia 24,13–14)

Pneuma here appears again as a distinctive object of treatment. Are the two latter effects (reviving appearance and restoring mnemonic faculties) dependent on the pneuma? There is good reason to assume so. We have seen a connection between pneuma and vital signs, which would support connecting pneuma to a general appearance and complexion. Moreover, if pneuma is what governs and activates the parts, then it would be necessary also for mental functions such as memory and recollection (which the Pneumatists assigned to the heart).⁸⁰

Dropax, sponging and other therapeutic methods the Pneumatists use are not unique to them, but a common part of Greco-Roman medical practice.⁸¹ The pathological explanation of disease as dependent on a qualitative imbalance, a *dyskrasia*, is also a strong part of that medical tradition. The practical similarity is stressed by Galen, who notes that so long as one explains disease in terms of qualitative imbalance and treatment in terms of restoring balance, it does not matter what the material subject in which this (im)balance occurs:

T9 If there is a cold and humid pain in the head, and one says that it is the pneuma (الريح) that has become colder and more humid, and that we need something that warms and dries, while others say that the nature of the head (طبيعة الرأس) has become unbalanced, and has become colder and more humid, and that we need correspondingly something warming and drying, so this

78 See for example: Aristotle, *De respiratione* 13, 477a11–477a24; 21, 480a16–480b21; Galen, *De utilitate respirationis* 5.7–8 (Furley/Wilkie 130–132 = K. 4.508–510).

79 See in particular Aët. *Lib. med.* 3.180 (Olivieri

1.351,3–26).

80 For the cardiac location of cognitive and intellectual functions, see Galen, *Loc. Aff.* 3.5, 3.7 (K. 8.151, 8.167); see Lewis 2018 for discussion.

81 Lewis 2018, 158–165.

disagreement that they have among themselves does no harm at all; for they are unanimous with respect to the quantity of heat and dryness (*sc.* to be applied), on account of the cold and moisture of the head. If, then, one says that it is a pneuma or something else, it will not hurt in the treatment of diseases.

Gal. *Hipp. Aer.* (ed. Strohmaier), *ad Hipp. Aer.* 10.1
(Jouanna 211,12–212,2 = L. 2.42)

Galen goes on to say that some people call “Pneumatist” those who talk about pneuma in this way. As we have seen, what singles the Pneumatists out is that their underlying pathological and therapeutic theories and the stated aim of their therapeutic method were formulated in terms of the pneuma – the connate, compositional pneuma present and active inside the substance of the body – and this pneuma stood at the centre of these theories and methods. Their explicit reference to pneuma in the classification of the pulse is unique in our sources, as is the concern with restoring the strength and power of the pneuma. It is these notions which sets them apart from other authors and justifies their unique appellation.

4 The Pneumatists and the Stoics

As a final point we want to briefly address the question of the relation between the Pneumatists and the Stoics. This is not intended to be a close comparison of their respective theories; rather, our aim is to offer some methodological considerations in light of the evidence discussed in this chapter, which we hope will be useful for future studies.

On several occasions, our sources explicitly connect Pneumatist ideas with those of the Stoics. In *CC*, Galen claims that Athenaeus was a disciple of Posidonius, which most scholars now agree is a reference to the Stoic philosopher, Posidonius of Apamea.⁸² In the same work, Galen also states that Athenaeus “bases himself upon the Stoics,” and Galen makes this remark in order to explain why it is reasonable that Athenaeus introduces the notion of a cohesive cause of disease into medical theory.⁸³ Elsewhere, Galen labels the Stoic Chrysippus as “the grandfather” (πρόπαππος) of the Pneumatist school and claims that “all these so-called Pneumatists conform to the opinions from the Stoics.”⁸⁴ The author of *Introduction* also explicitly says that Athenaeus followed the Stoics in

82 Gal. *CC* 2.1 (Lyons 54,3–4). See also Nutton 2013, 202–206.

83 Galen’s explanation is that the Stoics discuss cohesive causes in their physics, and Athenaeus follows

Stoic physics, so Athenaeus too can use cohesive causes. Gal. *CC* 1.1–2.1 (Lyons 53,2–54,7).

84 Gal. *Diff. Puls.* 2.10, 3.1 (K. 8.631, 8.641–642).

adding a fifth element.⁸⁵ We have, then, a consensus in our sources that the Pneumatist physicians are indebted to Stoic ideas. We also find terminological similarities among Pneumatists and certain Stoics. The technical terms used in the *Introduction* when talking about Athenaeus' views on pneuma resemble those used in other sources to discuss Stoic views on pneuma in the body: they all use the vocabulary of "permeating through things" (διήκοντι δι' αὐτῶν), "holding things together" (συνέχεσθαι), and of "cohesive cause" (السبب الماسك), presumably translating συνεκτικὸν αἴτιον).⁸⁶ Such similarities in vocabulary suggest it is plausible Athenaeus and other Pneumatists are adopting not just Stoic terminology, but also a network of Stoics concepts and adapting them to their writings (either with or without explicit reference to the Stoics); however, the evidence is not conclusive, and there are few reasons to be cautious.

While our sources almost universally assert that Pneumatists take Stoic physics as a starting point in physiology, it remains unclear to what extent the Pneumatists portrayed or even considered *themselves* to be following Stoic physics. While later authors emphasise the Pneumatists' Stoic heritage, as far as we can tell the Pneumatists do not. This is more than an argument from silence. For we *do* have numerous examples where Galen and other authors explicitly mention Athenaeus' or Archigenes' references to earlier authorities, and these authorities are never Stoic. Rather, we find them citing philosophers like Empedocles, Plato, Xenophon, and Aristotle, and physicians such as Hippocrates, Diocles, and Andreas, or simply "the ancients."⁸⁷ Moreover, even if they did explicitly follow the Stoics, we do not have any evidence from the Pneumatists themselves who those Stoics might be. The Stoics are not a monolithic school and aside from Posidonius, we do not know which Stoics the Pneumatists' might have followed.⁸⁸ To use

85 On the Stoic "fifth element," see n. 21 above, and especially the chapter by Hensley in this volume. It should be noted, though, that the Stoics were not the only possible source for the idea of pneuma as an element. Something like it is implied in Arist. *Gen. an.* 2.3 736b35–38. Athenaeus also incorporated the notion of soul into his explanations of the body and medical theory. See also Orib. *Coll. med.* (lib. inc.) 17 and 21 (Raeder 4.106,8–14, 112,19–24). This notion was absent in the theories of most physicians from the classical and Hellenistic periods, on which see Coughlin 2018, 109–113, 119–138, and the chapters by Lewis and Leith and by Leith in this volume.

86 See p. 221 above.

87 For example: Athenaeus' reference to Hippocrates: T1 above, p. 209–210; Archigenes citing Herophilus: Gal. *Diff. Puls.* 2.6 (K. 8.592 = Herophilus, fr. 163a vS); Athenaeus quoting Empedocles: Athenaeus ap. Orib. *Coll. med.* (lib. inc.) 16 (Raeder 106,4–

7); Athenaeus quoting Plato's *Timaeus*: Galen, *De tremore, palpitatione, convulsione, et rigore* 6 (K. 7.609–610); Athenaeus agreeing with Aristotle and Theophrastus: Gal. *Temp.* 1.3 (Helmreich 8,28–10,3 = K. 1.522–523); Report that Athenaeus wrote against Asclepiades, Heraclides of Pontus, and Strato: Gal. *Trem. Palp.* 6 (K. 7.615–616) and Galen, *Caus. Symp.* 2.3 (K. 7.165–166); Athenaeus' appeal to "some the ancients" (τινες τῶν ἀρχαίων): Ps.-Gal. *Def. Med.* 31 (K. 19.356). The fact that Athenaeus endorses the beliefs of "the ancients" (whomever he takes them to be) almost certainly means that he is rejecting a contemporary view, and he is probably doing so on the assumption that writers closer to Hippocrates in time are more authoritative. On Athenaeus' "Hippocratism," see Coughlin 2018, 120–130.

88 See the chapter by Tieleman and the chapter by Hensley in this volume.

the Stoics to understand the Pneumatists risks the same circularity as would bringing in other physicians whose views resemble those of the Pneumatists. Our suggestion, then, is that the Stoics be used as evidence when a circular argument can be avoided, or, at least, when the circle is not vicious. This is easier said than done. Comparisons with Stoic sources are extremely tempting, for instance, when interpreting a term in the Pneumatist fragments that has several possible meanings. Still, one should avoid assuming that several centuries of Stoic reflection on nature and natural philosophy all count as equally important context for the Pneumatist school.

The question of the Pneumatists' debt to Stoicism, like the question of the Pneumatist school itself, is one that seems to promise insight, but ends up not delivering much. Galen and his contemporaries may have made the Pneumatist physicians out to be the descendants of the Stoics, but this is no reason to adopt such characterizations without scrutiny. Our focus instead should be on understanding how the Pneumatists saw themselves as heirs and attendants of the healing art. Why did they appeal to the ancients, including Hippocrates, Plato and Aristotle, as authorities? Why did they attribute the beliefs to them that they did? Who were they responding to? And what therapeutic practices did these beliefs allow them to promote and develop? These questions have not found answers since Wellmann's study over 100 years ago. We hope this paper offers a place from which to start looking for them again.

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