

*Galen's Notion of Dialectic**Teun Tieleman***5.1 Introduction**

Ancient dialectic as a theory and practice of reasoning comes in different varieties depending on philosopher or school: Plato, Aristotle, the Stoics, and still others. Any study of Galen's notion of dialectic will, in principle, have to take into account most of these predecessors. In this chapter I will take a fresh look at some of the points first raised in Tieleman (1996a) and (1996b) where I took particular note of parallels with the so-called Middle Platonist backdrop (e.g. Alcinous' *Didaskalikos* or *Manual*).¹ Meanwhile I have come to believe that we should allow for a greater degree of independence on Galen's part in responding to what he read in the Platonic dialogues, most notably the *Phaedrus* and the *Timaeus*. In order to work out the specificity of Galen's position I start (in Section 5.2) from the first three books of *The Doctrines of Hippocrates and Plato* (*PHP*, V.181–805 K.; also edited with English translation in De Lacy, 1978–84); then (in Section 5.3) move on to *PHP* Book 9; next (in Section 5.4) to the *Introduction to Logic* (*Inst.Log.*, edited in Kalbfleisch, 1896; trans. in Kieffer, 1964); and finally (in Section 5.5), to *Distinct Types of Pulse* (*Diff.Puls.*, VIII.493–765 K.), with references to further works in each of these sections. In the Conclusion, I draw some threads together and present an overall view of the complex material that has been assembled and discussed.

5.2 Lessons in Method: *PHP* 1–3

In *PHP* Galen argues that the intellectual heroes of its title – Hippocrates and Plato – were in broad agreement and basically correct about some

¹ On Galen and Middle Platonism, see also Chiaradonna, 2009a; Chiaradonna, 2019: 327–31; Tieleman, 2020.

great issues in philosophy and medicine alike:² the location of the psychic powers (Books 1–3 and 6), the structure of the soul (including the issue of the cause of emotion) (Books 4–5), the virtues and sense-perception (Book 7), the elements (Book 8), and the method of inquiry (Book 9).³ Books 1–3 and 6 present Galen's vindication of the Platonic tripartition-cum-trilocation of the soul, which, given his overarching theme, he also ascribes to Hippocrates, albeit largely by implication. A salient feature of Galen's argument is his effective use of anatomical research involving vivisection experiments concerning the nervous and vascular systems and the central role of the brain, heart, and liver.⁴ I cannot dwell on this here, being concerned not with Galen's experimental methods but with dialectic, which is what Galen would call a *logical* method.⁵ In fact, these books

² Due to the loss of the first two-thirds of Book 1, however, Galen's initial statement of his purpose in writing *PHP* has been lost. But in the remaining books he presents Hippocrates and Plato as the fountainheads of a grand tradition of medicine and philosophy in which he incorporates later physicians and philosophers (e.g. Aristotle and Theophrastus on scientific methodology, on which see below, 138–9) and excludes others, most notably atomists. Galen presents himself as self-consciously eclectic in an oft-cited statement in his *On My Own Books* (*Lib.Prop.*, XIX.8–48 K.; also edited in von Müller, 1891: 91–124; and edited with French translation in Boudon-Millot, 2007: 134–73; English translation in Singer, 1997: 3–22) 1.9, XIX.13 K. = 138,14–15 BM. Thus, he was averse to membership in any particular school or sect, whether of philosophy or medicine. But even though his medical philosophy, or philosophical medicine, finds no exact parallel in his own time or in the preceding tradition, he does engage in a syncretistic and classicist project which reflects preferences and alignments more common at the time. See Vegetti, 1986 (also available in English: Vegetti, 1999); on the Middle Platonist backdrop and on Galen's general position, see Tieleman, 1996b: xxviii–xxxvii; and on Galen's education and his preference for Hippocrates and Plato, see now Tieleman, 2020: 26–8.

³ According to *Lib.Prop.* 16.3, 171,5 BM – a passage absent from Kühn's edition (cf. XIX.46 K.) but recently restored by Boudon-Millot in the light of the Arabic tradition – the work originally comprised ten books, but we know nothing about its contents: see Boudon-Millot, 2007, *ad loc.*, n. 3.

⁴ Galen's anatomical knowledge and skills were impressive and he demonstrated them on repeated occasions before audiences of fellow-doctors, philosophers, and interested intellectuals from the Roman upper class: for a nice account of such a demonstration, see, e.g., *Prognosis* (*Praen.*, XIV.599–673 K.; also edited with English translation in Nutton, 1979) 5.1–21, XIV.624–30 K. = 94,1–100,6 Nutton. But in doing so Galen built on the work of the great medical scientists Herophilus of Chalcedon and Erasistratus of Ceos, both active in Alexandria in the first half of the third century BCE. See von Staden, 1989; and, for Galen's argument, Tieleman, 1996b: 1–129. On the design and significance of his experiments, see Tieleman, 2002.

⁵ *Distinct Types of Fevers* (*Diff.Feb.*, VII.273–405 K.) 1.3, VII.282 K.; *Whether Blood Is Naturally Contained in the Arteries* (*Art.Sang.*, IV.703–36 K.; also edited with English translation in Furley and Wilkie, 1984: 135–84) 7.2, IV.729 K. = 174 Furley and Wilkie; *The Best Doctor Is Also a Philosopher* (*Opt.Med.*, I.53–63 K.; also edited in von Müller, 1891: 1–8; and edited with French translation in Boudon-Millot, 2007: 284–92) 3.5, I.59–60 K. = 290,7–10 BM). The expressions can be used interchangeably, it appears: cf. *The Diagnosis and Cure of the Errors of the Soul* (*Pecc.Dig.*, V.58–103 K.; also edited in De Boer, 1937: 41–68; translated in Singer, 2013b: 283–314) 5.3, V.81 K. = 55,9–10 De Boer, where he describes the logical method as an art of finding in terms closely similar to those with which he describes dialectic (e.g. by reference to indication and discovery, on which see

are no less marked by a sustained concern with proper modes of reasoning. The cardiocentric theory is wrong not just because its defenders – most Stoics following their great scholar Chrysippus and some doctors – are ignorant of the anatomical and physiological facts, but also because of their failure to follow correct principles of method (the trouble with Aristotle, another cardiocentrist thinker, is that he failed to put into practice what he had correctly preached about method).⁶ To experience one should bring reason, i.e. trained reason as expressed in the use of logical methods with which to make the correct distinctions and so ask the right questions.⁷ This subtheme is introduced in the first three chapters of *PHP* Book 2 (his actual argument about the respective functions of the heart and the brain follows from Chapter 4 onwards). Here Galen introduces a fourfold classification of assumptions or premisses (*lēmματα*). With regard to these Zeno and Chrysippus ‘taught us no method and gave us no training’. In consequence, the premisses are all jumbled together in their books. Galen explains:

For they do not know that scientific (*epistēmōnika*)⁸ premisses refer to the essence of the thing under investigation and have it as their target. All others are external. Some are used by the dialectician for practice, for refuting sophists, for testing a young man’s pregnancy and acting as midwife and leading him to some discovery and creating impasses: call all these, if you like, dialectical and gymnastic and topical, for I am not concerned with names, but try to distinguish them from scientific premisses. Others are even more external and remote and are constructed chiefly from reputable and everyday examples and from certain inductions of a similar kind or from witnesses. These you may call, if you wish, plausible and rhetorical, for I do not care what name you give them, but you must try to learn their nature. Sophistical premisses are still further removed from the essence of the matter under investigation. (*PHP* 2.3.9–11, V.221–2 K. = 110,22–112,2 DeL; trans. DeL, modified)

Galen does not lay claim to any originality for this classification. In the preceding context he had already mentioned Theophrastus and Aristotle in

below, 151–3); for this broader sense of ‘dialectic’ as logic (which was perfectly standard in Stoicism), see also the remarks and survey by Chiaradonna, 2019: 322.

⁶ *PHP* 2.2.3, V.213 K. = 104,3–5 DeL, and 2.3.23–4, V.225 K. = 114,22–5 DeL; cf. 1.8.7–15, V.202–3K. = 92,17–94,10 DeL, and see further below, 139. For Aristotle, cf. 142 n. 17 and 146–7.

⁷ Cf. Tieleman, 2011, on ‘trained perception’ and see further below, 149–51, on the method of distinguishing between similar things.

⁸ I.e. having the status of knowledge (*epistēmē*): for relevant uses, see Arist. *Top.* 1.1, 100b19, *APo.* 1.6, 75a30.

the *Second⁹ Analytics* as having provided the best account of scientific demonstration (*PHP* 2.2.4, V.213 K. = 104,3–5 DeL), as well as his own (lost) *On Demonstration (Dem.)*¹⁰ (2.2.3, V.213 K. = 102,26–104,2 DeL), which offered a ‘clear and full explanation of the rather unclear and brief statements by the ancients’ (2.3.1, V.219 K. = 108,21–5 DeL).¹¹ Following the above quotation Galen again refers to the ‘ancients’ (meaning, here, Aristotle in particular) as having dealt with each of these kinds of premiss in the *Sophistical Refutations*, the *Rhetoric*, the *Topics* and ‘the books *On Demonstration*, which are also called the *Second Analytics*’, respectively (2.3.12, V.222 K. = 112,3–8 DeL). Clearly, then, as far as *method* is concerned, his quarrel is not with Aristotle or the Peripatetics (as he also makes clear at 2.3.23–4, V.225 K. = 114,22–5 DeL). None the less, this should not blind us to certain differences from these Aristotelian works. The description of the dialectical class in the passages quoted above combines Aristotelian with Platonic and Socratic overtones (midwifery, *aporia*) but, more strikingly, Galen or his source has removed from it the ‘reputable’ views, i.e. the *endoxa*, of people in general or experts, which Aristotle had designated as the material of dialectical argumentation (*Top.* 1.1, 100a29–30, 100b21–3). Galen for his part assigns them to the rhetorical class, which is marked by the use of examples and (expert and non-expert) witnesses and so by reliance on what today is sometimes called the authority principle. In the context it is Chrysippus who is charged with availing himself of this type of unscientific reasoning, i.e. one not based on the correct method and so not leading to knowledge (*PHP* 2.2.1–3.27, V.213–26 K. = 102,18–116,8 DeL). The Stoics have a logic of their own, of course, with Chrysippus as its uncontested master. But Galen in a typical way denies that it is of much use for solving medical problems

⁹ I.e. *Posterior*. Cf. *Phlp. in Apr.* 14,4 Wallies; *Simp. (?) in de an.* 97,8 Hayduck.

¹⁰ Von Müller, 1895, was the first to present a survey of references to *Dem.* and so an impression of its content and style. See also Strohmaier, 1998, esp. 267–83, and Koetschet, 2015, on additional evidence from Arabic sources. On the nature of *Dem.*, see also Barnes, 1991: 67–9; Chiaradonna, 2009b; Havrda, 2015; Chiaradonna, 2019. Aspects of Galen’s methodology can be paralleled from *Clem. Al. Strom.* 8: see Tieleman, 1996b: 20, 104, who takes them to reflect a common ‘Middle Platonist’ background. Havrda, 2016, breaks new ground by arguing powerfully that large chunks of *Strom.* 8 actually derive from Galen’s *Dem.*

¹¹ Another sad loss of particular relevance to his notion of dialectic is Galen’s *On Proof-Finding (Peri apodeiktikēs beureseōs)*: see *The Therapeutic Method (MM, X.1–1021 K.*; translated in Johnston and Horsley, 2011) 7.2, X.469 K., *Lib.Prop.* 14.22, XIX.44 K. = 168,17–18 BM. This tract may have been a so-called *Ergänzungsschrift* for the relevant parts of *Dem.*; on the contents, including proof-finding, of *Dem.*, see *MM* 1.5, X.39–42 K.

or advancing medical knowledge (2.3.18–19, V.224 K. = 114,1–10 DeL).¹² Scientific premisses, Galen teaches, derive from and aim at the essence (or being, *ousia*) of something; the others he calls ‘external’, viz. to the essence, to varying degrees. The dialectical ones are closest to the scientific class. As we have noted, dialectic reasoning has its positive uses: training, raising questions, finding something, refuting sophists. But what do dialectical assumptions refer to if it is no longer the *endoxa*? The following passage makes this, and the second position of dialectic in this hierarchical series, clearer:

Since our problem is to inquire about the heart, whether the ruling part of the soul is in it, that is whether it initiates perception and voluntary motion in all parts of the animal, you must know that the premisses taken from its properties will be of two kinds: those which pertain to the subject of inquiry considered by itself will be scientific; all the rest will belong to another class, the second, at one remove from the scientific premisses. And all the premisses that are taken from men’s opinions, whether those of nonexperts or poets or philosophers, or from some etymology, or from nods, whether of assent or dissent, or from anything else of that kind will belong to the third class.¹³ These premisses are twice removed from the scientific and differ not much from sophistical premisses, which consist for the most part of certain homonyms and forms of expression. (*PHP* 2.4.3–4, V.227 K. = 116,19–31 DeL; trans. DeL, modified)

Here, then, we have the same four classes of premisses with the same hierarchical order. But Galen makes a different twofold distinction between the scientific and dialectical classes on the one hand and the rhetorical and sophistical on the other, whereas in the first passage he contrasted scientific ones with the three other kinds which are external to the essence or being of the subject. Here the scientific and dialectical ones have in common that both are taken from the attributes (*huparkhonta*) of the subject of inquiry. The rhetorical and sophistical ones, then, do not pertain to the subject of inquiry but are taken from external items, such as people’s opinions (rhetorical statements) or homonyms (sophistical propositions). These two classes do not differ much between themselves either.

¹² On the uselessness of Stoic logic, see also *Introduction to Logic* (*Inst. Log.*, edited in Kalbfleisch, 1896; English translation in Kieffer, 1964) 7.8, 19,6 Kalbfleisch. Galen’s insistence on utility is rightly emphasised by Barnes, 1991, followed by Chiaradonna, 2019.

¹³ This list is inspired by Chrysippus’ procedure in his *On the Soul* in particular. In addition to including many lines of poetic verse, he availed himself of etymology and, in this connection, of such things as our head nodding towards the chest when we say the pronoun for ‘I’ (*egō*), indicating that the self has the chest (i.e. the heart) as its seat. See *PHP* 2.2.9–23, V.213–18 K. = 104,27–108,20 DeL, with Tieleman, 1996b: 206–14.

I have already noted that Galen associates the notion of *endoxa* with the rhetorical class instead of the dialectical one. Here we see that the *endoxa* are associated with real features or attributes of the thing under inquiry. It is noteworthy that Galen, while appealing to Aristotle and the Peripatetic tradition (see above), does not comment on this striking divergence from Aristotle. This would perhaps be all the more striking if he is self-consciously emending Aristotle's concept of dialectic on this point. One may ask then whether he took this to be the official Aristotelian position and see whether it can be paralleled from, say, the exegetical tradition concerned with the Aristotelian *Topics*. In a previous study I have pointed to the absence of the *endoxa* from such works as Cicero's *Topica* or the works on topics by Boethius, which are of course much later than Aristotle's work but may be taken to reflect earlier stages of this tradition (and Cicero presents his *Topics* as dealing with the same subject-matter as Aristotle's *Topics*, in spite of the big differences between the two works).¹⁴ Especially for the period between Aristotle and Cicero this tradition has left hardly any traces, so that one may wonder whether anything deserving of the name ever existed.¹⁵ In this connection it is noteworthy that the great Alexandrian physician Herophilus of Chalcedon (first half of the third century BCE), who took a keen interest in Aristotelian methodology, wrote a treatise *Against Common Opinions* in which he called for the study of (perceptible) phenomena instead of working on the basis of more or less authoritative opinions, on which he did not rely.¹⁶ Herophilus was held in high esteem by Galen and may have influenced him on this point too. Likewise Galen in summarising the contents of his *Dem.* in *MM* 1.5, X.42 K., contrasts scientific premisses with those taken from among the 'views of the many' (*ek tôn tois pollois dokountôn*).

But what exactly differentiates scientific from dialectical ones according to Galen? The scientific ones pertain to the subject 'as such' (*kat' auto*), which determination may be taken to pick up the 'essence' or 'being' in the

¹⁴ See Cic. *Top.* 1–5, with Reinhardt, 2003, *ad loc.* None the less, Cicero's text does not permit us to take him actually to identify Aristotle's treatise (which he and most interpreters consider to be 'our' *Topics*) with his primary source. The verb *traderem* (§ 2) used by Cicero to characterise his project should not be taken to mean 'translate' but rather 'deliver' or 'teach' (or, as Reinhardt renders: 'pass on knowledge'). Cicero's list of *loci* is however similar to what is to be found in later ancient tracts by Themistius/Boethius and the *Anonymus Seguerianus*, a rhetorical treatise from the Imperial Era; on this tract and the tradition in which Cicero stands, see Reinhardt, 2003: 36–48.

¹⁵ See van Ophuijsen, 1994; Tieleman, 1996b: 110–26; Reinhardt, 2003: 36–48 (who suggests that Cicero's tract rather depends on a Peripatetic *rhetorical* tradition) and Crivelli, 2019.

¹⁶ See Herophil. T 203 von Staden (his treatise) and T 54 von Staden: Herophilus examined the observable phenomena as opposed to beliefs (δοξαι), in which he did not put his trust); cf. Tieleman, 1995: 494; and Tieleman, 1996b: 23; cf. von Staden, 1989: 119, 135.

first quoted passage. This distinction becomes clear from what follows from *PHP* 2.4.5, V.228 K. = 116,32 DeL onwards. Here Galen starts his inquiry into the heart's function, which he links to its being or essence.¹⁷ In *PHP* Book 2 he starts from the heart because his main opponents, the Stoics and Aristotelians, consider it to be the seat of the soul's ruling part. But this inquiry is soon expanded so as to include the brain, given the need to determine the interrelation between the two organs (*PHP* 2.6, V.262–7 K. = 148–52 DeL). Thus the critique of the cardiocentric doctrine turns into a vindication of the Platonic tripartite theory (the liver is argued to be the seat of the appetitive part in *PHP* Book 6).¹⁸ In regard to the heart Galen first presents a division (or *diairesis*) of the heart's attributes (*huparkhonta*):

We must begin, then, with all the attributes of the heart; and we must mention them all in turn, first by main heads and by genera, then also by parts and species. Now the heart has position, size, connection, conformation, state, and motion. Let us first take up position. (*PHP* 2.4.5–6, V.228 K. = 116,32–118,1 DeL; trans. DeL, modified)

I have studied the ensuing argument in great detail elsewhere.¹⁹ Suffice to note here that this beginning shows him applying the logical method of conceptual analysis or division (*diairesis*), a method which will be central to Book 9 (more on which below). This is not just clear from his reference to main heads and genera and parts and species but also from a realisation that the distinction between essence and attributes and between attributes among themselves was one of the forms of *diairesis* that form the background of Galen's methodology (cf. 9.9.43–6, V.804–5 K. = 608,12–29 DeL). Indeed, *diairesis* also counts as one of the 'topics' in the tradition represented by Cicero and Boethius.²⁰ In what follows this distinction is used to sort out which of the attributes pertain directly to the essence of the subject under investigation, i.e. the heart. Galen does so on the basis of the arguments used by Chrysippus, Aristotle, and Plato, which, then, are considered as having been derived from a particular type of attribute such

¹⁷ On the link between function (use, action) and being, see *PHP* 1.8.9–10, V.202 K. = 92,22–6 DeL: Having announced that he will follow Aristotle's own principles Galen says: "Thus it was he [*sc.* Aristotle] who taught us to look to the action (*energeia*) and use (*khreia*) of every organ, not to its structure (*kataskenē*) when we investigate its being (*ousia*). If asked "What is being for the eye?," we would answer, "It is that it be an organ of sight."

¹⁸ It should be noted that Galen in the extant part of Book 1 also draws attention to the significance of the nervous system for the debate on the seat of the ruling part: see, e.g., *PHP* 1.9, V.203–6 K. (= 94–96 DeL).

¹⁹ Tieleman, 1996b: 1–129. Cf. Tieleman, 1996a.

²⁰ Cic. *Top.* 26–8, Boeth. *diff.top.* 2.3.13–4.3 Nikitas with Tieleman, 1996b: 122–7.

as 'position' or 'motion'. This is also the case with the first set of arguments discussed by Galen and classed as depending on the attribute type 'position', i.e. of the heart in the body. Aristotle had availed himself of it, arguing that the heart's midmost position indicated that it played a functionally central role with respect to the body as a whole (*PA* 3.4, 665b18–20). Galen points out that strictly speaking the heart does not lie in the exact centre of the body or even the chest, but apart from that, position is not really relevant to what one is looking for (the centre of perception and voluntary motion). To fulfil these functions the organ under investigation needs vessels connecting it with the other parts of the body.²¹ This, then, leads to Galen's experiments concerned with the arteries and nerves aimed at establishing the function of the heart and brain respectively (*PHP* 2.5.1–6.17, V.240–62 K. = 128,15–152,8 DeL). In light of the division of attributes, it appears that the heart's being connected with its own system of vessels is indicative of its function (i.e. what is referred to as its *plokê*, its being connected or entwined with other tissues).²² Another relevant or appropriate²³ (viz. to the soul's ruling part) attribute is that of motion: the heart has its own distinctive motion, viz. pulsation, which is distinct from voluntary motion,²⁴ but appropriate to its being the seat of certain emotions according to Platonic tripartite psychology. After all, emotions such as anger and love manifest themselves through physical effects in the heart, most notably its pounding movement (2.7.1–22, V.267–72 K. = 152,9–156,26 DeL). To return to the attribute of position, it is worth noting that Galen also acknowledges that Plato had employed it as well, referring in the *Timaeus* to the uppermost position of the head as being suited to its being the seat of the highest, rational part of the soul, or pointing to the senses as being stationed around the brain like

²¹ *PHP* 2.4.6, V.228 K. = 116,34–5 DeL; cf. 1.8.4, V.201 K. = 92,5–10 DeL, and 1.8.10, V.202 K. = 92,25–30 DeL. For Galen this assumption derives from the *a priori* principle that all causal transmission is by contact (among other things); cf. also De Lacy, 1979, esp. 360–1.

²² This makes it all the more necessary to refute Aristotle's observation at *PA* 3.4, 666b14–16 that the heart has a large number of nerves (*neura*) (cf. *ibid.* 3.3, 665a10–13, *Arist. MA* 10, 703a14–24): cf. *PHP* 1.8.1–10, V.200–2 K. = 90,26–92,30 DeL.

²³ Greek *oikeios*, a term which Galen in this connection borrows from Aristotle: see *APo.* 1.2, 71b20–3, with Tieleman, 1996b: 13.

²⁴ For Galen's distinction between voluntary vs. natural (i.e. involuntary) movement, see also *On Problematical Movements (Mot.Dub.)*, edited with English translation in Nutton [Latin versions] and Bos [Arabic version], 2011) 2.5, 128,13–18 Nutton (where it is illustrated by movements directed from the brain and those from the heart respectively) with Nutton and Bos, 2011 *ad loc.* Cf. *Mot. Dub.* 2.5 (Mark of Toledo's version of Hunayn's Arabic translation) 187,14–18 Nutton. As its title indicates, the treatise is devoted to discussing those movements, e.g. respiration, that are unclear and/or controversial in terms of this distinction.

bodyguards.²⁵ Plato was on the right track. But this argument also does not yield knowledge of the head's, or brain's, function (2.4.17–18, V.230–1 K. = 120,1–10 DeL).

But does the above mean that Plato, too, had fallen short of the requirements of correct scientific procedure? Galen is in a position to save Plato from criticism along these lines by pointing to the fact that he had qualified his account in the *Timaeus* as likely or verisimilar (*eikos*), which, using an Academic term, Galen, following the Platonic *Phaedrus*, treats as interchangeable with the plausible (*pithanon*).²⁶ He uses the same exonerating strategy when it comes to Plato's pronouncements on things that are insoluble for lack of empirical evidence such as the question, hotly and endlessly debated among Platonists, of whether the world has been created, i.e. has a beginning.²⁷ In regard to the question of the seat of the soul's ruling part, or the intellect, we should note the opening chapter of Book 3. Here Galen comments on how Chrysippus in his *On the Soul* presented Plato's position. The Stoic scholar started out in a promising way, presenting a division of available options in the debate including Plato's tripartite one, ascribing the prevailing disagreement (*antilogia*) to the fact that the seat of the intellect cannot be directly inferred from sense-perception (*PHP* 3.1.10–15, V.288–9 K. = 170,9–27 DeL = *SVF* 2.885).²⁸ Thus, the Stoic correctly applied what Galen calls a 'division of the problem' (*diairesis tou problêmatos*, *PHP* 4.1.15, V.365 K. = 238,13 DeL).²⁹ However, Chrysippus then forgot all about his division and proceeded to bombard the reader with his own flawed arguments in favour of the cardiocentric position. How far Galen has a point need not detain us here; it is his method that concerns us.³⁰ He goes on to make the following critical comment:

First, in my opinion, he [*sc.* Chrysippus] should have stated the plausible arguments by which Plato was persuaded to adopt this view, then he should refute and discredit him, and after that establish his own position, not from the kind of plausibilities that sophists and rhetoricians are wont to employ

²⁵ *Tim.* 70a6, 70b2, *Resp.* 9, 573e7, 575b2.

²⁶ See, e.g., *PHP* 9.9.6, V.792 K. = 598,20 DeL, and 9.9.7, V.793 K. = 598,26 DeL on *Tim.* 29b–d; cf. *My Own Doctrines (Prop. Plac.*, partly edited in IV.757–66 K.; edited with French translation in Boudon-Millot and Pietrobelli, 2005; and with Italian translation in Lami and Garofalo, 2012) 13, IV.759 K. = 186,35–38 BM and Pietrobelli, 126,6 Lami and Garofalo; cf. *Phdr.* 272d7–e6.

²⁷ See Tieleman, 2018: 456–7, with further references.

²⁸ On this passage, see Mansfeld, 1990a, 1990b.

²⁹ On this point of method and Galen use doxographic schemes see Tieleman, 2018: 462–8, with further references.

³⁰ For an account of Chrysippus' argument in his own terms, see Tieleman, 1996b: 131–290.

but from scientific and demonstrative arguments, the use of which is proper for philosophical men who earnestly seek the truth. (*PHP* 3.1.20, V.289–90 K. = 172,4–10 DeL; trans. DeL)

Galen, then, distinguishes between the plausible arguments used by Plato and unjustifiably ignored by Chrysippus and the rhetorical type of argument used by Chrysippus himself. The latter kind could be called plausible too, but Galen makes it clear he has in mind another sort of plausibility, viz. that based on real attributes of the organs in question. Position is a real attribute; arguments referring to it deserve treatment aimed at classifying them as either dialectical or scientific. Plato's appeal to the head's position represents the former kind; his reference to the heart's pounding motion in anger (*Tim.* 70a7–b8; cf. *PHP* 3.1.33, V.293 K. = 174,21–4 DeL) the latter. To be sure, arguments may be plausible but false, for Galen as for the Stoics. Thus Galen exposes the falsehood, i.e. spurious plausibility, of arguments drawn from the heart's middle (Aristotle) or head's top (Plato) position. But this too is part of a dialectical procedure ultimately aimed at selecting relevant data and hence a positive outcome. Of course what he argues Chrysippus should have done is to follow the procedure advocated and followed by Galen himself, e.g. when he looks back at it at the beginning of *PHP* Book 8:

In the second book we demonstrated that the most plausible of the arguments they formulated on the governing part of the soul were not constructed in accordance with scientific method. Some of them were close to it, the ones that Aristotle had the habit of calling dialectical. Other were more remote; these we divided into the rhetorical and the sophistical. (*PHP* 8.1.15–16, V.650–1 K. = 484,4–8 DeL; trans. DeL)

Galen, then, wishes to focus on the most plausible ones and he is thinking here of the so-called dialectical ones in particular. His procedure aims to eliminate all non-scientific arguments, including dialectical ones. The latter may count as 'the most plausible' ones mustered by his opponents. Having dismissed Chrysippus' 'rhetorical and external' arguments (*PHP* 2.1–3, V.211–26 K. = 102–16 DeL) he turns to arguments based on real attributes with a view to eliminating the non-relevant ones and selecting the significant ones (2.4–8, V.226–84 K. = 116–66 DeL). Scientific or demonstrative arguments are derived from attributes that provide an indication in the technical sense of an *endeixis*³¹ as to the

³¹ For indication in the sense applicable here, viz. from the phenomena to the essence (or nature) of the matter under investigation, see *MM* 2.4, X.101 K. (where note that Galen speaks of therapeutic indication in particular and also uses the concept as applied to inferring from essence, *ousia*, to

essence of the subject under inquiry and lead to further testing so as to obtain empirical confirmation. As I have argued elsewhere,³² this testing makes a demonstration complete. Thus we see that in the case of the liver Galen succeeds in establishing it as the structural centre of its own system of vessels, the veins, but is unable to design experiments that will confirm its role as the functional centre of digestion, at least not experiments as clear and conclusive as in the case of the heart and the brain. As we have seen, the attribute of being the centre of a particular system of vessels (and, in the heart's case, also its distinctive motion) qualifies as indicative of essence or being.³³ Just as a clinical indication justifies a particular action, i.e. treatment, on the part of the physician,³⁴ so an indication in a theoretical context like this justifies an inference to an imperceptible cause (such as the soul's ruling part)³⁵ and the use of empirical testing: this two-stage procedure implements an originally Aristotelian procedure: from the phenomena ('what is better known to us') to the principles ('what is better known in itself') and back again.³⁶ It is encapsulated in Herophilus' call to 'start from the primary things even if they are not primary' (T 50a and b von Staden; T 50b = *MM* 2.5, X.107 K.).³⁷ We also find it under the heading of 'combination and division' (*Diff.Puls.* 2.6, VIII.601 K.).

The same method underlies the critique of a passage from Aristotle's *Parts of Animals* in the final three chapters of the preserved part of *PHP* Book 1 (Chs. 8–10). Aristotle had observed a large quantity of 'nerves' (*neurôn pléthos*) coming from the heart, adding that it needed 'a service and strength of this sort', i.e. an organ lending to it the leverage needed to move the body.³⁸ Galen takes this last point, about the heart needing 'nerves', as in itself apposite, given the assumption to be tested, viz. that the heart is the *arkhê* of the organism. He calls it 'pre-evident (*prodélon*) to everyone', where 'pre-evident' is a technical term denoting something that is evident in advance of any sign-inference or reasoning.³⁹ But in fact, what

remedies). See Kudlien, 1991: 106; Allen, 2001: 88–9, 136–42; van der Eijk, 2008: 292–5. See further above, Chapter 3, 82 n. 10.

³² Tieleman, 1996b: 55–65. ³³ See above, 143. ³⁴ See above, n. 31.

³⁵ See *PHP* 3.1.15, V.288–9 K. = 170,23–27 DeL = Chrysipp. *SVF* 2.885) with Galen's comment *ibid.* 3.1.18–19, V.289 K. = 170,32–172,3 DeL.

³⁶ See, e.g., the methodological passages in Arist. *Phys.* 1.1; *PA* 1.1, esp. 639b7–11 and 640a13–17; *PA* 1.5, esp. 645b1–4; cf. *ApO.* 1.2, 71b33–72a6; *Top.* 6.4, 141b15–19. See, e.g., Kullmann, 1974: 221–7.

³⁷ The fragment is discussed above, Chapter 2, 50–1.

³⁸ *PA* 3.4, 666b14–16, quoted at *PHP* 1.8.3, V.200–1 K. = 92,2–5 DeL; cf. *PA* 3.3, 665a10–13; *MA* 10, 703a14–24.

³⁹ See Sextus Empiricus, *PH* 2.99: 'the pre-evident objects [...] do not need a sign since they are apprehended of themselves'. Cf. *ibid.* 2.116 and Hankinson, 1995b: 201–3.

Aristotle saw were not 'nerves' in the post-Herophilean sense, but tissues such as sinews, tendons, or ligaments according to the older sense of the word. Thus these tissues were called 'nerve-like strands' by Herophilus followed by Galen.⁴⁰ In fact, Galen did not think that the heart is significantly innervated.⁴¹ Thus Aristotle's position is implausible (*atopon*, *PHP* 1.8.8, V.202 K. = 92,21 DeL). He has committed an observational error, lumping together different kinds of organ. He has failed to demonstrate (*ouk apedeixen*, 1.8.4, V.201 K. = 92,8 DeL) that the heart is the source (*arkhê*) of the nerves with everything this entails for the debate about the seat of the ruling part of the soul. But Galen does not leave it at that. He also suggests that Aristotle may have offered his observation not as proof but as a 'sufficient marker' (*hikanon gnôrisma*, 1.8.4, V.201 K. = 92,9–10 DeL) that the heart is the source (*arkhê*) of the nerves.⁴² But Aristotle also fails at this preliminary stage in which arguments are canvassed that qualify as plausible and so merit further testing: pointing to a 'large quantity of nerves' (in the required sense) does not even make a *plausible* argument (1.8.4, V.201 K. = 92,8–9 DeL: *Aristotelês ... oude pitthanôs epekheirêsen*). One might just as well designate the hand or the foot as the source of the nerves because they too have a lot of nerves (1.8.5–6, V.201 K. = 92,10–16 DeL). In other words, a large quantity of nerves is not an attribute proper to the heart and so not indicative of its function or essence.⁴³

What is needed to decide the issue and what Aristotle was far from offering is an anatomical demonstration showing that a particular organ is the *arkhê* of the nerves in the sense of being the centre, both structural and functional. Of course, only the brain qualifies as being that organ.⁴⁴ A complete demonstration goes beyond an account of structural features and involves anatomical experimentation showing that the brain is the *arkhê* of the nerves in a functional sense also. And the same applies to the heart as the centre of the arterial system. Galen provides this experimental account in the fourth chapter of *PHP* Book 2.⁴⁵ Galen's demonstration concerned with the liver as the seat of the appetitive part and centre of the

⁴⁰ *PHP* 1.8.8, V.202 K. = 92,21 DeL, and 1.10.4, V.207 K. = 96,22 DeL = Herophil. T 119 von Staden

⁴¹ Cf. Galen's observations at *The Function of the Parts of the Body* (*UP*, III.1–933 and IV.1–366 K.; also edited in Helmreich, 1907–9; translation in May, 1968) 6.18, III.500–1 K. = 1.364,5–365,18 H.

⁴² For the notion of *gnôrisma*, see above, Chapter 3, 89–90 n. 38.

⁴³ On Galen's use of the Aristotelian concept of property (*to idion*) see Tieleman, 1996b: 60–5.

⁴⁴ *PHP* 2.3.4–7, V.219–20 K. = 110,1–14 DeL.

⁴⁵ 2.4.1–51, V.226–40 K. = 116,9–128,14 DeL.

veinous system in *PHP* Book 6 is recommended reading for the light it throws on Galen's method. In his preface he indicates that the demonstration in regard to the liver cannot be based on as clear evidence as in the case of brain and heart in the earlier parts of the work: it is based on the liver's properties only (*sumbebêkota*) and not taken from its essence or nature (*phusis*). What he means is that one can point to such facts as that the veins start from the liver or that its colour indicates its role in blood-production but one cannot conduct experiments analogous to the ones in the case of the heart and the brain that produce equally clear results with which to establish the liver's function (6.3.2, V.519–20 K. = 372,18–22 DeL).⁴⁶ At *PHP* 6.5.5, V.539 K. = 388,22–6 DeL, Galen returns to the point at stake in his criticism of Aristotle in Book 1 (1.8.3–6, V.200–1 K. = 92,1–16 DeL; see above, 146–7), viz. the attachment of vessels to the heart (although here the arteries and the veins are considered), calling it an important marker (*gnôrisma*) on which an indication or sign-inference (*endeixis*) may be based. Clearly, then, the canvassing of arguments based on properties is aimed at bringing oneself in a position in which an inference as to essence or nature is possible.

In the case of the heart's function in the fully grown animal, Galen believes that conclusive empirical evidence is available. But even if the empirical evidence is defective, it still may be useful to argue in terms of greater or lesser plausibility. Thus in Chapter 11 of *Prop.Plac.*, Galen discusses the question of which organ is the first to be formed in the embryo entirely in terms of plausibility (*pithanon*) using the related dialectical terms of the reasonable (*eulogon*) and the implausible (lit. 'out of place', *atopôteros*). Initially, while still young, he had been swayed by the authority of respectable physicians to believe that the heart was the first organ to be generated, but later considerations made him see that this view belonged to the category 'plausible but not true'.⁴⁷ Here, then, the epistemic situation is similar to that in the *Timaeus*. No certainty is available, but it is possible to discuss the issue at stake in terms of degrees of plausibility or its opposite.

Passages such as these suggest that 'dialectical' for Galen not only is a label qualifying a particular kind of non-scientific argument but may also refer to an inquiry on the basis of non-demonstrative data when demonstrative ones are not available at all or still have to be discovered or

⁴⁶ See Tieleman, 1996b: 56.

⁴⁷ *Prop.Plac.* 11, 182,16–183,15 Boudon and Pietrobelli = 102–8 Lami and Garofalo.

established as such. Thus in *The Affected Places*⁴⁸ we find him referring to dialectical debates on long-standing, often insoluble issues, but also concerning the seat of the ruling part. He does so in the context of a critique of the Pneumatist physician Archigenes, who took the heart to be the seat of reason but treated mental ailments by attending to the head. A training in dialectical debate would have made his inconsistency clear to him and put him on the road towards the correct insight (*Loc.Aff.* 3.5, VIII.157–9 K.). The positive functions of dialectic listed by Galen, we may recall, included not only training, but also being brought to insight (cf. the Socratic midwifery) and being led towards the discovery of something (see above, 138). Seen in that light an argument such as that found in *PHP* Books 1–3 and 6 about the seat of the psychic function may be called dialectical. Time and again we find Galen not just refuting his opponents but using their argument in such a way as to further his own argument and working his way towards positive conclusions.

5.3 *PHP* Book 9: Platonic Inspiration

In *PHP* Books 1–3 and 6 Galen turns to Aristotle and the Aristotelian tradition as explained, it is true, by himself in the lost *Dem.* (see above, 138–9). By his day there was little surprising about an author pressing an Aristotelian theory of science and logic into the service of a Platonic doctrine, in this case tripartite psychology.⁴⁹ Aristotle was taken by many Platonists to have further developed what already had been anticipated by Plato. Galen, to be sure, is not your ordinary Platonist. But on this point he conforms to a pattern common among Platonists of the second century CE.⁵⁰ Nor should this then be taken to imply a preference for Aristotelian *as opposed to* Platonic methodology. Thus in *PHP* Book 9 Galen turns to the question of the method advocated by Plato in agreement with Hippocrates. Here Galen focuses on two related methods in particular: (1) that of distinguishing between (dis)similar things, e.g. theories (or arguments, *logoi*, *PHP* 9.7.1, V.777 K.= 586,7–9 DeL), as to whether they are true, or similar to the truth, i.e. plausible but untrue;⁵¹ and (2) division (*diairesis*). For the latter he refers to and quotes extensively from the long methodological disquisition in the *Phaedrus* 261a–274b, which

⁴⁸ *Loc.Aff.* VIII.1–452 K.; first two books also edited and translated into German by Gärtner, 2015; English translation in Siegel, 1976.

⁴⁹ Whittaker, 1987; Chiaradonna, 2009a.

⁵⁰ On Galen's relation to so-called Middle Platonism, see the studies referred to above, 136 n. 1.

⁵¹ *PHP* 9.7.1–2, V.777–8 K. = 586,7–16 DeL; cf. Tieleman, 2018: 458–9.

discusses the methods which, with training and practice added, constitute not just the art of rhetoric but any art. This includes the passage 270c1–d7 (which, perhaps surprisingly, Galen does not quote in Book 9 or anywhere else in the preserved text of *PHP*), where Plato refers to, and commends, Hippocrates as applying the method of dividing the nature of the whole [*sc.* body, probably] into its components parts – a method which may stand as a model for analysing the soul into its parts.⁵² Two things are to be noted: first, Plato calls the correct method towards which he is making his way *dialectic*:

SOCRATES: Well, Phaedrus, I am myself a lover of these divisions and collections, so that I may be able to think and to speak [...] God knows whether this is the right name for those who can do this correctly or not, but so far I have always called them ‘dialecticians’.

(*Phdr.* 266b3–c1; trans. Nehamas and Woodruff, 1995)

And a little further on we read:

SOCRATES: That’s just how it is, Phaedrus. But it is much nobler to be serious about these matters, and use the art of dialectic. The dialectician chooses a proper soul and plants and sows within it discourse accompanied with knowledge. . . .

(*Phdr.* 276e4–7; trans. Nehamas and Woodruff, 1995)

Second, this involves the ability to distinguish truth from verisimilitude. According to Galen, Plato teaches⁵³ us with the following words:

Can someone who lacks knowledge of the truth of each thing discern in other things any similarity, great or small, to the thing he is ignorant of? – He cannot. (*Phdr.* 262a9–b1; trans. DeL, modified)⁵⁴

Dialectic then is aimed at the truth and involves the ability to distinguish between what is true and what is plausible (*pithanon*) or likely (*eikos*).⁵⁵ In fact, as we have recalled, Plato had correctly marked out his own argument

⁵² We know that it was important to him: see *MM* 1.2, X.13–14 K.; *Commentary on Hippocrates’ ‘Nature of Man’* (*HNH*, XV.1–173 K.; also edited in Mewaldt, 1914: 3–113) *prooem.*, XV.4–5 K. = 4.18–5.9 Mewaldt), with Tieleman, 2020: 28–32.

⁵³ On the didactic aspect of the *Phdr.* according to Galen, see Rocca, 2006.

⁵⁴ The passage is quoted at *PHP* 9.1.5, V.721 K. = 540.18–20 DeL and 9.2.15, V.729 K. = 548.2–4 DeL (where it is cited along with its context, *Phdr.* 261e6–262c3, see *PHP* 9.2.14–16, V.729–30 K. = 546.35–548.13 DeL). Similarly Pl. *Phdr.* 273b–d. The argument was later used by Augustine in attacking the notion of the truthlike in Academic Scepticism: see Aug. *c. acad.* 2.7.19–8.20 (illustrated by the example of the man who says the son is like his father without knowing the father).

⁵⁵ *Phdr.* 272d–e: the plausible (*pithanon*) and the likely (*eikos*), not truth, are what ordinary rhetoric aims at; a little further on this is specified as that what is accepted by the many, *Phdr.* 273b1.

in the *Timaeus* as a likely or verisimilar account (*eikota logon*)⁵⁶ or story (*eikota muthon*, at *Tim.* 29c–d quoted by Galen at *PHP* 9.9.6, V.792–3 K. = 598,19–25 DeL, and elsewhere). The argument thus qualified includes issues that are insoluble in principle, and those about which Plato felt he could not lay claim to certain knowledge but which were decided later on, such as the issue of the seat of the soul's powers. Here Galen, on the basis of the advances made by Herophilus and Erasistratus, as further refined by himself (see above, 137 n. 4), provided anatomical evidence securing knowledge. In Galen's discussion of this issue (*PHP* books 1–3, 6), we see him using Plato's arguments, and those of others, to sort out those plausible considerations which may serve as a springboard to knowledge of the essence of the things investigated, viz. heart, brain and liver.

5.4 *Institutio Logica*

The difference between demonstration on the one hand and dialectical reasoning as revolving around the sign or indication on the other is illustrated by the following passage from Galen's *Inst. Log.*:⁵⁷

All the other combinations of premisses [*sc.* than those discussed in the preceding chapters] in each of the figures are invalid and no syllogism arises from them because nothing is concluded necessarily, either dialectically or through demonstration; for men call 'indication' the discovery of the truth about a thing in question arising out of the nature of the thing and made through following out the clues given by what is clearly observable; but an argument reaching a conclusion through premisses they call 'demonstration'. (*Inst. Log.* 11.1, 24,10–17 Kalbfleisch; trans. Kieffer, 1964: 42)

Dialectical procedure consists of sorting out observable clues until one finds an indication from which the truth is inferable: the stage of discovery. Demonstration is deductive proof on the basis of true premisses: the stage of confirmation and presentation. The procedure of *PHP* Book 2 is an

⁵⁶ Pl. *Tim.* 29e, 30b, 48d, 55d, 56a, and 57d.

⁵⁷ This treatise has been preserved under the Greek title Εἰσαγωγή διαλεκτική and is customarily referred to in Latin as *Institutio Logica*. It was first edited in 1844 by the Greek scholar Minoides Minas, who had found it in a thirteenth-century MS in the Mount Athos monastery, thereby saving the text, which is in a bad condition, from complete decay (now part of Cod. Suppl. Gr. 635 of the Bibliothèque Nationale in Paris): see Mau, 1960: V–VI. Some have questioned its authenticity but for no compelling reasons; today it is generally accepted as genuine: see Bobzien, 2002: 57; Morison, 2008a: 84–5.

implementation of that twofold schema. There is a deductive proof⁵⁸ and, as we have seen, a dialectical inquiry starting from perceptible attributes.⁵⁹

'Indication' was the cornerstone of Rationalist or Dogmatist medicine: it was a concept that justified the leap to hidden causes, an expression of the capacity of the rational human soul to do just that. Galen linked his notion of dialectic with the so-called Rationalist or Dogmatist school of medicine, in fact a blanket term for various schools, which, however, shared an interest in theorising with reference to hidden causes and in anatomical research.⁶⁰ Thus Galen in *SI* explains the difference between Empiricists and Dogmatists as follows:

Generally speaking, it is such matters the Empiricists and Dogmatists argue about with each other. But, on each particular point, there is a multitude of particular issues. For example, in their inquiries concerning the discovery of things that are not manifest, one party praises anatomy, indication, and dialectical theory. For, they claim, these are their instruments in their search for what is not manifest. The Empiricists, on the other hand, do not grant that anatomy makes any discoveries or that it would be necessary for the art, even if it did. Furthermore, they do not grant that there is such a thing as indication or that one thing can be known on the basis of another thing, for one has to know all things on the basis of themselves. Nor do they grant that there is such a thing as a sign of something which by its very nature is nonmanifest. Furthermore, they argue that no art has any need for dialectic. (*SI* 5, I.76–7 K. = 10,14–26 H.; trans. WF: 9, slightly modified)

In what follows Galen specifies a few concepts and methods of logic (axioms, definition, analogism) which may be taken to represent examples of the logical methods covered by the term 'dialectic' in the quoted passage (hence Michael Frede translates *dialektikê theôria* and *dialektikê* in the above-quoted passage as 'logical theory' and 'logic', respectively). In a theoretical (anatomical and physiological) inquiry such as that found in *PHP* Books 1–3 and 6, we have seen Galen applying the principles of method with which he here characterises the Dogmatist school. But the notion of (indicative) sign or indication⁶¹ seems to have its original home

⁵⁸ *PHP* 2.3.4–7, V.219–20 K. = 110,1–14 DeL; cf. 8.1.3–4, V.649 K. = 480,16–22 DeL.

⁵⁹ *PHP* 2.4.3–8.51, V.227–84 K. = 116,19–166,23 DeL. ⁶⁰ See above, 146.

⁶¹ See the definition given by Sextus Empiricus, *PH* 2.100–1 (cf. *M* 8.151–4): the indicative sign permits an inference to a nature or cause that is by nature unobservable, as in the stock example of inferring invisible pores in the skin from sweating. It is traditionally opposed to the commemorative sign, which permits an inference from what is perceived to something that is temporarily imperceptible, as in the case of smoke indicating the presence of fire. On the indicative sign, see Allen, 2001: 88–110; cf. Hankinson, 1995b: 201–2.

in medicine.⁶² An example is provided by a passage from *Praen.* 3.14–16, XIV.617–18 K. = 86,16–30 Nutton. Galen tells his patient Eudemus, an intellectual who suffers from the so-called quartan fever (a kind of malaria), that an upwards movement of his arteries betokens an impending haemorrhage. Galen then predicts an evacuation through the lower belly by *eliminating* signs (*sêmeia*) that point to other routes (e.g. vomiting or sweating). Eudemus characterises Galen's line of reasoning as 'dialectical' (*dialektikôs*, 3.16, XIV.618 K. = 86,29 Nutton). Alongside elimination there are of course other logical methods that may help the doctor in finding the correct sign or indication for treatment. The method of division (*diairesis*) is one of the most important. Not surprisingly, the doctor needs it when it comes to distinguishing between pulses. Which brings us to a key passage from *Distinct Types of Pulse*.

5.5 *Distinct Types of Pulse*

Of particular relevance to our inquiry is the following passage:

Why on earth is none of them ever seen using the method of division for counting how many items there are in each class or the method of collection with a view to finding the first principles? But then it is only dialecticians who are capable of using these methods, at one time going up from the indivisible and numerically infinite towards that one first genus of all through the generic and specific intermediate terms, at another time going back to the infinite items through these same middle terms. (*Diff.Puls.* 2.6, VIII.601 K.)

Here, as elsewhere, Galen insists that dialectic is necessary for medicine and engages in acrimonious disputes with those who deny dialectic any value for medicine.⁶³ According to Galen, the masters of the classical past, Hippocrates, Diocles, and Praxagoras, were all well versed in dialectic.⁶⁴ He even goes so far as to refer once to Herophilus as 'the dialectician'. But

⁶² I.e. between the doctors called Dogmatists or Rationalists, who uphold the indicative sign, and the Empiricists, who operate with the commemorative sign only: see previous note. From their debate the issue found its way into philosophy, where the Stoics and (Pyrrhonist) Sceptics were the respective proponents of the two concepts. The main evidence is found in Sextus Empiricus (himself both a Pyrrhonist philosopher and an Empiricist doctor), *PH* 2.97–133, *M* 8.141–299. For a more or less recent discussion Allen, 2001: 87–146 (who himself is in favour of the medical origins); cf. Hankinson, 1995b: 193–213.

⁶³ *Diff.Puls.* 2.3, VIII.569–71 K., 2.6, VIII.600 K., and 4.11, VIII.752 K. Cf. *The Elements According to Hippocrates* (*Hipp.Elem.*, 1.413–508 K.; also edited with English translation in De Lacy, 1996) 6.10–25, 1.459–64 K. = 104,6–110,7 DeL; *Art.Sang.* 7.7, IV.727 K. = 172 Furley and Wilkie; *Difficulty in Breathing* (*Diff.Resp.*, VII.753–960 K.) 5, VII.838 K.

⁶⁴ *MM* 1.2, X.9 K. On Herophilus, see also above, 141.

one might say this does justice to the great Alexandrian medical theorist and practitioner insofar as he is on record as having taken a keen interest in methodology.⁶⁵ The insistence on the need for dialectic comes with the warning that it is not easy and proper training is indispensable: otherwise, one may merely confuse one's pupils and make oneself liable to the criticism of those who call dialectic a waste of time.⁶⁶ These points, as applied here to dialectic, are all too familiar to readers of Galen. They make clear that he sees it as fundamental to his project of a philosophical medicine. Dialectic as an indispensable tool for this project is about logic as the study of consistency or validity of argument and sometimes seems to coincide with it. But in fact it is broader than that: given Galen's insistence upon the utility of all intellectual pursuits, it also comprises epistemology and methodology.

5.6 Conclusion

Leaving aside dialectic in its looser usage equivalent to logic, it has emerged that Galen determines his notion of dialectic by reference to discovery, sign, plausibility, and logical methods such as division in particular.⁶⁷ Apart from the tradition concerned with the relevant Aristotelian works, Galen's notion of dialectic bears the stamp of the Platonic *Phaedrus* and especially the long section in which Plato develops a form of dialectic turning very much on the method of division (*Phdr.* 261a–274b). This dialogue struck a chord with Galen, to put it mildly, not least for Plato's appeal to Hippocrates in connection with scientific procedure (*Phdr.* 269c–270d). But the picture is more complicated in terms of the relevant influences and their respective input. The Aristotelian legacy (especially as it had taken shape in Galen's lost *On Demonstration*) and his Platonist education impacted Galen's position as well as the medical tradition, most notably the Rationalist concept of indication (*endeixis*). As we have seen, it refers to the relevant evidence from which the hidden principle may be reliably inferred, as when Galen examines the perceptible

⁶⁵ *MM* 1.3, X.28 K = Herophilus, T 10 von Staden.

⁶⁶ *Diff.Puls.* 2.3, VIII.570 K., 4.7, VIII.735 K., and 4.11, VIII.752 K.; *The Composition of Drugs According to Kinds* (*Comp.Med.Gen.*, XIII.363–1058 K.) 3.2, XIII.573 K.

⁶⁷ To be added are other methods such as synthesis and analysis: see *Art of Medicine* (*Ars Med.*, I.305–412 K.; also edited with French translation in Boudon, 2000: 274–392; English translation in Singer, 1997: 345–96) I.1, I.305 K. = 274,1–9 Boudon; *Pecc.Dig.* 4.1–5.22, V.77–89 K. = 53,9–60,7 De Boer. Cf. Tieleman, 1996b: 34; Havrda, 2011: 366; Chase, 2015, 117–212. See Chapter 3 in this volume, 110–13.

attributes of the heart or the brain in view of their relevance to what is sought, viz. the principle of perception and voluntary motion (i.e. the ruling or rational part), eliminating the non-relevant ones as 'merely' dialectical and using the relevant ones as indicative of the presence of the ruling part or, as in the case of the heart, another power. Thus indication bridges the two-stage procedure stipulated by Galen because the next stage is that of empirical confirmation, making one's demonstration complete. This schema – going from the phenomena to the cause and from the cause back to the phenomena – was traditional and is Platonic and Aristotelian in origin. But Galen has implemented and moulded it creatively and, I would say, rather idiosyncratically, to suit his own scientific pursuits.