

Galen's Empiricist Background

A Study of the Argument in On Medical Experience

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Empiricism was an important influence on Galen's medical philosophy. The analytical catalogue of his writings he himself compiled includes a whole small library devoted to the Empiricists,¹ from which we have three early treatises extant.² There are very many references to the Empiricists throughout the extant corpus of his work. The subject of this chapter is one of Galen's earliest and least known works, *On Medical Experience* (*Med.Exp.*). We have so little of Galen's own voice in it that one might wonder whether it qualifies as Galen's work proper. This makes it a unique witness of Galen's development as a doctor and a thinker. My goal is to reconstruct the argument on the key philosophical issues between Rationalism and Empiricism and outline the problems it poses for Galen as an aspiring student of medicine already working out his own system of medical philosophy. The chapter has six sections: the first is introductory, the second presents the Rationalist criticism of the Empiricist concept of 'technical experience', the third discusses Empiricist replies to these criticisms, the fourth is devoted to Empiricist ontology, the fifth to the crucial

¹ The section '[Works] on the differences with the Empiric doctors' in *On My Own Books* (*Lib.Prop.*, XIX.8–48 K.; also edited with French translation in Boudon-Millot, 2007, 134–173; English translation in Singer, 1997: 3–22) lists the following titles: *Commentary* on Theodas' *Introduction*, in five books; *On Menodotus' work To Severus*, in eleven books; [*On*] *Serapion's 'Against the Sects'*, in two books; *Outline of Empiricism*; *On Medical Experience*; *On the Dispute among the Empiricists*, in three books; *Response to the Objections Made to On the Dispute among the Empiricists*; *Commentary on Theodas' Kephalaia*, in three books; [*On Menodotus to Severus*], an *Exhortation to the Study of Medicine* (*Protrepticus*); *Synopsis of the Works by Heraclides*; *On the Empirical Sect*, in seven books (*Lib.Prop.* 12.1–2, XIX.38 K. = 163,9–17 BM; I follow the analysis of the Greek text by Boudon-Millot, 2007: 214–18).

² *On Medical Experience* (*Med.Exp.*, see the following notes 3 and 4); *Outline of Empiricism* (*Subf. Emp.*, edited in Deichgräber, 1930/1965; translated in Walzer and Frede, 1985: 23–45); and *Sects for Beginners* (*SI*, I.64–105 K.; also edited in Helmreich, 1893: 1–32; translated in Walzer and Frede, 1985: 3–20), which discusses as the three main 'sects': the Rationalists, the Empiricists, and the Methodists.

Empiricist notion of epilogism. The sixth section contains concluding remarks on Galen's reception of Empiricism.

2.1 The Treatise *On Medical Experience*

On Medical Experience is one of Galen's earliest extant works. It is still relatively little studied.³ The full text of the treatise has been preserved only in the Arabic translation.⁴ In *On My Own Books* (*Lib.Prop.*) Galen writes:

(1) So I returned from Rome to my native city after the completion of my thirty-seventh year; and there three books were given to me which had been written before my departure from Pergamum, when I had gone to Smyrna to study with doctor Pelops and Albinus the Platonist. (2) One was a tiny work on the dissection of the womb; another, also quite short, on *Diagnosis of the Diseases of the Eyes*; the third a work of some length on *Medical Experience*. The first of these had been given to a certain midwife, the second to a young man who treated eyes. (3) The origin of the third was a two-day debate between Pelops and Philip the Empiricist, in which the former aimed to demonstrate that the art of medicine could not be composed of experience alone, and the latter that it could. (4) I transcribed the arguments that were given on both sides, laying them out in order as an exercise for myself; and I have no idea how this work came to leave my possession without my knowledge. (TI: *Lib.Prop.* 2.1–4, XIX.16–17 K. = 140,12–141,3 BM)⁵

According to TI.1, the treatise was written before 148, when Galen was studying medicine in Pergamum and was at most nineteen years old. Galen gives this treatise to someone in Pergamum before going away on his first long foreign trip (to Smyrna, Corinth, and Alexandria, until 157), and never recovers it until much later, in 166 or early 167, when he returns to Pergamum after his *second*-long absence, i.e. after his first Roman sojourn.⁶

³ The full text found in MS Aya Sofya 3725, fols. 135b–182b, was published with English translation in Walzer, 1944. Deichgräber added several passages from this translation in the 'Nachträge und Zusätze' to the 1965 edition of his work *Die griechische Empirikerschule* (first published in 1930). Walzer's translation was reprinted without changes in Walzer and Frede, 1985: 49–106. There is a French translation with annotations by Pellegrin, 1998, which largely follows Walzer.

⁴ The translation into Arabic in made by Ḥubaiš ibn al-Ḥasan al-A'sam, nephew of Ḥunayn ibn Ishāq, from the Syriac version made by Ḥunayn. On Ḥubaiš, see Le Coz, 2004: 178–80. On the history of the text, see Walzer, 1932; Walzer, 1944: v–xi.

⁵ Throughout this chapter, where the translator is not indicated, translations of the passages from ancient texts are mine.

⁶ Schlange-Schöningen, 2003; Boudon-Millot, 2012a; Mattern, 2013.

The treatise is Galen's report of a dispute between his teacher Pelops, then visiting at Pergamum, who speaks for the Rationalists, and an Empiricist doctor called Philip. We know more about Pelops, who was a student of Numisianus and taught a broad range of subjects, covering anatomy, physiology, pharmacology, and Hippocratic commentaries.⁷ Philip of Pergamum is mentioned by Galen in his *Commentary on Hippocrates' Epidemics VI*⁸:

Also my teacher Satyrus and Philip the Empiricist, and other men of distinction, who lived at the time of my father and grandfather, have written many commentaries. But from them either nothing at all has been preserved or only very little. I have read them all, except very few, and made excerpts for myself from the manuscript copies. (*Hipp.Epid. VI* 7, 412,35–413,5 Pfaff = fr. 360d Deichgräber, part)

The subject of the dispute is whether experience is sufficient as a foundation of the art of medicine. The answer in the affirmative defended by Philip was the position of the Empiricist 'sect' since the time it made itself distinct from the overall 'rationalist' trend in medical philosophy, in the Hellenistic age.⁹

In T1.3–4 we have an indication of a layered composition of the treatise involving an original and an edited version. The original version may have included a free-flowing conversation, with its digressions, variations on the same theme, and argument lines abruptly halted and resumed later. The edited version may have introduced some elements of formal structure cutting across the narrative of the original report. The former material probably goes back to the original notes, and the latter may have been underscored or inserted by Galen himself 'for the sake of exercise' in his redaction.

Galen does not tell us in T1 whether he undertook any further editorial work on the treatise upon recovering it in 166–167, but some features of his introduction to the treatise may make us think so. Let us take a closer look at it.

At the opening, Galen tells us that his own view on the nature and origin of medical art is that it 'was originally invented and discovered by *logos* in conjunction with experience. And today it can only be practised

⁷ See Schlange-Schöningen, 2003: 85–90; on Galen's studentship with Pelops, Boudon-Millot, 2012a: 52–4.

⁸ *Hipp.Epid. VI*, partially edited in XVIIA.793–1009 and XVIIIB.1–344 K.; edited in Wenkebach and Pfaff, 1956.

⁹ See Deichgräber, 1930/1965: 281–8.

excellently and done well by one who employs both of these methods' (*Med.Exp.* 1; trans. WF: 49). This announcement is followed by an invective against Asclepiades of Bithynia, who is criticised for his general ignorance of both methods, and specifically for his arguments against experience. Galen mentions two kinds of arguments: (a) experience is something utterly unreliable without *logos* and (b) experience does not exist at all.¹⁰ Arguments (a) and (b) clearly contradict each other and must be exposed as doing so by critical questioning. Unlike in *Lib.Prop.*, Galen makes no mention of a dispute between his teachers. He describes his method thus:

(1) Since [the pursuit of truth] is my intention, you must not allow yourself to think that what I am about to say first against Empiricism in this book is my own personal opinion, or that the second argument I use in support of Empiricism is my own view. (2) Rather shall I let one of the Rationalists bring forward the first argument which is similar to Asclepiades' view and the second argument shall be laid down by a representative of the Empiricists, Menodotus, if you like, or Serapion, or Theodosius. (3) As for the readers of my book, they must use their discernment and powers of reasoning when considering both arguments, and, after critically weighing their merits, see which of the two is more correct. For the reader who has attentively and eagerly exercised his mind in this book will the more easily and readily comprehend what I have dealt with in my book *On the Best Sect*¹¹. (T2: *Med.Exp.* 2; trans. WF: 51, slightly modified)

In T2.2, the text has Galen mention as his Empiricist sources three authors: Menodotus, Serapion, and Theodosius. Serapion of Alexandria is the Empiricist of the second half of the third century BCE, listed in ancient sources among key figures of Empiricism, in some indeed as the founder of the movement.¹² Menodotus of Nicomedia, active in the first half of the second century CE, is considered by many scholars to be responsible for some crucial reforms in the Empiricist doctrines.¹³ Theodosius makes a shadowy presence in this text. Galen does not mention his name in any other work extant today. Three other known

¹⁰ '... consider what you would think of anyone who speaks of experience as something utterly unreliable without the *logos*, and who asserts that experience does not exist at all, since there is nothing which can appear twice or thrice in the same way, to say nothing of its appearing very many times, as the Empiricists assert' (*Med.Exp.* 1; trans. WF: 50).

¹¹ Following von Müller, 1898, the authenticity of the work preserved in the Galenic corpus under this title is generally rejected by scholars. For a recent survey of the scholarship and some ideas about the relation of the extant treatise and lost Galenic original, see Perilli, 2004: 198–209.

¹² See fr. 4–8 Deichgräber (fr. 4 = Cels. *prooem.* 10 on Serapion as the founder).

¹³ See fr. 6–9 Deichgräber; Viano, 1981: 628–43, Stok, 2018, cf. Perilli, 2004.

references to Theodosius are in late sources which describe him as a commentator of Theodas and sceptic.¹⁴ This creates a potential problem for the early date of the treatise, which scholars tried to resolve in different ways.¹⁵ I think we might also consider a possibility of scribal error, not just on chronological grounds but also because Theodosius does not qualify as an Empiricist authority equal to Serapion and Menodotus.¹⁶ Theodas by contrast has a firm place in the Empiricist tradition. Galen studied his work closely.¹⁷ So possibly the text should read ‘Theodas’.

In T2.3, we have a reference to Galen’s now lost work *On the Best Sect*, which must have been written after *On Demonstration*.¹⁸ So our version of the treatise must have been edited again in or after 166–167.

After the introduction, the treatise has an antiphonal structure described by Galen as characteristic of all the polemical writings by the Rationalists and the Empiricists.¹⁹ Its genre is apology: first the Rationalist, ‘as if before the judge in a court of law’ (*Med.Exp.* 3; trans. WF: 52), presents his objections against the Empiricists (3–8, occupying thirteen manuscript pages), and then the Empiricist defends himself from accusations, often resorting to attack as the best form of defence (9–31, seventy-seven MS pages).

¹⁴ DL 9.70, Suda s.v. Θεοδοσίος, cf. Copenhagen, *Codex Latinus Hauniensis* (Den gamle kongelige samling) 1653, fol. 73a = fr. 7c Deichgräber.

¹⁵ Deichgräber (fr. 307) gave Theodosius’ likely date as after 200 CE and made no change after including this text in the second expanded edition of his work in 1965. Stok, 2018 agrees this Theodosius is the same as listed by Deichgräber, but suggests an earlier date for him. Perilli suggests Theodosius’ name could be a result of a very late, post-200 CE revision by Galen himself (Perilli, 2004: 199–200).

¹⁶ One clear error in this passage has already been corrected by Walzer: in the text of *Med.Exp.* 2, 4,8 Walzer, *thāudūsūs* is an emendation from the Arabic *sāudūsūs* (Istanbul, MS Aya Sofya 3725, fol. 37a10, where *sā* is easily explained as a homoeoarkton with the previous name *sārabiūn* which follows the same connecting phrase (in *šā’ra . . . wa in šā’ra*). It is just possible that the Arabic scribe expanded the much less familiar name *thāudas*, taking it for a shorter form of *thāudūsūs*, similarly to the way the name of Aristotle has both a longer and a shorter form in the Arabic books (*aristū* and *aristū’ālīs*).

¹⁷ See above 32 n.1.

¹⁸ See *The 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) 37.12, I.411 K. = 391,16–17 Boudon (mentioning *Med.Exp.* in the list of the books useful for the mastery of the art of medicine); then *ibid.* 37.14, I.411 K. = 392,9–12 Boudon: ‘That someone who is going to pursue the art rationally must also prior to all these practice oneself in the work *On Demonstration*, has been argued in the treatise *On the Best Sect*.’

¹⁹ *SI* 5, I.75 K. = 9,7–9 H. (cf. 4, I.74 K. = 9,1–3 H.). A detailed study of the school sources of this treatise is a desideratum, but it goes beyond the scope of this chapter, whose aim is to draw attention to the philosophical interest of the discussion. Therefore, unless specially indicated, I will be treating the Empiricist and Rationalist positions as generic, relatively to the tradition of the school debates.

2.2 The Rationalist Attack

2.2.1 *The Objections Stated by the Rationalist*

The Rationalist begins by questioning the Empiricist obsession with observation as a source of medical expertise. He points out that the Empiricists could hardly be prepared to neglect the type of causes, which are called antecedent,²⁰ but since these causes cannot be the object of immediate observation, they are not accessible to an Empiricist physician. So the relevant circumstances of the case at hand which belong to the class of antecedent causes will be accessible to an Empiricist doctor to a very limited extent at best, and may even elude him altogether.²¹

The Rationalist then argues that the best way to account for these and other causal factors of the disease is by starting from the principles and elements collected and delimited by rational procedure, such as the alphabet for the language, the three basic types of triangle (equilateral, isosceles, and scalene) and angle (right, obtuse, and acute) for geometry,²² and comparable elements in music.²³ The Empiricist position is presented, by contrast, as lacking any stable starting-points for the exercise of their art of healing.

All the Rationalist arguments that follow but the final one share a similar pattern: the Rationalist first states an objection to the Empiricist view, a criticism of a particular aspect of experience which makes it deficient as an instrument of cognition in medicine, and then for the sake of larger argument grants the point just criticised, and goes on to deal with the next point in the same fashion. These delayed criticisms serve a double goal: on the one hand, the particular points granted to the Empiricist for the sake of argument inform the premisses of the final refutation, which has the form of a sorites, and on the other hand, the criticisms elaborate on the perceived disadvantages of the Empiricist position compared to the

²⁰ *Med.Exp.* 3, WF: 52. The words 4,17 Walzer, *al-asbâb al-bâdiyâh*, are somewhat misleadingly translated by Walzer as 'salient causes' (but see below, 66–7 n. 91, and also Hankinson, 1987a, especially 92–7, on the connection of evidence [= 'salience'] with certain types of causes, antecedent and preceding, drawn in the ancient medical texts).

²¹ This is the Rationalists' stock objection to which the Empiricists have a stock reply, namely, that the knowledge of antecedent causes is available to the Empiricist doctor not by 'indication', but by the recollection of observation (*SI* 4, I.72–4 K. = 7,1–9,3 H., and *SI* 8, I.87–92 K. = 18,13–22,17 H.).

²² See *Euc. Elem.* 1, def. 9, 11–12 and 20.

²³ *Med.Exp.* 3, WF: 52–3. On music, the Rationalist provides no technical detail, but the idea is clear. The examples of alphabet and musical sounds echo *Phlb.* 16c–20c.

Rationalist view (and as such they are addressed by the Empiricist in due course after the discussion of the sorites).

The first criticism raised by the Rationalist is that perceptible manifestations of a disease are so many and complex that it would be impossible for the Empiricist who uses only observation to establish the identity between any two different cases of the same disease. The Rationalist then concedes for the sake of argument that there can be two distinct instances of the same disease fully identical in all their symptoms.²⁴

The second argument has to do with the elusive nature of the subject of observation: even if we were to grant the identity of the object of observation over time (one and the same disease occurring at different times), we cannot guarantee that the Empiricist observer will be equal to the task: the individual observer is never the same, and his or her circumstances are different each time, so he or she may not be able to register the same disease as the same.²⁵ Further, since the observations in question must be attested by many doctors, there is another difficulty: what is registered by one observer may escape another, and in the absence of any robust conceptual framework (which can only be provided by *logos*), this makes the whole concept of observation utterly inadequate for the recognition of disease, not to mention the discovery of remedy.²⁶ But let this point be granted and the Empiricist doctor presumed able to recognise the same disease in many various instances.

The third point of criticism which leads to a further special concession by the Rationalist has to do with the order in which the symptoms appear: it makes a critical difference for the course and outcome of the disease whether the lethargy precedes convulsions or follows upon them – in the former case it is not a sign of death, in the latter case it is a bad sign. The Empiricists, because of their rejection of *logos*, need to be able to memorise such differences of order, which, in the absence of a rational classification, makes the whole enterprise all but impossible.²⁷

²⁴ 'We shall, however, concede them this point and allow that this disease which showed itself just now is, in all its characteristics, the same disease as before' (*Med. Exp.* 4; trans. WF: 53).

²⁵ 'Moreover, if it could happen very many times, no single individual could ever see it. Should he who sees it at this moment be other than the one who saw it at a different time, there is nothing to show that it was seen very many times; for the observer, and he who retains in his memory what was observed and remembered, must continually, perpetually, and uninterruptedly observe it' (*ibid.* 4; trans. WF: 53).

²⁶ 'Again, what is regarded and observed must of necessity be observed by many people, since the case is as I have described it. How can a person determine whether what he sees at this moment is identical with that which someone else has seen before or is something quite different, unless he himself has seen both?' (*ibid.* 4; trans. WF: 53).

²⁷ *Ibid.* 5, WF: 54–5.

The fourth criticism has to do with the main issue between the Rationalists and the Empiricists: the Empiricists memorise all the circumstances that lead up to a disease, but since they reject causation, they are unable to identify precisely the factors responsible for a bad effect, nor can they securely attribute a beneficial outcome to any specific antecedent factor.²⁸ Again the Rationalist grants, for the sake of argument only, that the Empiricists may have a grasp of a difference between the good and bad symptoms on the basis of experience alone.

What has been granted so far accounts for the ability of experience alone, unaided by *logos*, to establish the identity of a given case: (i) in the infinite variety of symptoms; (ii) by an individual observer whose condition and circumstances are ever-changing; (iib) by multiple observers despite their numerous irreconcilable perspectival differences. Moreover, the Rationalist grants the Empiricist (iii) the ability to deal with the order of symptoms and treatments and (iv) to form a judgement about beneficial and harmful factors for a given ailment on the basis of experience unaided by reason. These concessions are provisional, made for the sake of the main argument, and the Empiricist will address them after dealing with this latter, the main target of which is the Empiricist conception of medical experience:

Now I will show clearly, not for their sake, for there is no point in arguing with stones, but in order to bring the argument to a conclusion, that *even if it be conceded that something can be seen to happen in the same way very often, they nevertheless will not be able to produce a technical theorem on the basis of this.* (T3: *Med.Exp.* 7; trans. WF: 57)

The concept of 'technical theorem'²⁹ appears to have central importance in Empiricist methodology, forming a constitutive part of 'learned' experience, the highest form of first-hand knowledge achieved through personal inspection (*autopsia*). The highest form of experience (*empeiria*) is grounded in several more basic forms of experience (*peira*): spontaneous, deliberate, and imitative. These basic forms of experience stem from personal observation which has no further constituents. This is how Galen describes this distinction between the learned, 'technical' experience, which presupposes the command of the technical theorems, and the most basic one:

²⁸ Ibid. 6, WF: 55–6.

²⁹ 'Technical theorem', *theôrêma tekhnikon*, is translated by Hubaiš as 'ilm al-ṭibbī, *Med.Exp.* 7, 12, 17 Arabic = 94, 11–12 Greek (Walzer; WF: 57), here in the plural: 'ulūm al-ṭibbī.

(1) Practised (*triuica*), i.e., learned (*erudita*) experience, is only to be had by experts when they are guided by the similarity with things which already have been found out by experience. (2) By 'experience' (*empeiria*), we mean the knowledge of those things which have become apparent so often that they already can be formulated as theorems, (3) i.e. when it is known whether they [a] always have turned out this way, or [b] only for the most part, or [c] half of the time, or [d] rarely. These are the four differentiations of the theorems. (4) Hence we will also say that a theorem is the knowledge of something which has been seen often, but a knowledge which involves at the same time a distinct knowledge of the results to the contrary.

(5) This will be a distinction between [a] what happens always (as something whose contrary never makes an appearance), [b] what happens for the most part (as something whose contrary does appear, but rarely), [c] what happens either way as it may chance to be (as something whose contrary appears equally often), and finally [d] as something what happens rarely (because its contrary does appear, not just sometimes, but for the most part). (6) But those things for which we do not have this kind of distinction, we say, are unordered, and the knowledge of them is not really a part of experience. (7) Menodotus called this kind of experience particular experience, and he said that it was not composed out of other particular experiences and hence was first and most simple. (T4: *Subf.Emp.* 2, 45,20–46,23 Deichgräber; trans. WF: 24–5)

'Practised', or 'learned', experience in T4.1 is correctly rendered as τριβικὴ ἐμπειρία by Deichgräber in his retroversion of this passage. Galen in *SI* refers to it explaining the same difference between learned and basic experience: 'This experience which one has as a result of the transition to the similar they call practised, because one has to be practised in the art if one wants to find something out in this way.'³⁰

For the Rationalist, the weakest part of this construction is the transition from the first and simple, 'particular' experience, described in T4.6–7 to the 'practised, learned' experience of T4.1 by means of multiple observations of the same phenomena. The Rationalist objection does not touch upon the notion of technical theorem as calibrated observation (in our text this Empiricist notion is spelled out twice, in T4.3a–d and again in T4.5a–d), central for the Empiricist response to the Rationalist criticism. The variation of observations in accordance with the accruing frequency is deliberately ignored by our Rationalist, who concentrates on the way in which a multiple repetition of the same observation can convert its status from 'non-technical' to 'technical'.

³⁰ *SI* 2, I.68–69 K. = 4,11–13 H. The same and related usage in Marcell. *Puls.* 10, 248 Schöne.

The Rationalist begins with the predicate 'technical', arguing that it cannot obtain from the multiple repetition of the same instance qualified as 'non-technical'.

(1) Which arguments, then, do I have to offer? The first one is an argument whose premisses are conceded even by them. (2) For I take it that it is the observation of things which have been seen to happen in the same way very many times which they call experience. (3) But they themselves also say that what has been seen just once does not amount to something technical. (4) The argument could also be presented in the following way. If what has been observed very many times is composed of many things which have been observed once, then what has been observed very many times is non-technical. (T5: *Med.Exp.* 7; trans. WF: 57–8)

Here, in T5.2, we see a restatement of the simplified version of the Empiricist premiss, which does not take into account the role of accruing frequency in the formation of the concept of 'technical', for this consideration would make the logical pattern of the 'clincher' argument less transparent.

The Rationalist now challenges his Empiricist opponent to say how many times exactly makes 'very many times':

(1) Let us then leave this argument which we have constructed ourselves aside, and instead, direct another argument against them which runs like this: can you tell us, Empiricists, how many times many times is? (2) For we ourselves desire to gain knowledge through observation the way you do. (3) Hence to make sure that we do not, for a lack of measure, miss the appropriate amount, either because we think that we already have come to the end before we have observed the matter sufficiently, or because out of our ignorance of the proper measure, we extend our observation far beyond what is appropriate, we ask you to show us, too, what the measure is, so that we, too, can learn something from observation. (T6: *Med.Exp.* 7; trans. WF: 58)

In both refutations we can discern the underlying soritical pattern, even if it is not laid out in detail at this point. The soritical argument can be represented as follows:

$$\begin{array}{l} \sim Fa_0 \\ \text{If } \sim Fa_0 \text{ then } \sim Fa_1 \\ \text{If } \sim Fa_1 \text{ then } \sim Fa_2 \\ \dots \\ \text{If } \sim Fa_{n-1} \text{ then } \sim Fa_n \\ \hline \sim Fa_n \end{array}$$

where F is a predicate, for instance ‘being a heap’ (*sóros* means a heap in Greek), and a_0 is an aggregate of one grain, a_n is an aggregate of n grains, a_{n-1} an aggregate of $n-1$ grains, where $n \in \mathbb{N}$. The addition of a single grain to an aggregate must not make a difference to whether the aggregate is a heap or not. It is good to note that a standard soritic sequence whose specimen we find in the Rationalist argument is monotonic.³¹

F need not stand for a heap or collection. If a is a mental state (e.g. ‘feeling cold’, ‘seeing red’), then the predicate F can stand for ‘being luminous’ (as in modern discussions of epistemological sorites),³² or ‘being cognitive’ (as in Stoic theory of cognitive impression, *kataléptikê phantasia*).³³ In that case a_0 can be a non-luminous or non-cognitive state, a_n a luminous or cognitive state, and a_{n-1} a mental state that is different but not distinguishable from the cognitive, or luminous state, a_n . In this case, the paradox will show that by starting from a non-luminous or non-cognitive state, one can arrive by a valid inference by *modus ponens* at a conclusion about the successor state in a chosen metric, so that the mental state (impression) assumed to be ‘luminous’ or ‘cognitive’ can be shown by this argument to be non-luminous or non-cognitive.

$$\begin{array}{l} \sim Fa_0 \\ \text{If } \sim Fa_0 \text{ then } \sim Fa_1 \\ \text{If } \sim Fa_1 \text{ then } \sim Fa_2 \\ \dots \\ \frac{\text{If } \sim Fa_{n-1} \text{ then } \sim Fa_n}{\sim Fa_n} \end{array}$$

The difference between this sorites, which we can label ‘epistemological’, and the previous one, the ‘heaper’ proper, is that here any two adjacent mental states in a soritical sequence have different intentional content. The difference has to do with the *degree* of luminosity or being cognitive and is not graspable as a separate incremental value, unlike the grain in the ‘heaper’. It is only accessible through the intentional state which has as its object the cumulative ‘feeling cold’ at any given time. Thus, if a_n is a veridical state of ‘feeling cold’ at the temperature $n^\circ\text{C}$, then a_{n-1} is a veridical state of ‘feeling cold’ in the temperature $n-1^\circ\text{C}$. Both states still qualify as ‘feeling cold’ in a luminous (or ‘cognitive’) fashion.

³¹ ‘The usual sorites sequences are monotonic in the sense that a question [“Are n few?” – I.K.] rightly answerable “No” never comes between two questions rightly answerable “Yes”, nor vice versa.’ (Williamson, 1994: 13).

³² Williamson, 2000: 93–113. ³³ Long and Sedley, 1987: 40A–T, 41A–I.

The epistemological family of soritical arguments was important in the debates between the Stoics and the Academics.³⁴ Our argument about experience is a distant relation to that family. It is a relation, because in its case, the predicate F would stand for 'technical' (as in T5), and *a* would stand for an experience, which is an epistemological concept. In a soritical argument, there will be no difference in respect of F between any two adjacent experiences a_i and a_{i+1} , so there will be no difference between the experience a_n presumed to be technical and its immediate precursor a_{n-1} already shown to be non-technical by the previous argument 'in small steps'. But our argument is only a distant relation to this epistemological family, because the Rationalist does not rely on any differences in intentional content between the two successive experiences of the kind we have between the two adjacent cognitive states in the Academic arguments against the Stoics, or in Williamson's anti-luminosity argument. The only difference between any two experiences in the soritical sequence constructed by our Rationalist is the number of the preceding experiences which are otherwise all exactly alike. This is why the second version of the same argument is formulated by the Rationalist in strictly quantitative terms, asking the Empiricist how many times is 'very many' (our T6).

So our Rationalist sorites has a curious hybrid format. Its soritical predicate 'technical' applies to the items similar to those at work in the epistemological family ('observations'), but the paradox is based on the 'aggregation' of these items, since the claim the Rationalist attacks is that when the basic, non-technical observations are many enough, they become technical. There is no suggestion that anything depends on the slight change in the object of two adjacent observations similar to the unnoticeable change of temperature in Williamson's example. On the contrary, the first two concessions made by the Rationalist³⁵ aim to provide the exact sameness of both the subject and the object of the observation, to ensure the argument works. This is a real 'heaper', an epistemological paradox of accumulation. The Rationalist implies that the Empiricist derives some additional psychological confidence from these granted repetitions of the same items which he then converts, without explanation, into the concept of 'technical'. But the Empiricist reply will show us that things are not that simple.

³⁴ For discussions see an excellent survey of the ancient sources of sorites in Sedley, 1977; Barnes, 1982, further studies in Burnyeat, 1982; Williamson, 1994: 8–35; Hankinson, 2007.

³⁵ See concessions (i) and (ii) above, 39.

Although the sorites is not spelled out by the Rationalist in detail, the Empiricist has no doubt that it is intended, and he will proceed to give many more examples of sorites, making this text one of our main sources for this logical puzzle.³⁶ This source has been duly mined, with the examples of sorites receiving a good discussion in several magisterial studies of their relation to the broader tradition of ancient philosophical logic.³⁷ My task here is to focus not so much on the logical aspects of the sorites *per se* as on its specific role in our argument between the Rationalist and the Empiricist. This will allow us to see that the concept of experience used by the Empiricist is not the same as the one that is used by the Rationalist, and that this difference makes the Empiricist's experience unsoriticisable and really challenging for any Rationalist who might want to take experience seriously into account in his system of medical philosophy.

2.2.2 Rationalist Objections Summarised by the Empiricist (*Med.Exp.* 8)

Following upon the Rationalist argument and prior to the Empiricist's replies, we find another summary of the Rationalist critical objections to Empiricism, distinguishing three kinds of objections, each of which is subsequently addressed on its own terms. They are formulated very concisely and anonymously, but in *SI* (written ca. 165 during the first Roman sojourn and subsequently revised),³⁸ Galen gives the same typology of Rationalist objections³⁹ spelled out in more detail, so we can identify the objections fairly precisely.

The first objection is the most radical, claiming that 'nothing can be ascertained by "seeing-very-many-times" and that all discoveries are made by *logos* alone'.⁴⁰ In *SI*, this objection is attributed to Asclepiades, who 'proving, as he thought, that nothing can be seen many times and in the same way, wants it to be totally unsustainable (*asustaton*) and not even capable of discovering the smallest thing'.⁴¹ This objection is captured by the sorites in the Rationalist argument above. The reply to it occupies roughly half of the Empiricist argument, *Med.Exp.* 9–21.

The second objection is attributed to those who 'admit that simple singular things which are observed in simple symptoms can be discovered

³⁶ *Med.Exp.* 16–20, WF: 74–84. ³⁷ As in n. 34 above. ³⁸ Boudon-Millot, 2012a, 359.

³⁹ Cf. *SI* 5, I.75 K. = 9,4–6 H.: 'But the Dogmatists have levelled various criticisms against experience. Some have said that this kind of experience is unrealisable, and others that it is incomplete, while a third group claimed that it is not technical'; trans. WF: 8.

⁴⁰ *Med.Exp.* 8, WF: 60. ⁴¹ *SI* 5, I.75 K. = 9,9–13 H.

gradually by "seeing-very-many-times".⁴² In *SI*, Galen attributes this objection to Erasistratus, 'who agrees that simple things acting upon simple symptoms can be discovered by experience, for instance, that purslane is a remedy for numbed teeth, but does not want it to be adequate for everything'.⁴³

The third kind of objections represents the most liberal approach to experience claiming that 'even if one were to admit that by "seeing-very-many-times" some part of this road could be discovered, yet the discovery of all things by experience totally free from *logos* is impossible <...> due to the number of diseases and their accompanying symptoms which in themselves are endless when taken individually'.⁴⁴ *SI* has here: 'others still, by those who concede that such things [i.e. composite cures for composite symptoms] can be discovered by means of experience, but censure it for being unlimited and long, and "unmethodical", as they put it, and on this basis introduce the *logos*, understanding that experience is neither unsustainable, nor non-existent, but some sort of non-technical thing'.⁴⁵ This is an argument 'from the economy of thinking'. A version of this argument opens the set of Rationalist objections in *Med.Exp.* 3, WF: 52–3, and all the concessions made by the Rationalist to the Empiricist in the run-up to the final refutation amount to a moratorium on this objection.

This tripartite division of Rationalist objections does not easily map onto either the foregoing Rationalist argument or the subsequent Empiricist replies to the Rationalist criticisms. There are three references back to it in the text of the treatise.⁴⁶ This division could have been introduced by Galen as a part of his redaction 'for the sake of exercise' in order to inscribe the current dispute into a wider doxographical framework. It is certainly not unrelated to the content of the dispute he reports, which speaks to all of the three standard Rationalist objections, but it cuts across some of the elements in the composition of the dialogue and this results in a rather odd structure superimposed on the discussion. For if its proposed signposting in the text is to be followed, the reply to the first objection (Asclepiades' criticism) takes up *Med.Exp.* 10–20 (thirty-eight pages in the Arabic manuscript), the reply to the second objection

⁴² *Med.Exp.* 8, 17,10 Walzer, WF: 60 (*bi-ru'yati al-shay'i marārān kaṭīratan jiddan: tōi boran pleistakis*).

⁴³ *SI* 5, 1.75 K. = 9,13–19 H. ⁴⁴ *Med.Exp.* 8, WF: 60. ⁴⁵ *SI* 5, 1.75–6 K. = 9,19–24 H.

⁴⁶ A clear one at the beginning of *Med.Exp.* 9, WF: 61, a weak one at the beginning of *Med.Exp.* 21; trans. WF: 84 ('As for the other proposition, that put forward by the Dogmatists . . .') and a very clear one at the beginning of *Med.Exp.* 22; trans. WF: 85 ('Perhaps you are still doubtful, O Dogmatist . . .').

(Erasistratus) occupies *Med.Exp.* 21 (two manuscript pages), and the reply to the third objection occupies *Med.Exp.* 22–31 (thirty-two pages).⁴⁷ In reality, the discussion in the Empiricist's speech is much less strictly ordered by topic, and has different strands of this textbook division freely intertwined in accordance with the logic of conversation. In *Med.Exp.* 21, the Empiricist tells us that this (second) objection, namely, that experience cannot be relied on for the discovery of composite remedies and cures for complex cases, has been already answered in the previous discussion, and adds just a handful of further examples to illustrate the point already made several times previously (*Med.Exp.* 21, WF: 84).

In what follows I will consider two arguments: the Empiricist's replies to the Rationalist's knockdown argument and to the 'delayed' criticisms stated by the Rationalist in the process of formulating the premisses of the sorites (Section 2.3), culminating in the discussion of the criterion of identity (Section 2.4) and the discussion of epilogism (Section 2.5).

2.3 The Empiricist Apology

In this section, we will consider first the Empiricist argument to the effect that all Rationalists, whatever they might say in their polemical zeal, do in fact rely on experience unaided by the *logos*, certainly in their practice, but also, equally certainly, in their theorising, since many of their generalisations about the causes at work in nature and in the human body are based on a certain interpretation, or even worse, on an uncritical acceptance, of particular observations. We will next consider the Empiricist criticism of the Rationalist use of experience and the Empiricist explanation of the concept of a technical theorem and how it can be acquired 'by seeing very many times'.

2.3.1 *The Rationalists Do Make Use of Experience (Med.Exp. 9–11)*

The first argument the Empiricist addresses is the one that claims that experience cannot discover anything at all when unaided by the *logos*.

The Empiricist gives a number of arguments from the arsenal of Empiricist–Rationalist debates. Some of these arguments can be traced back to the Hippocratic writers. Such is the argument from the priority of experience in the origin of all respectable arts, such as navigation, farming,

⁴⁷ This is the division in Walzer, 1944: 98, followed by Pellegrin, 1998: 144 n. 1, which I think is right.

vine-growing, food-tasting. The knowledge of the rising and setting times of the Pleiades (times for starting the harvest and for starting ploughing, respectively) does not require prior study of the nature of the Pleiades, Sirius, Bear, and other stars. The art of shoemaking need not include the knowledge of the nature of the animals whose skins are used for making shoes. The knowledge of the properties of such popular consumer products as wine and mushrooms – which are edible and which not – also need not depend on the knowledge of their respective natures. The baker's expertise does not depend on his understanding of the nature of seed (*Med. Exp.* 9, WF: 61–2.). 'And in short, we find that of the bulk of mankind each individual by making use of frequent observations gains knowledge not attained by another; for as Democritus says, experience and vicissitudes have taught men this, and it is from their wealth of experience that men have learned to perform the things they do' (ibid.; trans. WF: 62; Democr. fr. 558 Luria). There is no reason why medicine should be an exception. This argument has a venerable ancestry in earlier Greek philosophy and medicine: one of its sources, Democritus, is cited, another is the Hippocratic treatise *On Ancient Medicine* (which Galen thought to be spurious).⁴⁸

The Empiricist appeals to the authority of Hippocrates when he explains the priority of the empirical knowledge of individual facts over the 'knowledge of general things' (*Med. Exp.* 10; trans. WF: 63). 'The characteristic of *logos* is that everything it elucidates, it elucidates at once, and the characteristic of experience, that it elucidates little by little, gradually' (*Med. Exp.* 10; trans. WF: 63). If the Rationalists do not accept this feature of experience, then they are challenged to denounce Hippocrates' *Epidemics*, which its author desired to be 'a memorial to his observation and memorising' (ibid.).

There is also a special argument for the 'radical' Rationalists, who claim that nothing can be discovered by means of the *logos* in conjunction with experience: if this is indeed the case, then it must follow that a Rationalist physician (the one who 'knows the natures', i.e. the non-evident causal factors) can excel at healing without experience. But this is clearly not the case. On the contrary, we have examples of those who 'in the practice of medicine have attained a high measure of excellence' as a result of following the lead of simple experience (*Med. Exp.* 10; trans. WF: 64).

Perhaps most philosophically significant is the argument in which the Empiricist invokes the 'undecidable disagreement' (*diaphônia anepikritos*)

⁴⁸ See Schiefky, 2005, 65–6.

illustrated by the case of six different Rationalist theories of digestion: from denying the existence of digestion, to construing it on analogy with cooking (perhaps Aristotle), or with decay (Pleistonius is named), or as dissolution of food into juice, or as grinding and pounding of food, or as the work of *pneuma*. (*Med.Exp.* 11, WF: 65). The Empiricist asks why this theoretical controversy does not prevent all these doctors from agreeing on which kinds of food are easily digestible and which not. The answer involves the argument (*Med.Exp.* 11, WF: 65), which can be summarised thus:

- (a) The unanimity of experts is based on one thing which serves as their real guidance, and which they are able to discover.
- (b) This cannot be *logos*, because *logos* does not support the unanimity (as is made clear by *diaphônia anepikritos*)
- (c) It remains that the needed guidance is provided by experience.

Later on in the dialogue the Empiricist will explain that both the lack of resolution in the case of the Rationalist disagreement and the special credibility of experience as a guide are based on the crucial difference in the way in which reasoning is used by the two groups of medical experts (see Section 2.5 below). The important point now is that the Rationalists cannot avoid using experience in their practice and writings, even the experience unaided by *logos*.⁴⁹

2.3.2 *The Empiricist Concept of Experience: Not What the Rationalists Thought? (Med.Exp. 12–21)*

The Empiricist gives us an example of the use of experience and observation in the Rationalist arguments, in the following rich and difficult passage:

- (1) But whoever of them denies this must think that Hierocles in vain maintained that the *logos* which consists in inference from the visible to the invisible uses the facts of experience and sets them up as a foundation for their premisses. (2) We, however, find that this view is not worthless, and that this matter cannot be otherwise than as Hierocles says, since Rationalists, when they investigated each of the natural functions, set out from the very beginning to start from experience. (3) When, for example, they inquire about digestion and digestibility, you may hear one of them asserting that heat is one of the causes, and he makes this his starting-point

⁴⁹ The examples from therapy and pharmacology are listed in *Med.Exp.* 14, WF: 71.

in his explanation of this from the following things [*min hâhunâ*]. (4) He says: Since the most effectual aids to digestion and digestibility are: among the ages⁵⁰ [of a living being], those which contain most heat; and among the seasons of the year, those which store the maximum amount of innate heat in the stomach; and among crafts and activities, those which heat the body most; and among the influences which affect the body from without, those which produce heat, one must conclude that digestion in the body is caused solely by heat. (5) And listen how the exponent of this view produces many instances of this in order to support his argument that the digestion of each kind of food resembles the process of cooking. (6) He says, namely, that the rockfish is easily digested, his proof for this statement being that it is quickly cooked, while on the other hand, beef is not easily digested, the proof of this being that it becomes fit to eat only after much labour in cooking. (T7: *Med.Exp.* 12, 25,10–26,4 Walzer; trans. WF: 66, modified)

T7.1 reports the view that corresponds to the Rationalist theory of inference from the evident to the non-evident where the observed processes and structures are indicative of the unobservable processes and structures, the latter being explanatory of the former.⁵¹ It is not clear whether the reading 'Hierocles' here and in the next sentence is correct. The style of the passage suggests that 'Hierocles' must be an important authority for the Rationalist view that the premisses of the inference from the visible to the invisible must involve facts of experience. Hierocles the Stoic has been suggested,⁵² but this reference has no further confirmation.⁵³ Conversely, there are good textual and doctrinal grounds to attribute the view presented in T7.1 to Herophilus.⁵⁴ Herophilus is described later in the treatise as someone who 'concedes no small importance to experience, nay indeed, to speak the truth ... he makes experience all-important' (*Med.Exp.* 14; trans. WF: 70).

The view presented by the Empiricist doctor in T7.1 has several parallels in Herophilus' fragments. The Rationalist position, according to which

⁵⁰ Understanding *al-asnân* at *Med.Exp.* 12, 25,17 Walzer, in this way, following Garofalo, 1975 (Walzer prints 'teeth' with a question mark).

⁵¹ For the 'indicative' inference to the non-evident, cf. below, Chapter 3, 82 n. 10, Chapter 5, 152–3, and Chapter 11, 279–80.

⁵² Pellegrin, 1998: 153. ⁵³ This Hierocles is never mentioned by Galen or Sextus Empiricus.

⁵⁴ The readings in the text at Istanbul, MS Aya Sofya 3725, fol. 148b3 (*Med.Exp.* 12, 25,10 and 25,13 Walzer), are transcribed by Walzer as *iroqilis* and *iroqils*, respectively. The MS Aya Sofya 3725 has many errors of vocalisation and punctuation (as noted also by Walzer, 1944: iv). In terms of writing, the confusion of *qâf* and *fa'* is very possible in this MS. A further detail in favour of Herophilus against Hierocles reading is the presence of *yad* before *lâm* in both occurrences, which would be completely unwarranted in the transliteration of the name 'Hierocles' but is required to transliterate 'Herophilus' (cf. also the way the word 'Herophilus' is written at *Med.Exp.* 13, 31,3 Walzer).

medical reasoning proceeds from the evident to discover the non-evident principles and causes is attested in several fragments, most clearly in fragment 57 von Staden,⁵⁵ where Herophilus says that the discovery of the powers of a human body has its starting-point not in the static observation of the anatomical structures revealed by dissection, but from the observation of the other *phainomena*; but also fragments 58, 59a, and 59b von Staden,⁵⁶ which contain reports of Herophilus' discussions of causes.

The claim that the 'facts of experience' (*al-tajāribah*) should be used as premisses in reasoning from the evident to the non-evident has a close parallel in Herophilus' requirement that medical inquiry should start with facts of observation. This requirement is attested in two slightly different versions by Galen in *The Therapeutic Method* (*MM*)⁵⁷ (who claims that he cites Herophilus verbatim) and the Anonymus Londinensis, who reports virtually the same statement (T7.1a and T7.1b below, respectively). Both reports provide little context for this requirement in Herophilus. It has been reconstructed differently by scholars, most recently by Michael Frede, who argued that Herophilus requires that the observable facts should be made into premisses of medical reasoning aiming to discover their causes.⁵⁸ In this way the *phainomena* serve as natural hypothetical constraints on the resulting causal accounts. I give the translation of both passages defended by Frede:

Let these things be first things, even if they are not the first things. (T7.1a: *MM* 2.5, X.107 K. = Herophil. T 50b von Staden)⁵⁹

Let the *phainomena* be called first things, even if they are not first things. (T7.1b: P. Lond. 137 = Herophil. T 50a von Staden)⁶⁰

Our T7.1 also does not provide details for the context of the main claim. But it contains a valuable reconstruction of this Rationalist view, and whether or not we should attribute the reported view to Herophilus, the Empiricist argument helps us to understand the use of observation in

⁵⁵ *The Shaping of the Embryo* (*Foet. Form.*, IV.652–702 K.; also edited with German translation in Nickel, 2001; English translation in Singer, 1997: 177–201) 5.1, IV.678 K. = 82,10–17 Nickel.

⁵⁶ Herophil. T 58, 59a von Staden: *Antecedent Causes* (*CP*, edited in Bardong, 1937, and Hankinson, 1998b; translated in Hankinson, 1998b) 13.162, 41–42 Bardong, and 16.197–204, 53–55 Bardong; 59b: *The Composition of Drugs According to Places* (*Comp. Med. Loc.*, XII.378–1007 and XIII.1–361 K.) 3.1, XII.619 K.

⁵⁷ X.1–1021 K.; books 1–2 translated in Hankinson, 1991a; the whole work in Johnston and Horsley, 2011.

⁵⁸ Frede, 2011: 123–34, at 123–7. ⁵⁹ *estô tauta einai prôta, ei kai mê esti prôta.*

⁶⁰ *legesthò de ta phainomena prôta, kai ei mê esti prôta.*

accordance with what Frede has called 'the weak form of Rationalism'.⁶¹ In T7.2 the Empiricist says that Rationalist doctors in their study of natural functions begin with observation. The study of natural functions (*al-af'âl al-ṭabî'iyah, phusika erga*) is the Rationalist programme in medical philosophy. It is something the Empiricists considered redundant and rejected. Our Empiricist points out that even this study promoted by the Rationalists is still impossible without medical experience. It is important for his argument to have this point established, as he will go on to question the way Rationalists use experience in their reasoning.

In T7.3, the report of the Rationalist argument for innate heat as a cause of digestion based on observation is signalled. The innate heat theory of digestion is not attributed to anyone in particular, and is taken here to illustrate the use of experience in the formulation of a Rationalist principle. Elsewhere, the author cites the theory of heat as one of the conflicting theories which constitutes the unsolvable *diaphônía* among the Rationalist doctors.⁶² In T7.4 we get a battery of short arguments which supports this theory in the eyes of its Rationalist champions. Innate heat is the cause of digestion because all the internal and external factors which improve digestion – age, season, activity – are those that increase the concentration of heat in the stomach. We have to understand the young age (when the organism is presumed to contain more heat than it does in old age), the cold season (which causes the internal heat to aggregate inside by the mechanism of *antiperistasis*),⁶³ and the intense physical activity which increases the bodily heat.⁶⁴ All these examples serve as the supporting evidence for the non-evident principle adduced in the explanation of the process of digestion, namely, that digestion is thermal processing.

Such is the argument in outline, and we get next a more detailed illustration of the way the Rationalist reasoning works. In T7.5 we learn that these many instances are cited in order to support the claim that the process of digestion bears a *resemblance* to cooking. This resemblance is derived in T7.6 in a complex way, by comparing the processing of rockfish

⁶¹ Frede, 2011: 132–3 (by contrast with the extreme Rationalism of Aristotle, Herophilus' version sets limits to the use of natural philosophy in the explanation of medical facts which are known only from experience). See also Viano, 1981: 587–8, who argues that this 'weak' form is standard for medical Rationalism.

⁶² This is Aristotle's theory of digestion, see *PA* 2.3, 650a2–14. Galen himself subsequently develops a humoral theory of digestion which adopts and transforms some theses of this account (see Kupreeva, 2004; Kupreeva, 2014).

⁶³ On this concept in Aristotle, see Furley, 1983: 90; for Theophrastus, see Steinmetz, 1964: 123–6.

⁶⁴ Cf. Thphr. *Sud.* 18.120–19.129 Fortenbaugh (young age), 20.134–23.154 Fortenbaugh (physical activity), 23.154–162 Fortenbaugh (*antiperistasis*).

and beef in two different ways: in the process of cooking on the one hand and in the process of digestion, on the other. In each case, the relative speed of processing is the same: rockfish is digested and cooked more easily (faster) than beef. In both cases, this relative speed is established on the basis of observation. Hence, the Rationalist can use a quasi-proportion:

Cr:Cb - Dr:Db

In the first process (cooking, represented by the left-hand side of the equation), the causal mechanism that operates in the processing is considered to be evident throughout, in the second case (digestion, on the right-hand side) it is non-evident. Since the two processes show the same relative dynamics for the same pair of foodstuffs, it is therefore possible to assume that the hidden mechanism of digestion has the same nature as the mechanism of concoction that is not hidden. In this way the Rationalist theory gets its support from the observation.

The Empiricist doctor strongly objects to this use of observation in the explanation of the function of digestion. In his view, it is a bit too rash. Is it really *always* true to say that rockfish is digested better than beef? And if not, how does the Rationalist deal with the examples to the contrary?

(1) But we say to the exponent of this view: O you wise man, whence do you know this of which you speak, in order that you can understand by it something of the function of digestion? (2) For surely, after having seen each of these things but once, you will not say that you dare to erect the structure of your argument of what you have seen but once, but you would blush to say so and disgrace yourself by using an untrue argument. (3) For it is quite possible that at the outset you might meet with someone who can digest beef more easily and quickly than rock-fish. (4) If you believe and accept as correct what you have seen in this person, and then begin to inquire why beef is more quickly and easily digested than rock-fish, you will most certainly fall into a mistake from the very outset, since the thing, the cause of which you investigate, is in itself not true. (T8: *Med.Exp.* 12; trans. WF: 66–7)

In raising this question, the Empiricist reveals something very important about the Empiricist concept of experience, which distinguishes it from the Rationalist one. For the Empiricist it is a crucial characteristic of experience that it deals with the things subject to generation, destruction, and change, and thus even the same natural processes which come into the orbit of medical attention allow for different, indeed – as can be seen even from our simple example – opposite, outcomes. The Empiricist insists that true technical experience must take account of these facts of observation.

He reproaches the Rationalists for their hand-waving attitude to possible counterexamples and exceptions.⁶⁵

Rockfish is normally easier to digest than beef, but not always so; in some cases, beef is more easily digested than rockfish, so the outcome of observation will be opposite (T8.3). If a physician, by a mere chance, becomes first exposed to an exceptional instance, then the Rationalist pressure for a causal explanation in the absence of the Empiricist methodology may lead him to an erroneous theory of the misconstrued *explanandum* (T8.4). Therefore a single observation cannot count as representative of the 'fact of experience' (T8.2). In order to get the facts right we must make enough observations to see the proportion between these two outcomes.

Here we have the discussion of the use of experience in establishing the starting-points of a Rationalist theory of digestion. It seems to shed some light on an important difference between the Rationalist and the Empiricist treatment of experience: whereas for the former, 'experience' can be exhausted by the prevalent case (e.g. that rockfish is easier to digest), for the Empiricist, experience has to accommodate both the prevalent and the 'minority' cases: '... rockfish is by and large easier to digest, but in some cases beef is easier to digest'. This fact has to be established by a series of observations of the same kinds of process which have different, indeed, opposite outcomes, happening at a different rate. Clearly, this kind of experience cannot be obtained by a simple repetition of identical observations with the same outcome but presupposes a calibrated observation. The following passage reminds us of the important feature of 'technical' experience which has been omitted by the Rationalist in his 'knockdown' objection, namely, that 'technical' experience consists in mastering some technical theorems:

(1) Therefore I turn to you and ask you to tell me in what manner knowledge of those things that were discovered by experience without the *logos* became 'technical' knowledge⁶⁶ in which you have confidence? (2) Did you place confidence in it and accept it as 'technical' just because you had seen each single one of these things take place once, or after you had

⁶⁵ 'For I have observed that you often use the method of neglecting and leaving aside things which present themselves to you, and which you cannot refute, and about which there is some doubt, as if they were things you could not accept, but must rather reject because of their absurdity' (*Med.Exp.* 12; trans. WF: 67). The argument 'from small numbers' goes back to the Stoic-Epicurean debate about analogy preserved by Philo. *Sign.* XX,4–10 and XXIII,7–XXIV,10 De Lacy and De Lacy (Bromius' section). The medical debate gives a very different development of this argument from the one we find in Philodemus/Bromius, who defends the method of analogy.

⁶⁶ *Med.Exp.* 15, 33,13 Walzer: *ma'rifah šinā'iyah*.

discovered that it happened many times? (3) For my part I do not think that even if you were mad you would say: We have placed our confidence in it, and in our opinion it is 'technical' knowledge, since we have seen that it has happened once. (4) For things which are visible fall into four classes: [a] one of them is always plain, [b] another generally so, [c] in the case of another, lucidity and obscurity are equally balanced, and [d] the fourth is rarely plain. (5) If then something visible to the eye is seen only once, this single observation will not suffice to indicate which of the four kinds of technical theorem⁶⁷ it belongs to. (6) Since we do not know that it will appear on every future occasion as it has done on this occasion, how should we know that it is [a] always thus? (7) Therefore it is not possible for us after having seen a thing once to be able to foretell that what was seen on this occasion will [b] often be seen, and that its opposite will only be seen rarely, just as it is not possible to know whether [d] the reverse is the case. (8) And since this belongs to what cannot be recognised by a single observation, so in the case of both [b] what is more frequent and [d] what is more rare, it is impossible to know the thing after seeing it only once, and likewise it is not possible for that thing to be known [c] whose nature consists [both] in its being and in its not being. (T9: *Med.Exp.* 15; trans. WF: 72, slightly modified)

This argument is important in two different but related ways. On the one hand, as already indicated above, it points to a major methodological weakness in the Rationalist use of the experience, which consists in their uncritical acceptance of a given observation as supporting evidence for the inference to the non-evident underlying causal function, or 'nature'. The Empiricist shows here that things may be more complex even with what is taken to be 'evidence' and recommends a strictly calibrated approach to what must count as evidence in introducing the concept of 'technical theorem'.

On the other hand, it shows that the Empiricist concepts of 'technical' and 'seen very many times' are not open to the soritical objection as conceived by the Rationalist. As we have seen, the Rationalist first granted to the Empiricist that it is possible to observe one and the same thing 'very many times' and then asked how just observing one and the same thing very many times can make a basic non-technical observation into a technical one.

The Empiricist now tells us that the object of observation is in a way the same and not the same, insofar as the same effect can sometimes obtain and at other times fail to obtain. Both the successful and the unsuccessful outcomes of such a process in some important sense count as the objects of

⁶⁷ Ibid. 33,20–34,1 Walzer: *‘ulūm al-ṭibbī*: Walzer translates as 'medical science', but see above, 39 n. 29.

the 'same' observation, but of course they do not happen simultaneously, nor do they form any regular, not to mention monotonic, sequence.⁶⁸ The Empiricist warns his interlocutor against an easy mistake of generalising over just a few cases:

(1) Consider: What is to prevent the medicine which is being tested from having a given effect on two hundred people and the reverse effect on twenty others, and that of the first six people who were seen at first and on whom the remedy took effect, three belong to the three hundred and three to the twenty without your being able to know which three belong to the three hundred, and which to the twenty, even if you were a soothsayer? (2) And you surely do not say that you construct your *logos* on this. (3) Since you are in this position, you must needs wait until you see the seventh and the eighth, or to put it shortly, very many people in succession. (T10: *Med. Exp.* 15; trans. WF: 73)

'Technical' experience presupposes the mastery of technical theorems, i.e. the knowledge of the correct proportions between successful and unsuccessful outcomes for a given case, for instance, for a given remedy for a certain disease. The standard sorites does not seem to capture this type of procedure when it presents the acquisition of experience as a monotonic process 'heaping' the all-but-identical items one upon another. As our Empiricist has pointed out in several lengthy explanations, this route may be different for different practitioners, depending on the contingencies of their practice and the kinds of cases with which they get to deal.

The Empiricist answer to the Rationalist question 'When does experience become technical?' is thus: 'When its practitioner has a full mastery of all the technical theorems and knows how to apply them to the cases he deals with.' The Rationalist may feel disappointed. On his terms, the question 'When do n grains become a heap?' gets an answer: 'When they make a part of one of these four heaps.' And we already know that each of these four 'heaps', in turn, has a complex structure, with further non-standard conditions on 'heaping'. This rather dismisses the puzzle.

The Rationalist could insist that even in the picture painted by our Empiricist there is at least one type out of the four 'theorems', namely, the one that is constituted by the observations of what happens always, that must lend itself to the soritical analysis. But our Empiricist seems to be saying that the concept of experience he uses cannot be limited to just one class of observations. Moreover, the argument 'from small numbers' shows that it may take a different number of steps for the 'necessary' theorem to

⁶⁸ See above, 42 and n. 31.

be recognised as such, depending on the range of exposure to all the non-necessary cases. Thus, it may take time to recognise that the remedy A works for the case B not in 100 per cent cases, but only in 75 per cent, or even in 50 per cent. The number of necessary exposures is contingent on specific circumstances, which in some cases have been termed ‘chance’ or ‘luck’.⁶⁹ So the second set of Rationalist ‘concessions’ to the Empiricists, according to which each observation has the same value, is publicly observable, and does not depend on the circumstances of the individual observer, seems rather self-serving, stated in such a way as to mak it easier for them to set up a standard sorites. The Empiricists do not see the process this way.

Does this mean that the Empiricists are open to the Rationalists ‘delayed’ objections? Do they deny any sameness in the phenomena? And do they make no use at all of any kind of reasoning in their practice? In the next two sections we shall consider the Empiricist answers to these questions.

2.4 Empiricism and Ontology: The Unity of the Object of Experience (*Med.Exp.* 22–23)

In his ‘delayed objections’,⁷⁰ the Rationalist seems to suggest that the Empiricist’s refusal to use *logos* commits him to some version of the ‘flux’ view of reality, perhaps similar to the ‘secret doctrine’ as presented in Plato’s *Theaetetus*, according to which the world is an infinite multiplicity without unity, in constant change without any stable condition. Some Empiricist texts might look as if they support this construal of Empiricism, for instance, this passage in Celsus, with an argument against using anatomy as a source of knowledge:

(1) For colour, smoothness, softness, hardness, and all the like, are not such when the body is cut up, as they would have been in it untouched, for when bodies are unhurt these [characteristics] are still often changed by fear, pain, fasting, repletion of the stomach, weariness, and a thousand of other ordinary dispositions; (2) it is much more likely that the inner parts, which possess greater softness and for which this very light will be new, will be

⁶⁹ The better-known case from the history of modern science that could, *mutatis mutandis*, illustrate the latter point is provided by the experimental studies of the phenomena of electromagnetism in the early nineteenth century, where the lab setting of the experiment could be crucial to the discovery of the phenomenon of electromagnetic induction (the discovery made by Faraday in 1831 and missed by Colladon who was performing the same experiments at the same time).

⁷⁰ See above, 39–41.

changed under the gravest incisions and the very act of cutting up. (3) Nor is there anything more stupid than to think that of what kind something is in a living human being, of the same kind it is in the dying, not to mention dead. (T11: Cels. *proem.* 41–42 = fr. 14, 93,33–94,8 Deichgräber)

This argument says that since physical properties of a living body are changed by bodily affections and emotions, they will change when the body is cut up (T11.1), and this is even more true of the inner parts of the body that we normally do not see (T11.2). This means the properties we access when the body is thus cut up are not the same as those in a healthy body. Similarly, cutting up corpses gives no information about living bodies (T11.3). This could be read as a part of a sceptical trope according to which nothing is either smooth or rough, soft or hard, white or black, etc. – especially given the connection between the sceptics and the Empiricists.⁷¹

But this is not the reading our Empiricist would support, even if he agreed with this argument. For the argument does not establish the relativity of physical properties of a living body, but rather urges the doctors to take as full account as possible of the overall bodily condition and the circumstances in which these properties are observed.⁷²

Our Empiricist responds to this Rationalist charge by attacking the very assumption according to which the Empiricists treat all the differences, accidental and non-accidental, as being of the same order of importance:

(1) Do you maintain that [a] Socrates was not one but many, because when he lived in the city he was other than when he was in the army, or [b] when he tarried in the shade he was other than when he was in the sun? Or [c] do you think that he was Socrates in the winter and became someone else in the summer? [d] Would you say he was Socrates when he was young, but on becoming old he was no longer Socrates but Pythagoras; [e] or perhaps you would say that so long as he did not go to the baths he was Socrates, but on bathing he was Socrates no longer? [f] And when he was asleep, your assertion is that he was other than when he was awake; [g] and when he was thirsty he was other than when he had drunk? (2) Or perhaps this is all idle talk and chatter, since Socrates was not Socrates only because he bathed, or because he was armed or unarmed, or because he was young or old, or because it was winter or summer, but it was because of something else apart from all this that Socrates was Socrates? (3) So that as long as he is a thing

⁷¹ See DL 9.115 and 116, fr. 279–281 Deichgräber.

⁷² It could be compared, *mutatis mutandis*, with Aristotle's 'homonymy principle', according to which a dead hand is not a hand except homonymously (*de An.* 2.1, 412b11–22; *GA* 2.1, 734b24–a8; *Mete.* 4.12, 389b31–390a12; *PA* 1.1, 640b35–641a6; *Pol.* 1.2, 1253a20–25).

that by itself persists in its state, it is clear that even if the whole of his other states were to be changed, he would not be affected in the very least in respect of being Socrates; for even if the qualities which were in him and from which in respect of being Socrates he derived no advantage (yet because of which he was fitted to be Socrates) were to be stripped away, that would not affect him. (T12: *Med. Exp.* 22, 54,6–20 Walzer; trans. WF: 86)

In T12.1 we have seven pairs of expressions that refer to Socrates in different situations, each pair showing two incompatible situations:

- (a) Socrates-in-the-army \neq Socrates-in-the-city
- (b) Socrates-in-the-shade \neq Socrates-in-the-sun
- (c) Socrates-in-the-winter \neq Socrates-in-the-summer
- (d) Socrates-young \neq Socrates-old
- (e) Socrates-unbathed \neq Socrates-bathed
- (f) Socrates-asleep \neq Socrates-awake
- (g) Socrates-thirsty \neq Socrates-drunk

The argument set out by the Empiricist, who is reconstructing the Rationalist's objection, is that since Socrates, throughout his life, is always present under some qualification exclusive of some other qualification (and never without any qualification), the correct way of thinking about Socrates is by representing him as a bundle of all these multiple trope-like individuals each of which has a form 'Socrates-under-qualification'. This is how Socrates would be not one, but many.

The Empiricist then begs to disagree with this version of bundle theory, which might be labelled 'unrestricted' bundle theory, and argues that Socrates being Socrates does not depend on his qualifications in the seven pairs, but rather there is something else by virtue of which Socrates is Socrates (T12.2). He goes on to develop the view of Socrates as something that remains by itself in its state and would not be affected in this being even if all of its other properties were changed (T12.3). On this view, Socrates is one thing because he is a thing that persists through change. The Empiricist does not say what features of Socrates allow us to recognise this persistence, but we can make a safe guess that this is for him what we call today an 'empirical question'. We recognise that it is Socrates through our well-grounded experience of this Socrates, the son of Sophroniscus and Phaenarete, from the deme of Alopece.

From the example of Socrates we pass to the case of disease. The Empiricists view diseases as persisting combinations of symptoms, i.e. syndromes, which have their generation, growth, and decay in the body

of a patient.⁷³ Thus the disease called phrenitis possesses unity by virtue of a stable combination of symptoms, a *syndrome*, discovered by observation:

(1) Since the case is as I have described, how can you refuse to admit that this also applies to the phrenetic? (2) For if he had phrenitis because it is winter, he would not have it in summer, or if he had phrenitis on a full stomach, he would not have it on an empty one. (3) And if he had phrenitis in respect of [a] gathering flowers and picking roses and grass (?)⁷⁴ and [b] raving and uttering senseless words and [c] feverishness, then there is amongst the other characteristics not one that would justify his being called phrenetic by attributing it to him, nor would it harm him in respect of not being phrenetic by denying it to him. (T13; *Med.Exp.* 22, 54,20–55,6 Walzer; trans. WF: 86)

Here the unity of a disease seems still to be dependent on a bundle of attributes, but it is a special stable bundle, which satisfies the requirement of persistence through change. Its persistence and stability are established by experience.⁷⁵

Once the disease is so identified, the doctor can apply a specific designated therapy used to address just this disease.⁷⁶ The Empiricist

⁷³ *Subf.Emp.* 6, 56,20–57,12 Deichgräber; trans. WF: 30: 'It will then be good enough, if, for the purposes of clear communication or teaching and learning, one calls a symptom what, among things which are unnatural, is one without qualification (be it a colour, a growth, an inflammation, shortness of breath, a cold, a pain, or a cough), and if a syndrome of these is called an affection or an illness. For this is what all empiricists before us have called such a combination. But they did not call just any aggregate of symptoms this, but only when the symptoms arise in the body of the patient simultaneously and if they simultaneously grow, come to a halt, decline and dissolve.'

⁷⁴ *Med.Exp.* 22, 55,4 Walzer. The text is corrupt and left unvocalised in Walzer, 1944, where the translation tentatively uses Gibb's suggestion for reading, printed in a footnote with a question mark: '*wa yunaqqi al-julla wa al-tila* (Gibb)? I keep this provisionally now. The original sense of the passage must have to do with the phenomenon of carphology, a symptom of a delirious state in which patients pluck at non-existent hairs, pieces of straw, or other small objects on their clothes or bed-linen. Galen mentions this symptom (designated as carphology or crocydismus) several times in his work: *The Affected Places* (*Loc.Aff.*, VIII.1–452 K.; translated in Siegel, 1976) 4.2, VIII.227 K., and 5.4, VIII.330 K.; *Commentary on Hippocrates' Prorrhethics* (*Hipp.Prorrh.*, XVI.489–840 K., also edited in Diels, 1915) 1.1, XVI.565 K.; *Commentary on Hippocrates' Prognostic* (*Hipp.Prog.*, XVIII.B.1–317 K., also edited in Heeg, 1915) 1.23, XVIII.B.74 K.; *MM* 13.21, X.928 K.; *Commentary on Hippocrates' Epidemics I* (*Hipp.Epid. I*, XVIII.A.1–302 K.) 3.1, XVIII.A.216 K. For the symptoms of phrenitis in ancient medicine, see MacDonald, 2009.

⁷⁵ *Subf.Emp.* 6, 57,25–58,15 Deichgräber; trans. WF: 31: 'Those affections which arise and grow at the same time and which come to a halt and decline and disappear simultaneously they call "coincidentia", whereas those which only usually go together are called "constituents". Of the syndromes themselves some point to a diagnosis of the affection, and they are called "diagnostic"; others indicate what is going to happen in the future, and they are called "prognostic"; yet others are suggestive of a kind of treatment, and they are called "therapeutic". But all these syndromes we know on the basis of observation; we commend them to our memory and then make use of them on the basis of our recollection.'

⁷⁶ Cf. fr. 78 Deichgräber.

points out that his school methodology allows its practitioners to fine-tune the treatment to the specific condition: thus, the treatment of phrenitis *per se* will only require pouring liquid over the head, whereas bloodletting will be applied only if phrenitis is combined with a plethoric condition.⁷⁷

This persistence criterion is used by the Empiricist to distance himself from the relativism which could ensue from the ‘comprehensive’ bundle theory.

(1) If they say about the healthy man who undergoes any affection whatsoever, that he is many, then we must be immediately astonished by their opinion. (2) For if this is the case, then the judgments issued by the lawgivers as praises and marks of esteem deserved by the good people and those [issued] as penalty and chastisement [earned] by the offenders, are futile and in vain, (3) since it is [a] neither just nor fair if this one who is being honoured and rewarded for the good deed at this time is not the one who performed the good act due to which he had a claim to beneficence (*ihsân*), and is rewarded by a reward which he did not deserve and which is not his – and [b] it is neither just nor fair that this one is being punished and chastised while he is at this time not the one he was previously when he committed an offence and a bad deed. (T14: *Med.Exp.* 22, 55,20–56,8 Walzer; trans. WF: 87, modified)

In T14.1 the Empiricist speaker refers back to the Rationalist charge according to which the Empiricists postulate an infinite number of diseases. This charge would make sense if any affection whatsoever sufficed to constitute a disease, but the Empiricist emphasises that this is not his view, contrary to what is suggested by the Rationalist.⁷⁸

In T14.2–3 the Empiricist cites the paradoxes that would follow from such a flawed ontology as is attributed to him in the Rationalist objection. For both the ontology and its paradoxical consequences, the Empiricist seems to be referring to Epicharmus’ ‘Growing Argument’.⁷⁹ The parallel to our T14.2–3 is found in two testimonia that are near-contemporary to our dialogue.⁸⁰ Plutarch in *On the Delays of the Divine Vengeance* says:

⁷⁷ *Med.Exp.* 22, WF: 86–7.

⁷⁸ It is worth noting in parentheses that the Empiricist here draws no distinction between the affection-type and affection-token, although the discussion suggests that he is thinking of types here. Galen in his later work will criticise the Empiricist carelessness about this crucial ontological distinction. But for the purposes of this response the Empiricist considers himself to be well equipped.

⁷⁹ See Sedley, 1982, especially 255–6. Epicharmus’ work was widely read in the second century. For the argument, see Plut. *Comm.Not.* 1083a. For the fragment of Epicharmus, see DL 3.10–11.

⁸⁰ For the integration of the DL fragment with the testimonia, see recently Capra and Martinelli Tempesta, 2011: 149–57.

This seems the same as the words of Epicharmus, which produced the shoots of the growing argument cultivated by Sophists. For this man having taken a debt some time ago now owes nothing, for he has become different; and this one having been invited to dinner yesterday, today turns up uninvited, for he is now other. (T14a: Plut. *Ser.Num. Vind.* 559a)

The anonymous commentator on *Theaetetus* tells us:

And [Epicharmus] wrote this in a comedy where he presents the man from whom the pledge is being demanded back and who denies he is the same person, since some things have accrued and some departed, and when his creditor beat him and was charged, he in his turn also said that the one who did the beating was different from the one who was charged. (T14b: *Anon. in Pl. Tht.* 71,26–40)

Our Empiricist speaker builds on this paradox about the sameness in order to say that the position of his school is not open to the criticism deployed by the Rationalist. This helps him to make his point in a more striking way, by distancing himself from the paradoxical conclusions instead of providing any further proof that would show that he is entitled to this immunity to the Rationalist objection. This use of philosophical argument fits well with the urbane style of educated conversation which is meant to be full of fine literary quotations and allusions.⁸¹ And as we'll see, Galen, the young student assistant at his feet, will in due course be his nemesis for this lack of concern with proofs where they are needed.

In the next move we see the division between the changeable and unchangeable things used by the Empiricist to attack the Rationalists:

(1) I have, however, heard them say that something which is one by itself is said to be of two kinds: [a] one is what has an accident (*'araḍ*) and is perceived by sense-perception and [b] another is that which has in itself nothing at all of the increase of the thing itself and no subtraction from it. (2) And this second kind either does not exist, as most of them say, or, if it does exist, it is not necessary that it should be looked for in the bodies (*fa-laisa yanbaḡi an yuṭlaba fi l-abdân*). (3) And whether there is nothing of this second kind that would be one thing by itself or whether in the second kind there is something which is one thing by itself, (4) one of the two things is necessary: [a] either you do not establish at any point (*fi-waqtin min al-awqât*) that something is one thing by itself [b] or [viz. if you do so establish – I.K.] you say about it only what we say. (T15: *Med.Exp.* 23, 56,9–16 Walzer; trans. WF: 87, modified)

⁸¹ That our Empiricist is a very erudite man is clear from the quotations from the Greek authors that occur throughout the dialogue (Plato, Democritus, Diogenes the Cynic, Aristophanes), as well as literary and philosophical allusions.

The division between the changeable and the unchangeable along the lines of the Growing Argument is now being attributed to the Rationalists themselves. In T15.1 they reportedly draw a distinction between the two types of things which are considered unities: one of them (T15.1a) is a thing that has accidents, i.e. can undergo change, lose and acquire the accidents, and is perceived by senses. This is the type of unity that the Empiricists also accept and which our speaker has been defending with the examples of Socrates (T12) and phrenitis (T13) above.

What about the other kind of unity described under T15.1b? It is said to belong to the things that are always equal to themselves and allow of neither additions nor subtractions. The status of these things as intended here is not very clear: all the Empiricist tells us is that 'most of them' (i.e. Rationalists) say that these things do not exist, or if they exist, then 'it is not necessary that it should be looked for in the bodies' (T15.2).

Now, whatever the view the Rationalists take on the existence of the unchangeable entities, they must take a view on the perceptible and changeable ones. The Empiricist outlines two options that are available to the Rationalist: either at some point not to accept that some sensible thing is one by itself (T15.4a) or, if they accept that the sensible thing in question is one, they will do so on the same grounds as the Empiricists (T15.4b). These common grounds are provided by experience. Thus, Socrates-after-the-bath is not a unity, since it is transient and does not persist on its own, but Socrates is a unity and will be recognised as such even when he is after a bath. This result is equally valid for both the Empiricists, who do not wish to take a view on the unchangeable things, and the Rationalists, who may take different views on them.

The Empiricist next attacks the Rationalist claim to a different conceptual resource for establishing a unity of a sensible thing. This part of the argument is particularly important for the glimpse it provides of Empiricist ontology as it is presented by our speaker:

(1) The assertion of the Rationalists that by means of *logos* (*bi-l-qawli*)⁸² they can bring into unity things which are utterly opposed to each other gives one cause for greatest astonishment at the excellence of their

⁸² *Med. Exp.* 23, 57,4 Walzer: *al-qawl* here translates *logos*, as does also *qiyās* in 57,15 as well as in the name of the Rationalist sect, *aṣḥāb al-qiyāsi = logikoi*. We find other examples where Hunayn uses different Arabic words to translate the Greek term *logos*, depending on context: *The Best Doctor is also a Philosopher* (*Opt. Med.*, I, 53–63 K.; also edited in von Müller, 1891: 92–124 and with French translation Boudon-Millot, 2007: 284–92; English translation in Singer, 1997: 30–4) I.3, I.54 K. = 285,1 BM = I. 17 Bachmann, and 2.9, I.58 K. = 288,15 BM = I. 71 Bachmann (*qawl*) and 3.2, I.58 K. = 289,6 BM = I. 80 Bachmann (*qiyās*).

intelligence. (2) If I but knew whether they [a] have in mind things which we think are many and which are indeed not any unity – and they then transform them and start again (*fa-yuqabbilūnahā hum wa yarjī'ūnā*) and recreate in new form and change until they become something which they are not, or [b] whether these are things which are one in themselves, but which many people do not consider one! (3) But then do [the Rationalists] not rather divide them (*yumayyizūnahā*) and assert that they are other than the concept (*siwā al-mā'nā*)⁸³ that collects them so that by means of it many things become one thing? (4) Perhaps the Rationalist would answer: 'We make them such, although they are not a unity (*laisat bi-wāḥidīn*).'⁸³ If he says this, his words do not fall far short of absolute ignorance and lack of education in our view. (5) If he says: 'This is according to the second way', we would answer: 'I should very much like to know if you are empowered to see the one thing which in itself is one, although it exists as a multiplicity and we are unable to do so.' (6) Thereupon they say: 'Yes indeed, since you have no *logos* (*qiyāsūn*) by which to form an inference from the evident to the non-evident.' (7) And when they say this to us, we would answer: 'You, the followers of this *logos of yours* (*innakum antum aṣḥāba ḥādā l-qiyāsi*) have not even one single *logos* (*al-qiyās*) of this kind which is one and the same for all of you.' (T16: *Med.Exp.* 23, 57,3–16 Walzer; trans. WF: 88, modified)

The Empiricist submits to a dialectical scrutiny the Rationalist claim reported in T16.1 according to which the Rationalists bring the opposites into a unity by means of *logos*. The question he asks is very important philosophically: the Empiricist wants to know whether the Rationalists with the help of their *logos* can produce the object of study by uniting the bits which in reality do not form a unity (T16.2a), or whether they find the unity in reality and use *logos* to reveal what is already there to the many people who cannot see it (T16.2b). The dilemma relates to what is at stake between realism and anti-realism in the philosophy of science. In T16.3 our Empiricist asks rhetorically whether the Rationalists, rather than uniting things, as they profess to do, separate them and claim that things differ from the concept that makes them one thing. The Empiricist diagnoses the attitude 'so much the worse for the facts' and criticises it because in trying to establish the unity of things on the basis of unifying theoretical concepts it destroys the true unity of things, which as we know, for the Empiricist is discovered by well-tempered experience.

⁸³ *Med.Exp.* 23, 57,8 Walzer: *siwā al-mā'nā* probably translates *para tēn ennoian* (cf. Ḥubayš's translation of *The Capacities of the Soul Depend on the Mixtures of the Body* [QAM, IV.767–822 K.; also edited in von Müller 1891: 32–79, and Bazou, 2011; translated in Singer, 2013c] 2, IV.769 K. = 33,18 von Müller = 10,12 Biesterfeldt).

The Rationalist responses to the dilemma are dealt with briefly. If the Rationalist opts for the 'anti-realist' first horn (T16.2a), the Empiricist can only deplore his lack of education (this must be *apaideusia*). The second horn of the dilemma (T16.2b) is more promising philosophically: here the Rationalists would be inquiring about the things which are in themselves unities, but are not recognised as such by many people. The question that the Empiricist asks his Rationalist opponent who has hypothetically accepted this route (T16.5) is whether the Rationalist has a privileged access to these true unities, such that the Empiricist does not have. The Rationalist answers in the affirmative (T16.6) and explains that the privilege is provided by the *logos* which allows them to draw inferences from the evident to the non-evident, the instrument the Empiricist lacks. The Empiricist is quick to remind his opponent that there is no single *logos* – account – on which all the Rationalists would agree (T16.7); in fact, there is a lot of disagreement among them as to which rational explanation is the right one. Therefore the Rationalist would not be able to claim a privilege for just one *logos* either.

The Empiricist concludes this debate on a peaceful note: if only the Rationalists admit that they come to know things not by means of reasoning from the evident to the non-evident, but by means of a different kind of *logos*, epilogism, then the Empiricists and the Rationalists will come to an agreement. The discussion of epilogism occupies the rest of the treatise. Before moving on, it would be good to take stock of the lessons we – and Galen – have learned from this part of the Empiricist argument.

First, it is both instructive and refreshing to see that the Empiricist doctor in the second century is so interested in the questions of ontology and ready to discuss them at this level and with this degree of dialectical prowess. This is more than could be expected on the basis of the descriptions of the Empiricist school in the other sources, where the main focus is usually, and correctly, on its sophisticated epistemology. From this discussion we can see that ontology is also important, even if the discussion of it is triggered by the Rationalist polemic.

Second, and no less important, we can see here that our Empiricist is certainly no Pyrrhonian. His reply to the Rationalist criticism shows that he does not accept relativism: there is a sense in which Socrates is the same throughout the many changes he may undergo. There is also the sense in which a disease is the same throughout the many modifications it undergoes. This sameness is not merely postulated as a useful convention: there is a reality that corresponds to it, even if the Empiricist refrains from construing this reality in more specific causal terms. This point becomes

clear in the last discussion with the Rationalist, where the Empiricist does not consider the two horns of the dilemma, realist and anti-realist, as being on a par: he clearly rejects the anti-realist option as an absurdity and leans towards a realist understanding of the subject matter of medicine. This kind of approach would explain why Sextus Empiricus thought of Empiricism as dogmatic and preferred Methodism as a closer Pyrrhonist counterpart in medical philosophy.⁸⁴

Finally, there is a feature of the ontology developed by our Empiricist which probably irritates Galen, which has to do with its fundamental incompleteness. On the one hand, the Empiricist does not approve of relativism and subjectivism, and expects experience to be the source of knowledge about reality. On the other hand, the Empiricist resists any attempts to tell a fuller story about this reality in a way which would go beyond the limits set by the medical experience of particular clinical cases. Thus, we never get to know from this discussion what constitutes the unity of Socrates, what constitutes the unity of phrenitis, and how the former case helps us to understand the latter. The only answer offered in the text is that both kinds of unity can be established on the basis of experience. The Empiricist avoids any talk about natures, not to mention kinds, and Galen will come back on this.

2.5 Epilogism

The word *epilogismos* is introduced into philosophical vocabulary as a technical term by Epicurus.⁸⁵ It is associated with several distinct tasks of reasoning, and its precise scope and meaning have been a matter of discussion to which I won't be able to do justice here.⁸⁶ However, there are

⁸⁴ In *PH* 1.236, Sextus says that the Empiricists are not proper Sceptics because they are dogmatic about the inapprehensibility of some things, viz. non-evident things. This description might suggest that the Empiricists are Sceptics in every other respect and only fall short in attaching this status to the non-evident things. But our text shows that the nature of the Empiricist's debate with the Rationalist about ontology is very different from the Pyrrhonist's debate with the Dogmatic. The Empiricist is dogmatic not only about the inapprehensible things, but also about the ones that are apprehensible: he does not recommend deconstructing the concepts of Socrates or phrenitis with the help of the tropes, but seems to think that in each case it is possible to find suitable descriptions based on experience.

⁸⁵ Cf. Epicur. *Nat.* 28, fr. 8 col. V,8; fr. 13 col. VII,18; and fr. 13 cols. VIII,7–8 and 10–11 Sedley (*epilogismos*); fr. 13 col. VIII,13 Sedley (*epilogisis*); fr. 13 cols. VIII,17–18 and X,10 Sedley (*epilogizomai*); *Phld. Sign.* XVII,33, XXII,38, XXIII,5, XXIV,4–5, and fr. 4,3–5 De Lacy and De Lacy (*epilogismos*); VIII,35–36, XIII,32, XXVIII,15–16.26.37–38 De Lacy and De Lacy (*epilogizomai*). See Arrighetti, 1952; Sedley, 1973: 14–15 and commentary.

⁸⁶ Sedley, 1973; Asmis, 1984; Schofield, 1996; Tsouna, 2007; Giovacchini, 2012; summary by Giovacchini et al., 2010: 1452–54, most recently Armstrong and McOsker, 2020.

some Epicurean themes on which our Empiricist provides what seems to be an informed and considered comment.

In the Empiricist tradition, Menodotus is considered to be responsible for introducing *epilogismos* as a technical term, although the text on which this attribution is based is problematic and some scholars suggested this important novelty is to be attributed to Heraclides of Tarentum, a near-contemporary of Philodemus of Gadara.⁸⁷ The term ‘reasonable experience’, *rationalis experientia*, attested for Theodas of Laodicea in the Latin version of *Outline of Empiricism (Subf.Emp.)*,⁸⁸ has been rendered as *epilogistikê peira* by Deichgräber, who was followed by other scholars.⁸⁹ According to Galen, Theodas used the expression *rationalis experientia* to explain the ‘transition to the similar’, the third, and most controversial, leg of the early Empiricist tripod, which could be considered as the Empiricist counterpart of the Rationalist analogy.⁹⁰

This is how our Empiricist describes the Rationalist use of *logos*:

(1) You say first of all, it is necessary for the natural condition to be discovered, and he who does not know this will not succeed in recognising the unnatural state of things. (2) Then you inquire as to the manner in which man took his origin by the uniting of the elements which you claim to have discovered and found by first using the *logos* and investigation of the elements to discover this. (3) Then you examine the functions and say this is of use in finding out and learning about the affected parts and the diseased organs of the body more easily and readily. (4) For you assert that if one knows about the natural functions of a certain organ, it is easy, should that function be deranged, to understand something of what is necessary for the diseased organ. (5) And should he know this, and know the leading cause (*as-sababa l-mu’addiya*),⁹¹ then there is no further

⁸⁷ The text is from *Subf.Emp.* 12, 87,17–88,4 Deichgräber, WF: 44, discussed in detail in Perilli, 2004: 140–53. Perilli follows Marelli’s suggestion (Marelli, 1981: 675) to take Heraclides as the reformer who introduced epilogism into the Empiricist system. This is not implausible. In this chapter, however, I deliberately concentrate on the content of *Med.Exp.* and avoid any detailed parallels with known Empiricist sources. For a more recent comparison of Epicureanism and Empiricist epistemology, see Giovacchini, 2012.

⁸⁸ See above, 32 n. 2.

⁸⁹ *Subf.Emp.* 4, 50,3 Deichgräber, WF: 27; Frede, 1988: 88; Matthen, 1988: 113.

⁹⁰ *Melius autem fecit Theudas rationabilem experientiam dicens esse uiam eam quae per similitudinem (Subf.Emp.* 4, 50,2–4 Deichgräber, WF: 27).

⁹¹ *as-sababa l-mu’addiya (Med.Exp.* 24, 59,9 Walzer, WF: 89) probably translates to *proëgoumenon aition*. In the Arabic version of *Containing Causes (CC)*, edited with English translation in Lyons, 1969: 52–73; Latin version edited in Kollesch, Nickel, and Strohmaier, 1969: 133–41), *proëgoumenon* is rendered by *sābiqun* (54,11.14.19.25 Lyons). The difference may be due to the difference of translator (in our case Ḥubayš, of *CC*, either Ḥunayn himself or Ayyub b. al-Abraš [Lyons, 1969: 10]), or to a different, less technically laden context in our passage. In the *CC*, the term *proëgoumenon* occurs in Athenaeus’ tripartite division of causes: containing (*sunektika*, Ar. *al-*

difficulty; on the contrary, it is easy and simple to find the method of healing which will eliminate this cause. (6) I, for my part, think that if you proceed in this fashion, you are fittingly plunged into doubts and contradictions by inquiry into the elements, and also that you must inevitably hold different opinions as to the natural functions, upon which there is no unanimity and agreement. (T17: *Med. Exp.* 24, 58, 18–59, 16 Walzer; trans. WF: 89–90, slightly modified)

The Rationalists start by establishing the natural state of a human organism, taking this to be a necessary condition for understanding the disease (T17.1). The next two steps of the Rationalist programme mentioned by the Empiricist include the study of the elements (T17.2) and the study of the functions of bodily organs (T17.3). Medical expertise requires first mastering this knowledge of the nature of a prospective patient, a living human being (T17.4). The discovery of a remedy involves the knowledge of the *leading* cause of the disease (T17.5). We don't have any further details here, but our Empiricist may be referring to the Rationalist explanations where the external antecedent causes produce a particular kind of affection inside a body which under certain conditions is conducive to a disease. This affection is explained in terms of the nature of the body and the treatment of the disease is construed as the removal of all the causes that bring it about, in accordance with a given Rationalist account. This causal pattern supports the deductive structure of medical reasoning: the knowledge of causes allows the doctor to predict the effects and thus decide on the best method of healing. But the Empiricist points out that because the Rationalists can never agree about natures, they are equally unable to agree about diseases (T17.6). This implies that they cannot profit from their deductive pattern.⁹²

asbāb al-māsikah), preceding (*proëgoumena*, Ar. *al-asbāb al-sābiqah*), and antecedent (*prokatartika*, Ar. *al-asbāb al-bādiyah*), this latter term is used by Ḥubayš in our text in the same way, see n. 20 above (CC 54, 10–12 Lyons). In our T17, there is no context that would suggest such a classification. As Hankinson, 1987a, 89–92, shows, the term *proëgoumenon* is sometimes used by the ancient medical authors to describe both the antecedent and the preceding causes, without distinguishing the types of the precedence. This seems to be the meaning required by the argument of our Empiricist.

Walzer translated *mu'addin* as 'salient cause', the same translation he used for the *bādī*, 'antecedent' (*causa evidens* translates *aition prokatartikon* in Kühn's edition of pseudo-Galenic *Medical Definitions* [*Def. Med.*, XIX.346–462 K.] 154–5, XIX.392 K.; 425, XIX.447 K.; and 464, XIX.459 K.). Perilli included this passage as a testimony for the Empiricist use of causes, perhaps taking 'salient' to be an Empiricist term (T21.5–6 = C14 Perilli, see also Perilli, 2004: 139). But here this term is in fact a part of the Empiricist report of the Rationalist methodology.

⁹² See *Med. Exp.* 26, WF: 94–8, on Erasistratus and Asclepiades; cf. *Med. Exp.* 13–14, WF: 69–71.

Epilogism is introduced by the Empiricist as one of the two kinds of reasoning, *logos*, *qiyās*. Another is analogism, cultivated by the Rationalists, but rejected by the Empiricists.⁹³

(1) Respecting the *logos* (*qiyās*) known as *epilogism*, it is as we say directed towards evident things, and is the *logos* that is universal, common and agreed upon by all people, and about which there is no such thing as disagreement and diversity of opinion. (2) And it is entitled to this since it is tested and learned in the sense that evident things attest to its soundness (*tašhadu ‘alā ših̄atibi*), so that never at any time can it mix or confuse or combine two different things. (3) Concerning the *logos*, however, which is called *analogism*, because the non-evident things cannot become evident to sense-perception, insofar as [this *logos*] is sound and reliable it is not in the least attested to and confirmed by these [non-evident things], and insofar as it is weak and false cannot be shown up and destroyed by them. (4) For this reason therefore, when differences of opinion arise with regard to an abscess in the bladder, even before it becomes visible, a decision can be reached between them. (5) For if we see an abscess appear after lancing with a lancet, then its appearance puts to shame him who says there is no abscess in the bladder, and proves his view to be wrong, and furnishes evidence that the opinion of the other people is correct; but if on lancing no abscess is to be seen, then the reverse is the case. (6) In the same way the stones in the bladder are tested empirically. (7) Whether, however, the inflamed tumour (*al-waramu l-h̄arru*) arising from the blood results from a hot substance which flows into the organ or from blood falling from the arteries and veins, or from things which cause violent heat and swelling, or from the blockage by the atoms – these are parts which are not divided further – of the pores which are amongst them; (8) and whether the disease known as *phrenitis* arises from lesions of the brain itself, or from lesions of the membranes surrounding it, or from the integument; (9) all these are instances of things which cannot possibly be proved true or wrong (*laisa yumkinu an tuḥaqqāqa wa lā an tufassaka*) by means of any visible thing, (T18: *Med. Exp.* 24, 59,16–60,17 Walzer; trans. WF: 90, slightly modified)

Whereas previously our Empiricist argued for the inadequacy of the Rationalist methods in establishing the *principles* of their various theories, here we see him criticising the Rationalist methods of *diagnosis* of different illnesses and pathologies. He begins by praising the epilogism: it is the kind of reasoning that is not special to any particular sect, but *de facto* used by all (T18.1).

⁹³ For *analogismos*, see Epicur. *Nat.* 28, fr. 13 col. III(*infra*),7–9 Sedley; fr. 11 col. I,7 Sedley (cf. fr. 13 col. IV[*supra*],14 Sedley); Phld. *Sign.* IX,10, XXVI,23.39, XXXVII,29 De Lacy and De Lacy; see Sedley, 1973: 14–15.

In T18.2, explaining the reliability of epilogism, the Empiricist says that 'evident things attest to its soundness': *tashadu* must translate *epimarturei*. *Epimarturêsis*, 'witnessing', or 'confirmation', is the term of Epicurus' *Canon*, which refers to one of the two methods of establishing the truth of an opinion or impression. The other method is *ouk antimarturêsis*, 'absence of counter-witnessing', or 'absence of disconfirmation'.⁹⁴ We have a well-known description of it in Sextus Empiricus:

Of opinions, then, according to Epicurus, some are true, others false. (2) The true ones are confirmed and not disconfirmed with regard to what is clear (*pros tês enargeias*). Confirmation (*epimarturêsis*) is apprehension in clarity (*katalêpsis di' enargeias*) that the object of opinion is such as the opinion had it to be – as when, for example, on the approach of Plato from afar I guess and form an opinion that this is Plato, and when he comes near there is a further confirmation that this is Plato when the distance is shortened, and it is confirmed in clarity itself. (T18.2a: M 7.212)

... Likewise the non-confirmation (*ouk epimarturêsis*) is opposed to confirmation. For it is a clear impression (*hupoptôsis*) that the object of opinion is not such as the opinion had it. Thus, for instance, when someone is approaching from afar and we guess, because of the distance, that it is Plato, but when the distance is shortened we recognise with clarity that it is not Plato. (T18.2b: M 7.215)

The procedures of establishing whether there is an abscess and whether there are stones in the bladder described in T18.4–6 provide the tests of epilogistic reasoning in accordance with this pattern of verification/falsification. On the basis of medical evidence, the doctor makes a hypothesis (about a stone in the bladder) which is then confirmed or disconfirmed by experience.

Epicurus' *Canon* distinguished two classes of non-evident presentations (*phantasiai*): those standing for things that are not present, but 'are yet to appear', or 'awaiting confirmation' (*ta prosmena* or *prosmenomena*),⁹⁵ and those that are non-evident *tantum* (*adêla*).⁹⁶ The phenomena our Empiricist considers as legitimate objects of medical reasoning belong to the former class; these are the proper objects of epilogism. Analogism is described as dealing with the second class of presentations. In T18.3 our Empiricist speaks of 'non-evident things' (*al-ašya' al-kafiyah*, *Med.Exp.* 2.4, 60,3 Walzer, WF: 90).

⁹⁴ Epicur. *Ep.Hdt.* 50–52, cf. Asmis, 1999: 283–5.

⁹⁵ For the reading προσμενόμενον, see Long and Sedley, 1987, vol. 2: 91 (17B).

⁹⁶ Epicur. *Ep.Hdt.* 38.5–10, cf. DL 10.34; for discussion, see Asmis, 1984: 141–66.

Epicurean epistemology has special verification and falsification procedures which apply at the level of the non-evident.⁹⁷ ‘Disconfirmation’, *antimarturêsis*, is defined in Sextus as a ‘joint refutation of the apparent fact with the supposed non-evident fact, as when, for instance, the Stoic says that void does not exist, asserting something non-evident, and that which is evident, i.e. movement, has to be eliminated jointly with it supposed in this way’.⁹⁸ In other words, the claim that void does not exist will be disproved by the Epicurean by arguing that if void does not exist, then movement does not exist either; but movement does exist, hence void exists, and the original claim is disconfirmed. The absence of falsification, in turn, establishes the truth of a presentation whose object is non-evident.⁹⁹

Our Empiricist predictably ignores this second class of tests developed by Epicurus specially for the inferences from the evident to the non-evident, and instead applies the first class of tests to analogism (in T18.3), with predictably disappointing results. For the sound analogism (as our Empiricist understands it) cannot get any confirmation from observation, while the unsound one cannot be exposed as such by the absence of confirmation. In T18.7–9 our Empiricist gives us his examples of the ‘multiple explanations’ of tumour and phrenitis offered by different Rationalist doctors. None of these multiple explanations can be shown true or false by means of observation. The conclusion, for our Empiricist, is that the kind of reasoning they represent, analogism, inference to the non-evident, should be rejected by physicians.

Thus, our Empiricist makes a highly selective use of the terminology, concepts, and methods developed by the Epicureans. He adopts the term *epilogismos*, defining it by means of verification procedure which corresponds to the Epicurean *epimarturêsis/ouk epimarturêsis* as reasoning within the realm of the evident (including what can in principle become evident and excluding that which is non-evident by nature). We don’t find this definition of epilogism and analogism in the Epicurean sources. Further, whereas for the Epicureans epilogism always accompanies reasoning based on analogy, for our Empiricist it is the only legitimate kind of reasoning. Analogism is simply ruled out as unsound.

Had this epistemological account of epilogism been the only parallel with Epicureanism, it would have been perhaps interesting, but not striking. But there is a further development of the notion of epilogism in

⁹⁷ Sextus Empiricus, *M* 7.214.

⁹⁸ For discussion, see Barnes, 1988.

⁹⁹ Sextus Empiricus, *M* 7.213, see Asmis, 1984: 323–6; Allen, 2001: 200; Giovacchini 2012: 127–45.

our text, which makes our Empiricist's affinity with Epicureanism look less like a weak generic parallel and more like a programmatic critical appropriation, where all the distortions of the source are deliberate. This development has to do with the Epicurean use of *epilogismos*, which David Sedley has identified as 'the bold principle that the truth of any opinion must stand or fall on the advantageousness or otherwise of the behaviour to which it can be seen to lead'.¹⁰⁰ Sedley points out that 'in several ethical texts, Epicurus employs variants on the phrase $\delta\ \tau\omicron\upsilon\ \tau\acute{\epsilon}\lambda\omicron\upsilon\varsigma\ \acute{\epsilon}\pi\iota\lambda\omicron\gamma\iota\sigma\mu\acute{o}\varsigma$, which he seems to regard as the correct basis for all moral activity'.¹⁰¹ Epilogism has several important tasks on the axiological plane. They include the appraisal of, and the reasoning of one's way to, the human end in the broadest sense, as in the *Letter to Menoecus*;¹⁰² recognition of the good and the bad in various specific and individual situations, again involving empirical reasoning,¹⁰³ appraisal of one's own ends and fortunes, and of what is permissible for a good man.¹⁰⁴ It can even include practical guidance about how to avoid the pitfalls of sophisms by the appraisal of the pragmatic aspects of conversation which will allow one to see the range of meanings involved before simply opting for a reply.¹⁰⁵

This axiological function of epilogism seems to be adopted, again with changes, by the Empiricists. The difference of this application of epilogism as a *sui generis* kind of reasoning from the one we have in the previous, 'diagnostic', section of the argument, is that in the latter case the task of such an application is as accurate as possible a description of a disease, whereas in the case of therapy the doctor must answer the question about the best course of action. According to our Empiricist, the source of this normativity for the Rationalists is the study of 'natures of things', based on their different, and discordant, theoretical assumptions. The Empiricists, on the contrary, base their therapeutical prescriptions on 'what should be done on the basis of the good or evil which is inherent in the thing and accompanies it':

¹⁰⁰ Sedley, 1973: 28. This paragraph draws heavily on the texts and discussions in Diano, 1946; Arrighetti, 1952; De Lacy, 1958; Sedley, 1973; Schofield, 1996; Tsouna, 2007: 53–9, 230–7; Giovacchini, 2012: 146–61. See also Armstrong and McOsler, 2020, especially 47–58.

¹⁰¹ Sedley, 1973: 28.

¹⁰² Epicur. *Ep.Men.* 133: who could be better than the one who has reasoned about the natural end (*to tēs phuseōs epilogismenou telos*)?

¹⁰³ For specific ends: KD 22.

¹⁰⁴ Phld. *Ir.* 44,38, 46,16–40, and 47,16–39 Armstrong and McOsler.

¹⁰⁵ See Epicur. *Nat.* 28, fr. 13 cols. VII–XIII Sedley, with Sedley, 1973: 66–8.

(1) Similarly, one of the physicians may say: ‘Those suffering from the disease known as loss of memory (*bi-l-nisyân*) must not be spoken to, since their disease is due to inflammation of the cerebral membrane, and motion is not good for any inflamed organ.’ (2) This is a statement which belongs to the method of reasoning (*madhab al-qawli wa-l-qiyâsi*) called *analogismos* since it deals with non-evident things, and is a view which is asserted only by those who follow this method, and concerning which men are not all unanimous, nor think the same about it. (3) Then another comes and says: ‘I have often observed that each time when we sat by the bedside of a person sick of this disease which had him completely in its power and controlled him, if we did not rouse him and keep him awake, he was worse.’ (4) This is a statement which belongs to the method of reasoning called *epilogismos*. On the whole the method of reasoning called *epilogismos* prescribes the doing of what should be done on the basis of the good or evil which is inherent in the thing and accompanies it, whereas the conclusion known as *analogismos* prescribes action on the basis of the natures of things. (T19: *Med.Exp.* 25, 63,8–18 Walzer; trans. WF: 92–3, slightly modified)

The illustration of the Rationalist approach is given in T19.1: the therapeutical advice not to speak to the patients suffering from memory loss is based on a particular physiological theory of this illness. This advice is derived by analogism because it is established on the basis of the presuppositions about the invisible which are peculiar to the followers of this theory and are not shared by everyone (T19.2). The presuppositions are spelled out in T19.1: ‘their disease is due to inflammation of the cerebral membrane, and motion is not good for any inflamed organ’.

‘Another’ doctor who comes in at T19.3 is either an Empiricist or someone who in this particular case is acting on the basis of the Empiricist principles. Here our attention is drawn to the effect of the proposed therapy on the patient’s well-being rather than to any presuppositions concerning the causes of his condition grounded in the nature of the patient and disease: in the past it was better for the patient’s state to be kept awake in this kind of disease. Since the appeal is made in T19.3 to the past experience of the doctor, we already know that we are dealing with *epilogism* here. And what makes it a case of *epilogism* is not the mere fact of the past experience, but that it relates to a concatenation of evident facts: the patient’s being kept awake, and his getting better (perhaps contrasted with outcomes in cases where they were allowed to sleep).

But T19.4 adds something new to our definition of *epilogism*, which may have been understood previously, but never made explicit: the *epilogistic* reasoning is based on the attributes of the good and the bad that belong to a thing thus recommended or prohibited and which follow upon

it, in terms of the consequences for the state of the patient. The Rationalist doctor who is consistent in his use of analogism is supposed to learn what is good and what is bad for the patient from the study of the natures of things which involves presuppositions about invisible entities (such as Asclepiades' corpuscles and pores, Erasistratus' *triplokiai*, or even some physiological theories which cannot be directly verified by empirical testing, e.g. the theory that the loss of memory is caused by the inflammation of the cerebral membrane). The Empiricist observes the course of illness and healing and memorises good and bad outcomes and what processes lead to them. On the basis of these observations, he forms his medical experience with which to work on future cases.

The Empiricist doctors seem to have adopted some of this methodology and adjusted it to the tasks of their art, leaving aside everything that has no direct relation to the art of medicine. They used Epicurean empiricist epistemology, making drastic simplifications, possibly polemical, to carve out the version of empiricism needed to satisfy the methodological requirements of the Empiricist school. In doing so, perhaps, they also shaped these methodological requirements. Thus, the Empiricist approach to reasoning demarcates its scope so as not to step outside the evident phenomena. This is not to suggest any sort of subjectivism or perspectivalism: consistent organised experience as a collective professional activity will ensure that any aberrations will be temporary and corrigible. The rejection of reasoning based on hypotheses does not mean the rejection of principles. Empiricist reasoning relies on the teleological principle of the good in its old medical version, where the good means health and life and the bad means illness and death. One does not need to be a doctor to both understand and accept such principles of the good and the bad – in this our Empiricist agrees with the Hippocratic *On Ancient Medicine*.¹⁰⁶

2.6 Concluding Remarks: Galen's Lessons from the Empiricist Doctor

The goal of this chapter has been to introduce the argument of the treatise *On Medical Experience*, an important source for Galen's epistemology. Its more detailed contextualisation in Galen's work is the task of further

¹⁰⁶ See Hipp. *VM* 7.1, on the difference between the reasoning of a doctor and a layman who 'originally discovered and prepared for all human beings the nourishment we make use of today from that savage and brutish regimen' as the difference in 'that it has more aspects, is more complex, and requires more diligent effort'. Cf. *ibid.* 13.1, on those who 'pursue their researches in the art according to a new method, of a hypothesis' (trans. Schiefky, 2005: 83 and 89).

research. Here I would like to signal several key points that emerge from our survey as Galen's lessons from Empiricism.

The first has to do with Galen's use of the Empiricist legacy in his medical practice and writings. We cannot tell from our treatise what stance Galen took in the 'soritic' controversy, but we know from his other writings that although Galen is a Rationalist, he distances himself from the kind of Rationalists he calls 'part-time Dogmatists' who are not consistent in their principles and speaks much more warmly about the Empiricists on that same count of consistency:

(1) It is very easy for anyone, even someone only lightly versed in the demonstrative methods, to perceive that the arguments of all of these part-time Dogmatists are inconsistent. (2) For whenever the stomach is inflamed and digestion suffers as a result, they think it right to investigate the cause of the inflammation and to derive remedies therefrom, eschewing the Empirical method. (3) But whenever the digestive weakness occurs simply as a result of a poor blending, without inflammation or any other affection of that sort, then they themselves resort to Empiricist in order to discover cures. (4) Clearly then their practices are inconsistent, while those of the Empiricism are both consistent and at the same time demonstrate and conclude what they want from premisses which you yourselves agree to. (T21: *MM* 2.5, X.108 K.; trans. Hankinson, 1991a: 54–5)

Galen's criticism of the Rationalists for inconsistency here is very close to a similar criticism by our Empiricist speaker, who also points out that the Rationalists do have to resort to the Empiricist principles and to the Empiricist therapies.¹⁰⁷ Yet Galen's point here is very different from that of the Empiricist: he is outlining the two extreme positions in the debate concerning the principles of the art of medicine, neither of which he is ultimately going to endorse. The position of the Rationalists who are chastised for their inconsistency, for their 'part-time' commitment to their principles, is here described as not substantive enough, because they do not have a good physiological theory to explain the weakness of digestion which occurs 'as a result of a poor blending' (T21.3), and resort instead to the Empiricist remedies. This does not mean that Galen recommends Empiricism as a sound alternative, or any sort of complement, to poor, 'part-time' Rationalism. His idea is rather that the good, full-time Rationalism must have a powerful physiology based on a comprehensive theory of blending, which will be able to account for any pathology

¹⁰⁷ Especially in *Med. Exp.* 14, WF: 71; see also 48 above.

discovered by experience. Such a physiology is only possible on the basis of a sound philosophy of nature, and here Empiricism is of limited help.

The Empiricists are praised for the consistency of their commitment: they are certainly not part-time, and their diligence helps to maintain the scope of the medical art as comprehensive as possible, for they assemble, keep, and transmit all the helpful remedies and all the useful medical lore without divisive theoretical biases. Although none of this changes Galen's thesis that no therapeutic method can be built just on medical experience,¹⁰⁸ he still thinks that medical experience is indispensable in the proper practice of the art. Even if not as a part of therapy based on indication, experience and empirical reasoning can be of great help at the first stage of diagnostic procedure.¹⁰⁹

Galen adopts the Empiricist division of symptoms into four classes depending on the frequency of occurrence: the symptoms that are necessary (*ex anankês*), those that are present for the most part (*pleistakis, hôs epi polu*), those that come about half of the time and are ambiguous signs (*amphidoxôs*), and the ones that are rare (*spania*). He does not treat these classes as Empiricist theorems, but still takes this to be an important classification, which he includes in his late definitive synopsis of the art written for the prospective doctors and also makes a frequent use of it discussing various questions of diagnosis and treatment in his own writings.¹¹⁰

Still, with all the credit that can be given to Empiricism, when it comes to the question of its credibility as an overall approach in medical philosophy, Galen does not hesitate to point out its limitations. This is clear from his criticism of Empiricist ontology. This is the second point on my list of Galen's lessons. In *MM* 2.7, in his imaginary discussion with an Empiricist about the distinction between the numerical and specific unity, Galen is very likely alluding to the argument from *Med.Exp.* As we have seen, the Empiricist argued against the Rationalist 'infinity' objection by

¹⁰⁸ *MM* 2.7, X.127 K.; trans. Hankinson, 1991a: 64: '... Let us once again recall something that we have already spoken of frequently: namely that the entire therapeutic method is independent of experience ...'

¹⁰⁹ *Hipp.Prog.* 1.6, XVIII B.26 K. = 211,12–17 Heeg. Galen is adopting the Empiricist use of the concepts of *analogism* and *epilogism* here.

¹¹⁰ See *The Composition of the Art of Medicine (CAM)*, I.224–304 K.; also edited with Italian translation in Fortuna, 1997) 14.5, I.273 K. = 98,15–18 Fortuna; *Hipp.Prorrh.* 1.26, XVI.563 K. = 39,13–14 Diels, 2.58, XVI.694 K. = 100,31–34 Diels, 3.11, XVI.738 K. = 122,15–16 Diels, 3.14, XVI.744 K. = 125,17–18 Diels, 3.20, XVI.756 K. = 131,2 Diels; *Commentary on Hippocrates' Regimen in Acute Diseases* (*HVA*, XV.418–919 K.; also edited in Helmreich, 1914) 4.63, XV.842 K. = 326,20 H.; *Loc.Aff.* 5.8, VIII.366 K.; *MM* 10.2, X.667 K.

defending the types of unity which can be captured by the Empiricist 'persistence' criterion. He cited the examples of Socrates who persists through accidental changes and of a disease called phrenitis, which is seen as a persistent syndrome.

In *MM*, Galen revisits these issues. In the second book, he claims that the starting-point for the search for a correct therapy for every disease is the knowledge of the nature of the disease and makes a brief, but important digression to preach to the Empiricists that they should make explicit use of the ontological distinctions of which they, as everyone, are already making implicit use in their everyday reasoning. Galen criticises the Empiricists for their failure to distinguish between unity in form (or species) and unity in number. His tone in the whole of the digression is very harsh and far from complimentary (a sea change from several pages above):

(1) It is sufficient for me simply to show that those who do not agree that it is one thing to say that something is one in species and quite another to say that it is one in number, are even more stupid than donkeys.¹¹¹ (2) More stupid still are those who say that phrenitic and Empiricist are unitary, but who refuse to agree that man is unitary, or (3) who do not understand that man is one in species but not in number; (4) nor that Socrates is one in both form and number, but that phrenitic is one in form, but not one in number. (5) For it isn't possible that Dion, Socrates, Theon, and Coriscus, supposing they all suffer from phrenitis at the same time, could all four of them be one in number; rather they share a single species, but are not one in number. (T22: *MM* 2.7, X.136 K.; trans. Hankinson, 1991a: 68, slightly modified)

The distinction between the two types of unity is Aristotelian, and Galen refers to Aristotle and Theophrastus when explaining it (*MM* 2.7, X.137 K.).

We know that our Empiricist doctor has failed to draw it. His persistence criterion of unity has no further ontological constraints or categorial framework. Galen points out that this failure generates a number of errors and confusions about unity. The position which treats 'phrenitic' and 'Empiricist' as unitary but denies unity to 'man' (T22.2) may result from T22.3, failure to understand that although there are many different men,

¹¹¹ Apparently, comparison with irrational animals is a special topos of anti-Empiricist rhetoric of insult. Celsus tells us (from an Empiricist source): *neque enim se dicere medicum consilio non egere et irracionale animal hanc artem posse praestare; sed has latentium rerum coniecturas ad rem non pertinere*, etc. (Cels. *prooem.* 38 = fr. 14, 93,20–22 Deichgräber). A more common insult would involve a comparison with plants.

and no one is 'one' with another numerically, there still is the unity of species which characterises all these numerically different individuals. Failure to distinguish between the types of unity that characterise Socrates, an individual substance, on the one hand, and phrenitis, a disease which is a universal, in the sense of being shareable, on the other (T22.4–5), is certainly present in the discussion of the unity by our Empiricist in *Med. Exp.*

Galen's discussion may seem to be concentrated on the niceties of philosophical usage, but in fact the point Galen makes has to do with the whole programme of medical philosophy. Recognising the distinction between numerical and specific unity must lead Galen's Empiricist interlocutor to the recognition of the reality of both particulars and universals. Galen presses for the Empiricist to accept the concepts of genus and species:

(1) Then let us further ask them whether phrenitic Menodotus and phrenitic Serapion are the same or different. If they answer that both phrenitics are one and the same insofar as they are phrenitic, we will ask them once again, whether they are not both one insofar they are both ill. (2) If they deny that they are, we will not allow that both of them are one insofar as they are phrenitics. (3) Whereas if they agree that they are, we will ask them what this thing which has one form is, to which all men assign the name 'illness'. (...) (4) But, he says, there is no kind (*eidos*) 'animal' or 'illness' that would be as well-defined as [the kinds] 'man' and 'phrenitis'. (5) What are you saying, you scoundrel? Do the words 'animal' and 'illness' seem to you to signify nothing, but have a sense similar to 'blituri' and 'scindapusus'?¹¹² (...) (6) Or is it the case that they signify, and that one thing is signified by them? (7) If there is no object referred to by the words 'animal' and 'disease', then it will not be true to say that man is animal, or that phrenitis is an illness. (8) If there is and what you say is true, that this one who is approaching is an animal, while this one who is lying sick with phrenitis, as it might be, is ill, then there is at any rate something in both of them to which you apply each of the names. (T23; *MM* 2.7, X.143–5 K.; trans. Hankinson, 1991a: 72, modified)

Galen begins by asking his imaginary Empiricist interlocutors to accept the distinction between the specific and numerical unity for the concept of 'phrenitic'. His main goal is to force them to accept the genera (T23.3). The imaginary Empiricist finds it difficult to see the kind that would correspond to the concepts 'man' and 'illness', probably because his criterion of unity, i.e. persistent concursus of observable properties, which

¹¹² For these standard examples of meaningless words, see Hankinson, 1991a, 220–1.

we have seen at work in *Med.Exp.*, presupposes nominalism about the genera, making them superfluous. Galen's strategy in this argument is to start with the point which he expects his interlocutors to concede: is there a clear meaning to the commonly used words 'animal', 'illness'? Is the common way of speaking of a human being as an animal and phrenitis as a disease acceptable to the Empiricists? As long as they agree, they have accepted the new criterion of unity, different from the 'persistence through change', and perhaps more important for Galen's overall criticism, they are forced to recognise universal natures, such as disease, and ultimately give up on the Empiricist project of medical philosophy based on experience alone.

The Empiricist account of epilogism as empirical reasoning about the end may have had an appeal to Galen the teleologist. Galen thought of medicine as nature's handmaiden,¹¹³ and this role does presuppose thinking about ends and means: something the Empiricists also cared about, even if only at a very deliberately circumscribed level of experience and observable phenomena. The substantive correction Galen makes with regard to the 'local' teleological outlook projected by the Empiricist epistemology of the epilogism is that in order to be successful this epistemology needs to rely on a good system of 'global' natural teleology, of the kind he develops in his physiological writings.¹¹⁴

¹¹³ *The Elements According to Hippocrates (Hipp.Elem., I.413–508 K.; also edited with English translation in De Lacy, 1996) 5.5–6, I.449 K. = 92,26–94,2 DeL.*

¹¹⁴ Early drafts of this chapter were presented at the conference on Galen's Epistemology in Prague and at the Ancient Philosophy Seminar of the Institute of Philosophy of the Russian Academy of Sciences in Moscow. I am grateful to the participants of both events for discussion and feedback. I am very grateful to Matyáš Havrda and Jim Hankinson for their painstaking reading of the final draft which helped resolve many unclaritys and saved me from a number of errors. I have benefitted from Fedor Benevich's comments on the Arabic and from Stephen Menn's and Malcolm Schofield's feedback on the final draft. Any errors that remain are my responsibility, of course.