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**Evidentiary Criteria in Galen: three competing accounts of medical
epistemology in the second century CE**

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Report

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Dedication

para mi abuelo y
para mis mujeres: Aida, Alicia, Rosalyn, Isabel, y Penelope

Caminante, son tus huellas
el camino, y nada más.

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Abstract

Evidentiary Criteria in Galen: three competing accounts of medical epistemology in the second century CE

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This report examines the sectarian backdrop for Galen of Pergamum's medical epistemology. It considers the justificatory role that experience (*empeiria*) and theoretical accounts (*logoi*) play in Empiricist and Dogmatist epistemology in an attempt to track how Galen incorporates experience into theoretical accounts as a means by which to undergird them. Finally, it briefly considers the exiguous evidence for Methodism, Galen's main medical rivals in the Roman world and claims that Galen forges a middle path between these sects.

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Introduction

This report will consider Galen's epistemological views with respect to medical knowledge. That is, it asks what constitutes medical knowledge for Galen, in particular what criteria he considered to be justificatory for epistemic medical claims. To that end, I will begin by considering the three schools of medicine whose epistemic claims Galen discusses at greatest length. Galen's criticisms of these three schools, the Dogmatists or Rationalists, the Empiricists, and the Methodists show a set of concerns, against which Galen's own epistemological views take shape. Second, I will outline Galen's overall arguments for the foundations of knowledge claims. Finally, I will lay out how Galen's commitment to empirical data, especially anatomical data, differed from contemporaneous views on evidentiary criteria for medical knowledge in an effort to show how Galen's approach to the question of what constituted justification of medical beliefs formed a substantive sea-change in the use of empirical evidence for medical knowledge.

GREEK MEDICINE IN THE CLASSICAL PERIOD

Through the Classical period, it is difficult to separate Greek medicine from Greek philosophy. Traditionally, the emergence of Greek philosophy is tracked, as its main criterion of differentiation from other intellectual activity, by its expression of a certain causal picture that attempts to explain the natural world. Greek philosophy, on this account, begins with the disavowal of divine or mythic causal explanations and a

concomittant growth of interest in the investigation of natural or sub-lunar phenomena employing rational and empirical explanations.¹ It is for this reason (which of course does not exclude others) that the so-called Pre-Socratic philosophers are said both to give rise to and to occupy a distinct branch on the genealogical tree of Greek intellectual history.² Greek medicine follows similar suit; consequently, ancient Greek medicine is usually said, certainly too neatly,³ to begin with Hippocrates and the Hippocratic corpus in the 5th century BCE.⁴

This similarity between rationality as the main taxonomical criterion both for ancient Greek philosophy and ancient Greek medicine is not accidental, in part because philosophy and medicine were overlapping fields of study in the ancient Greek world.⁵ One prominent theme among the more philosophical writers of the Hippocratic corpus, which is similar to the tendency for theorizing about the composition of the natural world that Aristotle claims underlies philosophical theories from the 6th and 5th centuries, is an interest in arriving at rational theories of how human beings are constituted (e.g., *De Vetere Medicina*, *De Natura Hominis*, *De Diaeta in Morbis Acutis*, *De Flatibus*, etc.). As

¹ See, for example, Kirk, Raven, and Schofield (1983: 7-8); Barnes (1979: 3-5)

² The term 'Pre-Socratic' is marked by being both misleading and entrenched. I use it for the latter reason.

³ Other medical theorists, such as Alcmaeon of Croton, were certainly active in the early 5th century. Alcmaeon, preserved in Aetius (5, 30, 1= Alcmaeon DK 24B4), is the earliest surviving author to envision health as a matter of balance or equilibrium between opposites.

⁴ For the overall context both of the messiness of this question and of the foundational role of the Hippocratic Corpus for Greek medicine, see (Nutton (2004: 37-71). On the Hippocratic question, Smith (1979) is still the benchmark.

⁵ See Smith (1979), Longrigg (1993), Nutton (2004), *et passim*

Frede notes, from the 5th century onward "philosophers regarded human physiology and pathology as part of natural philosophy."⁶

Beginning most obviously with Aristotle and gaining full steam in the Hellenistic period, a greater interest in the relation of medicine to empirical observation began to make its way into medico-philosophical discourse.⁷ But, throughout the works of these authors, the notion, for many reasons unobjectionable, persists that there is some theoretical picture underlying observable phenomena, from and to which one can make inferences with the proper tools.

As different versions of this theoretical picture blossomed, resistance arose to the very notion that health and illness had to be or even could be adequately explained in terms of some underlying theoretical scaffolding.⁸ The Empiricists, so-called because of their adherence to experience (ἐμπειρία) rather than theoretical accounts (λόγοι), rejected the notion that hidden (ἄδηλα) entities could be medically explanatory. This rejection was in virtue of the fact that they could not be observed directly and that direct observation (αὐτοψία) or its adequately verified reports (ιστορία), for the Empiricists, was a necessary condition for epistemic claims.⁹ Through their rejection of explanations that involved hidden or non-evident entities, an increasingly formal distinction between these two schools of thought took shape.

⁶ Frede (1985: xx)

⁷ This tendency is not absent in the Hippocratic corpus. It is, for example, present in *De Vetere Medicina*, *De Natura Hominis*, and *De Morbo Sacro*. I only mean that systematic treatment of the role of observation in philosophy and medicine only really takes flight under Aristotle and the Peripatos.

⁸ See, for example, Frede (1990: 229) on the role of mere plausibility had in the emergence of Empiricism.

⁹ See, for example, Celsus, *De Medicina* 27-28 on the incomprehensibility of hidden causes and nature more generally.

By the second century CE, physicians in the Greco-Roman world had come to distinguish themselves from one another generally on the basis of their commitments to just these sorts of broad views. And, by the time Galen comes onto the scene, the disagreements between these various sects or *haireseis* had become entrenched.

MEDICAL SECTS IN THE SECOND CENTURY

Greek medical sectarianism had really crystallized in the Hellenistic period along with the subsequent ramification of philosophy into schools or sects.¹⁰ Although what precisely constituted a medical sect or *hairesis* is not entirely clear, a workable definition for my purposes is a group of practitioners or thinkers with a shared intellectual methodology, along the lines of Nutton's provisional description,

"[a]lmost always, however, the word 'sect' is best interpreted as a shared ideology rather than any official institution and hierarchy. But, as in philosophy, there was no easy means of securing adherence to the doctrine of every sect in every particular, and there were ample opportunities for individual interpretations of the words of one's distinguished predecessors."¹¹

¹⁰ See, for example, Von Staden (1982: 80-81). In particular p. 81, regarding naming conventions for the titles of works (themselves largely an Alexandrian innovation), "Unlike the medical *hairesis* tradition, however, the early philosophical usage is not associated with a substantial body of treatises called 'On *hairesis* x' or 'Against *hairesis* y.' This reinforces the impression that Greek medicine is the more significant early nurturing ground for *hairesis* as a doctrinal group designation. No later than the second century CE, however, *hairesis* also had become a standard term for philosophical 'school'- and for religious 'sect'..."

¹¹ Nutton (2004: 147). See also, Von Staden (1982: 79-80), "The paucity of testimonia concerning the content of the Alexandrian *hairesis* literature unfortunately leaves us only vaguely informed about what qualifies a group for the label *hairesis* or what qualifies an individual for membership in a *hairesis*. But the evidence suggests that a group with fairly coherent and distinctive theories, with an acknowledged founder (*hairesi-arches*), and with publicly identifiable leaders who articulate (*a*) their rejection of rival theories through theoretically founded polemics, as well as (*b*) their own systematic alternatives, would qualify as a *hairesis*. Unanimity on *all* doctrinal questions is not a requirement..."

By the second century CE, however, three medical sects (*haireseis*) dominated the medical landscape in Rome: the Dogmatists (δογματικοί) also frequently called the Rationalists (λογικοί),¹² the Empiricists (ἐμπειρικοί), and the Methodists (μεθοδικοί).¹³ Our main witness to the actual therapeutic practice of these three sects is Galen. The joints along which he carves out distinctions between these sects are generally epistemological rather than practical. Various, he testifies to the similarities between competent Dogmatists and Empiricists with respect to treatment. For example, in his propaedeutic treatise on medical sects, *De Sectis*, he makes the following remarks,¹⁴

They say that the dispute about non-evident things (ἄδηλα) is insoluble, not about the evident (φαινόμενα). For from this starting point each thing, when it becomes evident what sort of thing it is, argues on behalf of those who are telling the truth and refutes those who are not. Empiricists and Dogmatists disagree about innumerable things of this kind while providing the same treatment in the cases of the same illnesses (at least those who have been trained correctly in each sect).¹⁵

¹² The term "Rationalist," with its emphasis on λόγος can be somewhat misleading and I tend to prefer to use the term "Dogmatist" for that reason. The term λογικοί does not arise because the Dogmatists either had or claimed to have exclusive rights to reasoning in their medical practice; rather, it appears to have arisen because their practice involved a *particular* kind of reasoning. They were associated with λόγος, in the sense that they were committed to inference from *a priori* claims about the natural world to treatment and diagnosis of disease. Other medical sects, of course, could and did have a rational method. See, e.g., Barnes (1991: 53 n. 13).

¹³ See Von Staden (1982: 77). Cf. Galen, *De Sectis*, I 64-65, 73; ps.-Galen, *De Optima Secta*, I 118; ps.-Galen, *Def. med.* XIX 353

¹⁴ There is still no strict orthodoxy in references to the texts of Galen. My references are all to the volume and page numbers in the Kühn edition of Galen as the texts contained in it either remain critically authoritative or are referenced in the margins of editions that supercede them. Consequently, my references will mention the Latin name of the text first, then the Kühn volume number in Roman numerals, followed by its page in Arabic numerals (e.g., *De Sectis*, I 64).

¹⁵ *De Sect.* I 79 ἀνεπίκριτον δὲ τὴν περὶ ἢ τῶν ἀδηλῶν ἀνομολογίαν εἶναι φασιν, οὐ τὴν περὶ τῶν φαινομένων. ἐνταῦθα γὰρ ἕκαστον φανέν οἷόν ἐστι μαρτυρεῖ μὲν τοῖς ἀληθεύουσιν, ἐξελέγγει δὲ τοὺς ψευδομένους. τοιαῦτα μυρία πρὸς ἀλλήλους ἀμφισβητοῦσιν ἐμπειρικοί τε καὶ δογματικοὶ τὴν αὐτὴν θεραπείαν ἐπὶ τῶν αὐτῶν παθῶν ποιούμενοι, ὅσοι γε νόμῳ καθ' ἑκατέραν τὴν αἴρεσιν ἤσκηται. Cf. also *De Sect.* I. 72-4.

Just as regularly, as in the passage from *De Sectis* above, he makes their explanations of medical phenomena the central differentiating criterion that sets them at odds with one another and individuates them with respect to other sects.¹⁶ That is, the Empiricists and the Dogmatists had different and incompatible commitments to the justificatory role that so-called ἄδηλα or non-evident causes, entities, and structures could play in claims about medical knowledge. This epistemological conflict and the effects that it had on medical discovery, according to Galen, differentiated the competent Empiricist and the Dogmatist more than practical or even observational differences regarding φαινόμενα or evident causes. According to Frede (1990: 225), for example, Empiricists distinguished themselves from Dogmatists in that,

they took the view that knowledge is just a matter of experience (in Greek *empeiria*), whereas the rationalists were so called since they assumed that mere experience, however complex, does not amount to knowledge, that knowledge crucially involves the use of reason (*logos* in Greek, *ratio* in Latin), for example to provide the appropriate kind of justification for our belief.¹⁷

As Frede notes, shortly after this quotation, quite a bit rides on just what is meant here by reason or inference. The Empiricist did not wholly dismiss reasoned activity with respect to medical diagnosis and treatment. Clearly, any sort of diagnosis and choice of treatment involved some level of reasoned activity, although perhaps not unambiguously from an ancient Greek perspective. What Empiricists disagreed about, to varying degrees,

¹⁶ See especially *De Sect.* I 65, 96

¹⁷ Frede (1990: 225)

was what sorts of reasoning were epistemically reliable. Low level, informal,¹⁸ reasoning, and in particular memory,¹⁹ which had bundled into itself a power to form empirical generalizations of the sort that could be congenial to Empiricist epistemology appear to have been generally acceptable to them. Reasoning, of the sort engaged in by Dogmatists, to and from non-evident causes, however, was at best suspect and at worst provided no epistemic warrant at all.²⁰

At the heart of this dispute lie both differing commitments to causal explanations and to non-evident structures or causes. Therefore, *a fortiori*, they differed in their commitments to the sorts of inferences, if any, one can be justified in making both to and from these structures. Galen develops this second point shortly before this passage from *De Sectis* above, where he also reiterates similarities in treatment,

And to speak generally, the Dogmatists and Empiricists use the same treatments for the same illnesses, while they disagree regarding the manner of their discovery (here εὔρεσις). Since, as far as the Dogmatists go, in cases of symptoms manifest in the body there is an indication (ἔνδειξις) of the cause (αἰτία), from which they find a therapy. On the other hand, as far as the Empiricists are concerned there is a reminder (ὑπόμνησις) of frequent and similar observations.²¹

¹⁸ See Galen *Comp.Med.Loc.* XIII 362; *Subfig.Emp.* 87, 27

¹⁹ On the role of memory in Empiricist epistemology, see generally Frede (1990), the source of the quotation above.

²⁰ This is perhaps overstated. See *Subfig.Emp.* 87, for some Empiricists that allow *prima facie* formal reasoning into medical practice (e.g., Heraclides of Tarentum and Menodotus, although the case of *epilogismos* is muddier).

²¹ *Sec.Int.* I 73, καθόλου φάναι τὰς αὐτὰς ἐπὶ τῶν αὐτῶν παθῶν ἰάσεις οἷ τε δογματικοὶ καὶ οἱ ἐμπειρικοὶ παραλαμβάνουσι περὶ τοῦ τρόπου τῆς εὐρέσεως αὐτῶν ἀμφισβητοῦντες· ἐπὶ γὰρ τοῖς αὐτοῖς φαινομένοις κατὰ τὸ σῶμα συμπτώμασιν ἔνδειξις μὲν τῆς αἰτίας γίγνεται τοῖς δογματικοῖς, ἐξ ἧς τὴν θεραπείαν εὐρίσκουσιν, ὑπόμνησις δὲ τοῖς ἐμπειρικοῖς τῶν πλειστάκις καὶ ὡσαύτως τετηρημένων.

Galen here, probably oversimplifying the Empiricist position for the sake of emphasizing methodology over actual treatment, stresses the epistemological difference between Empiricist approaches to what constitute evidentiary criteria for medical knowledge claims and Dogmatist notions of evidentiary criteria. In effect, this difference lies in the incompatibility between their analyses of how the correct treatment was to be found, the process of discovery (εὔρεσις), and in what terms illness was to be understood.

For the Empiricist, etiological explanations (αἰτία) or explanations that involved non-directly observable structures (ἄδηλα) were anathema.²² Rather, the Empiricist depended on correlations (ὑπομνήσεις) between past and present evident phenomena. The Dogmatist on the other hand, embraced causal explanations, unobservable structures, and indication (ἔνδειξις) or formal inference involving these sorts of structures.

²² Empiricists also considered "anatomical issues" ἀνατομία (i.e., issues of anatomy and dissection), for reasons that I will detail at greater length subsequently, as belonging to the class of explanations involving non-evidents on the grounds that one could treat anatomical structures observed in dead bodies as being the same as those structures in live bodies. There are further ethical and operational points that I will discuss subsequently.

Dogmatists

The Dogmatists (δογματικοί) or sometimes the Rationalists (λογικοί), are so named Galen suggests, not on the grounds that they were especially good logicians²³ nor especially tied to logic²⁴ but because they subscribed to beliefs (δόγματα) about the natural world that involved items, which were non-evident by nature.²⁵ As a preliminary sketch, one can say that the Dogmatists proceeded from the notion that health and disease were to be understood primarily in a theoretical framework of universal claims about the physical world or at least about human bodies. The Dogmatist comes to a treatment plan by inference first to and then from certain intelligible but not necessarily observable truths about the nature of the world (e.g., that opposites treat opposites, that certain externals such as location or season were part of a contagion theory of disease, that nothing happens without a cause, etc.).²⁶

These claims express certain propositions about the natural world, to which Dogmatists believed one could infer from evident phenomena through a process, called

²³ Cf. *Praen.* XIV 605; *Pecc.Dig.* V 71

²⁴ See, e.g., *Ord.Lib.Prop.* XIX 52; *UP* III 837; *Pecc.Dig.* V 71; *et passim*

²⁵ Cf. Sextus, *PHI.* 13; Galen, *Sect.Int.* I 65; but see, *contra*, *Ars Med.* I 305-6. On the role of logic in medicine before Galen generally, see Barnes (1991: 50-54).

²⁶ The Hippocratic corpus and the Galenic corpus are littered with examples of this notion that opposites cure opposites. See, e.g., *Loc. Hom.*, Galen *MM X* 102-4, 178, 650, 739, *et passim*; Galen often criticizes other doctors, particularly Methodists for failing to take into account circumstantial factors surrounding patients, such as location, season, age, etc. See Galen *PHP V* 389-90 *et passim*. Many of these diagnostically relevant circumstances take their root from the Hippocratic corpus, e.g., *De Aere Aquis et Locis*.

'indication' or ἔνδειξις.²⁷ Once those propositions were apprehended, the Dogmatist could in turn deductively infer a treatment plan. In other words, the doctor would arrive at diagnostic facts about the patient and through indication then, in virtue of those facts, produce an effective treatment for the diagnosed illness.²⁸

SIGN INFERENCE: INDICATION AND *EPILOGISMOS*

This feature of Dogmatist epistemology, indication (ἔνδειξις), has its roots in Hellenistic epistemology, where it was a heuristic tool used to discover medically relevant facts and treatments. Indication, in this technical sense, is a sign-inference; that is, indication is an inference from some evident fact, a sign, to some non-evident fact, something ἄδηλον. A paradigmatic instance of this sort of inference, for example, is an inference from sweat coming out from inside of some body, some fact X, to an unobservable fact Y, that the skin is porous, whose truth obtains in virtue of X. Consequently, indication (like *epilogismos*, which is a similar inferential move from some fact X to Y, where Y is rather another evident fact, although one not necessarily evident at the time)²⁹ picks out not only a kind of conditional but also the epistemic status of its relata, in particular its consequent.

²⁷ These sets of examples, such as the environmental ones, as well as others such as the plethora of materially monistic accounts (if Aristotle is to be trusted), put a fine point on why indication could be suspect to Empiricists.

²⁸ In passing, it is important to mention that Dogmatists were not necessarily committed to the truth of the same set(s) of medical beliefs, although certain general beliefs are common to them (e.g., that one could infer to non-evident facts about the world on the basis of evident ones. See, for example, Galen *MM* X 17).

²⁹ For *epilogismos* see Sextus, *PH* 2.100-102; Galen *Sec.Int.* I. 78; *Subf.Emp.* 63, 69; Ps.-Galenus, *Def.Med.* XIX 354, *et passim*

Sextus offers the most detailed surviving accounts of the the epistemic status of these relata in *PH* 2.97-99, of which here 97-8,

According to the Dogmatists, of these facts, some are evident and some are not non-evident; and, of the non-evident some are wholly non-evident, some are non-evident at a certain time, and some are non-evident by nature. They also say that *a*) evident facts come from themselves to our knowledge, (e.g., that it is daytime); and *b*) those things that are wholly non-evident, that they are what falls fundamentally beyond our understanding, (e.g., that the stars are numerically even); and *c*) those things that are non-evident at a certain time but have an evident nature are those that are non-evident at a certain time to us on account of external circumstances (e.g., for me now, the city of Athens); and *d*) those things that are non-evident by nature are those that have a nature that does not fall under our clear perception (e.g., intelligible pores). For, these are never apparent on their own but, if at all, they could be thought to be apprehended from other facts (e.g., from sweating or something of the sort).³⁰

The two main classes of Sextus' division are into things that are evident to perception and things that are non-evident to perception. Of the second class, he further subdivides these non-evidents into facts that are in no way apprehensible, non-evidents that can otherwise be evident, and the class of non-evidents that is of concern in the debate regarding sign inference between the Empiricists and the Dogmatists (i.e. those non-evident by nature); it is from this methodological commitment to deduction from

³⁰ *PH* 2.97-98, Τῶν πραγμάτων τοίνυν κατὰ τοὺς δογματικούς τὰ μὲν ἐστὶ πρόδηλα, τὰ δὲ ἄδηλα, καὶ τῶν ἀδήλων τὰ μὲν καθάπαξ ἄδηλα, τὰ δὲ πρὸς καιρὸν ἄδηλα, τὰ δὲ φύσει ἄδηλα. καὶ πρόδηλα μὲν εἶναι φασι τὰ ἐξ ἑαυτῶν εἰς γνώσιν ἡμῖν ἐρχόμενα, οἷόν ἐστι τὸ ἡμέραν εἶναι, καθάπαξ δὲ ἄδηλα, ἃ μὴ πέφυκεν εἰς τὴν ἡμετέραν πίπτειν κατάληψιν, ὡς τὸ ἀρτίους εἶναι τοὺς ἀστέρας, πρὸς καιρὸν δὲ ἄδηλα ἄπερ τὴν φύσιν ἔχοντα ἐναργῆ παρὰ τινος ἕξωθεν περιστάσεις κατὰ καιρὸν ἡμῖν ἀδηλεῖται, ὡς ἐμοὶ νῦν ἢ τῶν Ἀθηναίων πόλις, φύσει δὲ ἄδηλα τὰ μὴ ἔχοντα φύσιν ὑπὸ τὴν ἡμετέραν πίπτειν ἐνάργειαν, ὡς οἱ νοητοὶ πόροι· οὗτοι γὰρ οὐδέποτε ἐξ ἑαυτῶν φαίνονται, ἀλλ' εἰ ἄρα, ἐξ ἐτέρων καταλαμβάνεσθαι ἂν νομισθεῖεν, οἷον τῶν ἰδρώτων ἢ τινος παραπλησίον.

claims about particulars to non-evident truths that the Dogmatists come also to be known as Rationalists (λογικοί) because of their commitment to an underlying explanatory account (λόγος).³¹

As a technical term for Galen, "indication" refers to an inferential move from some evident feature of a particular to non-evident features of the class to which the particular belongs, a move that is made without the need of experience. Galen defines therapeutic indication at *MM X*. 126, "[w]e say that indication, so to speak, a reflection of the consequence. The consequence is also discovered by testing, but not so as to be reflected in the antecedent. And, for this reason, none of the Empiricists says that anything is reflected in anything else."³² As a qualification of this sort of definition Galen adds, at *MM X*. 127, "accordingly, the one who sets out to discover what follows from the very nature of the matter, without experience, is making the discovery through indication."³³ The inferential move is more one from (*a*) the nature or essence of a particular (ἐξ αὐτῆς τῆς τοῦ πράγματος φύσεως) to (*b*) a non-evident feature of particulars in that class.³⁴ A common example of this sort of inference regards porosity of the human body. From the evident fact, for example, that some particular person is sweating (really the generic fact that people do sweat), the Dogmatist might infer through

³¹ See n.12, on the potential pitfalls of this association.

³² *MM X* 126, τὴν γὰρ οἶον ἔμφασιν τῆς ἀκολουθίας ἔνδειξιν λέγομεν. εὐρίσκεται μὲν καὶ τῆς πείρας τὸ ἀκόλουθον, ἀλλ' οὐχ ὡς ἐμφαινόμενον τῷ ἡγουμένῳ. καὶ διὰ τοῦτο τῶν ἐμπειρικῶν οὐδεὶς ἐμφαίνεσθαί φησι τῷδέ τινι τότε τι.

³³ *MM X* 127: τὸν τοίνυν ἐξ αὐτῆς τῆς τοῦ πράγματος φύσεως ὀρμώμενον ἐξευρίσκειν τὸ ἀκόλουθον ἄνευ τῆς πείρας ἐνδείξει τὴν εὐρεσιν ἔστι πεποιησθαι.

³⁴ See De Lacy (1991: 293)

indication that as a consequence of this generic truth about human beings that human bodies are porous, a consequence that is itself non-evident.

The Empiricists, on the other hand, resisted certain generalizations about the physical world. They proceeded from the notion that health and disease could only safely be construed in terms of particular instances of disease. They determined the class of disease on the basis of observational similarity rather than some essential definition, which more than likely would have appealed to non-evidents. The Empiricists denied that one could do more than class these diseases as presenting similarly, generalizations that did not exclusively refer to direct observations were outside the purview of Empirical medicine.³⁵ Diseases fell under the same category only insofar as they were the similarly and directly observed. Consequently, the effective Empiricist physician adhered to a regimen of treatment based exclusively on firsthand experience and a canon of case histories.

Crucially, the Empiricist is not engaged in induction, at least not in any formal sense of induction.³⁶ The aforementioned inferential move, called *epilogismos*, is still an inference from an evident fact (X) to another evident fact (Y). It is just the case that (Y)

³⁵ See Frede (1982), Frede (1990)

³⁶ I do not intend to use 'induction' here tendentiously. I mean it in a formal sense rather than the sense in which Frede reasonably attaches certain rational activities to memory on the Empiricist account. For example, Frede (1990: 226) regarding how a doctor comes to gain empirical knowledge, "But to assume this is not yet to assume that reason plays no role in our coming to have this kind of experience and the general belief which goes with it. And even less is it to assume that reason never plays a role in our coming to have this kind of experience and the corresponding general belief. To claim this seems to presuppose a particular conception of reason which is different from ours, a conception on which it is not true by definition that anything we would call 'inference' or 'reasoning' will be a function of reason. It rather seems to be a view which attributes some or all functions of reason, to the extent that it recognises them, to memory."

happens not to be evident *at the time*. For example, consider the case of smoke and fire, where some Empiricists will allow the epilogistic move on the grounds that one has seen a sufficient number of instances of smoke correlated with fire to make the inferential move from the former to the latter in a case where the fire is not apparent, at that moment.

Nonetheless, for the Empiricist, theoretical commitments involving naturally non-evident facts and, in particular, causal explanations were largely seen as a liability. To the point that, at least for the hardline Empiricist, reference to or inference from things that could not be directly observed were to be wholly eschewed.³⁷ And at that, the Empiricist would require certain restrictions on the degree of formality allowed in inference. Experience and case histories provided the physician with a wealth of *comparanda* to which a given particular case could be compared. Upon finding a sufficiently similar case or cluster of cases, the physician would infer that whatever treatments were successful in those cases would likely be successful in the case at hand. This process called *epilogismos* was associative (sometimes ἐπιλογισμός was opposed to ἀναλογισμός, a synonym for indication in the sense of inference to hidden conditions)³⁸ and unlike indication purported to rely on no propositional claims involving non-directly observed entities. That is *epilogismos* was a certain type of knowledge by acquaintance.³⁹ It could not and did not purport to reveal propositional truths about theoretical entities or even the

³⁷ Cf. Galen *Subfig. Emp.* 82; *Med. Exp.* 95

³⁸ See Frede (1990: 232-3)

³⁹ Frede (1990: 226)

natural world, on the grounds that knowledge does not range over these sorts of things but only over evident phenomena.⁴⁰

⁴⁰ See *Sect.Int.* I 77-9; *Subf.Emp.* 7, 8, 63-4, 68-9; *Med.Exp.* 24-5, 29, 135-8, 148-9

Empiricists

SOURCES

Our principle sources for medical Empiricism are, as in the case of the Methodists, Galen himself as well as the first century BCE Roman author, Celsus, in the preface to his *De medicina*. Besides the references to Empiricism and Empiric doctors scattered throughout his corpus, two Galenic treatises survive whose stated subject is the Empirical school, *De experientia medica* and *Subfiguratio empirica*. Both have been lost in Galen's original Greek; *Subfiguration empirica* is extant only in the peculiar word for word translation of Niccolo da Reggio while *De experientia medica* survives only in its Arabic translation, both medieval.⁴¹ In addition to these, survives Galen's short treatise introductory treatise on the medical sects prominent in his day, *De sectis ad eos qui introducuntur*, in the actual Greek.⁴²

ORIGINS AND THE ROOTS OF *HAIRESEIS*

Beginning with the Peripatetics in the mid 4th century BCE, there is increasing evidence for doxographical writing about a variety of intellectual disciplines.⁴³ In one

⁴¹ Niccolo da Reggio was a 14th century Italian physician whose hyper-literal method of translation was in the style of some late 20th century translators of ancient philosophy. Although his Latin is sometimes difficult to construe, it so faithfully reproduces its Greek sources that backtranslations to the original from his versions are not only possible but have been attempted.

⁴² All three works, in translation, are collected in Frede (1985), *Three Treatises on The Nature of Science*.

⁴³ A tendency toward doxographical writing can be seen clearly in the prefaces to many of Aristotle's works (e.g., *De Anim.* 1.2, *Phys.* 1.2, and *Meta.* A.3-6). Theophrastus and Eudemus author some of the earliest explicitly doxographical works, on the history of natural philosophers and mathematicians respectively.

sense, the emergence of doxographical writing parallels the emergence and succession (διαδοχαί) of heads of schools in the more formal sense, such as the Lyceum and the Academy. In the Hellenistic period, however, the Greek world saw a proliferation or, more precisely, an articulation of medical and philosophical disciplines into a spectrum of schools of thought or sects (*haireseis*).⁴⁴ And, it is in the context of (if not as the impetus for) this Hellenistic ramification that the Empiricists are generally seen to have emerged as a distinct medical movement.⁴⁵

The founder of the Empiricist school is said to have been a student of Herophilus', Philinus of Cos (and sometimes his own student Serapion of Alexandria), some time in the late 3d century BCE. Sadly, none of Philinus' writing survives. Serapion, when not considered the founder as such, is often credited with introducing the empiric "tripod" τριποῦς, which made a tripartite division of Empiric heuristic methods into (a) eye-witness accounts (αὐτοψία), (b) case histories that could when necessary substitute for those accounts (ἱστορία), and (c) the most tendentious of Empiric heuristic devices, the so-called "transition from a similar case" (μετάβασις ἀπὸ τοῦ ὁμοίου), more commonly known as transition "to a similar".

The generically empirical characteristics of the school, though, have roots in medicine as early as the 5th century in Alcmaeon of Croton,⁴⁶ the Hippocratic treatise,

⁴⁴ See Nutton (1975), Von Staden (1982)

⁴⁵ I do not here engage in discussion on what the precise delimitations of ancient medical and philosophical *haireseis* were. For my purposes, it is necessary only to mention when the doxographical record distinguishes Empiricists as a distinct and nameable group of medical practitioners and theorists.

⁴⁶ Alcmaeon of Croton, for example, is said to have been the first to discover the optic nerve and was a proponent of dissection or at least of empirical investigation; both these claims are attested in Theophrastus'

On Ancient Medicine (De vetere medicina), and the 4th century rough contemporary of Aristotle's Diocles of Carystus. Near the inception of Greek medicine or at least the inception of its record, the question of the importance of empirical data to treatment is present. Consider the aforementioned Hippocratic treatise *VM*, where the author admonishes the less empirically minded practitioner of medicine,

Certain doctors and sophists say that it is not possible for someone to understand medicine who does not know what a human being is; rather, [they say] that it is necessary that the one who is going to treat human being correctly understand this [what it is to be a human being]. Their argument veers toward philosophy just as Empedocles and the others who, from the beginning, have written about nature: what a human being is and how he first came to be and how he is structured. But I believe that whatever has been said or written about nature by a sophist or a doctor is more germane to writing than to the art of medicine. And, I think that that there is no way to know anything clear about nature except from medicine. And it is possible to understand this when one has correctly grasped the whole of the medicine. Prior to this, it seems to me to be missing a lot (i.e., this search to know precisely what a human being is and how a human being has come about, etc.).⁴⁷

de Sensibus 26 = *DK* 24A5. For Alcmaeon's concerns about the limit of human understanding see, for example, Diogenes Laertius, VIII, 83 = *DK* 24B1: Alcmaeon of Croton, son of Peirithous, said these things to Brontinus, Leon, and Bathyllus, "regarding what is not manifest, the gods have clarity about mortal things, but to judge from signs belongs to men" and the following things" (<Ἀλκμαίων Κροτωνιῆτης τάδε ἔλεξε Πειρίθου υἱὸς Βροτίνῳ καὶ Λέοντι καὶ Βαθύλλῳ· περὶ τῶν ἀφανέων, περὶ τῶν θνητῶν σαφήνειαν μὲν θεοὶ ἔχοντι, ὡς δὲ ἀνθρώποις τεκμαίρεσθαι> καὶ τὰ ἐξῆς.). Here Alcmaeon contrasts the epistemic clarity (σαφήνειαν) of the gods with the inferential constraints placed on mortals (τεκμαίρεσθαι). In passing, given my mention of Alcmaeon's anatomical interests, it is worth noting a distinction between *empirical* tendencies, which I mean to suggest here, and *Empirical* tendencies, which I do not mean to suggest. This concern over the limits of human knowledge runs counter to the majority of pre-Socratics (see Longrigg 1993:51) although Cf. Xenophanes' own concerns regarding the restrictions of human knowledge.

⁴⁷ *VM* 20.1-13, Λέγουσι δὲ τινες καὶ ἰητροὶ καὶ σοφισταὶ ὡς οὐκ ἔνι δυνατὸν ἰητρικὴν εἶδέναι ὅστις μὴ οἶδεν ὅ τί ἐστιν ἄνθρωπος· ἀλλὰ τοῦτο δεῖ καταμαθεῖν τὸν μέλλοντα ὀρθῶς θεραπεύσειν τοὺς ἀνθρώπους. Τείνει δὲ αὐτέοισιν ὁ λόγος ἐς φιλοσοφίην, καθάπερ Ἐμπεδοκλῆς ἢ ἄλλοι οἱ περὶ φύσιος γεγράψασιν ἐξ ἀρχῆς ὅ τί ἐστιν ἄνθρωπος, καὶ ὅπως ἐγένετο πρῶτον καὶ ὅπως ξυνεπάγη. Ἐγὼ δὲ τουτέων μὲν ὅσα τινὲ εἴρηται σοφιστῆ ἢ ἰητροῦ, ἢ γέγραπται περὶ φύσιος, ἥσσον νομίζω τῆ ἰητρικῆ τέχνῃ προσήκειν ἢ τῆ γραφικῆ. Νομίζω δὲ περὶ φύσιος γνῶναί τι σαφὲς οὐδαμῶθεν ἄλλοθεν εἶναι ἢ ἐξ ἰητρικῆς. Τοῦτο δὲ, οἷόν τε καταμαθεῖν, ὅταν αὐτέην τις τὴν ἰητρικὴν ὀρθῶς

Here, the author of *VM* contrasts two bases for epistemic claims about medicine and the natural world. The first set of claims about medicine, is grounded in a general account of the natural world without recourse to the experience of practicing physicians. This objection to overly theoretical accounts, while only implied at the beginning of the passage, is made explicit toward the end, certainly by τοῦτο δὲ, οἷόν τε καταμαθεῖν, ὅταν αὐτέην τις τὴν ἱητρικὴν ὀρθῶς πᾶσαν περιλάβῃ. The warrant for the epistemic claims of *physiologoi*, such as Empedocles, contrasts with the warrant by which practicing doctors make epistemic claims precisely in the causal relationship between theory and experience. These former, sophistical doctors, almost apotropaically distanced with the use of the indefinite τίνες, mistakenly base their claims to knowledge on an account of the natural world from which they derive medical practice rather than basing both their claims to knowledge and their accounts of the natural world on the practice of medicine (i.e., that is, I take it, in the experience of the practicing physician).

That the appeal to empiricism in *VM* is unlike later Empiricism is clear in the closing lines of the quotation, where the author writes that knowledge of these non-evident structures may well be possible but only if theories of these sorts are grounded in the right sorts of empirical warrant, namely the practice of medicine (for which see both the quotation above and the preceding line, νομίζω δὲ περὶ φύσιος γνῶναί τι σαφὲς οὐδαμῶθεν ἄλλοθεν εἶναι ἢ ἐξ ἱητρικῆς.).

πᾶσαν περιλάβῃ· μέχρι δὲ τουτέου πολλοῦ μοι δοκέει δεῖν· λέγω δὲ τὴν ἱστορίην ταύτην εἰδέναι ἄνθρωπος τί ἐστὶ, καὶ δι' οἷας αἰτίας γίνεται, καὶ τᾶλλα ἀκριβέως.

In the fourth century, Aristotle and his rough contemporary, Diocles of Carystus reveal that the appeal to empiricism in *VM* was not a flash in the pan.⁴⁸ I will say more on Aristotle's views of empirical data with regard to knowledge claims later but, at present, it is worth considering Diocles, who echoes some of the views on explanation also present in the Aristotelian account of explanation of first principles in his *Posterior Analytics*. As with most of the other fragmentary medical authors I have and will mention, this fragment of Diocles' is preserved in Galen.

Galen begins his treatise *On the Powers of Foodstuffs* (*Alim. Fac.*) with a brief doxography, in the Aristotelian style, of foods and, in particular, the questions of how and why certain foods affect the body in different ways. The introduction ranges from a compressed discussion of the relative value of deductive explanation to inductive explanations and, finally, the question of whether observations or theoretical concerns are more important with respect to the effects of food on the body.⁴⁹ In this context, Galen invokes Diocles as a voice in the debate on whether experience or reason should be the guide in foods and, by extension, in matters of medical explanation,

Diocles, even though a Dogmatist, wrote the following in the first book of his treatise *On Health to Pleistarchus*, ... "Those who suppose it is necessary in each case to cite the reason why something is nutritious, why

⁴⁸ On Diocles of Carystus, see van der Eijk (2001), which collects all of the known fragments with commentary. For Diocles' views, in particular the complicated issue of his dates and the resultant relationship of his ideas to Aristotle, see specifically the introductory pgs. xxi-xxxvii.

⁴⁹ *Alim.Fac.* VI 453-4: So, it is reasonable that most of the finest physicians were keen to examine the powers of food carefully, some saying that these were known to them from experience alone, others who wanted to use reason as well, and even certain others who reckoned that reason was most important of all (εικότως οὖν ἐσπούδασαν οἱ πλείστοι τῶν ἀρίστων ἰατρῶν ἀκριβῶς ἐπισκέψασθαι τὰς ἐν αὐτῇ δυνάμεις, οἱ μὲν ἐκ τῆς πείρας ἢ μόνης ἐγνώσθαι σφισι φάσκοντες αὐτάς, οἱ δὲ καὶ λογισμῶ προσχρησθαι βουλόμενοι, τινὲς δὲ καὶ τὸ πλείστον αὐτῷ νέμοντες).

it is a laxative, a diuretic, or some other such thing, seem to be unaware: first that for practical purposes this sort of thing is frequently unnecessary; second, that many things that exist in some respects seem, by their nature, like certain first principles, so as not to admit of a causal explanation. Additionally, some go wrong when after taking as given things that are unknown, not agreed upon, or not credible, they think they have given an adequate explanation. While it is not necessary to pay attention to people who etiologize in this way or to those who suppose that it is necessary to give an explanation for everything, it is necessary rather to rely on things that have become known from lengthy experience. And, it is necessary to examine the explanation of what admits of one when it is likely that, because of this, what is said will become better understood and credible.⁵⁰

To readers of Aristotle, Diocles' discussion of first principles as explanatorily atomic should be familiar (e.g., *Post An.* 2 and *passim*). For Diocles certain things in the world, such as food, are like these first principles, ἀρχαί, in that they do not admit of causal accounts.⁵¹ Medically, this notion that certain principles are explanatorily atomic reflects empiricist concerns with respect to how the medical practitioner must engage with these otherwise unexplainable items in the world (and later Empiricist concerns that these explanations are even possible). For those things that do not admit of an explanatory account, the physician should not only resist the urge to provide an etiology

⁵⁰ *Alim.Fac.* VI 456: <Διοκλής> δὲ καίτοι δογματικὸς ὢν οὕτω κατὰ λέξιν ἔγραψεν ἐν τῷ πρώτῳ τῶν πρὸς Πλείσταρχον Ὑγιεινῶν· αἰτίαν δ' οἱ μὲν οἰόμενοι δεῖν ἐφ' ἐκάστου λέγειν, δι' ἣν τρώφιμον ἢ διαχωρητικὸν ἢ οὖρητικὸν ἢ ἄλλο τι τῶν τοιούτων ἕκαστόν ἐστιν, ἀγνοεῖν εἰκόμασι πρῶτον μὲν, ὅτι πρὸς τὰς χρήσεις οὐ πολλάκις τὸ τοιοῦτον ἀναγκαῖόν ἐστιν, ἔπειθ' ὅτι πολλὰ τῶν ὄντων τρόπων τινὰ ἀρχαῖς τισιν ἔοικε κατὰ φύσιν, ὥστε μὴ παραδέχεσθαι τὸν ὑπὲρ αἰτίου λόγον· πρὸς δὲ τούτοις διαμαρτάνουσιν ἐνίοτε, ὅταν ἀγνοούμενα καὶ μὴ ὁμολογούμενα καὶ ἀπίθανα λαμβάνοντες ἱκανῶς οἴωνται λέγειν τὴν αἰτίαν. τοῖς μὲν οὖν οὕτως αἰτιολογοῦσι καὶ τοῖς πάντων οἰόμενοις δεῖν λέγειν αἰτίαν οὐ δεῖ προσέχειν, πιστεύειν δὲ μᾶλλον τοῖς ἐκ τῆς πείρας ἐκ πολλοῦ χρόνου κατανεοημένοις· αἰτίαν δὲ τῶν ἐνδεχομένων δεῖ ζητεῖν, ὅταν μέλλῃ παρ' αὐτὸ τοῦτο γνωριμώτερον ἢ πιστότερον γίνεσθαι τὸ λεγόμενον.

⁵¹ For a short discussion both of this passage and of this issue, of Diocles' deeper doubts, relative to Aristotle, regarding the possibility of adequate explanations for things in the world, aside from first principles, which are primitive, see Hankinson (1995: 61-3)

but should disregard those who do; rather, the physician should rely wholly on well-established experience (πιστεύειν δὲ μάλλον τοῖς ἐκ τῆς πείρας ἐκ πολλοῦ χρόνου κατανενοημένοις). Furthermore, for Diocles even when a causal account is possible, it is not always desirable, a sentiment which stands as an early indication of a difference between expressions of theoretical and practical ends in medicine.

These two passages, from the Hippocratic corpus and from Diocles, nearly spanning the breadth of the classical period, reveal perhaps unsurprisingly that although later Empiricists were in large part reacting to a dominant, primarily theoretical, strand of medical practice or exposition throughout the classical period, the questions regarding the possibility or improbability of adequately explaining the natural world that ultimately drove them to establish themselves as a medical sect had roots that reached far into their medical past.

THE RISE OF MEDICAL SECTARIANISM

While this passage of Diocles suggests a view of medical epistemology that merely places limits on the possibility or practicality of theoretical knowledge in certain cases, the earlier account in *VM* flatly privileged empirical evidence over "accounts" λόγοι. This emphasis on empirical data, however, was both not strongly sustained in subsequent literature and, although it nodded to part of the Empiricist's program, did not fully anticipate sectarian Empiricism. In fact, Von Staden (1982) has argued that the emergence of medical *haireseis* and what he terms "Alexandrian *haireisis* literature" is

contemporaneous with and intimately linked to the birth of the Empiricists as a sect in the third century BCE.⁵² On Von Staden's construal, it is precisely through the example and terms set by Serapion in his *Ad Sectas* that both the Empiricists and the Dogmatists/Rationalists take shape as distinct medical *haireseis*,

By the end of the pre-Christian era the Alexandrian Empiricists and Herophileans therefore had identified themselves or their beliefs- and each other- as distinct *haireseis* and had produced a sizeable corpus of '*hairesis* literature', the main impetus for which continued to be derived from the sharp conflict between the two schools.⁵³

EPISTEMOLOGICAL COMMITMENTS

This conflict, to which Von Staden points, is ultimately both a methodological and epistemological one.⁵⁴ The Empiricist school, whose core beliefs were more homogeneous than the groups of medical practitioners and writers captured under the

⁵² Von Staden (1982: 78), although it is worth keeping in mind, as a point of consideration, the already growing doxographic tendencies of Peripatetic authors and the influence of schools whose heads had already begun to have successors. It is difficult, though, to make a case either way on the basis of exact chronologies, since all these events were occurring nearly contemporaneously in the late 4th and early 3d centuries BCE.

⁵³ Von Staden (1982: 79). Cf. *ibid.* p. 78, where Von Staden elaborates this point, "[T]he plural *haireseis* [in Serapion's title], probably refers to what later was lumped together as the 'rationalist' or 'dogmatist *haireseis*'. Later Empiricists, perhaps taking their cue from the philosophical Sceptics, labelled all non-Empiricists 'Rationalists' or 'Dogmatists'; but here the plural perhaps still concedes considerable diversity within 'non-Empiricism'- a diversity which later becomes at least partially obscured by the popular but distorting and misleading notion of a single 'Rationalist' *hairesis*. While one cannot exclude the possibility that Serapion used *hairesis* to refer to something other than the distinctive collections of beliefs that characterize certain groups, subsequent uses of the term within the Empiricist 'school'- and, for that matter, in other medical *haireseis*- render this unlikely. There were enough groups to provide Serapion with a plural target: Herophileans, Erasistrateans, Praxagoras and his pupils, and so on."

⁵⁴ This is not to ignore other considerations that set the Dogmatists apart from the Empiricists, for example, the tension between the growing interest of the Dogmatists to inquire into the nature (φύσις) of the body, health, and illness and of the Empiricists to inquire primarily into what therapies would simply cure the illnesses to which the patients were prone. Differences between therapeutic aims are not, however, a main focus of this paper.

more catchall term 'Dogmatist' or 'Rationalist,' took shape in part as a disavowal of two long-standing methodological tendencies in Greek philosophy and medicine.⁵⁵ Without lingering on the point, however, this claim should not be taken as excluding all intra-doctrinal disagreements. As I mentioned earlier, the use of 'transition from the similar' (ἡ ἀπὸ τοῦ ὁμοίου μετάβασις τῷ ὁμοίῳ), for example, was a source of methodological contention among Empiricists, on which more shortly.

Before the schism of the Empiricists with the Herophileans, one can trace a marked tendency among Greek philosophers and physicians generally to (a) posit non-evident or non-observable explanatory structures (again the Empiricist's ἄδηλα) in the natural world, both *to* and *from* which one could make inferences and also to (b) privilege those inferences over empirical data (or perhaps it is better to say, not to use that empirical data as a *sine qua non* for those inferences).⁵⁶

That is not to say that empirical data were wholly absent from theories propounded by philosophers and medical writers before the Empiricists. In fact, many of these inferences to so-called hidden explanatory structures in the world took observations as their starting point, which is not surprising given the importance of evident signs even to indication. Those empirical data, however, were often not an appreciable index of verification for the theories they had inspired.⁵⁷ To that extent, empirical data did not tend

⁵⁵ See Frede (1985), Frede (1990), Nutton (2004)

⁵⁶ Cf., *Pecc.Dig.* V 66; *Lib.Prop.* XIX 39-40; *et passim*

⁵⁷ See especially Galen's complaints about physicians who ignore available empirical data, as in the aforementioned *Pecc.Dig.* V 66.

to play a vital role in the verification of the principles inferred from them. It is in large part against these two positions, (a) and (b), that the Empiricists defined themselves.

Writing in the first century BCE, the encyclopedist Celsus offers the following account both of the emergence of Empiricism and an introduction to some of its concerns,

[T]hose who call themselves Empiricists, paronymously from "experience," embrace certain evident causes as necessary. They argue that inquiry into truly hidden causes and natural processes is useless on the grounds that nature is not intelligible. That nature cannot, in fact, be known is patent from the disagreement of those who argue about these issues, since on this matter there is no agreement either among the professors of philosophy or among physicians themselves. Why indeed should someone believe more in Hippocrates than in Herophilus? Why more in this guy than in Asclepiades? If someone wants to follow doctrines, the doctrines of all of them can seem plausible. If [someone wants to follow] treatments, sick people have been brought back to health by all of them.⁵⁸

The Empiricists took shape in opposition to what they perceived as a unifying thread running through the epistemological commitments of what could often be an otherwise variegated set of medico-philosophical beliefs and methodologies, in the passage above ranging from Hippocrates to Herophilus and Asclepiades. Revolting against what they saw as an impossible or at least unverifiable interest in so-called hidden causes, Empiricists introduced the terms 'Dogmatist' or 'Rationalist' to pick out other practitioners

⁵⁸ Celsus, *De Med.* 1.27-9, *Contra ii*, qui se Empiricos ab experientia nominant, euidentes quidem causas ut necessarias amplectuntur: obscurarum uero causarum et naturalium actionum quaestionem ideo superuacuum esse contendunt, quoniam non comprehensibilis natura sit. Non posse uero comprehendere ex eorum, qui de his disputarunt, discordia, cum de ista re neque inter sapientiae professores, neque inter ipsos medicos conueniat. Cur enim potius aliquis Hippocrati credat quam Herophilo? cur huic potius quam Asclepiadi? Si rationes sequi uelit, omnium posse uideri non improbabiles; si curationes, ab omnibus his aegros perductos esse ad sanitatem.

of medicine in virtue of a narrow set of epistemological commitments.⁵⁹ As a consequence, the terms can run the risk of eliding the many differences between the other beliefs held by those groups of practitioners. 'Dogmatist' and 'Rationalist' pick out a wide range of otherwise heterogeneous schools, while 'Empiricist' or 'Empirical' picks out practitioners in virtue of a single, albeit a major difference in commitment to both the limits of knowledge and the types of warrant that justify it.

Roughly speaking, then, medical Empiricism appears to have arisen as a response to a growing dissatisfaction with the proliferation of theories about the natural world, in particular theories about the human body and human physiology along with the theories on the attendant issues of health and illness. The theorists who held views with regard to non-evident or unobservable features of the world, the Empiricists, and the subsequent doxographical record, called 'Dogmatists' or 'Rationalists'.

The Empiricist's formation as a reaction to this more traditional view in Greek medicine (and certainly in Greek philosophy), namely that underlying and hidden features of the natural world were more primary than *phainomena*, is perhaps explanatory of their greater internal homogeneity. A version of this view, which I am calling traditional, can be encapsulated in Aristotle's common and pithy distinction between what is logically prior (and therefore more intelligible in one sense) and what is phenomenally prior (and therefore less intelligible although more familiar).⁶⁰ This distinction takes as its point of difference the point of reference. For Aristotle, propositional knowledge about

⁵⁹ On this point, see for example, Tecusan (2004: 7-8)

⁶⁰ For this Aristotelian distinction see *Post.An.*, 71b33; *Nic. Eth.*, 1095b2-4, *et passim*

the world was more intelligible *as such* in that it expressed universal truths about the natural world, while our experience with particulars, on which this propositional content piggybacked, was more accessible *prima facie* to the observer.

I choose Aristotle's view as an example because it is on the whole rather congenial to the role that observation or experience (ἐμπειρία) plays in the acquisition of knowledge. Yet, it still cleaves to the notion that non-evident structures are the principles on which knowledge of the natural world rests. Furthermore, despite the role of experience in knowledge acquisition, it is crucial that the knowledge in question (νοῦς certainly) is still knowledge of first principles (as opposed to ἐπιστημὴ that is generally knowledge derived from first principles).

First principles, in the sense that they are non-evident are, themselves, not directly observable through sensation, even if on Aristotle's account they are *apprehended* through νοῦς by way of perception.⁶¹ Moreover, although perhaps less objectionable to the Empiricist, empirical data on this construal does not supply warrant for knowledge claims about those first principles; rather, universals on Aristotle's account are in a sense bundled up in perception. They are already bound up in the observer's observation.⁶²

⁶¹ The issue of ἐπαγωγή in Aristotle is a vexed one. Regardless, the question of whether or not ἐπαγωγή is to be taken as 'induction' or something distinct is not directly relevant to my argument, which is just that even the Empiricists' more empirically minded predecessors did not eschew knowledge of non-evident structures and propositional knowledge of them. For a summation of the controversy and recent bibliography see Barnes (1994:259-271).

⁶² Experience (ἐμπειρία) explains how one acquires knowledge of first principle but does not clearly serve as justification for knowledge of them (see *Post.An.* 72b19-24, 76a16-37). Rather, it is through retention of experiences that knowledge of first principles takes hold in the mind.

At any rate, according to Aristotle, although *phainomena* are epistemically and experientially prior to the underlying (and hidden) structures of the natural world, those underlying and hidden structures are logically prior and more knowable than the *phainomena* they undergird.⁶³ Although Aristotle allowed for experience (ἐμπειρία) to serve as a springboard toward knowledge of certain universal truths, it was those truths toward which one should be directed.⁶⁴

Although Empiricists did differ with regard to the degree to which they admitted theoretical entities and forms of formal inference to their medical theories (on this point, more shortly), they were united in favor of the notion that, in principle, theoretical entities and formal inferences were at best impossible to verify (and so did not offer sufficient warrant for knowledge claims) and at worst detrimental to the pursuit of medicine. Medical Empiricism was a rejection of this view that *phainomena* must be in a sense posterior to the hidden features of the world underlying them. Since this view, on

⁶³ See, for example, *PA* 640a13-16: It seems that we must first begin, even about generation, just as I said earlier that first we must take the phenomena around each kind, then we must talk about their causes (Ἔοικε δ' ἐντεῦθεν ἀρκτέον εἶναι, καθάπερ καὶ πρότερον εἶπομεν, ὅτι πρῶτον τὰ φαινόμενα ληπτέον περὶ ἕκαστον γένος, εἴθ' οὕτω τὰς αἰτίας τούτων λεκτέον καὶ περὶ γενέσεως).

⁶⁴ Cf. *PA* 1.5: Of those things which are, however many exist by nature [we say that] there are (a) those that have neither generation nor destruction at any time and (b) those that are subject to generation and destruction. It so happens that about the former, although they are divine and honorable, we have very few observations (since the things we can investigate about them and the things we can know about them that are apparent to sensation are really very few), while about the latter, those things that are ephemeral (i.e., plants and animals) we have plenty of information for our understanding, since we live along side them (Τῶν οὐσιῶν ὅσαι φύσει συνεστάσι, τὰς μὲν ἀγενήτους καὶ ἀφθάρτους εἶναι τὸν ἅπαντα αἰῶνα, τὰς δὲ μετέχειν γενέσεως καὶ φθορᾶς. Συμβέβηκε δὲ περὶ μὲν ἐκείνας τιμίας οὐσας καὶ θείας ἐλάττους ἡμῖν ὑπάρχειν θεωρίας (καὶ γὰρ ἐξ ὧν ἂν τις σκέψαιτο περὶ αὐτῶν, καὶ περὶ ὧν εἰδέναι ποθοῦμεν, παντελῶς ἐστὶν ὀλίγα τὰ φανερὰ κατὰ τὴν αἴσθησιν), περὶ δὲ τῶν φθαρτῶν φυτῶν τε καὶ ζώων εὐποροῦμεν μάλλον πρὸς τὴν γνῶσιν διὰ τὸ σύντροφον).

the Empiricist's construal, could not be known it was at best immaterial to medical practice.

In response to what they saw as a certain theoretical promiscuity, the Empiricists jettisoned the causal theories of the Dogmatists from their own approach to medicine and adhered, as far as they could, to a practice based solely on observation. They argued that, from a therapeutic perspective, the various and varied theories of non-Empiricist physicians made little difference to the outcome of medical cases.⁶⁵ Furthermore, from an epistemological perspective, they denied that theories involving appeals to non-evident entities could either be verified or known. And, in what appears to have been at root a desire to provide for a criterion by which to discount certain theories, they forewent etiological theories about the natural world *tout court*.

HIDDEN FEATURES OF THE WORLD (ADĒLA)

As mentioned above, a rejection of the intelligibility or at least the diagnostic utility of unobservable features of the world (ἄδηλα) is a central if not *the* central concern unifying Empiricist objections to so-called Dogmatist theories of the natural world. This rejection of unobservable features has antecedents in much earlier medical writing. As early as the Hippocratic treatise *On Ancient Medicine (De vetere medicina)*, for example,

⁶⁵ Although not an Empiricist, see for example Polybius *Hist.* 12,25d for suspicion about the efficacy of Dogmatist theoretical claims.

However many have taken a hand to speak or write about medicine, having established a *hypothesis* (ὑπόθεσιν) for their account, either heat or cold or wet or dry or whatever else they want, reducing their principle of explanation (τὴν ἀρχὴν τῆς αἰτίας) for the diseases and death of human beings and laying down the same one or two principles in every case are clearly wrong in much of what they say. And it is especially appropriate to chastise them because they are wrong about a discipline that already exists, which everyone uses in the most important circumstances and whose good practioners and craftsmen everyone honors.⁶⁶

PEIRA AND EMPEIRIA

Without appeal to non-evident structures in the world, the Empiricist is at pains to justify the choice of one therapeutic plan over another or any therapy at all. They address this issue by appealing to medical experience or test in a loose sense (πεῖρα).⁶⁷ Experience, for the Empiricists, consisted of two and sometimes three separate heuristic tools *autopsia* (αὐτοψία), *historia* (ἱστορία), and 'transition from the similar' (ἡ τοῦ ὁμοίου μετάβασις). This last tool bears on a point that Galen critically presses Empiricists on generally. Given the stress that Empiricists placed on previous direct observations and reliable reports of others' direct observations, how was the Empiricist to treat cases of illness that were qualitatively different or even significantly different from

⁶⁶ VM 1.1-6: Ὅσοοι ἐπεχείρησαν περὶ ἰητρικῆς λέγειν ἢ γράφειν, ὑπόθεσιν σφίσιν αὐτέοισιν ὑποθέμενοι τῷ λόγῳ θερμὸν ἢ ψυχρὸν ἢ ὑγρὸν ἢ ξηρὸν ἢ ἄλλ' ὅ τι ἂν ἐθέλωσιν, ἐς βραχὺ ἄγοντες τὴν ἀρχὴν τῆς αἰτίας τοῖσιν ἀνθρώποισι τῶν νούσων τε καὶ τοῦ θανάτου, καὶ πᾶσι τὴν αὐτέην ἐν ἡ δύο προθέμενοι, ἐν πολλοῖσι μὲν καὶ οἷσι λέγουσι καταφανέες εἰσὶν ἀμαρτάνοντες· μάλιστα δὲ ἄξιον μέμψασθαι, ὅτι ἀμφὶ τέχνης εὐούσης ἢ χρέονταί τε πάντες ἐπὶ τοῖσι μεγίστοισι καὶ τιμῶσι μάλιστα τοὺς ἀγαθοὺς χειροτέχνας καὶ δημιουργοὺς.

⁶⁷ In this context, experience (πεῖρα), of course, evokes the distinction between experience and technical knowledge (τεχνή) made as early as the Classical period by Plato in the *Gorgias*. On the limits of experience, see also Plato, *Meno* 97A-D. The association of each with social class is also present.

what was recorded in case histories or what formed part of the physicians personal experiences? Is the Empiricist not hobbled with respect to the discovery of either treatments for previously unknown diseases or of substantially new treatments for old ones? Galen, for example, cites the cupping glass as an example of such a discovery in

On the Affected Parts,

So that I may say something in response to the Empiricists, it really isn't possible to discover any of these sorts of therapies [i.e., ones for rare or new diseases] from experience. A man burning up with a very hot fever may find relief every once in a while after taking a desperate drink of cold water. But, this provides the physician a principle of imitation without any rational indication. But the application of the cupping glass did not have a chance development, but arose wholly from rational indication; and neither could the cupping glass itself ever have come about by chance nor, even if someone conceded this point, could it ever have been stuck on someone's head by happenstance, especially in the case of a rare illness.⁶⁸

Transition to a similar case from another is the mechanism by which the Empiricist can at least attempt to answer Galen's objection regarding new or rare diseases.⁶⁹ Quite a bit of the epistemological difference between the Empiricist and Galen (as well as the Dogmatists) rides on how the Empiricist cashes out similarity and analyzes the process by which a physician comes to transition from one case to a similar one.

⁶⁸ *Loc.Aff.* VIII 154-5, οὐδὲ γὰρ ἐκ πείρας, ἵνα τι καὶ πρὸς τοὺς ἐμπειρικοὺς εἶπω, τῶν τοιούτων εὐρησθῆναι τι δύναται· καυσούμενος μὲν γὰρ ἄνθρωπος ἐν πυρετῷ διακαεὶ ψυχρὸν ὕδωρ ὑπ' ἀκρασίας προσενεγκάμενος ὄνητο μὲν αὐτός ποτε, μμήσεως δ' ἀρχὴν ἰατροῖς παρέσχεν ἄνευ λογικῆς ἐνδείξεως· ἢ δὲ τῆς σικύας πρόσθεσις οὐδεμίαν ἔχει περίπτωσιν ἡγουμένην, ἀλλ' ἐκ λογικῆς ἐνδείξεως ἅπαντα γέγονεν, μήτ' αὐτῆς ποτε δυναμένης τῆς σικύας αὐτομάτως γεννηθῆναι μήτ', εἰ κἄν τοῦτό τις συγχωρήσειε, κολληθῆναι ποτε τῇ κεφαλῇ κατὰ περίπτωσιν, καὶ μάλιστα' ἐπὶ πάθους σπανίου.

⁶⁹ See also *Loc.Aff.* VIII 371, where Galen reiterates this challenge to the discovery of treatments to rare or completely unknown illnesses.

This is not to say, however, that Galen considered Empiricists to be ineffective. We have already seen how it is that Empiricist therapies could be just as effective as the best the Dogmatists had to offer. And, in fact, Galen embraces the Empiricists' common complaint about Dogmatist theorizing, namely, that it can lack a basis in observational fact. Galen's sympathies with each of these sects cannot be said, though, to extend to the Methodists, for whom he reserves nothing but contempt and vitriol.⁷⁰

⁷⁰ On Galen's rhetoric against Methodist doctors, see Nutton (1991: 1-25) and cf. the introduction to Tecusan (2004).

Methodists

It has to be said that it is very difficult to determine, with any certainty, what the precise epistemological commitments of the Methodists were. It is known that the sect was not only very popular in Galen's time but also maintained this popularity for some time afterward.⁷¹ In fact, Methodism was and continued to be a countervailing school of medical practice that rivaled Galenic medicine from its inception through the early medieval period, at least in the west.⁷² The popularity of the sect, however, is belied by the paucity of records left by its practitioners.⁷³

EVIDENCE FOR METHODIST THEORIES OF DISEASE AND THERAPY

Besides Soranus of Ephesus (*fl.* early-mid 2nd cent. CE) and Caelius Aurelianus (*fl.* 5th cent. CE) no extant treatises by Methodist doctors appear to have survived the ravages of history. The vestiges may be even more faded than this, as there is doubt about the exact relationship of Caelius' extant treatises *Celeres passiones* and *Tardae passiones* to Soranus' *Acute* and *Chronic Diseases* (περὶ ὀξείων νοσημάτων and περὶ χρονίων νοσημάτων). Caelius is generally thought either to be translating or heavily basing his

⁷¹ See Nutton (2004:188). Galen singles out contemporary Methodists for rebuke such as Statilius Atticus, Marcus Modius Asiaticus, Julian, et al. Caelius Aurelianus, whatever his exact dates, is evidence that Methodism was still a viable school of medicine as late as the sixth century CE.

⁷² Nutton (2004:188)

⁷³ See Tecusan (2004:1), "Methodist cures became popular, Methodist ideas influential, yet Methodist medicine was perceived as a threat to the established tradition. The Methodists achieved fame at the cost of an extremely bad press: if they revolutionised medicine, they were certainly silenced by their rivals. For it looks as if the main obstacle to our knowledge resided in their own originality and success."

own work on Soranus'.⁷⁴ Consequently, extant Methodism may very well reduce to one author, Soranus, whose opinion is both late and not necessarily representative of the school as a whole.

In addition to the already exiguous nature of extant Methodism, there is a further problem with respect to the provenance of the non-Soranic scraps that survive. Although recently Tecusan (2004) has collected the surviving testimonia⁷⁵ about Methodist doctors outside Soranus, a problem of the provenance of these testimonia to the Methodists as well as any potential fragments persists.⁷⁶ Her collection shows that the extant testimonia and fragments are mostly found in the writing of a single source, Galen, who is emphatically not impartial. By her own reckoning, two-thirds of the material on ancient Methodism in Tecusan (2004), which is currently the only compendium of its sort, is culled from the pages of Galen.⁷⁷ Since these testimonia are filtered primarily through this single lens, points of comparison through which to lessen or at least become more clearly aware of the ways in which Galen's interpretation affects Methodist texts are difficult at best. Consequently, our view of Methodism is largely Galen's view of Methodism. And, given the silence of Methodists themselves, even when other sources are available such as Pliny and Celsus, we must rely on those authors whose bias ranges,

⁷⁴ See van der Eijk (1999a: 414-428 and 415-6, n.85) and (1999b: 47-56)

⁷⁵ Tecusan, herself, appears to use the word "fragment" in place of the more usual "testimonium". That is, her volume is a collection of extant testimonia and perhaps some fragments of the Methodist sect. She is explicit in her introduction that her criterion for inclusion in this volume is simply explicit reference to Methodism or Methodists, Tecusan (2004: 21-5).

⁷⁶ At the time of this report's writing, the second and third volumes of Tecusan's work on Methodist fragments have not been published. The second volume is a commentary on the fragments found in the first while the third volume will contain the extant fragments of Soranus.

⁷⁷ Tecusan (2004: 3)

to varying degrees, from the extreme distaste of Pliny and Galen to the muted disapproval of Celsus.⁷⁸

ORIGINS AND GENEALOGY

As with other things having to do with the Methodists, the origins of the sect are as obscure to modern scholars as they were to their ancient counterparts.⁷⁹ Its roots lie in the corpuscular theory of Asclepiades of Bithynia, now reported only through tendentious sources and often at multiple removes.⁸⁰ Generally, Asclepiades is thought to have been active some time in the first century BCE, although he is difficult to place precisely.⁸¹ For our purposes, it is enough to say that he was active some time in the early to mid first

⁷⁸ See Tecusan (2004:1), "[Methodism] looks familiar to us today, but what is known of it makes it extremely remote. The sense of familiarity is due to authors like Celsus or Pliny, or above all Galen, who was intensely preoccupied with Methodism and mentioned it extremely often. But such authors were equally intensely inimical to it, and the positive information to be sifted from their abuse is disappointingly meagre."

⁷⁹ Tecusan (2004) contains all of the available testimonia to date. See also Pigeaud (1991: 7-50), Hankinson (1991: 144-145), Frede (1987b: 1-23), Lloyd (1983: 182-200), and Edelstein (1967: 173-91)

⁸⁰ See, e.g., Galen *MM* X 268-9; 268 for the explicit claim that they are derivative of Asclepiades: Now, this is typical of their stupidity, deriving from the theory of Asclepiades, just as the rest of their beliefs do... (νυνὶ

δὲ, τῆς γὰρ τούτων ἐμπληξίας ἐστὶν οἰκείον, ἀπὸ τῆς Ἀσκληπιάδου γεγεννημένον ὑποθέσεως, ὥσπερ καὶ τᾶλλα αὐτῶν δόγματα...)

⁸¹ There is some confusion regarding Asclepiades' dates. See Nutton (2004: 167). Cicero mentions him in *De Oratore*, the setting of which is in 91 BCE, but not again in his letters. If Asclepiades is already established by 91 BCE, it is difficult to follow the succession from Asclepiades to Themison to Thessalus in the mid first century CE. Alternately, if he continued to be active into the 70s-50s BCE, the gap is manageably small.

century.⁸² So, one can say that the mid first century is a *terminus post quem* for the beginning of Methodism's story.

Galen and the surviving mentions of Asclepiades in Methodist authors are in agreement that the latter was a source for early Methodism although not its founder.⁸³ And, even discounting for the reputation that Methodists had for heavily criticizing one another and their own intellectual forbears,⁸⁴ which is consistent with the self-reporting that survives of Soranus and Caelius, the Methodists did not see Asclepiades as one of their own.⁸⁵

Themison (*fl.* first cent. BCE), allegedly a pupil of Asclepiades, is the first known Methodist.⁸⁶ Celsus already distances Methodism of his own time, the first century CE, from the beliefs of Themison.⁸⁷ An uncomfortably large gap separates Themison from Thessalus of Tralles (*fl.* first cent. CE), whom Celsus does not even mention. Galen credits this Thessalus with the foundation of the Methodist school.⁸⁸ Soranus of Ephesus, whose *Gynaecia* is mentioned above, comes on to the scene some time at the end of the first century CE (his death is normally placed in the late 130s CE, a short while after the

⁸² Although, and in vein of disagreements regarding Asclepiades' dates, see Rawson (1982), who argues that Asclepiades must have already been dead by the dramatic date of *De Oratore*, making him active in the late second century BCE and perhaps the very early first century.

⁸³ See, e.g., Galen, *Caus.Morb.* VII 1-2, 32-33; *Plenitudine* VII 514-15; *SMT* XII 783. Caelius Aurelianus *De morbis acutis* 1.155, 2.52, 3.29; *De morbis chronicis* 1.48, 1.50; see (1990: 131)

⁸⁴ What van der Eijk calls a "constant process of critical revision", van der Eijk (1999: 399). For a list of contemporary as well as some ancient sources for this claim, see van der Eijk (1999: 398, n. 3)

⁸⁵ See, e.g., Soranus *Gyn.* 3.4, regarding Asclepiades' view on the elements and on causation; *Gyn.* 3.29, regarding Asclepiades' treatment of hysteria, where Soranus approaches Galenic derision of other physicians, especially notable are Asclepiades and Hippocrates; *Gyn.* 3.43 not only on his treatment of flux but also on the irrelevance of his diagnostic method.

⁸⁶ For Themison, see Moog (1995) and Tecusan (2004)

⁸⁷ See Nutton (2004:189)

⁸⁸ See *MM* X 50-51 *et passim*

birth of Galen). It is only as late as Soranus that enough material survives to get a sense, even if a potentially unrepresentative one, of what ancient Methodism may have looked like from the inside.

Since Galen is so monolithic a source for Methodism, it is not clear whether Thessalus' approach to medicine was typical of Methodism in general or on its fringes. It is necessary to be cautious when even posing the question of what was typical or characteristic of Methodist practice and theory, as it is clear that Methodism was not as homogenous as Galen might have us believe, although Galen's picture of the Methodists in particular is tendentious.⁸⁹ This caution is underscored by the frequency with which Galen, himself, will also point up internal disputes between Methodist writers when it suits his rhetorical purposes to do so. In fact, Soranus reviled Asclepiades⁹⁰ and considered Themison,⁹¹ who was beside Thessalus another possible candidate for the foundation of the sect, to be a closet Asclepiadean by both Soranus and Caelius Aurelianus.⁹²

The picture drawn by Galen and echoed in the anonymous author of *Introductio seu Medicus* claims that Thessalus furthered the doctrines of his own teacher Themison, who had himself broken from Asclepiades earlier.⁹³ All of the foregoing is to return to

⁸⁹ See, e.g., Vallance (1990: 132)

⁹⁰ See n. 85

⁹¹ Soranus also has sharp words for Themison shortly after voicing his disapproval of Asclepiades at *Gyn.* 3.24 and again at 3.42.

⁹² *De morbis acutis* 1.155, 2.232, 3.29; *De morbis chronicis* 1.48, *passim*

⁹³ *Int.* IV, 684; *MM* X 52-5. For Asclepiades' influence on and relation to Methodism see Frede (1985: xxix) and Vallance (1990: 141)

this theme of obscurity and emphasize that the doxographical footing surrounding early Methodism is historical quicksand.

EPISTEMOLOGICAL COMMITMENTS

With that caveat already in mind, one must proceed cautiously for a further reason. The Methodists appear primarily as bugaboos in Galen's accounts of them. Galen's criticisms of them are legion. And so, for this reason too, it becomes more difficult to say what their therapeutic practice may have been. In *De Sectis*, Galen comes to his explanation of how the Methodists differ from both the Dogmatist and Empiricist sects,

And the so-called Methodists, for so they named themselves, as though their Dogmatist antecedents did not claim to practice the art with any method, seem to me not only to disagree with the ancient sects as far as their account goes but even so far as to many of the practices of medicine. Indeed, they say that the affected part has no relevance to indication of treatment (nor the cause, nor age, nor season, nor location, nor an examination of the strength, constitution, or disposition of the sick person).⁹⁴

For Galen, while the Dogmatists and Empiricists differ primarily with regard to their epistemological claims, they still prescribe similar treatments. The Methodists not only abided by a different understanding of medical knowledge, they also eschewed

⁹⁴ *Sect.Int.* I 79, Οἱ δὲ μεθοδικοὶ καλούμενοι, οὕτω γὰρ ἑαυτοὺς ὠνόμασαν, ὥσπερ οὐχὶ καὶ τῶν ἔμπροσθεν δογματικῶν μεθόδῳ τὴν τέχνην μεταχειρίσασθαι φασκόντων, οὐ μέχρι λόγου μοι δοκοῦσι ταῖς παλαιαῖς ἀμφισβητεῖν αἰρέσεσιν, ἀλλ' ἤδη καὶ τῶν ἔργων τῆς τέχνης πολλὰ μετακοσμεῖν, οἷ γ' οὔτε τόπον πεπονθότα χρησίμιμον οὐδὲν ἔχειν φασὶν εἰς θεραπείας ἔνδειξιν οὔτ' αἰτίαν οὔθ' ἡλικίαν οὔθ' ὥραν οὔτε χῶραν οὔτε τοῦ νοσοῦντος τῆς δυνάμεως τὴν ἐπίσχεψιν ἢ τῆς φύσεως ἢ τῆς ἕξεως αὐτοῦ.

effective practice. Of course, this last claim is striking given the popularity of the Methodists in the Roman world. When Galen's account is compared to their surviving medical texts, however, the Methodists seem far less absurd and far less homogeneous⁹⁵ than their Galenic treatment would suggest. This inconsistency argues for a bias on Galen's part, since he is equally content to ridicule their internal disagreements as he is to point up their failed and, in this context, settled doctrines.⁹⁶

THE PLACE OF THE METHODISTS IN THE SECTARIAN DEBATE

The Methodist sect appears to have emerged partly in response to both the Dogmatist and Empiricist sects.⁹⁷ It eschewed the theoretical elaboration of the Dogmatists while demanding greater theoretical underpinnings for its medical claims than the Empiricists.⁹⁸ Since Galen, too, attempts to provide a *media via* between these two sects, the Methodists were natural rivals for Galenic medicine.

Galen, however, restricts his criticisms to their practice and their conception of medical epistemology. The specifics of this epistemology are obscure, though, as both

⁹⁵ Even a cursory look through Soranus' *Gynaecia* or Caelius' *Tardae passionis* and *Celeres passionis* reveals, through their criticisms of other Methodists, the heterogeneity of Methodist thought regarding treatment and classification; that is to say nothing of Galen's pervasive accusations of internal inconsistency among Methodists and Celsus' own observations to the same effect in the second and first centuries CE respectively. Whether Galen or Celsus are fair witnesses is beside the point. At a minimum they confirm the non-doctrinaire tendencies of our extant texts.

⁹⁶ Cf., however, Galen's position expressed in *MM X* 125: Whence, I suppose, arose also the conflict, not insignificant, for their [sc. Thessalus, Asclepiades] followers. In every way, they are at loggerheads about both about the concept of affections as well as their existence. (ὄθεν, οἶμαι, καὶ πόλεμος οὐ μικρὸς τοῖς ἀπ' αὐτῶν ἐγένετο κατὰ τε ἄλλα πάντα διενεχθεῖσι καὶ περὶ τῆς τῶν παθῶν ἐννοίας τε καὶ ὑπάρξεως.)

⁹⁷ See, e.g., Frede (1982:2)

⁹⁸ See Celsus *De Med.* 62; Ps.-Gal. *Opt.Sect.* I 119-131, *et passim*

Soranus and Caelius remain largely silent on Methodist beliefs regarding medical knowledge; that is, they do not attempt to give explicit accounts of their epistemological beliefs. Soranus, Caelius, and Methodist critics all allude to general notions of Methodist epistemology that, at least in broad strokes, clearly must have played a foundational role in their approach to Medical epistemic claims. The so-called commonalities, the κοινότητες, the notion of stricture, flux, and the denial both of certain empirical data as well as certain theoretical data are common, for example.⁹⁹

Their silence is perhaps due to an expectation of familiarity with Methodist epistemology on the part of the reader. Although, it is equally if not more plausible that Methodist authors, such as Soranus, do not consider the theoretical underpinnings of Methodist practice to be terribly important to their readership. In support of this second possibility consider, for example, the closing lines to Soranus' *Gyn.* 1.2, "Since natural philosophy (τὸ φυσικόν) is not useful for our ends, although it is a nice bauble for a learned work, I have excluded it here, keeping for now only to necessary matters."¹⁰⁰ This is not to say, however, that these two explanations, an expectation of the reader's familiarity with the outlines of the theoretical background of Methodism as well as a lack of concern for that theoretical background, are mutually exclusive.

Of a piece with the relative lack of importance that Soranus places on theoretical knowledge, Methodist attitudes toward the fundamentals of medical education focused on

⁹⁹ See, e.g., Celsus *De Med.* 54-55; Soranus *Gyn.* 1.29.3

¹⁰⁰ Soranus *Gyn.* 1.2, τὸν μὲν οὖν φυσικὸν ἄχρηστον ὄντα πρὸς τὸ τέλος, φερέκοσμον δὲ πρὸς χρηστομάθειαν, κεχωρίκαμεν ἐντεῦθεν, μόνον πρὸς τὸ παρὸν ἐχόμενοι τῶν ἀναγκαίων.

practical matters. If Galen's accounts are any indication, the pupil was not expected to undergo a time-consuming curriculum and the Methodists were even reputed to have believed that all of medicine could be learned in six months.¹⁰¹ According to Galen, Methodists took pride in turning the Hippocratic maxim, *ars longa, vita brevis* on its head,¹⁰²

And they rebuke anyone who says, "life is short but the art is long", since quite the contrary, "the entire art is short, and life is long". For if everything falsely assumed is taken away to help the craft and we put an eye to the commonalities (κοινότητας) alone, medicine will no longer be long nor difficult but quick and clear; and, the whole business can be known in six months.¹⁰³

With Galen's emphasis on the proper and extensive education¹⁰⁴ necessary for medical competence, this emphasis on practicality alone did and must have galled him.¹⁰⁵ The Methodist sect was bound to offend Galen's sensibilities both as a champion of philosophical medicine and as an agitator for the conversion of medicine at Rome to an elite practice, both points that Frede (1982) makes in passing,

Methodism had a great success in Rome. Nevertheless, the aggressive way it was propounded by Thessalus could not but offend the more

¹⁰¹ See *Dig.Puls.* VIII 770, *MM X* 781, 927

¹⁰² On parallels between Methodists avowal of shortcuts to medicine and similar philosophical stance (i.e., Cynics) see Barnes (1991: 60 n. 37)

¹⁰³ *Sect.Int.* 82.29-83: καὶ τῷ γε βραχὺν [εἶναι] εἰπόντι τὸν βίον, τὴν δὲ τέχνην μακρὰν ἐπιτιμῶσι τοῦναντίον γὰρ ἅπαν αὐτὴν μὲν βραχεῖαν εἶναι, τὸν δὲ βίον μακρόν. Ἀφαιρεθέντων γὰρ ἀπάντων τῶν ψευδῶς ἠπειλημμένων τὴν τέχνην ὠφελεῖν καὶ πρὸς μόνας τὰς κοινότητας ἀποβλεπόντων ἡμῶν, οὔτε μακρὰν ἔτι τὴν ἰατρικὴν οὔτε χαλεπὴν εἶναι, ῥάσστην δὲ καὶ σαφῆ, καὶ μῆσιν ἕξ ὅλην [τάχιστα] γνωσθῆναι δυναμένην.

¹⁰⁴ For Galen's insistence on lengthy and rigorous study, see, e.g., *Opt.Med.* I 59; *CAM I* 244; *Nat.Fac.* II 179-80; *PHP V* 222, 732-3, 783; *MM X* 39-40; *Pecc.Dig.* V 61-83; *et passim*.

¹⁰⁵ Consider also that Galen frequently places himself, in Aristotelian style, at the head of a long tradition in medicine hearkening back to Hippocrates himself. Given the Methodists lack of interest in traditional medicine, this too must have galled Galen. Cf, for example, *MM X* 5, 309, 346.

traditionally minded doctors. When Hippocrates had said that life is short and art long, Thessalus claimed that life was long and art short, a matter of six months. This was a deliberate affront not only to all those who venerated Hippocrates but also to all those who, like Galen, prided themselves on their long and no doubt expensive medical training. It seems fairly clear that Methodism was also felt and presumably meant to be a social threat: a clear medical doctrine to be learned in six months, even by slaves and the poor, who had not the education to master the secrets of philosophy, mathematics, and the whole of learned medical tradition going all the way back to Hippocrates.¹⁰⁶

Galen's outrage and his need to persuade his readership that his attitude toward medicine was far and away superior to the Methodist attitude, however, plays both a central role in the preservation of Methodism in his corpus (or at least a version of it) and what appear to be the massive distortions this image of Methodism appear to have suffered at his hands.

It is necessary, then, to tease out what is possible from Galen's reports as well as from what few fragments remain. To that end, I turn to the roots of what we are told Methodism is, which begin with Asclepiades of Bithynia.

METHODIST FORERUNNERS, ASCLEPIADES AND CORPUSCULAR THEORISTS

At the root of the Methodist approach to medicine is a corpuscular theory of disease derived ultimately from Asclepiades of Bithynia. Asclepiades appears to have believed that the body consisted of certain particles (ἀναρμοὶ ὄγκοι), whose nature is

¹⁰⁶ Frede (1982: xxx-xxxix)

itself a matter of some controversy,¹⁰⁷ as well as pores (πόροι).¹⁰⁸ To be healthy, on his account, was just to have free movement of these particles through corporal pores; illness was a result of pores being overly constricted or overly loose and therefore affecting the movement of these particles adversely. Since the cause of illness was the relative stricture of the pores, working to counteract any imbalance in the pores relative to the size of the corresponding particles was a necessary and sufficient condition for restoring the body to health.

Asclepiades' corpuscular theory was itself reminiscent of other ancient theorists who believed in variations on this particular theme: Leucippus, Democritus, and Epicurus all spring to mind. Given the present work's scope, however, it is impossible to do more than briefly mention earlier corpuscular theorists as a background for some other conflicts Galen was fated to have with the Methodists. In particular, atomism was associated with a non-teleological view of the world.¹⁰⁹

Additionally, a corpuscular theory occupied the same functional role in physiology as the traditional Hippocratic humoral theory. That is, both a corpuscular view and a humoral view see health through the lens of some kind of biological balance,

¹⁰⁷ Briefly, it is not clear what ἄναρτοι ὄγκοι means precisely. They were frangible and so unlike the eponymous ἄτομα of the atomists, precisely in the respect most characteristic of them. Consequently, Asclepiades' ὄγκοι cannot be taken to be quantitatively atomic even if they are in some way qualitatively atomic. Regarding ἄναρτοι, Vallance gives a host of philological reasons for interpreting the adjective as meaning something breakable or in a sense 'disjointed,' into fragments such as θαύσματα for example (see Vallance (1990: 40-42).

¹⁰⁸ For a longer discussion of the nature of Asclepiadian particles, ἄναρτοι ὄγκοι, and the difficulty in determining what precisely they were thought to be, see Vallance (1990): 7-43.

¹⁰⁹ See, e.g., Diogenes Laertius 9.31= DK 67A1; Hippolytus *Ref.* 1.13.2= DK 68A40; Simplicius *De Caelo* 242.21= DK 67A14; Galen, *Nat.Fac.* II 26-30; *et passim*

on the humoral view a balance whose equilibrium when thrown off-kilter accounts for illness in the body and on the corpuscular view, a balance between stricture and the relative size of the corpuscles passing through them account for the same thing.¹¹⁰

This bare bones account of Asclepiades' theory is intended both to flesh out some of the details of the physiology that Methodists would later commit themselves to as well as to prompt a question: assuming the Methodist's lack of interest in theoretical issues, causation, and commitment issues with unseen biological processes (ἄδηλα), how could Methodists use Asclepiades' corpuscular theory as a starting-point for their own views?

WHAT CAN BE SAID OF METHODIST MEDICAL BELIEFS

The core beliefs that appear consistently both in what survives of Methodist authors and even in non-Methodists commenting on them are two: first, the notion that diseases in general shared a certain very limited set of features, whose treatment was sufficient to cure the patient of his illness.¹¹¹ Second, these limited sets of features were classed into three rough categories that took their contours from differing relations between pores (ποροί) and the corpuscles passing through them, arising from some kind of corpuscular theory, likely a version of Asclepiades'.¹¹²

¹¹⁰ See Vallance (1990:10). On this point, it is not necessary for my purposes, to discuss most of the particular differences between Asclepiades' corpuscles and Abderite atoms in too much detail (e.g., frangibility and indivisibility respectively). It is only necessary to show that, at its deepest root, Methodism was anathema to Galen.

¹¹¹ See Vallance (1990: 132)

¹¹² An objection that Galen brings to bear often against the Methodists is the paradigmatic status of pores as instances of non-evident (ἄδηλα) features of the world. Their pedigree was indeed old, and is found as early as the Hellenistic period. It is unclear what the Methodist response to this objection might have been,

The Methodists called these classes of shared features κοινότητες, often translated 'commonalities' or 'communities'; these commonalities were divided into three types, running along an axis of relative constriction and taking their structure from a corpuscular analysis of the body: stricture (στέγνωσις), looseness or flux (ρόωδες or ρύσις), and a third state (ἐπιπλοκή) compounded of the first two states occurring variously in the body.¹¹³

These corpuscles, pores, and consequently those states that are relations between them present a stumbling block for reconstructing a coherent Methodist epistemology. Both corpuscles and pores are paradigm cases of non-evident entities, ἄδηλα, to which Methodists are in principle opposed. Sextus Empiricus, to take an example, includes pores in his list of stereotypically un-experiencable entities in *Adversus Mathematicos*,¹¹⁴ "Naturally non-evident entities are those which are always hidden and unable to fall under our perception, as for example the intelligible pores and the infinite void thought to be outside the cosmos by certain physical theorists."¹¹⁵ What then would a Methodist respond to objections that the two bases of their physiology conflict with the epistemological demands they place on medical theory?

short of either claiming that they were only heuristically committed to something like pores and not ontologically committed to them or claiming that pores were somehow evident to sensation.

¹¹³ See Celsus *De med.* 1.54-5; Soranus *Gyn.* 1.29.3

¹¹⁴ Pores are part of a larger discussion in Sextus on intelligible entities and the signs by which non-sceptical thinkers, such as the dogmatists, explain inference from those signs. See, *Math.* 8.145-158. Also, *PH* 2.98, 140. For the larger issue of non-evident entities and indication through sign, see Hankinson (1998: 232-233).

¹¹⁵ Sextus Empiricus *Math.* 8.146: φύσει δὲ ἦν ἄδηλα τὰ δι' αἰῶνος ἀποκεκρυμμένα καὶ μὴ δυνάμενα ὑπὸ τὴν ἡμετέραν πεσεῖν ἐνάργειαν, καθάπερ οἱ νοητοὶ πόροι καὶ τὸ ἀξιούμενον ἐκτὸς εἶναι τοῦ κόσμου τισὶ φθισικοῖς ἄπειρον κενόν.

There are no extant sources that contain an explanation or justification for these states of relative constriction, which is perhaps due to the inclination among Methodists to avoid any professional affiliation with robustly articulated medical theories even if privately cleaving to a more elaborated theory. It was enough to recognize an imbalance with respect to constriction. That is, for the Methodists, the proof was in the pudding. Any further explanation, as Vallance notes, lay outside the purview of what was relevant to medical *practice*, which was after all the ambit of medicine.¹¹⁶

It is likely, however, that relative constriction played the role in Methodist view of illness due to the connection, mentioned earlier, with the corpuscular theory of Asclepiades and, if Galen is to be trusted, Epicureans, and other corpuscular theorists;¹¹⁷ but, given Galen's efforts to equate Methodists with Epicureans it is difficult to say what the exact relationship may have been.

On that point, Vallance has argued that the connection between the particles of the Methodists, insofar as they were those of their predecessor Asclepiades, and Epicurean atoms is passing or, more likely, adventitious.¹¹⁸ That is, while both Asclepiades and atomists were material monists, in that they believed that bodies were made up of a single kind of stuff, Asclepiades was not committed (and could not be) to the further constraints

¹¹⁶ Vallance (1990: 132)

¹¹⁷ Cf. *Nat.Fac.* II 38-56 and especially 51-52 for a comparison of Epicureans and Asclepiadeans, in which Galen argues that the two sects reject one another effectively. In particular, that Epicureans state the observable facts well but cannot give any reasons for the theories they derive from them, while Asclepiadeans (although Asclepiades has effectively shown the inconsistencies in Epicurus' overall corpuscular theory) fail either to present a plausible theoretical picture or account for the facts.

¹¹⁸ Vallance (1990: 1-43 but especially 21-43)

that Epicureans and Democriteans placed on the structure of their underlying stuffs, namely indivisibility.

In that vein, Vallance emphasizes the frangibility of Asclepiades' ἀναρμοὶ ὄγκοι as distinct from the indivisible particles that populate Epicurean and Abderite accounts of material composition. One crucial difference between Asclepiades' particles and those of atomic theorists is a consequence of this frangibility. While Epicurean and Abderite atoms were of some constant dimensions, Asclepiadean corpuscles could result in disease precisely due to an alteration in their shape and size and not, for example, just in virtue of their shape and size.

This etiology is, of course, compatible with but not necessary for Methodist beliefs regarding the so-called communities. How relative constriction could come about is a question over and above the notion both that relative constriction is just a matter of fact and that this constriction results in illness. Galen, however, does not engage directly with constriction, arguably as a means to dismiss the Methodists, whom he does not as a group take seriously. Vallance also claims that this distinction is elided by Galen in order to associate Methodists with atomism and by so doing make a caricature of their view of the body's composition,

Galen was no fool. He must have known that Democritean and Epicurean atomism differed profoundly from Asclepiades' corpuscular hypothesis. After all, he was aware of the fragility of the particles. And in his note at *De elementis* 1.418k he makes it quite clear that he knows that the Democritean atoms are unbreakable 'on account of their hardness' and

'indivisible on account of their size'. He is just as clear about the Asclepiadean corpuscles.¹¹⁹

Vallance suggests that Galen makes medical simpletons out of the Methodists for rhetorical purposes.¹²⁰ And, although it is difficult to reconcile the Methodist disavowal of hidden causes with their commitment to the communities and the corpuscular theory underlying them, it is clear from observations like Vallance's above that Galen is playing fast and loose with his rivals. Comparisons Galen's accounts of Methodist incompetence and what little survives in writing of Methodist practice, by Methodist authors such as Soranus and Caelius, reaffirm this notion.

Soranus' dictum at *Gynecologia* I.2, already quoted,¹²¹ may also explain why the Methodists might remain silent on their own theoretical commitments, however loosely those were taken. Furthermore, their nearly institutionalized tendency toward intra-sectarian criticism can give the impression of inconsistency, where there may simply have been therapeutic debate. Vallance sums up this point nicely,

Methodism was not a homogeneous system, and our first-hand knowledge of it does not extend very far beyond what we can see in Caelius and Soranus. The method of the Methodists was essentially a method of treatment, and while all Methodists seemed to have shunned theoretical speculation, they did so to varying degrees.¹²²

¹¹⁹ Vallance (1990: 40)

¹²⁰ A point brought out throughout the introduction to Tecusan (2004)

¹²¹ "Since natural philosophy (τὸ φυσικόν) is not useful for our ends, although it is a nice bauble for a learned work, I have excluded it here, keeping for now only to necessary matters." Soranus *Gyn.* I.2, τὸν μὲν οὖν φυσικὸν ἀχρηστον ὄντα πρὸς τὸ τέλος, φερέκοσμον δὲ πρὸς χρηστομάθειαν, κεχωρίκαμεν ἐντεῦθεν, μόνον πρὸς τὸ παρὸν ἐχόμενοι τῶν ἀναγκαίων.

¹²² Vallance (1990:132)

Consequently, a formal nosology was not necessary on a Methodist contrual even if a therapeutic one was. What use, after all, was a classification of diseases when nosological differentia were not causally relevant to treatment? The same can be said for an elaborate taxonomy of symptoms. Except insofar as they might be indicative of a strictural imbalance in the pores of the body relative to the corpuscles passing through them, symptoms bore little medically relevant relation to the underlying cause of the disease. Consider, for example, Soranus' discussion of inflammation of the uterus,

Inflammation is so-called on account of "growing inflamed" and not as <Democritus> has said, on account of the cause being phlegm. There are many other antecedent causes of inflammation around the uterus but very frequently they are cold, likewise pain, miscarriage, and a poor delivery, none of which contributes to a change of treatment. When the uterus is inflamed, some general signs appear and some particular and indicative of its affected part.¹²³

Here, Soranus echoes his claim from elsewhere in the *Gynecologia* that the causes of a given disease are not relevant to its treatment, even if they are of interest to the curious practitioner. The notion at work in this passage is that physical disorders will fall into three broad categories. The affected part will be overly constricted, not sufficiently constricted, or there will be a mix of disordered constriction. Ultimately, the reasons for the disordered constriction are not relevant to treatment; so, the physician need only be concerned with correctly identifying which of the three abnormal constrictions presents

¹²³ Soranus *Gyn.* 3.17, Ἡ φλεγμονὴ κέκληται μὲν ἀπὸ τοῦ φλέγειν καὶ οὐχ ὡς ὁ <Δημόκριτος> εἴρηκεν ἀπὸ τοῦ αἵτιον εἶναι τὸ φλέγμα. προκατάρχει δὲ τῆς περὶ τὴν ὑστέραν φλεγμονῆς πολλὰ μὲν καὶ ἄλλα, συνεχέστερον δὲ ψύξις, ὡσαύτως κόπος, ἔκτρωσις φαύλη τε μαίωσις, ὧν οὐδὲν εἰς τὴν ἐξαλλαγὴν συντελεῖ τῆς ἐπιμελείας. μήτρας δὲ φλεγμαινούσης τὰ μὲν κοινὰ παρῆπεται σημεῖα, τὰ δὲ ἴδια καὶ δηλωτικὰ τοῦ πάσχοντος μέρους αὐτῆς.

itself.¹²⁴ Galen variously takes this Methodist uninterest in causal explanations as a deep methodological inadequacy. He says, for example, that

[t]o suppose that health exists in function and that disease consists in physical conditions or, alternately, that health is in the constitution of the parts while disease is in the injury of functions is worthy of the other Methodists, and especially of Thessalus, the founder (ἀρχηγού) of their idiocy. In fact, nearly all these members of this non-methodical and insane sect say that health, and heartiness, is the stability of natural functions, while disease, and frailty, is not injury of functions but as far as some go a certain disposition of the body and as far as others go the body being in a certain state.¹²⁵

Galen's view of the importance of a causal account in the understanding and therefore the treatment of disease brings us to the role that causation played for Galen, in opposition to Methodist and Empiricist approaches to therapy.

¹²⁴ This sentiment is echoed shortly after the passage above at the end of 3.19, on Demetrius of Apamea's analysis of the spread of inflammation, "and we agree on this point, even if what is being sought out makes no difference to the application of local treatment" (καὶ <ἡμεῖς> δὲ τοῦτο συναινοῦμεν, εἰ καὶ τὸ ζητούμενον οὐδεμίαν ἐξαλλαγὴν ἐπιφέρει πρὸς τὴν χρῆσιν τῶν τοπικῶν βοηθημάτων).

¹²⁵ *MM X 51*: τὸ δ' ἐν ταῖς ἐνεργείαις ὑποθέμενον εἶναι τὴν ὑγίειαν, ἐν ταῖς διαθέσειν ὑπολαμβάνειν συνίστασθαι τὴν νόσον, ἢ ἔμπαλιν ἐν μὲν τῇ κατασκευῇ τῶν μορίων τὴν ὑγίειαν, ἐν δὲ τῇ βλάβῃ τῶν ἐνεργειῶν τὴν νόσον, ἄξιον τῶν τε ἄλλων μεθοδικῶν ἐστὶ καὶ δὴ καὶ τοῦ τῆς ἐμπληξίας αὐτῶν ἀρχηγοῦ Θεσσαλοῦ. πάντες γοῦν σχεδὸν οἱ ἀπὸ τῆς ἀμεθόδου τε καὶ μανιμῶδους ταύτης αἰρέσεως τὴν μὲν ὑγίειαν εὐστάθειαν τῶν κατὰ φύσιν ἐνεργειῶν εἶναι φασι καὶ ἰσχύν, τὴν δὲ νόσον οὐκ ἔτι βλάβην ἐνεργείας καὶ ἀσθένειαν, ἀλλ' οἱ μὲν διάθεσίν τινα σώματος, οἱ δὲ σῶμά πως διακείμενον.

Galen's Eclecticism

EDUCATION

Galen was born to a wealthy family at Pergamum in 129 CE. His father, Nicon, was a successful architect who undertook to have his son educated in philosophy from an early age.¹²⁶ As was fairly standard for the children of the socially elite, Galen was trained in grammar and mathematics; he began to study logic at the age of fourteen and was educated by prominent philosophers of the major philosophical schools of the time starting at the age of fifteen.¹²⁷ His so-called eclecticism reflects his early exposure to this philosophical melange, which included study under Academics, Peripatetics, Stoics, and Epicureans.¹²⁸ Some time around between the ages of fourteen and seventeen, Nicon is reputed to have had a dream in which Asclepius appeared to him encouraging that he train his son in medicine, in addition to his training in philosophy.¹²⁹ As with philosophy, Galen studied under representatives of the medical sects of the day, first at Pergamum and then after the death of his father in 149 CE, throughout the Greco-Roman world.¹³⁰

This early training that Galen received in philosophy instilled in him a deep respect for and adherence to logical method in his medical practice, with certain *caveats*.

¹²⁶ See Hankinson (2008: 3-4) for a longer discussion of Galen's early education. For standards of education in the Roman period Cf., for example, *OCD* s.v. 'education, Roman.' Children of social elites generally were educated by a *grammaticus*, who would have trained students in letters as well as mathematics, through about the age of twelve and then a *rhetor* through about the age of fifteen.

¹²⁷ *Ord.Lib.Prop.* XIX 59

¹²⁸ Cf. *Aff.Dig.* V 41-2. Also, see Hankinson (2008: 3).

¹²⁹ See *Praen.* XIV 608; *Ord.Lib.Prop.* XIX 59

¹³⁰ See *Ord.Lib.Prop.* XIX 57-8; *Lib.Prop.* XIX 16-7; AA 217-8. For Galen's time in Egypt see Nutton (1993)

By the second century CE, various philosophical sects (e.g., the Stoics and Peripatetics) had come to disagree with respect to logical method in similarly sectarian ways to those in which the various medical schools had come to disagree, regarding the role of formal inference in the practice of medicine. While the Peripatetics focused primarily on types of logical quantification (e.g, universal, existential), the Stoics focused primarily on connectives (e.g, the conditional, disjunctions, etc.).¹³¹

APPROACH TO MEDICINE

As mentioned earlier, Galen's approach to medicine was shaped by his early experiences with philosophical logic. These experiences, however, had left him, as he tells us, dissatisfied both with the inter-sectarian discord and with the inability of logicians to adequately verify the claims they alleged to prove,

So, after entrusting myself to all of the leading Stoic and Peripatetic philosophers of the time, I learned many logical theorems which, once I had examined them for a time, I found to be useless for demonstrations (ἀποδείξεις): very few had been investigated, by the Stoics and Peripatetics, with any practical result (χρησίμως) and very few would allow them to reach their stated *demonstrandum*. Moreover, these theorems were inconsonant (διαπεφωνημένα) with one another and some even contradicted our native intuitions. For all that's holy, if it were up to these teachers, I would have fallen into Pyrrhonian *aporia* had I not mastered geometry, arithmetic, and logic, in which subjects most of all I

¹³¹ Generally on Galen's logical method and its backdrop in the second century see Barnes (1991) and Morison (2008)

had been taught to proceed from childhood by my father, who had learned theory from my grandfather and great-grandfather.¹³²

Galen's complaint regarding the inconsistencies (διαφωνία) between the logical theories of the Stoics and Peripatetics echoes some of the grounds for the Empiricists' rejection of Dogmatist sects (see, for example, *De Sectis* I 78-79, quoted earlier), where Galen puts a very similar argument into the mouths of Empiricists who reject Dogmatism for just these reasons. In that passage, the conclusions that the medical Dogmatists come to, like the arguments of the Stoics and Peripatetics here, are plausible but neither proven nor provable (at least not employing their method of argument).¹³³

Galen's central objection to arguments between Dogmatists, here, is that they did not have a basis for adjudicating between different accounts for their treatments and analyses of the natural world.¹³⁴ His response to the argumentative inadequacies he

¹³² *Lib.Prop.* XIX 39-40, πᾶσιν οὖν τοῖς κατ' ἐκείνον τὸν χρόνον ἐνδόξοις Στωϊκοῖς τε καὶ Περιπατητικοῖς ἐμαυτὸν ἐγγχειρίσας πολλὰ μὲν ἔμαθον ἄλλα τῶν λογικῶν θεωρημάτων, ἃ τῷ μετὰ ταῦτα χρόνῳ σκοπούμενος ἄχρηστα πρὸς τὰς ἀποδείξεις εὖρον, ὀλίγιστα δὲ χρησίμως μὲν αὐτοῖς ἐζητημένα καὶ τοῦ προκειμένου σκοποῦ τυχεῖν ἐφίεμενα, διαπεφωνημένα δὲ καὶ ταῦτα παρ' αὐτοῖς ἐκείνοις, ἔνια δὲ καὶ ταῖς φυσικαῖς ἐννοίαις ἐναντία, καὶ νῆ τοὺς θεοὺς, ὅσον ἐπὶ τοῖς διδασκάλοις, εἰς τὴν τῶν Πυρρωνείων ἀπορίαν ἐνεπεπτόκειν ἂν καὶ αὐτός, εἰ μὴ καὶ τὰ κατὰ γεωμετρίαν ἀριθμητικὴν τε καὶ λογιστικὴν κατεῖχον, ἐν αἷς ἐπὶ πλείστον ὑπὸ τῷ πατρὶ παιδευόμενος ἐξ ἀρχῆς προεληλύθειν ἀπὸ πάππου τε καὶ προπάππου διαδεδεγμένῳ τὴν θεωρίαν.

¹³³ In Galen, forms of διαφωνία and διαφωνεῖν often refer to sectarian disagreements. For similar language with respect to sectarian διαφωνία as a motive for Galen's different approach to demonstration see *MM X* 469, "As I have already said in my treatise *On Demonstration*, after I had been completely buried under the discord (διαφωνία) between most doctors, I turned to evaluating demonstration (αὐτήν), knowing that it was necessary first to be well-versed in the demonstrative method. Having done this for many consecutive years, I subjected each of the doctrines to demonstration in a similar way." (Ὡς γὰρ κἄν τῷ περὶ τῆς ἀποδεικτικῆς εὐρέσεως εἴρηται γράμματι, περιαντληθεὶς ὑπὸ τοῦ πλήθους τῆς τῶν ἰατρῶν διαφωνίας, εἶτ' ἐπὶ τὸ κρίνειν αὐτὴν τραπόμενος, ἔγνω χρῆναι πρότερον ἐν ἀποδεικτικαῖς μεθόδοις γυμνάσασθαι. καὶ τοῦτο πράξας ἔτεσιν ἐφεξῆς πολλοῖς ὑπέβαλλον οὕτως ἕκαστον τῶν δογμάτων αὐτῆ...). For Galen's use more generally, Cf. *Sect.Int.* I 78; *MM X* 35, 53, 469 *et passim*.

¹³⁴ Although this objection has as its target competent logicians, Galen also frequently objects to logical incompetence on the part of many physicians and philosophers who pretend to use these logical arguments.

perceives in some of the theorems of the Stoics and Peripatetics is, to a point, similar to the Empiricist response to the proliferation of medical theories without some, in their case empirical, litmus test for truth. Galen makes this point more explicit immediately after the quotation above where he offers up a type of geometric proof based on empirical evidence as a basis for just this sort of adjudication,

Seeing, therefore, that evident truths (manifest not only to me) were produced in the predictions of eclipses, in the construction of sundials and of water-clocks, and of many other things besides in engineering, I thought it would be better to use this type of geometrical demonstration.¹³⁵

All of the examples above, the sundial, waterclock, and cases of engineering, have in common that their function is demonstrable through repeated physical observation.¹³⁶ Galen is certainly no sceptic with regard to the senses and it is perhaps useful, in this context, to recall the root meaning of geometry (γεωμετρία). Geometry was originally, as the structure of the word suggests, a form of land surveyance.¹³⁷ That is, geometrical

This sort of complaint is common in Galen's writing, that not only is the theory held by the object of his attack flawed but also that the target in question fails to understand even this flawed theory (e.g., *MM* X 38, 61-2; *PHP* V 220; and, emphatically *passim*).

¹³⁵ *Lib.Prop.* XIX 40, ὁρῶν οὖν οὐ μόνον ἐναργῶς ἀληθῆ φαινόμενά μοι τὰ κατὰ τὰς ἐκλείψεων προορήσεις ὥρολογίων τε καὶ κλεψυδρῶν κατασκευὰς ὅσα τ' ἄλλα [τά] κατὰ τὴν ἀρχιτεκτονίαν ἐπινοήθη βέλτιον φήθη εἶναι τῷ τύπῳ τῶν γεωμετρικῶν ἀποδείξεων χρῆσθαι.

¹³⁶ See *Pecc.Dig.* V 82-83, too lengthy to quote here, for the observational tests Galen recommends for the construction of an accurate sundial. In brief, one creates a sort of waterclock by which to measure the sundial: after a stipulated period of time determined by whatever standard measurement the sundial measures, one observes how much water has leaked from a pierced vessel. After marking the side of the vessel and refilling it, one waits for another unit of that time to pass as measured by the sundial. If after repeated tests of this sort the waterclock and sundial agree, the sundial is accurate. Of particular relevance, here, is Galen's emphasis on repetition the deciding factor of the empirical proof and repeatability as the criterion for success for the sundial (and by extension for medicine).

¹³⁷ The earliest attestation of γεωμετρία, for example, is in Herodotus 2.109, in a discussion of Egyptian land surveyance. The sundial and the division of the day into hours also appear in this passage, emphasizing the sort of measurements with which this word was associated. Documentary papyri bear out

demonstration, on this construal, is a tool for measuring and quantifying natural phenomena, whose utility was in large part determined by its ability to accurately and repeatedly predict features of the natural world, to function *in practice*.

Even in its later use, to refer to its eponymous branch of mathematics and the forms of proof found therein, Euclidian geometry was based on certain axioms and common notions that were either supposed to be immediately evident to the senses or immediately evident to the mind. This notion, of immediate evidence to the mind, requires some unpacking. Consequently, It may be organizationally useful here to discuss Galen's logical method generally, in order to explain the role that these so-called geometrical demonstrations and geometric axioms play in his overall medical method.¹³⁸

LOGICAL METHOD

Inquiry regarding the discord (διαφωνίας) between practitioners is of great import, not only for those who are ill to regain their health but also for those who are healthy (clearly as a protector of it) and for those who exercise for good health in order to get it and keep it. Then he added, "and for whatever each person wants," making it clear to us that the problem and its solution extend not only to medicine but also to all the other arts (τέχναι).

The reason why doctors, practicing an art in which it is possible to be tested by experience (τῆ πεύρα... κριθῆναι) whether the remedies used helped or hurt, still make contradictory claims about what helps and what hurts may be baffling. It is not at all baffling that, in philosophy, the majority of

this primary meaning of geometry even in later Greek (Cf. *PTeb.* 24.42, *POxy.* 499.27 from the second centuries BCE and CE respectively).

¹³⁸ Cf. *Pecc.Dig.* V 66, on the need to verify theories both on the basis of indemonstrable but evident first principles, such as in geometry, as well as by empirical observation.

disagreements (τῶν διαφωνιῶν) haven't at all been settled, since its subject matter cannot clearly be tested by experience (τῇ πείρᾳ).¹³⁹

Engineering, waterclocks, and sundials, whose successful functions are determined observationally, all point to a useful subset of the sorts of premises that Galen accepts as contributing to the soundness of arguments. That is, their proof is in the pudding.¹⁴⁰ In this vein, Galen's writing is replete with evidence that he is primarily interested far less in the validity of argument, as he suggests of some Dogmatists and sophistical doctors, than in their soundness.¹⁴¹ He consistently shows that he is primarily interested in arguments ranging over and proceeding from features of the world that are able to be judged by experience (τῇ πείρᾳ). Experience, for Galen, not only involves features of the world that are evident to sensation but also features that are evident to cognition, in the way that geometric axioms and common notions can be said to be evident (more on this latter notion, which is one of the features that distinguishes Galen from Empiricists, shortly).¹⁴²

¹³⁹ *PHP* V 765-6, τὸ περὶ τῆς διαφωνίας, φησί, τῶν τεχνιτῶν σκέμμα μεγίστην ἔχει δύναμιν οὐ μόνους τοῖς νοσοῦσιν ἐς ὑγιείας κτήσιν, ἀλλὰ καὶ τοῖς ὑγιαίνουσιν, ἐς φυλακὴν αὐτῆς δηλονότι, καὶ τοῖς ἀσκούσιν ἐς εὐεξίην τοῦ σώματος πρὸς τε τὴν κτήσιν αὐτῆς καὶ διαμονήν· εἶτα προσέθηκε “καὶ ἐς ὃ τι ἕκαστος ἐθέλει,” δηλῶν ἡμῖν οὐ μόνον εἰς ἰατρικὴν ἀλλὰ καὶ τὰς ἄλλας τέχνας ἐκτετάσθαι τὸ σκέμμα καὶ τὴν λύσιν αὐτοῦ. θαυμάσαι γὰρ ἐστὶ διὰ τί τέχνην μετιόντες οἱ ἰητροὶ καθ' ἣν τῇ πείρᾳ τὰ προσφερόμενα βοηθήματα κριθῆναι δύναται, πότερον ὠφέλησεν ἢ ἐβλαψεν, ὅμως ἐναντιωτάτας ἀποφάσεις ἐποιήσαντο περὶ τῶν ὠφελούντων τε καὶ βλαπτόντων. ἐν μὲν γὰρ φιλοσοφίᾳ μὴ πεπαῦσθαι τὰς πλείστας τῶν διαφωνιῶν οὐδὲν θαυμαστόν, ὡς ἂν μὴ δυναμένων τῶν πραγμάτων ἐναργῶς κριθῆναι τῇ πείρᾳ.

¹⁴⁰ Cf., *Pecc.Dig.* V 69, where Galen describes how one tests sundials, waterclocks, and other mechanical devices against astronomical observations.

¹⁴¹ Cf. *Pecc.Dig.* V 72-3 on the perils of valid but unsound arguments (among other types of arguments).

¹⁴² See, e.g., *PHP* V 766-7, 791-5

Galen, for example, as suggested by the quotation above shows a conspicuous and explicit lack of interest in many of the questions that frequently peppered philosophical and medical texts preceding him. He variously denigrates any conclusions regarding void, the sempiternity of the world, the corporeality or location of divine entities, the nature of the soul, the faculty involved in the formation of the fetus, etc., as not adequately verifiable and therefore largely pointless from a medical perspective.¹⁴³

EVIDENCE

Let me return now to the geometric example I mentioned earlier. I had said that Euclidean geometry took as its axioms notions that were either evident to sensation or in a sense evident to the mind and that Galen's repeated use of geometric proof was telling for his own medico-philosophical practice. Galen mentions geometric proofs as a palliative for his disgust with the proliferation of Dogmatist theories and as the means by which he tried to forge a new path in medicine. Given Galen's interest in finding the proper warrant for the premises of medical arguments, it bears some fruit to discuss the basis for geometric principles, at least of the ancient sort.

¹⁴³ See *passim* but e.g., *Prop. Plac.* 2; *PHP* V 771 on the generation or destruction of the world, on void, on the corporeality and location of divine beings. *Prop. Plac.* 3 and 7; *PHP* V 763, 766 on the substance of the soul. *Prop. Plac.* 4, on knowledge of celestial bodies. *Prop. Plac.* 11; *Foet. Form.* IV 700-2 on the formation of the fetus. *Prop. Plac.* 15, on *empsychosis* and *metempsychosis*.

a) Empirical Evidence

It is not fair to say that Galen considered empirical evidence to be the only satisfactory warrant for knowledge claims, although empirical warrant was sufficient for such claims. Beginning with empirical evidence, however, it *is* fair to say that Galen was not a sceptic with respect to perception.¹⁴⁴ In this respect and others, Galen was fairly consistent with Empiricist doctors of his time. A particularly striking example of his commitment to perception occurs in a longer description of his well-known demonstration of encephalocentrism, which involved the ligation of the recurrent laryngeal nerve in an effort to show that the brain was the starting point for the nerves involved in voice production,

As you know, Alexander was known to everyone for this weakness [i.e. φιλονεικία), just as he also demonstrated at the time. For, I had just promised a demonstration involving the finest nerves: that there is a hair-like pair of nerves inserted in the muscles of the larynx, on the left side and on the right; and, that in those cases in which the nerves are ligated by a snare or when they are severed, the animal becomes mute while not causing any damage to the animal or to its overall capacity to function. Before I began the demonstration, Alexander said, interrupting me, "Should this be granted to you first, that we must believe in empirical evidence?" Stepping away from them, I left, saying only this one thing, that I was mistaken to think that I had not come before some backwoods Pyrrhonists; otherwise, I would not have come at all.¹⁴⁵

¹⁴⁴ See *Dig.Puls.* VIII 780-6

¹⁴⁵ *Praen.* XIV 628, γινώσκεις γὰρ ὡς ἐπὶ τούτῳ τῷ πάθει πρὸς ἀπάντων καὶ Ἀλέξανδρος ἐγινώσκετο, καθάπερ καὶ τότε σαφῶς ἐδήλωσε. δείξιν γὰρ ὑποσχομένου μου νευριῶν λεπτοτάτων, ὡς εἶναι τριχοειδῆ συζυγίαν τινὰ τοῖς τοῦ φάρυγγος μυσὶν ἐκφυομένην, τοῖς μὲν ἐκ τῶν ἀριστερῶν μερῶν, τοῖς δὲ ἐκ τῶν δεξιῶν· ἐφ' οἷς βρόχῳ διαληφθεῖσιν, ἢ τμηθεῖσιν ἄφωνον γίνεται τὸ ζῶον, οὔτ' εἰς τὴν ζωὴν τι βλαπτομένον, οὔτ' εἰς τὴν ἐνέργειαν· ὁ Ἀλέξανδρος ὑποτυχῶν πρὶν δειχθῆναι, "τοῦτο πρῶτον," ἔφησεν, "ἂν σοι συγχωρηθεῖ, τοῖς διὰ τῶν αἰσθήσεων φαινομένοις πιστεύειν ἡμᾶς δεῖν." ἀκούσας δ' ἐγὼ ταῦτα, καταλιπὼν αὐτοὺς ἐχωρίσθη ἐν μόνον φθεγξάμενος, ὡς ἐσφάλην οἰόμενος οὐκ εἰς τοὺς ἀγροικοκυρῶνείους ἦκειν, ἢ οὐκ ἂν ἀφικνεῖσθαι.

This example, from Galen's treatise *On Prognosis*, involves Alexander of Damascus, a little known Peripatetic, who allegedly objected to or at least questioned the justificatory basis empirical evidence (τοις διὰ τῶν αἰσθήσεων φαινόμενοις) had for demonstration. In addition to being a vivid example of Galen's fondness for biting satire,¹⁴⁶ the text here is both indicative of Galen's position on scepticism regarding empirical evidence and, in particular, his response to rejections of anatomy as a basis for medical investigation.¹⁴⁷

This second implication of the Alexander of Damascus passage is equally a dig at Empiricist doctors who rejected anatomy as a viable basis on which to make medical claims. The Empiricist objection to anatomy (notwithstanding their further objection to the cruelty of vivisection) was based both on ethical grounds and on a refusal to consider that anatomical information, obtained from dead bodies, was useful for the treatment of live bodies. As far as they were concerned, it required an unacceptable degree of analogical reasoning, as witnessed by Celsus,¹⁴⁸

¹⁴⁶ Note the puns on δειξις throughout the quotation as well as Galen's coinage ἀγροικοπυρρόωνεῖος, which I have translated 'backwoods Pyrrhonists' and which Galen uses variously elsewhere.

¹⁴⁷ This scenario and Galen's response to it are, given Alexander's Peripatetic background, ironically reminiscent of Aristotle's own response to hardline scepticism regarding the reliability of the senses. According to Aristotle sceptics of this sort are little more than plants (ὁμοίος γὰρ φυτῷ τοιοῦτος ἢ τοιοῦτος ἤδη) at *Meta.* 1006a15-16 and, more generally, throughout *Meta.* IV.4). It is possible, and if true amusing, to imagine that Galen is pointing up Alexander's alleged *philoneikia* by having a Peripatetic philosopher object to a fundamental principle of Aristotelian philosophy, the reliability of sensation.

¹⁴⁸ See Mudry (1982:107), "Il est révélateur à ce propos que les empiriques, qui refusent la dissection, n'envisagent pourtant pas d'autre méthode d'investigation anatomique que la connaissance directe." Also, Mudry (1982: 137), "Tout en rejetant catégoriquement la vivisection, les empiriques admettent pourtant que la connaissance de certaines particularités des organes internes, celles qui ne sont pas altérées par l'effet

For these reasons, that the dissection of the dead is not necessary (even if it isn't cruel, it is disgusting), since most things are changed in dead bodies and that treatment itself shows what can actually be learned in live bodies.¹⁴⁹

Galen expanded the ambit of what counted toward *πείρα* by not only including anatomical training, investigation, and knowledge in it but also by basing his practice in large part on anatomical knowledge. And, given the evidence for the waning of anatomical knowledge and investigation after its heyday in the Hellenistic period, it is no surprise that Galen's objections to ignorance of it and even to ancient physics extended to many Dogmatists as well.¹⁵⁰

b) Intellectually Primitive Evidence

Galen's dissatisfaction with the medical methods of other thinkers was not restricted to Dogmatists. He is equally biting with regard to the failings he sees in the broad approach of the Empiricists to medical knowledge. While, as far as Galen was concerned, the Dogmatists failed to provide proper justification for their arguments and to give proper weight to empirical observation, the Empiricists failed to accept a class of

des blessures, peut être utile au médecin (la dissection, qui ne fait connaître que des organes morts, est excluee." I owe this reference to Dr. Marquis Berrey.

¹⁴⁹ *De Medicina*, 44, Ob haec ne mortuorum quidem lacerationem necessarium esse (quae etsi non crudelis, tamen foeda sit), cum aliter pleraque in mortuis se habeant; quantum vero in vivis cognosci potest, ipsa curatio ostendat. More generally, see *De Medicina* 40-44.

¹⁵⁰ Cf. *MM* X 169-170, Some of the Dogmatists are like them [sc. Empiricists] even if they don't want to be, however many can't make their way to the natural principles of the bodies by reason. For as I have shown earlier, these also are half-Empiricists, who couldn't understand primitive elements. (ὅμοιοι δ' αὐτοῖς εἰσι, κὰν μὴ θέλωσιν, ὅσοι τῶν Δογματιζιπόντων ἐπὶ τὰς φυσικὰς ἀρχὰς τῶν σωμάτων οὐκ ἐνδυνήθησαν ἀναβῆναι τῷ λόγῳ. καὶ γὰρ αὐτοὶ, καθότι πρόσθεν ἐδείξαμεν, ἐξ ἡμίσεώς εἰσι Ἐμπειρικοί, οἳ οὐκ ἠδυνήθησαν διαλαβεῖν περὶ τῶν πρώτων στοιχείων).

evidence into their epistemology. Galen treats this class, things that are evident to the mind, as playing an evidentiary role in medical epistemology even if he ultimately does not consider it a part of experience (ἐμπειρία),

The ancient philosophers say that there are two kinds of *phenomena*:

i) one part, which is consistent with the Empiricists, has to do with things that are known by some sensation (e.g., whiteness and blackness, hardness and softness, hot and cold, and so on;

ii) another, indemonstrable, part that has to do with those things that come under observation of the intellect in their initial apprehension (e.g., things that are equal to the same thing are equal to one another, and that if equals are added to equals the sums are equal, and if equals are subtracted from equals the remainders are equal). They also say, of this second class, that nothing comes to be without a cause, and that everything comes from something, and that nothing comes to be from something that doesn't exist at all.¹⁵¹

This second class of evidence, things that are evident to the mind, is a *sine qua non* of justification for Galen.¹⁵² The notion that there is a class of things evident to the mind is already present in Platonic discussions of epistemology and more fully worked

¹⁵¹ *MM X 36*, οἱ δ' αὖ παλαιοὶ φιλόσοφοι διττὸν γένος εἶναί φασι τῶν φαινομένων, ἓν μὲν, ὅπερ καὶ τοῖς ἐμπειρικοῖς ὁμολογεῖται, τῶν αἰσθήσει τινὶ διαγινωσκομένων, οἷον λευκοῦ καὶ μέλανος καὶ σκληροῦ καὶ μαλακοῦ καὶ θερμοῦ καὶ ψυχροῦ καὶ τῶν ὁμοίων, ἕτερον δὲ τῶν ὑποπιπτόντων νοήσει κατὰ πρώτην ἐπιβολὴν ἀναπόδεικτον, ὡς τὰ τῷ αὐτῷ ἴσα καὶ ἀλλήλοις ὑπάρχειν ἴσα, καὶ ἐὰν ἴσοις ἴσα προστεθῆ, καὶ τὰ ὅλα ἴσα γίνεσθαι, καὶ ἐὰν ἀπὸ ἴσων ἴσα ἀφαιρεθῆ, καὶ τὰ λοιπὰ ἴσα εἶναι. τοῦ τοιοῦτου γένους εἶναί φασι καὶ τὸ μηδὲν ἀναιτίως γίνεσθαι· καὶ πάντ' ἐξ ὄντος τινός, ἐκ δὲ τοῦ μηδὲν ὄντος οὐδέν·

¹⁵² See, for example, Hankinson (2008: 167), "In the case of geometry, these will be stipulative (yet self-evident) definitions, plus *a priori* axioms such as those mentioned above. But how is the method to be applied in the case of an empirical science?" These sorts of axioms are also mentioned by me immediately above regarding *MM X 36* and below in the context of *Pecc.Dig. V 67*. *Pace* Hankinson, it is unclear that to Galen geometry would have been a non-empirical science to the extent that both its definitions and axioms could, according to Galen, be tested empirically even if they could not be directly observed.

out by Aristotle, principally in the *Posterior Analytics* (e.g., *Post An 2*).¹⁵³ I have described the process by which Aristotle believes we come to know some of the members of this class earlier. Empiricists would object to the claim that there are items evident to the mind, on the largely *a priori* grounds that only the senses are reliable truth bearers. That is, this sort of mental grasping or seeing falls into the class of indications (ἐνδειξις) to which the Empiricists in principle object.

Part of the Galenic program for reliable epistemic claims requires not only that one follow the aesthetic phenomena to intellectually primitive evidence but also that, once that has been accomplished, one verify the soundness of resulting arguments by confirmation with empirical observations. For example, consider Galen's description of the way in which one can apply this method, common in fields such as engineering or geometry, to medical investigations,

When you find your own method or when you use a method that has been taught to you by someone else and divide the line before you into however many parts you like, the matter will make itself evident to you. It will be rigorously manifest that all the parts divided in this way are equal. And it will also become manifest, by way of empirical observation, that all problems of this kind are discovered with certainty.¹⁵⁴

This translation, out of context, does not make clear what sort of phenomena are adequate criteria for confirmation for Galen. In what follows subsequently, however,

¹⁵³ Cf. *Pecc.Dig.* V 79 *et passim* for Galen's discussion of first principles as necessary to avoid an infinite explanatory or causal regress.

¹⁵⁴ See *Pecc.Dig.* V 67, ἐὰν γὰρ εὐρῶν μέθοδον ἰδίαν ἢ παρ' ἑτέρου ἢ διδαχθείση χρώμενος εἰς ὅσαπερ ἂν ἐθέλης μέρη τὴν προτεθείσαν εὐθείαν διορίσης, αὐτὸ μαρτυρήσει σοι τὸ πρᾶγμα, φανεῖται τε ἅπαντα τὰ μέρη τῆς οὕτω διαιρεθείσης ἀκριβῶς ἴσα, φανεῖται δὲ καὶ τὰ <λοιπὰ> τοιαῦτα πάντα προβλήματα βεβαίως εὐρημένα δι' αὐτῶν τῶν ἐναργῶς φαινομένων

Galen creates a fuller context for the phrase, translated here "on the basis of things that are clearly evident" (δι' αὐτῶν τῶν ἐναργῶς φαινομένων). In the following two chapters, he gives a relatively lengthy example of the successful geometric construction of a circumscribed polygon. At *Pecc. Dig.* V 68 he makes it clear that confirmation of its construction is visually apparent, although Galen is not excluding the confirmation of other proofs through mentally evident evidence. Of a piece with the geometric examples mentioned earlier, Galen proceeds to discuss how this is also the method commonly used in astronomy and 'architecture' (ἀρχιτεκτονία), which he tells the reader includes the engineering of sundials, waterclocks, and other mechanical devices.

Galen endorses the Empiricist's belief in the power of and the need for direct observation and testing, in the sense of *παῖρα*, for the epistemic medical claims. He simultaneously echoes the Empiricist's objections to Dogmatist theorizing, on the grounds that it is merely plausible without some empirical evidence with which to underpin such theories down. On the other hand, Galen bristles at the limits that Empiricists place on theoretical and causal medical accounts. He does so on the grounds that observation without some organizing principle leaves medical discovery up to chance, which not only cripples medical progress but also is disingenuous (cf. the discovery of the cupping glass and of certain complex drugs, whose utility is not itself a matter of question).

The force of both the cupping glass example as well as the case of complex drugs lies in the improbability of making such complex discoveries wholly on the basis of a

concatenation of chance observations. Complex drugs, in particular, have on Galen's construal strongly emergent properties (i.e., they are not evident in any one of their ingredients or even in incomplete groupings of those ingredients). Consequently, the Empiricist is at pains to explain how Empiricism, with its adherence to non-experimental observation, can generate these sorts of remedies, whose utility according to Galen they do concede. Additionally, Galen correctly chastises the Empiricists' skepticism with regard to hidden structures, entities, and principles (e.g., anatomy and fundamental physical principles) on the grounds that this scepticism groundlessly proscribes robust tools for diagnosis and the determination of therapy. By taking on board an empirical method for verifying his theoretical claims and explaining those claims through a rational method, Galen attempted to forge a middle path that aimed at a coherent and effective medical practice.

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