

EPISTEMOLOGICAL PERSPECTIVES IN LATE ANTIQUITY – A DIALOG BETWEEN RATIONALISM AND EMPIRICISM IN THE SCIENTIFIC WRITINGS¹

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ABSTRACT: Given the particular character of Ancient Literature, I considered it useful to approach the issue from the perspective of the Philosophy of Science: Epistemology and the Philosophy of Science stem from the same source, and this aspect is all the more patent for Antiquity. In fact, the two perspectives that I mentioned in the subtitle, Empiricism and Rationalism, both represent epistemological choices and approaches specific to the Sciences, as well as to the Philosophy of Science, in the manner that they were practiced in Antiquity. This present study argues that Empiricism noticeably distinguishes itself from Rationalism, not merely in the philosophical works of the above-mentioned period, but also in its non-philosophical literature, especially the one pertaining to Science. Consequently, this study aims to indicate the major lines of thought in the Ancient Philosophy of Science, which reflect themselves in Epistemology in an unmediated manner.

KEYWORDS: Late Antiquity's epistemology, philosophy of science, Galen, rationalists, empiricists

1. Sources

As one might rightly presume, the primary sources for this research consist of documents composed at that time, and successfully preserved onto this very day. They pertain to various disciplines, from Religion to Science, from Theology to sheer Literature. In my previous papers on the subject,² I have tried to at least partially indicate how the epistemological endeavors of Late Antiquity were structured, and I mainly focused on the science of the period. Nevertheless, as

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² See Adrian Muraru, "Philosophy of Science and Epistemology in the Scientific Writings of Late Antiquity," in *Significance and Interpretation within the Knowledge Based Society* (Iași: Institutul European, forthcoming), Adrian Muraru, "Some Epistemological Perspectives in the First Christian Centuries," in *Philosophy and the Knowledge Based Society*, ed. Adrian Muraru (Iași: Institutul European, 2012), 21-30.

anyone should expect, research is significantly impeded by the state of the source-texts (very few have survived onto the current day), and also by the type of censoring filter applied, over time, to their transmission through copying. By this, I do not just mean ideological censorship, but also one of a subtler kind. It stems from slanted intellectual interests that both medieval and modern readers harbored, so that they favored particular works/authors at the fatal expense of others. An additional difficulty arises from the situation of (potentially) relevant sources: many of them fell out of grace from contemporary research interests, and hence, they do not enjoy the privilege of appropriately accurate (critical) editions.

2. Topic

On the other hand, the topic of the Philosophy of Science is of secondary interest for contemporary scholarship on Late Antiquity, as far as non-philosophic works are concerned. There are multiple reasons for this aspect: from placing an excessive emphasis on philosophic literature, which is considered the most relevant, to the preeminence of specific topics in contemporary research. All these aspects describe the generic situation of the field: scholarly literature is highly selective, so that the Philosophy of Science (and the underlying Epistemology) remains rather marginal for the interests of modern research. Most studies/books end up discussing the Epistemology of Late Antiquity only in its secondary sense, by referring to the period's various theories of knowledge, and focusing mostly on the authors that are philosophically relevant. Thus, one may still encounter studies on the Epistemology of Plotinus or on that of Aristotelian commentators from Late Antiquity, but only at the outskirts of scholarly literature, in a marginal segment, because the ontological or metaphysical topics dominate the field.

3. Subject

Nevertheless, an epistemological interest persists not just in the philosophic works, but also in the scientific ones. It stems from certain conceptual options within the Philosophy of Science: the main argumentative choices are exercised in the field of Science, as well, and this research path is less traveled. This study operates with the working hypothesis that there are fully cogent and coherent epistemological doctrines underlying the main argumentative choices in the Philosophy of Science. Henceforth, I will seek to flesh out these notions from the scientific works of Antiquity. The hallmark of the period is that very few of its scientific writings were preserved. For this reason, the method I chose for this study has been to carefully follow the writings of a second-century AD doctor (but also philosopher), namely Galen, and then interpret – through the conceptual lens

that they provide – the surviving evidence on various argumentative choices from the Philosophy of Science and, implicitly, from Epistemology. I chose to focus on the work of Galen because of its considerable size, which renders it as a more significant sample for the flavor of the intellectual milieu in Late Antiquity. In turn, this makes it easier to observe and highlight trends in the doctrines specific to the Philosophy of Science. Fortunately, most of Galen's works survive to this day: their medical content made them practically useful to posterity, so that they were copied, and thus, preserved.³ The fact that they were saved *only* due to their *practical* utility is suggested by the fate that the same author's philosophic and philological works suffered – the most important ones disappeared, almost without a trace. Galen, whose work served as the main source for this study, is also considered a philosopher by his contemporaries (such as Alexander of Aphrodisia).⁴ One can only regret that the corpus of his work is available nowadays only with significant lacunae. Galen transmits essential information about the three medical schools of thought in his time, and beyond his accounts, we may only be content with fragments from authors belonging to these schools (in *Die griechische Empirikerschule*, Deichgraeber collected fragments relevant to the Empiricist stream of thought, while Manuela Tecuşan has edited the first volume in a series that seeks to collect all the surviving fragments from the Methodists: *The Fragments of the Methodists. Volume One: Methodism Outside Soranus*).

Therefore, Galen's writings provide testimonies on the different epistemological attitudes from authors in Late Antiquity. He, himself, adopted a well-defined epistemological perspective, and since we lack other relevant written evidence on the debates from this period, our only solution is to appeal to the single available 'witness.' The author often discusses the fundamental differences between the main medical schools of the period, the empirical and the Rationalist one. He also

³ One should remark that the entire medical literature that preceded Galen has disappeared, because the second-century AD doctor-philosopher was considered normative. There are few exceptions: *The Hippocratic Corpus* (whose survival can be explained by its professional prestige, authoritatively confirmed by Galen), *The Gynecology* of Soranus (incidentally, also praised by Galen), or the *Materia medica* of Dioscorides.

⁴ The correlation between Medicine and Philosophy is obvious from the very first lines of the treatise *An Outline of Empiricism*: „All doctors who are followers of experience, just like the philosophers who are called Skeptics, refuse to be called after a man, but rather want to be known by their frame of minds” (Galen, *Three treatises on the nature of science*, trans. M. Frede (Hackett: Indianapolis, 1985). Toward the end of the treatise, Galen returns to the comparison between the Empiricists and the Skeptics, insisting on the similitude of their attitudes (see Ch. 11). One should remark how the Empiricists use Democritus (see *On Medical Experience*, 9, where the atomist is cited: “experience and difficulties have taught people to do these things”).

mentions the ‘methodic’ school, a medical ‘sect’ that was trying to suggest a different epistemological approach. Three of Galen's writings are essential for understanding the differences between the various medical schools.⁵ The first one is *On Sects – for Beginners*, a medical treatise that focuses on the ‘empirical’ sect, and which was preserved in Greek. The same topic dominates the treatise titled *An Outline of Empiricism*, preserved in Latin (in the translation of Nicolaus de Regio). Finally, the third paper, which only survived in Arabic⁶ (just a few fragments were preserved in Greek), is entitled *On Medical Experience*.⁷ For this final work, because of the lacking necessary knowledge in Arabic, I will use the English translation by R. Walzer. The linguistic diversity of these surviving works suggests a lot about the fate of Galen's writings, but also underlines to what extent prudence should accompany research.

Unfortunately, Galen is the only author who transmits any information on the medical sects mentioned above: one should note that the terms ‘Empiricist’ and ‘Rationalist’⁸ (which enjoy a glorious history in European Philosophy) seem to have been first used precisely on the occasion of these debates, which did not strictly pertain to the medical field. As such, one should be mindful that Galen's view may skew the information (for Galen, too, seems to have had his own firm perspective on Medical Epistemology), even if he himself is aware of this aspect, and transparently admits it. In one of the writings of his old age, when he tries to set order among the works that he had authored, Galen notifies the reader of his own potential bias. In *On My Own Books*, he professes that he had always refused to uncritically adhere to the opinions of any particular medical sect, and that he had always sought to elaborate his own intellectual stance, from which he could critically scrutinize other authors' opinions with detachment (1). Nevertheless, this type of ‘eclecticism’ does not spare Galen from an inherent bias. Moreover,

⁵ Scholars dispute the authorship of a different writing, which offers abundant information on the medical schools of Late Antiquity. This work is usually attributed to Galen (*On the Best Sect*), but because of the reason I explained above, I will avoid discussing it in this paper.

⁶ In fact, as R. Walzer, the editor himself, attests (pp. VI-VII), the Arabic version in turn follows the lost Syriac translation. Hence, the history of this treatise's transmission follows a far more winding course, from Greek, into Syriac, and finally into Arabic.

⁷ For *De sectis ingredientibus*, I used the G. Helmreich edition (*Galenus Pergamensis opera minora*, vol. III, Leipzig, 1893), for *Subfiguratio empirica*, I used the K. Deichgraeber edition (*Die griechische Empirikerschule*, Berlin, 1930, reedited in 1965), and for *On Medical Experience*, I used the R. Walzer edition (Oxford, 1944).

⁸ Galen recounts that these medical schools (*On Sects – for Beginners*, 1) had also received other names. The Empiricists were also called “observationalists,” while the Rationalists were also called “dogmatics,” or “analogists.”

the author's often impetuous writing style should serve as a warning to his audience, as he frequently slips from sober expositions of other authors' works to imprecations against them. And yet, several elements prove advantageous to the inquiry at hand: the three above-mentioned works aim to plainly explain the content that they approach.⁹ Furthermore, the title of the first writing indicates from the onset that it addresses novices, while *On Medical Experience*, 2, indicates young people as its preeminent audience, choosing to expose its content in dialog form for precisely this engaging purpose.¹⁰ Therefore, one may appreciate that Galen's style is directed at the type of audience who would find little use for lofty displays of rhetoric.¹¹

In fact, the disputes between different medical schools referred to the nature of medical knowledge, to the specific theory of scientific knowledge that can be assumed by the practitioner of Medicine. As early as the Hippocratic Corpus, practice and theory were regarded as fundamental disciplines within Medicine: it was considered that theoretic knowledge about human anatomy and physiology was possible (see the Hippocratic treatise *On the Nature of Man*), and

⁹ One should remark how Galen inserts fictional dialogs between representatives of the different medical sects: he makes special use of this stylistic device in the final part of the treatise *On Sects* (8-9), as well as in *On Medical Experience*, passim. He uses a similar rhetorical technique in *An Outline of Empiricism*: toward the end of the first chapter, after discussing the name assumed by the Empiricists, as well as their predecessors, Galen impersonates an Empiricist, in order to render an outline of this epistemological current of thought. "But let us suppose that the person who says all the things which are to be found in this book is an Empiricist" (Galen, *Three treatises*).

¹⁰ Galen provides a most interesting image in the third chapter of this writing: "And now let the Dogmatist speak first, as if he were before the judge in a court of law, ridiculing the arguments of the Empiricist" (trans. R. Walzer).

¹¹ One should remark the abrupt, highly personal *exordium* of the treatise *On Medical Experience* (1): after he shows himself an adept of the median solution (one that assumes both reason, and experience as instruments in the medical craft), Galen condemns the attitude of Asclepiades, a famous Rationalist. One should remark the exigency of perfect coherence, which, Galen tells us, is not respected by Asclepiades. "He does not make statements which contradict each other only slightly, but employs such as are in startling opposition to one another. If you wish to understand what I mean, consider what you would think of anyone who speaks of experience as something unreliable without the logos, and who asserts that experience does not exist at all, since there is nothing which can appear twice or thrice in the same way, to say nothing of its appearing very many times, as the Empiricists assert. Do you consider these to be contradictory statements or not? I, myself, regard these two views as being absolutely in opposition to one another. Now we find that Asclepiades frequently tries to affirm and maintain each of these opinions, and that he shows much determination in his effort to support and strengthen each one with the help of the other" (trans. R. Walzer).

that doctors should have been able to use these theories for treating the diverse cases they encountered. Famous physicians of Antiquity, such as Diocles, Praxagoras, or Erasistratus proved rather prudent in affirming the primacy of theory, of reason, with respect to medical knowledge: Medicine is a practical discipline, and so theory should be regarded as a corollary aid applied to empirical knowledge. In the 2nd and 3rd centuries AD, however, famous physicians began disputing the nature of specialized knowledge more fervently, several ‘sects’ appeared, following the theoretical outlines drawn by prominent figures (such as Erasistratus of Herophilus), and the tension inherent to the ‘Rationalistic’ disposition gave birth to another conceptual option, Empiricism. To put it plainly, the physicians who shared the Empiricist presuppositions considered that the only thing necessary for doctors to conduct their craft was practical experience. As such, the supporters of this view found theory useless: one does not require ‘theoretical’ concepts (such as atoms, void, pneuma, pores – all empirically imperceptible) to render a correct diagnosis. In order to differentiate their intellectual adversaries, the Empiricists called the latter ‘Rationalists.’ The natural question that arises is, of course: did the Empiricists allow for the use of reason at all? One should, at least, admit that reason is necessary, if only to capitalize on empirical experience. One requires memory, as well as conceptual correlations, which solicit more than mere experience. It seems that, in the specific technical manner with which they used words,¹² the Empiricists did, in fact, allow for the ‘empirical’ use of reason (in deductions or inductions), but they by no means accepted theories which affirmed the existence of ‘imperceptibles’ (hidden causes, atoms). In *An Outline of Empiricism* (XII), Galen relates that the Empiricists rejected the use of reason to transition from theoretic judgment to individual cases, and only accepted to make such a transition to similar sorts of judgment, when it proved necessary.¹³ Certainly, the Empiricists claimed, it is allowed to use reasoning, but only usual, ‘mundane’ reasoning, which arises from empirical experience.¹⁴ This particular type of reasoning had a special name – *epilogism*. It

¹² In *An Outline of Empiricism*, 3, Galen draws attention to how the Empiricists used particular Greek terms with unusual meanings. “These words \i.e. experience, observation\, then, the Empiricist have not used in accordance with Greek usage.” In a different fragment, but in the same chapter, Galen notices that the Empiricists were also lexically creative: “In the ancient Greek authors, I have found the word ‘somebody-who-has-seen-for-himself’ (*autoptes*), but I have not found the word ‘one’s-own-perception’ (*autopsia*)” (Galen, *Three treatises*).

¹³ See, for example, chapter 4 from *An Outline of Empiricism*. Chapter 9 of the same treatise attempts to define ‘similarity,’ an unequivocal term.

¹⁴ Naturally, the Empiricists’ arguments use analogy: they assimilate Medicine to practical crafts (such as ship-sailing, cultivating the land, etc.) or mundane practices, which do not require

can never lead to general, theoretic truths, but only to the resolution of a given situation. The reasoning specific to Rationalists was called *analogism*¹⁵ by the Empiricists.

The disputes between Empiricists and Rationalists must have been epic. One should remark how Galen underlines that the treatment proposed by the disciples of the two schools is similar, and only the ways by which they arrived at this treatment differed.¹⁶ Therefore, the terminus seems identical: the only thing that differentiates the ‘Empiricists’ from the ‘Rationalists’ is their underlying theory of science, that which leads them to discover the cure. The information that Galen delivers provide us with a clearer image of the Empiricist perspective. This is because, on the one hand, the Empiricists seem to have reconverted the very Greek terms used for the intellectual debate, and Galen highlights this aspect multiple times. On the other hand, they appear to have structured downright ‘battle strategies’ against the Rationalists. The first of these – and the most

any special training (e.g. drinking wine, or picking mushrooms.) Chapter 9 of *On Medical Experience* provides multiple examples of this type. On the other hand, considering the internal differences from within the medical sects, a Rationalist could very well argue that the Empiricists are in great difficulty when they claim that medical practice is possible through the experience of observing something “a great number of times.” The very expression “a great number of times” is, after all, ambiguous. Moreover, the Rationalists invoked the sorites argument (see *On Medical Experience*, 7): mere accretion of facts cannot generate authentic knowledge. Nevertheless, the Empiricists (especially those who considered that even a single significant experience could lead to a discovery) replied that, if one strictly follows reason, there should be no multitudes in the world, no plurality, so that terms such as “large,” “herd,” “community” would lack meaning. Furthermore, the *logos* collides with the facts, as such as we arrive to know them through our senses (see *On Medical Experience*, 16-17). As a logical consequence to this *aporia*, they questioned the very possibility of movement within the Rationalists’ paradigm (see *On Medical Experience*, 19-22). There is an interesting anecdote about a dispute that Diogenes held with a Rationalist on the topic of movement: after the latter argues that movement does not exist, he replied: “I am surprised at these miserable seafarers who annoy us all day long with their cries of: Who is going to Rhodes, who to Cnidos, to Kos, to Lesbos?” (*On Medical Experience*, 22).

¹⁵ In general terms, “what is known as *epilogismos* is the conclusion pointing to the visible things, and what is called *analogismos* is the conclusion pointing to invisible things” (*On Medical Experience*, 24). In *On Medical Experience*, 25, one may find several more medical examples of arguments with consonant conclusions, but which are evaluated differently by the Rationalists and the Empiricists. As the latter claim, the advantage is that an epilogism is accessible to anyone, whereas not all are capable to comprehend analogisms.

¹⁶ In *On Sects*, 4, Galen explicitly states: “Generally speaking, the dogmatics and the Empiricists use the same treatments for similar diseases. They only dispute the manner in which these remedies are discovered.”

important one – was to contest their opponents’ theories by using philosophical instruments (mainly taken over from the Sceptics). The second strategy suggested arguing that experience sufficed for the practice of Medicine.¹⁷ Nevertheless, Rationalists, too, had their lines of argument: they invoked against Scepticism some of the greatest names in Philosophy, such as Plato, Aristotle, or Chryssipus, who became staunch intellectual points of reference for the Rationalists. In Galen’s *On Sects – for Beginners*,¹⁸ one may find many of the Rationalists’ arguments, which he took over from Asclepiades, a famous physician and “Rationalist” in his own right (one who did not share the classical theory of humors, but rather a functional atomism).¹⁹ Following these aspects, what added to the boastful prestige of every sect was to assume quite obvious scientific merits (such as the invention of particular medical instruments or pharmaceutical cures²⁰), as well as to claim intellectual descent from ancient authoritative medical figures, in particular, Hippocrates.²¹

¹⁷ Besides this objection, the Empiricists also reproached the Rationalists that they could not agree on a “single” theory, which was to be expected in the case of those who legitimized their intellectual endeavor as stemming from *logos*: see this stream of criticism in *On Medical Experience*, 11. Hence, the Empiricists concluded that there is no single *logos*, but rather only *logoi*, which makes experience the “unifier” in the sphere of medical knowledge. Of course, Rationalists would try to reply: Galen mentions their response (naïve, in his opinion, as well as that of Alexandros or of one of his disciples), according to which it is possible to discover the same thing through multiple *logoi* (see *On Medical Experience*, 13).

¹⁸ In chapter 5 Galen explains that the “Rationalists” formulated numerous, as well as very diverse replies: some of them contested the fact that experience, as understood by the Empiricists, was possible, others claimed that experience is incomplete, whereas other “Rationalists,” still, argued that what the Empiricists proposed is not an “art.” For these arguments, please see *On Medical Experience*, 8, where Rationalists’ arguments against Empiricists are reduced to three types: some of them denied the possibility of Medicine by the sheer accretion of experience, without the *logos* that, alone, discovers them all, others noted the universal applicability of the induction type professed by the Empiricists, whereas other Rationalists, still, argued that discovery is not possible exclusively by inductive accretion, because the *logos* is also necessary.

¹⁹ A fine Empiricist reply to Asclepiades’ objections can be found in the final chapters of *On Medical Experience* (25-27).

²⁰ For these aspects, see *On Medical Experience*, 26: Rationalists took pride in discovering the catheter, whereas the Empiricists, who considered anatomy useless, excelled in the discovery of pharmaceutical substances.

²¹ It was a classical *locus* to assume that Hippocrates was a Rationalist, as “father of Medicine.” Nevertheless, the Empiricists also assimilated Hippocrates to their stream of thought, capitalizing, for instance, on *Epidemics*, a work from the Hippocratic Corpus, which comprises several medical “cases” (see *On Medical Experience*, 10). Moreover, the Rationalist

Galen offers little information on the third medical ‘sect,’ the methodist one. The reason must lie in the outward contempt that the famous physician carried toward this group. Nevertheless, methodism appeared later than the other sects (according to the potential filiation Asclepiades – Themison – Thessalus; the final one is considered the true founder of this medical group). Only in the 1st century AD did methodism fully bloom as a school of medical thought worthy enough to compete with the classical Rationalists and Empiricists. The Methodist doctrine may be described as ‘mixed:’ it adopts both ‘Empiricist,’ and ‘Rationalist’ positions, admitting that theory is a constitutive part of ‘medical science.’ The Methodists’ fundamental theory, that of “obvious communities,” described disease as a dilation or contraction, leaving “the method” as the only solution for regaining health (that which is either dilated or contracted, must return to its initial state). One should remark that the Methodists used classical Skeptic *loci* against the ‘Rationalists,’ following the Empiricists in this respect: the Methodists admit reasoning, like the ‘Rationalists,’ but they, nevertheless, block it at the level of perception. Galen could not have been a great sympathizer of “the method” (although he carried great respect for particular Methodists, such as Soranus), because the Methodists claimed that the entire medical art could be learned in 6 months.²² Of course, what appeared outrageous to Galen must have seemed rather chic for the first few centuries AD: an art so complex, such as Medicine, could be learned by anyone in only 6 months. It almost sounds like a modern commercial advertisement.

4. Discussion

4.1 Preamble: Classical Antiquity

Of course, the entire discussion on empiricism and rationalism could not have remained particular to the medical field alone. Indeed, it is within medical writings that one first finds the terms ‘Empiricist’ and ‘Rationalist,’ but epistemological debates on the sources of knowledge and the criteria for ascertaining truth exist in other ‘arts,’ as well. Knowledge in the political sphere, for instance, was considered by the rhetorician Philodemus to be strictly empirical (B, I, 27-28).

thesis, which states the *logos*’ supremacy, makes any attempt to capitalize on medical precedents useless: all can now be discovered by using the *logos*.

²² In fact, as Galen affirms in *On Sects*, 6, the Methodists not only part significantly from the classical medical sects, but also defy almost everything in medical practice at the time. In the same chapter, Galen indicates a “blasphemy” of the Methodists: the Hippocratic adage “life is short, art is long” is overturned by the Methodists’ interpretation, who affirm that, in fact, life is long, whereas (medical) art is short.

Even in the time of Plato (hence, before the two above-mentioned medical sects appeared), scholars distinguished between physicians who started their practice from general theories on the constitution of the human body, and doctors who started from their own observations on human physiology (*Laws* 720 A-C, 857 C-D). Another art seems to receive the same status in a different Platonic dialog, *Gorgias*. In that text, Socrates affirms that, if one were to follow Polus' and Gorgias' views (which he denounces), one should conclude that rhetoric must be regarded as the fruit of experience (*empeiria*) and of practice (*tribe*), not as an art (*techne*). Therefore, one should conclude that, as early as Classical Antiquity, a debate had arisen with respect to the sources and the nature of knowledge. The precariousness of primary sources, however, makes it difficult to clarify this debate in its finer nuances. Nevertheless, Galen does prove that the debate was perceived as a generic one, beyond the strict scope of one particular *techne* or another. Thus, towards the end of the *An Outline of Empiricism*, the physician discusses the Empiricist intellectual attitude as a generic one: "...since they believe that evident perception and memory suffice for the constitution of all arts."²³

4.2 Late Antiquity

In Late Antiquity, the epistemological issue becomes acute, and the medical debates of the period testify to this aspect: the differences between the medical 'sects' derived from their argumentative options with respect to the realm of knowledge, and more specifically, with respect to the origins of accurate, reliable medical knowledge. For this reason, it is, of course, natural that fierce polemics would have arisen, and engulfed other specialized fields, as well. Only in modernity did various intellectual disciplines separate rigorously. Thus, it was far easier for an Ancient thinker to be both physician, and philosopher, than for one to do so in our time. Consequently, the intellectual testimonies provided by the medical disputes are worth a lot: the medical writings of Galen survived to a great extent, and they project the features of a complex intellectual landscape. Unfortunately, other areas of knowledge involved in the epistemological debates of Late Antiquity have left far fewer traces. For this reason, it is most difficult to identify 'mirror spots,' which should reflect the intense debates from within the various disciplines. Important philosophical authors do provide us with some snippets that suggest the intensity of epistemological debates. For instance, in *Dissertationes ab Arriano digestae*, 1, 17, Epictetus dedicates an entire section to this issue, and grants it a very suggestive title: *On How Rational Things Are*

²³ Galen, *Three treatises*.

Necessary. The arguments that he presents are of the sort underlying a Rationalist-Empiricist debate.

Heron, the famous scientist of Late Antiquity, also confirms that the distinction between the two lines of thought must have mattered greatly. At the beginning of his treatise, *Pneumatica*, the mathematician insists on mentioning that “the pneumatic matter was considered worthy to be examined by the ancient philosophers and mechanics.” In the following sequence, where he classifies all writings on this subject, Heron states: “some have discussed the potency of this matter from a rational perspective (*logikos*), whereas others also [discussed] it according to the action of perceptible things” (see *Introduction*). Consequently, for Heron, one could expose the study matter either from a strictly Rationalist perspective, or a opposed one. This manner of interpreting the specificity of a scientific discipline seems to have been somewhat common, even banal, since it is mentioned in the preamble to the scientific treatise.

The question of sources for scientific knowledge was also discussed (by reflex) in another prominent work from Late Antiquity. Porphyry, the 3rd – century Neoplatonist philosopher, focused not only on what any History of Philosophy treatise indicates to us today, but also on other fields, such as Philology and Music. In a commentary that he makes on the *Harmonics* of Ptolemy, Porphyry remarks the dual nature of Music, relying, as criteria for his argument, on multiple authoritative figures, or other *loci* invoked in the works of Ptolemy. Thus, he introduces “The Musician Didymos,”²⁴ an entry in which he discusses what defines truth. Here,²⁵ Music not only constitutes a rational doctrine (*logikon mathema*), but also one that is simultaneously sensory, and logical (28). Porphyry argues that this conclusion arises because there are also two criteria for truth: both senses, and reason. More importantly, as the treatise follows this same criterion, authentic

²⁴ It is not at all easy to identify this figure. The name “Didymos” was widespread in Antiquity. If we follow the *Suda Lexicon* (under the heading “Didymos”), we find that there was a certain Didymos, son of Heracleides, who was passionate about Music, and who was a contemporary of Nero. This is the only “Didymos” whom one may find in the *Suda* with the explicit characterization “mousikos”. *Pauly-Wissowa* considers him a distinct person (see Didymos, 11), whereas *Der ... Neue Pauly* attributes to Didymos of Alexandria, the famous philologist and polyhistor, the musical work previously attributed to Didymos the musician.

²⁵ The fragment cited by Porphyry comes from the work *On the Difference between the Disciples of Aristoxenos and those of Pythagoras*. As I mentioned in the previous note, this work has an uncertain author: *Pauly-Wissowa* attributes it to a person mentioned by the *Suda* (see *Didymos*, 11), whereas *Der... Neue Pauly* attributes it to Didymos of Alexandria, commentator, scholiast, polyhistor (who conducted his scholarly activity at the beginning of the Christian Era): the latter is mentioned in *Pauly-Wissowa* as a distinct person, with a sizable work (see *Didymos*, 8).

knowledge, the treatise gradually introduces its reader into the history of the discipline. Thus, one first learns (26) that some of those preoccupied with Music tried to exclude reason from their research as much as possible, and took into consideration only what their senses provided. This tendency outlines itself in their systematic refusal to argue by using reason or logical consequence, considering that the mere sensory preoccupation (*tribe*), which is born out of custom, would suffice. Didymos exhibits his derogatory opinion on such musicians: he deems them rudimentary, and he underlines that they are merely interpreters of Music, not musicians proper.

Porphiry's text also provides an important piece of information: this type of musicians still existed in the time of Didymos, and they were the ones who engaged in "preoccupation without reason" (*alogw tribe*). Moreover, as Didymos claims, there were other musicians, who preferred reason as their sole criterion, nevertheless using sensory information as a starting point in their discourse. They are identified with the Pythagoreans, who admit to perceptible, sensory elements, only to the extent that they do not contradict reason. Finally, Didymos also discusses a third category of thinkers who theorized on music, namely those who granted equal importance to reason and sensory experience. Amongst them, he especially distinguishes Arcestratos. Of course, it was possible to take a nuanced intellectual stance within a wide spectrum, and Didymos mentions Aristoxenos as an example in this respect. The latter suggested that both types of criteria were necessary within their respective, separate fields (sensory/intelligible). Nevertheless, he preferred empirical knowledge in certain situations, which, as he argued, could by no means be supplanted by theoretical constructions (27-28). Once again, it is important to underline the essential role that the discussion on the criteria for finding truth plays in this discussion. Didymos recounts that this discussion was part of the first book of Aristoxenos' treatise, *Harmonic Elements*. At the end of the long quote from Didymos, Porphyry feels the need to explain: although the passage suggests that Ptolemy and Aristoxenos convened on their opinions, that was not so. In fact, Ptolemy took the notion of "reason" from the Pythagoreans, whereas the concept of "sensibility" comes from Aristoxenos. Porphyry considered this theoretical position as "mixed" (*meiktos*), or "elective" (*kat'eklogon*).

It comes across that the epistemological problem was important from another fragment cited by Porphyry: the source was Ptolemais of Kyrene, who, in all semblances, synthesized the entire musical doctrine of Classical Antiquity. It is also very important to notice the place where the author discusses the musical 'sects:' she refers to the differences between them right from the onset, in the work's introduction.

Another important testimony about the Rationalist-Empiricist pairing comes from Sextus Empiricus, where yet again, it is oriented toward a different scientific field. In the first book of his *Adversus Mathematicos*, which was dedicated to the study of grammar, the author defines this discipline of language in accordance with Dionysus the Thracian: „grammar is, for the most part, the experimental knowledge (*empeiria*) of that which was said by poets and writers” (1, 57). After he exemplifies what the study of “grammar” entails, by invoking names of relevant authors, Sextus Empiricus cites an objection brought against Dionysus: “Ptolemy the Peripatetician, however, challenges him, by affirming that he should not call grammar experimental knowledge (*empeiria*) – for experimental knowledge is a particular occupation (*tribe*), and it is a work wholly lacking in art and reason, which consists of mere observation and practice, whereas grammar is an art” (1, 60). Of course, it is difficult to identify the famous philologist’s addressee: *Pauly-Wissova* avoids placing the Peripatetician within a particular time frame (see *Ptolemaios*, 70). In any case, the debate must have actually taken place, since the author who provides us with this information, Sextus Empiricus, goes on to explain that he replied to Ptolemy’s allegations in his work *Empiricist Memoires*, and that he formulated his response in the manner of Metrodorus: *empeiria* is, actually, a synonym for *techne* (1, 61). Once more, one may notice how the debate on the origins of knowledge is framed between ‘Empiricists’ and ‘Rationalists,’ of whom the latter considered grammar to be a *techne*.

5. Conclusions

All that I have discussed above attempts to reconstruct an intellectual landscape in which the epistemological debate was essential. Either implicitly, or explicitly, the problem of the very possibility of knowledge, of its sources, or of the criteria for truth, stirred the acute interest of thinkers in Late Antiquity. Heated debates raged throughout the period, questioning precisely the Epistemology that one assumed. As shown, the specific arguments involved reach beyond the domain of individual ‘arts,’ and indicate generic intellectual options within the field of knowledge. Several prominent figures of the philosophical sects are recognized as philosophers in the common-speak of the discipline: Menodotus and Sextus, dubbed “Empiricus” (“the Empiricist”) support the views of Pyrrhonian Skepticism.