

# Plato and the Method of Hippocrates

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## I

HIPPOCRATES, deprived of the books of the *Corpus*, but invested with the doctrines which tradition ascribes to him, does not live a shadowy existence. . . . Plato and Meno give enough details so as to make clear the outlines of Hippocrates' medicine." Thus Ludwig Edelstein in a critical review (first published in 1939) of attempts by some scholars in the 1930s to ascribe certain treatises in the *Corpus Hippocraticum* to Hippocrates himself.<sup>1</sup> According to Edelstein, the *Corpus* does not contain one work by Hippocrates, since none squares with the testimony of Plato and Meno. Recently, however, the distinguished Hippocratic scholar Wesley D. Smith has in a way turned Edelstein's statement against this negative position: accepting Edelstein's points concerning what is said by Plato and Meno as conditions that have to be satisfied if a treatise in the *Corpus* is to be ascribed to Hippocrates, he then points to a treatise which, in his view, fits.<sup>2</sup> The *Corpus* contains a major work in which, he argues, can be found *both* the aetiology of diseases attributed to Hippocrates in the abstract from Meno's *History of Medicine* preserved in the Anonymus Londinensis (5.35ff), a compilation of the first or second century, *and* the method attributed to him by Plato in *Phaedrus* (269Eff). Meno, Aristotle's pupil, says that Hippocrates explained diseases as products of the gases that result when digestion goes wrong. Plato attributes to Hippocrates the use of his own method of inquiry, *viz.*, the dialectical method of the 'collection' and 'division' of the things to which concepts refer. He also writes that Hippocrates studied the nature of the body "not without the nature of the whole." The meaning of the words 'the whole' is disputed. Some scholars argue that the *whole of the body* is meant, *i.e.*, that whoever practises a division of body should begin by studying

<sup>1</sup> "The Genuine Works of Hippocrates," repr. in *Ancient Medicine* (Baltimore 1967) 133ff; the quotation is from 144. Edelstein argued against Deichgräber, Pohlenz, and Nestle.

<sup>2</sup> *The Hippocratic Tradition* (Ithaca and London 1979) 44ff [hereafter 'SMITH'].

‘body’ in its full extension and then divide this ‘whole’ into parts or species. Others argue that ‘the whole’ here means the *whole of nature*. Now Smith has done three things: (1) he has brilliantly adduced a passage in a very interesting treatise in the *Corpus, Regimen*, according to which the nature of man as a whole (or in general: πάντος φύσιν ἀνθρώπου) must be studied, as to its component parts and the factors influencing those parts, in relation to the natural environment and indeed to the whole universe (τοῦ ὅλου κόσμου);<sup>3</sup> (2) in the beginning of the same chapter, he has found a reference to a sort of collection and division;<sup>4</sup> (3) finally, he has managed to find another passage (3.74 *init.*) in which (Meno’s) gases cause disease. Hippocrates, then, would be the author of *Regimen*.

Yet there are compelling arguments against this identification. To start with (3): the passage is only an incidental point in the treatise; but if *Regimen* really had been the work Meno had in mind, one would expect the gases theory to be *the* dominant aetiology of this treatise, which it is not. As to (2), the presence of a notion of collection and division is itself disputable,<sup>5</sup> and, as also in the case of (3), one would expect again that if Plato had thought of *Regimen*, a method of collection and division would be *the* method of the treatise, which it is not. As to (1) and (2) taken together, it is surely unsatisfactory that Smith exploits the ambiguity that scholars have seen in Plato’s ‘nature of the whole’ by having it both ways.

The *Corpus*, moreover, contains a group of interrelated treatises of outstanding quality and originality which for emotional and other reasons one would much prefer to ascribe to Hippocrates before, say, the eclectic and idiosyncratic *Regimen*—works such as *Epidemics* I and III, *Prognosticon*, *Airs Waters Places*.<sup>6</sup> Their attribution, however, cannot be proved on grounds of *internal* evidence, or quality, alone, while such *external* evidence as we

<sup>3</sup> *Vict.* 1.2. For the eclecticism of *Vict.* see *infra* n.65.

<sup>4</sup> Here the author speaks of γινῶναι καὶ διαγινῶναι—according to Smith 46, “know together and know separately.”

<sup>5</sup> This is argued, cogently I believe, by Robert Joly in the paper referred to *infra* n.66, in the context of a general criticism of Smith’s study. Joly also makes the point about 3.74.

<sup>6</sup> The classic statement of this case is K. Deichgräber, *Die Epidemien und das Corpus Hippocraticum* (Berlin 1933, 1971<sup>2</sup>). Joly (*infra* n.66) deals admirably with this point; see also his article “Hippocrates of Cos,” *Dictionary of Scientific Biography* 6 (New York 1972) 418ff. For the “preuve d’authenticité par le génie” see C. Lichtenhaeler in M. D. Grmek, ed., *Hippocratica* (Actes 3<sup>me</sup> Coll. Hippoc. Paris 1978: Paris 1980) 353.

possess has up till now proved insufficient. From external evidence such as the ancient biographical accounts of Hippocrates,<sup>7</sup> which contain elements that it would be hypercritical to doubt (some are confirmed by the epigram said to have been inscribed on his tomb),<sup>8</sup> we may infer that Hippocrates practised medicine in the regions where the observations recorded in *Epid.* I and III (and also in II, IV, VI) were made. But this is not enough to prove authenticity; these circumstantial data provide only a possibility or at most probability, but do nothing to clear away the main obstacle to identification. This obstacle is the uncertainty about Plato's meaning in *Phaedrus*. If we opt for 'the whole' in the sense of the body as a whole, to be investigated by means of collection and division, then no link with the above-mentioned treatises can be confidently established—at least none so far has.<sup>9</sup> If we opt for the whole of nature, there is no such link either, for the treatises at issue are concerned not with nature as a whole but with the environment only.

There is of course no trace of Meno's aetiology of gases and digestion in these treatises either, in any case nothing that would enable us to say that such a theory, in the form presented by our abstract, is their dominant aetiology. This, however, is less serious. Anonymus Londinensis indeed cited 'Aristotle' (*i.e.*, Meno) for the attribution of this aetiology, but the author (or perhaps rather the lecturer he listened to) explicitly disagrees with Meno's point of view and says that Hippocrates himself taught other things. For these true Hippocratic doctrines he refers to theories derived from

<sup>7</sup> Cf. Deichgräber (*supra* n.6) 147f, 162, and Joly (*infra* n.66). For Apollodorus' *floruit* of Hippocrates (*ca* 420 B.C.) see F. Jacoby, *Apollodors Chronik* (Berlin 1902) 295f, rather than his comment *ad FG̃rHist* 244F73.

<sup>8</sup> *Anth.Pal.* 7.135:

Θεσσαλὸς Ἴπποκράτης, Κῶος γένος, ἐνθάδε κεῖται,  
Φοῖβου ἀπὸ ρίζης ἀθανάτου γεγαῶς,  
πλεῖστα τρόπαια νόσων στήσας δπλοῖς Ὑγιείης,  
δόξαν ἐλῶν πολλὴν οὐ τύχαι, ἀλλὰ τέχναι.

W. Peek, *Griech. Vers-Inschr.* I ad no. 418, dates the epigram "V./IV. Jh." If it was indeed inscribed on Hippocrates' tomb, it cannot have been much older than *ca* 380 B.C. The first two lines tell us that Hippocrates, by birth a Coan and from a family claiming descent from Apollo (*i.e.*, the Asclepiads), lies here 'a Thessalian'. This suggests an honorific burial; *cf.* my remarks in *Mnemosyne* SER. IV 33 (1980) 86f.

<sup>9</sup> The point of (*e.g.*) *Epid.* VI 3.12 is much narrower; *cf.* H. Diller, "Ausdrucksformen des methodischen Bewusstseins in den hippokratischen Epidemien" (1964), repr. in *Kleine Schriften zur antiken Medizin* (Berlin 1973) 106ff, 120–33.

treatises that we can still identify, *sc.*, *Nature of Man* (to be safely attributed to Hippocrates' son-in-law Polybus)<sup>10</sup> and *Diseases I* (not a Coan, but a Cnidian work). He also seems to imply that 'Aristotle's' use of the term 'gas' is mistaken and that Hippocrates himself spoke of air, *pneuma*.<sup>11</sup> I conclude that, in Anonymus, there is already a 'Hippocratic Question' surprisingly similar to that of today. But even if we ignore this aspect of Anonymus' exposition and take into account only the section he disagrees with, *viz.*, what 'Aristotle' says, we are still faced with a major problem. The first part of Anonymus is not a substantial piece quoted *verbatim* from Meno's *History of Medicine* falsely ascribed to Aristotle, but a later abstract from this work which shows the hand of a Stoic or at least of a person who found it very natural to use concepts that are Stoic in origin.<sup>12</sup> A relatively late date, then, should be assigned the abstract from Meno used by Anonymus (or possibly his lecturing source) for his compilation. It is impossible to gauge the extent to which Meno's original text has been modified, but one can be certain that it has been rather seriously rewritten. Consequently, I submit that it is methodologically unsound to take Anonymus' 'Aristotle' *au pied de la lettre* and on this basis to look (or, with Edelstein, refuse to look) for works in the *Corpus* by Hippocrates himself. At the very least, one should not begin with the theory 'Aristotle' ascribes to Hippocrates or treat it, as do Edelstein and Smith, on a par with what Plato says. I do not wish to suggest that the task of explaining what is in Anonymus should be neglected or postponed indefinitely,<sup>13</sup> but only that we should give primary consideration to the only other early piece of doxographical evidence we have, the passage in *Phaedrus*, which is even earlier than the lost original Meno. We can only hope to solve the riddle of the Meno-abstract if we have previously solved the riddle of Plato's characterization of Hippocrates.

I do not think the interpretation of the *Phaedrus* passage is hopeless, because I accept a postulate formulated by Max Pohlenz

<sup>10</sup> Cf. J. Jouanna, *Hippocrate, La Nature de l'Homme* (CMG I.1.3: Berlin 1975) 55f.

<sup>11</sup> 6.13–31. The excursus on the *pneuma* or air in any case somewhat interrupts the abstract from Meno.

<sup>12</sup> There are explicit references to the Stoics at 2.22 and .39, with discussion of their view, and, for example, in the section on Plato (14.15–29) a form of the Stoic theory of different types of mixture has been interpolated. See L. Edelstein, *RE Suppl.* 6 (1953) *s.v.* "Hippokrates" 1323.

<sup>13</sup> I have worked out a tentative solution, which I hope to publish in due time.

more than forty years ago.<sup>14</sup> Pohlenz pointed out that we have, after all, a collection of about sixty works attributed in antiquity to Hippocrates. Therefore the postulate that at least *some* among these many works are by Hippocrates is much more cogent than the skeptic's view that none of them is. Consequently (although this was not the way Pohlenz himself proceeded), I conclude we must use the *doxographical* evidence at our disposal to try to identify works by Hippocrates in the *Corpus*. A considerable number must be dated to Hippocrates' lifetime, and as to the method of identification to be used I agree entirely with Smith as against Edelstein: but only Plato's evidence offers any hope. This, to be sure, is in a sense as doxographical as 'Aristotle's', but we have his own words, not an abstract made by a much later writer with Stoic leanings.

There is, however, a wide-spread feeling to the contrary. Moreover, most scholars (whichever is their interpretation of 'the whole') would see in the passage an *interpretatio platonica*. In contrast, I shall not try to read the passage as a hyperinterpretation to be either decoded or rejected in despair, but take it *au pied de la lettre*, in order to establish what is Plato's *description* of Hippocrates. Fortified by Pohlenz' postulate, I shall then consider the *Corpus* as a whole, or rather those works which (1) are to be dated to Hippocrates' lifetime and (2) do not have to be attributed to others. Among these treatises, I shall try to single out at least one which fits what I take to be Plato's description of Hippocrates' method.<sup>15</sup>

<sup>14</sup> *Hippokrates und die Begründung der wissenschaftlichen Medizin* (Berlin 1938) 2.

<sup>15</sup> My references to the learned literature need not be very full, as a nearly complete survey of earlier opinion can be found in: R. Joly, "La question hippocratique et le témoignage du Phèdre," *REG* 74 (1961) 69–92, repr. in trans. [referred to hereafter as 'JOLY'] in H. Flashar, ed., *Antike Medizin* (Darmstadt 1971) 52–81 with postscript 82 (the view is maintained in his paper cited *infra* n.66); in M. Isnardi-Parente in E. Zeller (trans. R. Mondolfo), *La filosofia dei Greci* II.3.1 (Florence 1974) 494ff [skeptical conclusion]; and in H. Herter, "The Problematic Mention of Hippocrates in Plato's *Phaedrus*," *ICS* 1 (1976) 22–42 [a variant—at least in part—of Joly's view: 'the whole' is the universe; "Plato went beyond Hippocrates not by mistake, but because he was carried away by the momentum of his own thought," 37]. See also G. E. R. Lloyd, "The Hippocratic Question," *CQ* N.S. 25 (1975) 171–92.

## II

According to “Hippocrates the Asclepiad,” Plato writes, it is impossible “to understand the nature of the body without the nature of the whole” (270c). We have seen that the words ‘the whole’ are ambiguous. In favour of the assumption that the whole of the body is meant is the fact that Plato in the immediate sequel applies his dialectical method (*cf.* already 270b4f). In favour of the assumption that the whole universe is meant is the fact that in the passage immediately before the little sentence about Hippocrates, (1) Plato spoke of the *meteorologia* or cosmology<sup>16</sup> of Anaxagoras, a thorough familiarity with which made Pericles a great orator, and (2) he said that medicine is in the same case as rhetoric. This would entail that great medicine, like great rhetoric, cannot do without cosmology, and that the whole without which the body cannot be understood is the universe.

I have pointed out already that, for the identification of works by Hippocrates himself in the *Corpus*, both arms of this dilemma reach out into emptiness. Those who argue that Plato means the body as a whole are, as a rule, skeptics.<sup>17</sup> Jacques Jouanna, for instance, has stated recently that the key to the *Corpus* is not to be found in the *Phaedrus* passage.<sup>18</sup> But neither does the other inter-

<sup>16</sup> 270A1, ἀδολεσχίας καὶ μετεωρολογίας φύσεως περί. I agree with Joly 57, 67f that the translation of μετεωρολογία as ‘lofty thoughts’ cannot be defended. *Cf.* also J. Burnet’s excellent note on *Apol.* 18b7 (*Plato’s Euthyphro* etc. [Oxford 1924] 76), in which he also refers to the decree of Diopeithes, directed against Anaxagoras, which spoke of λόγους περί τῶν μεταρσίων (*Plut. Per.* 32; see now my remarks [*supra* n.8] 94 and n.345). At *Politic.* 299b, the physician who can be characterized as a μετεωρολόγον ἀδολέσχην τινὰ σοφιστήν studies ἀλήθειαν περί πνεύματά τε καὶ θερμά καὶ ψυχρά. Those who prefer ‘lofty thoughts’ should in any case translate φύσεως περί as ‘about Nature’, *not* as ‘about a nature’ (*sc.*, the soul and the body), because “prattling and lofty thoughts about a nature” virtually condemns the dialectic method. In other words, the reference to natural philosophy cannot be eliminated from this sentence. On ἀδολεσχία καὶ μετεωρολογία see now D. Babut, “Anaxagore jugé par Socrate et Platon,” *REG* 91 (1978) 60f, for a definitive vindication of Joly’s view.

<sup>17</sup> Full references in the works cited *supra* n.15. The first to adopt this position was L. Edelstein, see esp. *supra* n.12, 1318–22. Note that Edelstein’s interpretation of Plato’s dialectic is inspired by that of Julius Stenzel, which is not today the generally accepted one.

<sup>18</sup> “La collection hippocratique et Platon,” *REG* 90 (1977) 15–28. I briefly summarize his argument: ‘The whole’ means the body as a whole. Cosmological or environmental medicine are not involved. *Meteorologia*, though Plato puns (19 n.5), means ‘discours élevés’. Plato thinks of the reactions of different types of bodies to different sorts of regimen or remedies [*cf. infra* n.32]. This idea, Jouanna holds, is both too general and too special to be helpful in identification—the latter, because only a selection from medical theory and

pretation provide us a reference to the group of interrelated treatises that scholars have wished to attribute to Hippocrates; for in these works it is not the whole of the universe that is involved but only part of it: the human environment of sun and winds, of climate and weather, of barren or fertile soils, of rivers, springs, and other waters, and so on. These environmental factors differ in different parts of the world and even in different parts of one and the same country. It is somewhat paradoxical that a consistently cosmological brand of medicine is to be found only in marginal treatises of the *Corpus* such as *Regimen*<sup>19</sup>—and of course also outside the *Corpus*, as in the system of Philistion of Locri,<sup>20</sup> whom Plato to an extent followed in the medical section of his own cosmological treatise, *Timaeus*.<sup>21</sup> Plato's own theory of the human body, and his medical thought, are firmly rooted in his general cosmological system. This is not what we find in *Airs Waters Places* or *Epid.* I and III.

In 1961, Robert Joly sought (71–73) to eliminate the contradiction that arises when one interprets 'the whole' as the universe and yet wants Plato to refer to environmental medicine. Plato, he argued, would have read Hippocrates with Platonic eyes and would spontaneously have raised Hippocrates' theory of the environmental factors to a theory of the universe as a whole, which, in the earlier parts of *Phaedrus*, is Plato's own. This suggestion is as seductive as it is brilliant—but it will not bear scrutiny. For, on the one hand, it leaves the *division* of body which Plato imputes to Hippocrates without point. Joly, to be sure, says (80) that only a very trivial idea is involved, *viz.*, that the human body is composite in that it consists of a number of different organs and humours. But this, again, leads nowhere: the idea is far too general to be helpful in selecting from the *Corpus* works by Hippocrates. Joly, however, argues that the use of this trivial notion of the body as the subject-matter of a serious Platonic division is another case of *interpretatio platonica*<sup>22</sup> analogous to the *interpretatio* involved

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practice has been made; the former, because this selected aspect of medical thought can be found in works of the *Corpus* such as *Ancient Medicine* which Jouanna does *not* want to attribute to Hippocrates.

<sup>19</sup> Bk. 1 in general; *cf.* esp. 1.10, the arrangement of the component parts of the body as copying that of those of the universe.

<sup>20</sup> Fragments in M. Wellmann, *Die Fragmente der sikelischen Ärzte Akron, Philistion und des Diokles von Karystos* (Berlin 1901) 109ff.

<sup>21</sup> 81E–86A. See F. M. Cornford, *Plato's Cosmology* (London 1937) 332ff.

<sup>22</sup> At 78 he argues that 270C6–7, *χρή . . . πρὸς τῷ Ἱπποκράτει τὸν λόγον ἐξετάζοντα*

when Plato substituted the universe for the environment. In the argument about Hippocrates in *Phaedrus*, then, there is even according to Joly much more of Plato than of Hippocrates. In any case, Joly leaves the dialectical section alone and concentrates on what he could have called Plato's hyperinterpretation of environmental medicine. Now I do not wish to suggest that Plato's writings contain no instances of the hyperinterpretation of the ideas of other men. From a methodological point of view, however, one should speak of hyperinterpretation only when a comparison is possible between Plato's text and another, or when Plato unmistakably infuses metaphysical ideas that are his own, or when he makes clear himself that he 'interprets' *more philosophico*. Only then can we gauge the extent to which what Plato says may go beyond what the other man said. In the present case, attempts to identify and measure Plato's surmized distortion are question-begging. One cannot, therefore, feel confident about Joly's interpretation of 'the whole', nor satisfied with his rather cavalier treatment of the dialectical part of Plato's argument.

I take up the latter problem first, Plato's use of dialectic in the passage at issue. It will be recalled that skeptics believe that Plato means that in a given discipline one must consider the subject-matter as a whole and try to establish its component parts, which are to be reached by a division. The Platonic Hippocrates, they argue, in this way studies the body, both as a whole and as to its constituent parts. No cosmological or environmental medicine is involved. This analysis, I believe, is wrong. Plato indeed performs a division (of soul, not of body; but it is generally agreed that body and soul, subjects of distinct disciplines, have been strictly paralleled); but not one into *parts*, but into *types* or sorts. M. Jouanna has seen this.<sup>23</sup> A trivial identification of bodily parts as organs or humours is not at issue. If confirmation is necessary, it can be

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σκοπεῖν εἰ συμφωνεῖ, and 9–10, σκοπεῖ τί ποτε λέγει Ἱπποκράτης τε καὶ ὁ ἀληθῆς λόγος, indicate that this λόγος is much more important than what Hippocrates said. I cannot find this in the text. Plato's point is that Hippocrates' view should not be accepted on authority (cf. c7, πιθέσθαι, and 275B8–C4), but is to be subjected to rational scrutiny (cf. also 270c7, ἀξίως λόγου). Contrast 273A7–B1, where εἰπέσθω followed by the attribution of a Sophistic notion to Tisias clearly marks an *interpretatio platonica*. At 270c9 (cf. 271A8, *infra* n.24) Plato, without comment, speaks of "Hippocrates *and* the true account"; the truth, in other words, is compatible with what Hippocrates said. On this point, I am closer to Edelstein (*supra* n.12) 1325 and *Περὶ ἀέρων und die Sammlung der hippokratischen Schriften* (Berlin 1931) 121.

<sup>23</sup> Jouanna (*supra* n.10) 24, avoiding the mistake of Edelstein (*supra* n.12) 1319, 1321. Cf. *Phdr.* 271Df, and already 248Aff, which explains the differences between sorts of



found in Plato's statement that one has to decide whether the soul is one or homogeneous or exists in many forms, just as the body exists in many forms.<sup>24</sup> Even more important, however, and not seen by Jouanna and other skeptics (nor, so far as I know, by Plato scholars who comment on the passage), is that Plato's earlier description<sup>25</sup> of dialectic conflicts with their interpretation of the present passage. Plato has already described collection and division for us and illustrated his meaning with an example: There is a thing to be defined, Eros. Eros, it has been established, is a sort of Madness. Correct definitions of Eros can be found by dividing [not Eros, but] the *Idea* of Madness, or rather each of the two *eide* or sorts of Madness one must distinguish, *viz.*, divinely inspired Madness on the one hand and a Madness which is only a sort of human disease on the other. Divine Madness itself, again, has four *eide* or types, only one of which is to be linked up with Eros: a sublime sort of Eros. Sinister human love, however, can only be found by pursuing the division of the other type of Madness, *viz.*, the human disease. At the end of this division of Madness we have found two sorts of Eros. The diseased human sort, Plato says *expressis verbis*, is merely *homonymous* with the divine variety.<sup>26</sup>

We may infer that whoever is to study a subject in dialectical fashion does *not* proceed in the manner which some Hippocratic and Platonic scholars have deduced from the passage on Hippocrates. He does not first study Eros as a whole and then divide it into parts or types. Quite the opposite: his first step is to subsume Eros under a concept of greater extension, or larger whole: Madness. To consider only the extension of Eros-as-a-whole and then divide Eros into sorts would be wrong; we never could distinguish the good Eros from the bad if we did, just as we could not distin-

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people in terms of sorts of (whole) souls—in the language, however, of myth. Smith 48 also places parts of bodies and types of body on the same level. (Note that *Phlb.* 14E is different).

<sup>24</sup> *κατὰ σώματος μορφήν πολυειδές*, 271A8. Joly 80 states erroneously that no more references to Hippocrates or medicine are to be found after 270D.

<sup>25</sup> 265A6–266B1. I agree with W. K. C. Guthrie's pellucid analysis, *History of Greek Philosophy* IV (Cambridge 1975) 428f, and am all the more surprised that he does not exploit his insight for the interpretation of 269Eff. On this latter passage he comments (431f) "to say that *ἄνευ τῆς τοῦ ὅλου φύσεως* refers to the whole soul or body . . . makes nonsense of the need for *μετεωρολογία*"; but he does not discuss the division and has overlooked Joly's fine point, so his attempt to make sense of this passage in Platonic terms is not successful.

<sup>26</sup> Thus Plato corrects or at least modifies *Symp.* 205B, where Diotima says that what we do is take a particular *ἔρωτος* . . . *εἶδος* and apply to it the name of the whole (*τοῦ ὅλου*), *sc.*, *ἔρωτα*. Jouanna (*supra* n.10) 22f refers to *Symp.* 205B, not to *Phdr.* 265A6f.

guish the left arm from the right (*cf. Phdr.* 266Af), or, say, the left middle finger from the right, if we did not consider them as parts of a whole organism. Other instances of this procedure could be quoted from Plato's works; I shall confine myself to a brief reference to the *Sophist* (218Dff). Here Plato does not consider the sophist as a whole, but says he is a kind of technician or artist and thus goes on to divide the *eidos* of *technè*, all the way down, until at last the sophist has been reached. In this case, the choice of the more extended concept to be divided turns out to be unsatisfactory, but this does not affect the dialectical method in its *formal* aspect.

Let us apply this dialectic to the passage on Hippocrates and see if it works. Whoever wishes to reflect on the nature of whatever thing, Plato writes, must first consider "whether it is simple or has many forms."<sup>27</sup> Scholars tend to say little of this first step. It is, however, legitimate to ask how anyone can establish that a thing to be investigated is simple, *i.e.*, cannot be divided. I contend that one can only do so by performing a division,<sup>28</sup> which, starting from a concept of wider extension, establishes that the subject at issue is an *infima species* in its own right. Such a division, of course, may also establish that it is not an *infima species*, *i.e.*, that it is what Plato calls 'many-formed'.<sup>29</sup> So much for the first step. The next is described by Plato in more detail: in both cases, *sc.*, both when the thing is simple and when the several forms of such a thing have been counted, the investigator should *try to establish the active and passive capacities*: of the simple thing, or of each member of a set of subspecies. In Plato's own somewhat cumbersome words: their natural capacity to act to what extent upon what, and their natural capacity to be affected to what extent by what.<sup>30</sup> Commentators have often neglected these active and passive capacities.<sup>31</sup> As to the division actually performed here by Plato, recall that he speaks subsequently of a plurality of forms of

<sup>27</sup> 270D1 (*ἀπλοῦν ἢ πολυειδές*). *Cf.* 271D1–5.

<sup>28</sup> *Cf.* Deichgräber (*supra* n.6) 15: "Ob die Seele ein ganzes ist oder nicht, soll ja erst in der Division festgestellt werden."

<sup>29</sup> The many forms are *species infimae*, *cf.* 277B7.

<sup>30</sup> 270D3–7: *ἂν μὲν ἀπλοῦν ἦ, σκοπεῖν τὴν δύναμιν αὐτοῦ, τίνα πρὸς τί πέφυκεν εἰς τὸ δρᾶν ἔχον ἢ τίνα εἰς τὸ παθεῖν ὑπὸ τοῦ, ἂν δὲ πλείω εἶδη ἔχη, ταῦτα ἀριθμησάμενον, ὅπερ ἐφ' ἑνοῦ τούτ' ἰδεῖν ἐφ' ἐκάστον, τῶ τί ποιεῖν αὐτὸ πέφυκεν ἢ τῶ τί παθεῖν ὑπὸ τοῦ.* *Cf.* 271D5–7. See also *infra* n.35.

<sup>31</sup> Platonic scholars, that is (but see *infra* n.33). See however Diller, "Stand und Aufgaben der Hippokratesforschung," in Flashar (*supra* n.15) 35–36 (also *Kl. Schr.* [*supra* n.9] 93–94); but Diller, like Galen, thinks of *Nature of Man*, for which see *supra* n.10 and

body. Now he also states that there are many types of soul, and that each sort of soul has to be influenced by the orator by means suitable to the type concerned.<sup>32</sup> Plato, then, assumes that in the case of body and in that of soul, the first step has already been taken by the investigator and that it has been settled that there are many forms of soul, as of body. Body, or soul, is not an *infima species*. Thus we may begin with the second step of the investigation, and must study the active and passive capacities of the subject of our study. These capacities are relevant to whatever subject we actually study: body, soul, anything. Now, if active and passive capacities *per se* are common to all the subjects that one can study, the extension of the notion of such capacities is larger than that of each separate subject. In any case, I would contend that the common general property to be investigated in the case of both bodies and souls refers us to a larger concept or whole under which both body and soul can be subsumed. In order to understand what is meant by this larger concept, we must turn to another dialogue.

In the *Sophist*,<sup>33</sup> Plato opposes the Presocratic materialists, those who think that only bodies are real, to the idealists or “friends of the Ideas,” who believe that there is a reality much more real than bodies, *viz.*, the Ideas and Soul. Plato then argues in favour of a compromise. Both camps, the Presocratics and the orthodox Platonists, must be compelled by argument to accept a *common denominator of what is real*.<sup>34</sup> The Real (τὸ ὄν) is whatever has the capacity (δύναμις) of acting or being affected (ποιεῖν, πάσχειν). What we see here is a division, however sketchy: reality, *i.e.*, what is capable of acting or of being affected, is to be divided into body, Soul, and Ideas, all of which are real and are capable of acting or of being affected, regardless of the fundamental differences between them and regardless, I would say, of the question whether body itself, or Soul itself,<sup>35</sup> is to be further divided. To pursue this interpretation would, I believe, have interesting consequences for

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text thereto. Also Joly 80, and especially Herter (*supra* n.15) 31f, who refers to “the well known constitutions of the body.”

<sup>32</sup> This constitutes a *third step* (271B1f, *cf.* 271Df), comparable to medical therapeutics (*cf.* 270B6–9 and 268A5–C4).

<sup>33</sup> 245Eff. Guthrie does not refer to this parallel (*supra* n.25), but has noticed it in his subsequent volume V (Cambridge 1978) 140, where however he does not exploit it. For *Phdr.* 245C see *infra* n.35.

<sup>34</sup> See F. M. Cornford, *Plato's Theory of Knowledge* (London 1935) 232ff.

<sup>35</sup> *Cf.* *Phdr.* 245C the *division* of soul into human soul and divine soul according to its *passive* (πάθη) and *active* (ἔργα) capacities. On the sequel, see, *e.g.*, G. Jäger, “Nus” in *Platons Dialogen* (Göttingen 1967) 97f.

the interpretation of the *Sophist*. We should, however, return to *Phaedrus*. In the passage at issue, Plato speaks of whatever subject in general—but specifically of body (the human body) and soul (the human soul). Both body and soul, or rather the several sorts of bodies and of souls that exist, are to be investigated as to their capacity (*δύναμις*) of acting and being affected (*ποιεῖν, παθεῖν*). The agreement with the *Sophist* is as perfect as one could wish. In the same *Sophist*, moreover, Plato, just before the passage cited, somewhat tortuously argues that the concepts of ‘the real’ and of ‘the whole’ are co-extensive, and that both larger and smaller wholes and realities exist.<sup>36</sup>

To sum up. Considering *Phaedrus*, we have found that the application of the dialectical method to, say, the study of the human body cannot entail that this study be confined to body-as-a-whole, but presupposes the prior subsumption of body under another whole, *viz.*, a concept of wider extension. The *Sophist* has enabled us to identify this concept—which, presumably, is one of the highest notions under which body and soul can be subsumed. Accordingly, the analysis of the use of the dialectical method as imputed by Plato to Hippocrates in *Phaedrus*—and of this method only—takes us further than skeptics on the Hippocratic question have thought, *viz.*, towards a larger whole of which the body is a part and which, in view of its *defining* characteristic, we may identify as *the whole*, or the whole of reality.<sup>37</sup>

This is confirmed by the two other passages in *Phaedrus* where Plato appeals to dialectic (273DE, 277BC, *cf.* 276E5–6). The true orator must be a dialectician and even a philosopher (278D): he must be able not only to divide and collect his own subject of investigation, but things in general (*τὰ ὄντα*, 273E2), or everything (*πάν*, 277B6)—and then soul in the same way as everything.<sup>38</sup> The dialectic study of soul is impossible without knowledge of dialectic and its application *in general*; the acquisition of this knowledge is difficult and takes time (273E–274A). All of which shows that the dialectical study of soul is placed in a larger context, that of the dialectic study of reality as a whole.<sup>39</sup>

I would add that such is indeed Plato’s conception of true *science*. According to Aristotle, Reality or Being (*τὸ ὄν*) is not a genus;

<sup>36</sup> 244Dff; *cf.* Cornford (*supra* n.34) 226–28; Guthrie (*supra* n.33) 137–38.

<sup>37</sup> Skeptics who translate (*e.g.*) “high-flown speculative talk about *a nature*” condemn the dialectic method itself; see *supra* n.16.

<sup>38</sup> 277B8, *περί τε ψυχῆς φύσεως διιδῶν κατὰ ταῦτά.*

<sup>39</sup> This, of course, is why the Platonic orator must be a Platonic philosopher.

only the fields studied by the particular sciences are genera. According to Plato, Being is a *summmum genus*.<sup>40</sup> Skeptics who, following Edelstein, argue that in the *Phaedrus* passage ‘the whole’ represents not reality in general but the field studied by a particular discipline ascribe Aristotle’s conception of science to Plato.

### III

Thus, the interpretation of the dialectical passage reaches the premises of Joly’s argument, *viz.*, that when Plato says that Hippocrates studied the nature of the body not without the nature of the whole, the words ‘the nature of the whole’ refer to the whole of nature.

Does this entail that we must assume as well, with Joly and Herter, a hyperinterpretation on Plato’s part? Are we, that is, to take ‘the whole’ in the full sense of the *Sophist*, or the whole of nature in the full sense of the metaphysical portion of *Phaedrus*? Do we have to include the Ideas, *e.g.*, as the proper objects of dialectical inquiry?<sup>41</sup> I do not think that this hyperinterpretation is what we should attribute to Plato. For in the introductory paragraph to the section on Hippocrates Plato, I believe, spares no pains to suggest that, in the present context, the reference to the ‘whole’ is *limited to what a Presocratic thinker intended when he spoke of nature*. Plato discourses on the benefits Pericles, that consummate orator, derived from steeping himself in the *meteorologia* or cosmology of Anaxagoras, adding that medicine is in the same case as rhetoric. In Plato’s own eyes, of course, the Presocratic concept of nature, or of the whole, is far too narrow—which, again, helps to explain the somewhat bantering tone of this passage. In the final section of *Phaedrus*, which is about scien-

<sup>40</sup> *Soph.* 254D4ff, the deduction of the “greatest kinds,” *viz.*, those which both are highest and have the greatest extension. One would have thought it otiose to make this point about Aristotle and Plato, and it is anyway superfluous to quote passages from the former. Edelstein (*supra* n.12) 1320 maintains that *φύσις* throughout the *Phaedrus* passage at issue means ‘die Idee’; he argues that each scientist should “die Idee seiner Wissenschaft erkennen,” by which, presumably, he means the ‘Idee’ studied by a given discipline. If for ‘Idee’ we substitute ‘genus’, we have the Aristotelian concept of science.

<sup>41</sup> Joly 71f: *Phdr.* 245C–249E. Curiously, Edelstein (*supra* n.12) 1320f, supports his thesis that *τὸ ὅλον* = ‘die Idee’ by appealing to the same section. Joly argued that at 270c2 *τὸ ὅλον* refers to Plato’s universe in its “hochphilosophische Bedeutung,” but he says (67) that 270c1–5 explain what is said about Pericles and Anaxagoras at 270A. At 270A, however, the idea is *meteorologia*, not Plato’s ‘hochphilosophisches’ universe.

tific rhetoric, Plato indeed substitutes his own view of what constitutes reality for the Presocratic view referred to in the present passage. This does not affect my inference, however, that in the section on Pericles Plato defines 'the whole' for us as the lesser whole that had been studied by the Presocratics. Otherwise the reference to *meteorologia* would not make sense.

Consequently, neither need we attribute to Plato another hyper-interpretation, the attribution to Hippocrates of the deliberate use of the full dialectic method, inclusive of its dependence upon Ideas. The 'whole' within which the Hippocratic division is placed is not co-extensive with what Plato thinks is the whole of nature. Accordingly, what Plato imputes to Hippocrates is an unconscious and rudimentary use of division within the context of Presocratic *meteorologia*—a method which, with hindsight, is compatible with a transcription in Platonic terminology.<sup>42</sup> According to Plato, Hippocrates avails himself of *dialectica utens*, not *docens*. Compare a central tenet of Plato's epistemology, that what a person really does in recognizing a thing for what it is and calling it by its name is to remember the Idea of this thing. Naturally this does not entail, for Plato, that each person actually knows that what he is doing is *anamnesis*.

So I believe that Plato did not immediately and spontaneously substitute his own view of the nature of reality for an environmental theory he found in works by Hippocrates, as Joly holds. Did he, however, foist on us a hyperinterpretation using notions that were *not* his own—did he substitute the *Presocratic* notion of the whole of nature for the Hippocratic notion of the environment? If we assume this, we may still want the hypothesis that Plato jumped from a part (the environment) to the whole (Presocratic nature). We do not, however, need this hypothesis. Plato himself points the way from 'the whole', in the sense of a Presocratic universe,<sup>43</sup> to part of this whole.

He does so when speaking not of Hippocrates' relation to cosmology in general, but of Pericles' relation to the cosmology of Anaxagoras in particular. At first blush, this latter relation is no less of a conundrum than the former, for how can one become a sublime and efficient orator by studying Anaxagoras' cosmology inclusive of his theory of cosmic Mind? Another great orator and

<sup>42</sup> Cf. *supra* n.16.

<sup>43</sup> The argument that follows is also valid when (as, I think, one should not) one interprets the 'whole' not in Presocratic but in Platonic terms.

perhaps politician, Cicero, explains that Pericles *easily* transferred his mental training from hidden and dark subjects to public and popular speeches.<sup>44</sup> Easily, says Cicero, but he does not tell us how. There is a riddle here, which, I believe, is exactly comparable to the riddle of Hippocrates' involvement with cosmology. There is no more an immediate and clear-cut way from the philosophy of Anaxagoras to the eloquence of Pericles than there is from the Presocratic study of nature as a whole to environmental medicine. In the case of Pericles, however, Plato immediately solves the riddle for us: Pericles became an accomplished speaker because he drew from Anaxagoras' *meteorologia* and theory of Mind and Mindlessness, and applied to the art of rhetoric, *what was suitable thereto*.<sup>45</sup> Familiarity with Anaxagoras' system is not a sufficient, but a necessary condition of great rhetoric,<sup>46</sup> just as Pericles' natural talent as an orator is, according to Plato, a necessary, not a sufficient, condition.

Pericles, in other words, selected certain suitable elements from Anaxagoras' thought and applied these to rhetoric, an already existing discipline (how he did this, what he actually selected and to what extent and purpose he used it, Plato does not tell us). In the next sentence Socrates affirms that the attitude of medicine is the same as that of rhetoric.<sup>47</sup> Phaedrus does not understand. Socrates explains (270B): in both disciplines there is a certain nature to be divided if one is to practise one's *métier* not on the basis of routine and experience only, but in such a way as *techne* requires. Medicine, however, is not only in the same case as rhetoric in so far as practice grounded in a conceptual division is concerned, but also in a larger way. Medicine, like rhetoric, is a great discipline, and all great disciplines need some sort of information of a cosmological nature (269E4–270A3). Now, great rhetoric, as I have remarked in the case of Pericles, was possible only by the selection from a Presocratic cosmological system of such ingre-

<sup>44</sup> *Brut.* 11.44. At *Orat.* 4.14 he attributes to Pericles a division of souls and the application of specific types of argument to specific types of soul, *i.e.*, he attributes to Pericles, in respect of soul, the method Plato attributes to Hippocrates in respect of body. This is not in Plato. Theon, *Progymn.* (Spengel, *Rhet.* II 59), who alludes to *Phaedrus*, is more honestly non-committal: ἀμωσγέπως ἄψασθαι φιλοσοφίας, καὶ τῆς ἐκεῖθεν ἐμπλησθῆναι μεγαλονοίας.

<sup>45</sup> 270A7–8: ἐντεῦθεν εἴλκυσεν ἐπὶ τὴν τῶν λόγων τέχνην τὸ πρόσθερον αὐτῇ.

<sup>46</sup> See *infra* n.48.

<sup>47</sup> At 270A9 Phaedrus asks: “How do you mean this?” This question applies to 269E4–270A8 as a whole. Socrates answers, 270A10: ὁ αὐτός που τρόπος τέχνης ἰατρικῆς ὅσπερ καὶ ῥητορικῆς.

dients as can be used with profit. Analogously, I would argue, the great medicine of Hippocrates is possible only if general Presocratic cosmology is taken into account, from which certain ingredients can be borrowed that can be used with profit. Consequently, when Plato has Phaedrus conclude that, like great rhetoric, so also great medicine cannot be pursued in a way that stands up to criticism (*ἀξίως λόγου*, 270c1) without the study of the whole of nature (note the maieutic skill with which Socrates has elicited this response!), the words ‘not without’<sup>48</sup> refer to the selective use of something—used not *in toto* but only in part, in so far as is suitable to the discipline involved.

Thus the scientific method Plato ascribes to Hippocrates has three aspects: (1) a selection from Presocratic cosmology of ingredients suitable to the existing art of medicine; (2) the use of those ingredients in order to sort out a division of the human body into types; (3) the investigation of the active and passive capacities of these different types of bodies within the framework of the selected portion of natural philosophical theory. To read Plato in this way is to take him *au pied de la lettre*.

#### IV

What remains is to identify the selection actually made. Different types of body are affected in different ways by certain forces in nature which directly concern them. We have found environmental medicine. When we survey such works in the *Corpus* as must be dated to Hippocrates’ lifetime and do not have to be attributed to someone else, there is among them at least one treatise, a very famous one, to which Plato’s description may be said to refer beyond reasonable doubt: *Airs Waters Places*.<sup>49</sup> I therefore submit that we ascribe it to ‘Hippocrates the Asclepiad’. In itself, this identification is not sensational; *Airs Waters Places* has often been ascribed to Hippocrates. If I am not mistaken, however, it has not so far been ascribed on the basis of an interpretation of the

<sup>48</sup> “The idea of a necessary condition is first expressed in the form of the ‘that without which’ (*ἐκεῖνο ἄνευ οὗ*) in Plato’s *Phaedo*” [sc., 99AB]; so G. E. R. Lloyd, *Magic, Reason, and Experience* (Cambridge 1980) 54. There Socrates criticizes Anaxagoras’ conception of causality as being incomplete. For *ἄνευ* or *οὐδὲ ἄνευ* in *Phdr.* see 270c2, c4, d9.

<sup>49</sup> I accept H. Grensemann’s argument that the treatise is a unity: “Das 24. Kapitel von *De aeribus, aquis, locis* und die Einheit der Schrift,” *Hermes* 107 (1979) 423–41. I have profited much from his excellent analysis of its conceptual scheme.



*external* and *doxographical* evidence found in Plato that acknowledges the *essential link* between the study of the whole and the method of division.

In *Airs Waters Places*, the natural forces in the environment of the towns or countries people live in decisively influence their constitution and even their outward bodily forms.<sup>50</sup> For instance, people living in a city in a dry land exposed to the cold and dry north winds have a bilious constitution (*Aër.* 4); those who live in a wet land exposed to the warm and wet south winds are phlegmatics (3). In both cases, the first fact is the cause of the second. The environment also determines the forms of their bodies (*eidea*, 24): populations living in one environment and climate are tall, strong, and wiry; others, living in another sort of environment, are pot-bellied and have soft flesh.<sup>51</sup> On arriving in a city, the physician should study the natural forces of the environment in order to be able to determine the physical type of the population from which his patients come. For both the environment itself in its changing climatic aspects and the sort of human constitution it conditions are responsible for specific sets of concomitant diseases (1–2). Bodies specifically conditioned by a specific environment react in specific ways to this environment. The physician should also take into account the differences between men and women, and those between different age-groups: sex and age are responsible for typical variations of the bodily type to be found within a specific environment, hence also for a variation in the sets of concomitant diseases; persons of different sex and different age may react differently to their environment. One and the same typical disease usually affects the different sections of such a population in typically different ways (3–4, etc.).

The theory of specific human constitutions as conditioned by specific natural environments, a theory further refined to accommodate differences of sex or age as typical variations of such a common constitution, inclusive of typical reactions to this environment which exhibit the same scale of variations, is *the* dominant idea of *Airs Waters Places*. This is what Plato describes as a division of bodies into types in respect of their active and passive capacities related to factors outside the body which have been abstracted from general cosmological theory.

<sup>50</sup> See now Grensemann (*supra* n.49), and *cf.* A. S. Pease on Cic. *Div.* 1.79 (repr. Darmstadt 1977: 234f) and *Nat.D.* 2.17 (repr. New York: II 592); see also E. C. Evans, *Physiognomics in the Ancient World* (Philadelphia 1969) 19f.

<sup>51</sup> *Aër.* 3–4, 15, 24. See further Grensemann (*supra* n.49) 424f, 435f.

It is of some importance to add that, in the introduction to *Airs Waters Places*,<sup>52</sup> the author says that some may think the method he recommends smacks of *meteorologia*—and consequently, we should interpolate, may reject it. Even such a person, however, the author continues, is bound to realize that the observation of the heavenly bodies or *astronomia* represents a major contribution to the practice of medicine, for as the seasons change, so do men's diseases and their innards. The argument, of course, implies that if the opponent allows for seasonal variations of diseases and constitution which can be plotted by means of the application of astronomical knowledge, he is also bound to accept that the environment as a whole is concerned, and that not only the part of *meteorologia* called *astronomia* but also other parts are indispensable to medicine. This reference to *meteorologia* has often been used as an argument in favour of attributing *Airs Waters Places* to Hippocrates—because Plato also uses this word. In isolation, however, this coincidence is not sufficient as proof of the attribution. My own argument is independent of the reference to *meteorologia* in *Airs Waters Places*, and the latter, I believe, merely gives additional strength to the former.

If one takes into account the excellent work accomplished by several generations of scholars in distinguishing groups of related treatises in the *Corpus* (now confirmed, Wesley Smith advises me, by the computer analysis of the *Corpus* executed by G. Maloney and W. Frohn Villeneuve), it is comparatively easy to extend the list of genuine works of Hippocrates. *Sacred Disease* inevitably follows,<sup>53</sup> and it should not prove too difficult to add at least *Epid.* I and III.

## V

G. E. R. Lloyd, however, has argued that to find the Hippocrates of environmental medicine in the *Phaedrus* passage one must prove that also “the detailed empirical study of natural phenomena,”

<sup>52</sup> 2 *in fine*: I follow Diller's text, *Hippokrates, Über die Umwelt* (CMG I.1.2 [Berlin 1970]) 26.19. For the real or imaginary opponent in treatises in the *Corpus* see Lloyd (*supra* n.48) 88 and n.153 (without reference to *Aër.* 2). J. Ducatillon, *Polémiques dans la collection hippocratique* (Paris 1977) 124f, and other scholars argue that in *Aër.* 2 *μετεωρολογία* and *ἀστρονομία* are coextensive; this misses the point.

<sup>53</sup> For the relation between *Aër.* and *Morb.Sacr.* see H. Grensemann, *Die hippokratische Schrift “Über die heilige Krankheit”* (Berlin 1968) 7ff.

the “broadly observational and empirical methodology” found in works such as *Airs Waters Places*, is involved in the method described in *Phaedrus*.<sup>54</sup> He argues that it is implausible to represent Plato as “agreeing with, let alone recommending”<sup>55</sup> any such empirical methodology. This is a good point, which can, however, be met.

Pericles, Plato says, adapted part of cosmology to an already existing discipline, rhetoric. Hippocrates did the same for medicine. Without this use of the study of the whole, Plato writes, both rhetoric and medicine would only be a matter of routine and experience (*τριβὴ . . . καὶ ἐμπειρία*, 270B). Plato, in other words, accepts that there *is* an experiential side to medicine (and I would be prepared to argue that there is not only a conceptual but also an experiential side to his own dialectical method, but this by the way). In *Phaedrus* itself, he recommends a sort of empirical research to be performed by the orator-to-be.<sup>56</sup> Furthermore, when describing the division of body in respect of its active and passive capacities in relation to conditioning outer factors, Plato only uses unspecific language; the details, *viz.*, the identification of the factors concerned, are a matter of the sort of research that is carried out within a given discipline, *e.g.*, that of Hippocrates. One should not, moreover, forget—and Lloyd unfortunately fails to make this distinction—that the later Plato’s views on empirical research were much more tolerant than the earlier.<sup>57</sup> Finally, I would not myself call the attitude of *Airs Waters Places* a “broadly observational and empirical methodology.”<sup>58</sup> Observation and experience are not absent in this treatise—they are even prominent, but (as is only to be expected) they have been decisively determined by the

<sup>54</sup> Lloyd (*supra* n.15) 174.

<sup>55</sup> I presume this refers to “Hippocrates and the true account”: see *supra* n.22.

<sup>56</sup> 271B7f (this ‘research’ follows after the theoretical training has been accomplished).

<sup>57</sup> Lloyd (*supra* n.48) 131f, 145f. For the larger view of the later Plato see *e.g.* *Politic.* 297E–299E, a fine defence of the freedom of research in the sciences and arts against legalistic attempts to thwart it by rigid prescriptions. Here also occurs the characterization of the physician quoted *supra* n.16; what he studies inevitably reminds one of *Aër.* and *Morb.Sacr.*

<sup>58</sup> Apparently Lloyd’s view has evolved since his paper of 1975, for now (*supra* n.48) 146ff, where he writes splendidly about the speculative and conceptual side of Hippocratic medicine and attempts to find instances of what he calls ‘deliberate research’, he concludes that most of these are firmly embedded in a conditioning conceptual frame. Only the observations of *Epid.* can in his most recent view be called empirical; I would argue, however, that also these investigations have been prompted and are sustained by rather speculative theories.

general conceptual scheme, a full-fledged speculative theory deriving from natural philosophy, and confirmed rather than tested by observation.<sup>59</sup> Goethe, who was familiar with a notion of experience as uncontaminated by theory, but was not wholly fooled by this idea, characterized *Airs Waters Places* as follows:<sup>60</sup> “Ich habe auch diese Zeit die Abhandlung des Hippocrates: de aere aquis et locis gelesen und mich über die Aussprüche der reinen Erfahrung herzlich gefreuet, dabey aber auch zu meinem Troste gesehen, dass ihm, wenn er hypothetisch wird, gerade geht wie uns, nur möchte ich seine Hypothese eher den Schiffsseilen und unseren Zwirnsfäden vergleichen.” Goethe had a remarkably observant mind. His comparison of Hippocrates’ *Hypothese* or use of speculative theory and modern constructs is fully justified, as is also his compliment as to the tough quality and relative modesty of Hippocrates’ general theories. Plato, however, was an even more observant person. His off-hand remark that Hippocrates made a selective and critical use of a general theory (or set of general theories) from which he abstracted what was useful for the art of medicine is quite important as a contribution to the analysis of the procedure of an *empirical science*, and should be acknowledged as a philosophers’ view of what is scientific method.

A final point. Plato’s thesis that Hippocrates’ theory of human types is to be placed within the context of Presocratic natural philosophy, though true, is not, I believe, the whole truth. Although some selection of factors from *meteorologia* may explain the environmental aspect of Hippocratic medicine in general, it cannot with the same facility entail a theory of the human types to be found in specific environments, *i.e.*, in the individual combinations of single factors that constitute these environments. But rather than arguing for a revised form of Lloyd’s position and suggesting that Hippocrates’ theory of human types has its basis not in cosmology but in uncontaminated experience, I would suggest

<sup>59</sup> *Aër.* falls within the category of speculative treatises characterized by Lloyd (*supra* n.48) 151; *cf.* also R. Joly, *Le niveau de la science hippocratique* (Paris 1966) 180ff, whom I do not follow, however, in calling this attitude ‘pre-scientific’.

<sup>60</sup> Letter to Heinrich Meyer 30 December 1795, quoted by Deichgräber, “Goethe und Hippokrates,” *Sudhoffs Archiv* 26 (1933) 34. Goethe’s view of ‘Hippocrates’ had been influenced by Johann Georg Zimmermann, who attributed to Hippocrates not only the use of experience, but also of speculative insight: see Deichgräber 30f, and esp. the quotation from Zimmermann (32 n.2): “Von dem bekannten zu dem unbekanntem zu steigen, muss er [the physician] zwar immer wieder weiter denken als er sieht, das unsichtbare als sichtbar sich vorstellen, von dem, was ist, auf das schliessen, was seyn wird, oft errathen und oft zu werke gehen, ehe er errathen hat.”

that it is indebted on the one hand to another philosophical theory (or set of theories), *viz.*, the anthropology of the Sophists,<sup>61</sup> and on the other to a scientific theory (or set of theories) from another discipline, *viz.*, the results of *Ionian ethnography*. It is not by accident that *Airs Waters Places* devotes so much space to information and description of an ethnographical nature. But instead of seeing the medical section and the ethnographical section of the treatise—the latter of which may have been of less interest to Plato—as independent pieces,<sup>62</sup> we should recognize that the ethnography of this brilliant little work justifies the medical human typology. I cannot, however, pursue this line of thought here. Another line I cannot pursue is the very serious possibility that a rough and general idea of environmental medicine is already found with the philosopher<sup>63</sup> Alcmaeon of Croton, in the generation before Hippocrates; if, that is, ‘Aëtius’ report of his theory of health and disease is to be accepted.<sup>64</sup> In this report, however, the environment (or at least “waters of a certain quality, and the land”) is not the first item listed; nor is it explicitly linked to factors in the body; and what we do not find in Alcmaeon, in any case, is a human typology or a typology of the environment. Hippocrates’ real originality as a theorist, I would suggest, lies in his critical talent: his fusion and original development of selected ideas derived from both natural philosophy and from Sophistic and ethnographic thought, which resulted in a typology of environments causally connected with a human typology.<sup>65</sup> I have argued here that it is precisely this theory that is described in *Phaedrus* as a division of the body not without the study of the whole.

<sup>61</sup> See the fine pages of Guthrie, *History of Greek Philosophy* III (Cambridge 1969) 164ff, 55f. I have studied Protagoras’ views on human individuals and human groups in “Protagoras on Epistemological Obstacles and Persons,” forthcoming in the *Acts* of the Third International Colloquium on Ancient Philosophy (devoted to the Sophists; Bad Homburg 1979).

<sup>62</sup> For these separatist views see Grensemann (*supra* n.49) 428f.

<sup>63</sup> See my “Alcmaeon: ‘Physikos’ or Physician?” in *Kephalaion: Studies . . . C. J. de Vogel* (Assen 1975) 26ff.

<sup>64</sup> *Vorsokr.* 14F4: . . . *κακ τῶν ἐξωθεν αἰτιῶν, ὑδάτων ποιῶν ἢ χώρας.*

<sup>65</sup> I cannot find this theory in *Vict.* 1.2 (for Smith on this passage see *supra* p.342), although I can see that there are Hippocratic echoes in this chapter. But there are also other echoes. The author of *Vict.* is an eclectic; in his defence of eclecticism (1.1) he explains that he will accept the correct statements of his predecessors—on regimen. But regimen, in this author, is inextricably bound up with general cosmology. Finally, *Vict.* may be too late for Hippocrates: *cf.* my *The Pseudo-Hippocratic Tract Περὶ ἐβδομάδων* (Assen 1971) 25f n.116, and now G. Harig, “Anfänge der theoretischen Pharmakologie im CH,” in *Grmek* (*supra* n.6) 236–39, esp. 239: “relativ spätes Werk aus der ersten Hälfte des 4. Jahrh.”

What Plato says enables us to authenticate at least one work in the *Corpus*. This does not oblige us to believe that Plato's *explanation* of the origins of Hippocrates' scientific attitude, to the extent that this explanation can be distinguished from the *description* of the method involved which makes the identification possible, should be complete in every detail.<sup>66</sup>

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<sup>66</sup> This paper is a revision of part of a commentary on a paper by R. Joly, "Hippocrate et l'Ecole de Cos: entre le mythe et l'hypercritique," part of which was read at the Third International Conference on the History and Philosophy of Science (Montreal 1980); that paper and the remainder of mine will be published in the acts of the conference. Versions of the present text were presented also at the University of Colorado under the sponsorship of the Center for Interdisciplinary Studies and the Classics Department, and at the University of Pennsylvania under the sponsorship of the Departments of Philosophy and Classics (September 1980). It is a pleasure to thank Professors Robert E. Butts, Robert Joly, Hazel E. Barnes, William M. Calder III, Charles H. Kahn, and Wesley D. Smith for their hospitality and critical and stimulating interest.