

# **Plato's Use of Medical Language and Concepts**

by

Tyson Sukava

A Thesis submitted to the Faculty of Graduate Studies of

The University of Manitoba

in partial fulfilment of the requirements of the degree of

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### **Abstract**

This thesis explores both Plato's understanding of human anatomy and medicine, and the vocabulary he uses when discussing these subjects. In the following work I examine Plato's use of medical vocabulary and discussions of medical themes under four general classifications: 1) Human anatomy and physiology, 2) physical conditions and symptoms, 3) doctors and their art, and 4) treatments and cures. By comparing Plato's language and concepts with those of his predecessors and contemporaries I intend to show that he exhibits a relatively consistent and positive concept of the medical art, and one that is comparable in both theory and word-use to those found in the works of certain Classical authors. I also intend to show that most of the medical concepts that Plato employs are not of his own creation, but rather borrowed from ideas already active in Greece by his time.

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This work, and in no small part any that may follow, is dedicated to my parents,

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### Introduction

Plato reveals himself through his writings to be a man of extraordinarily broad interests. In addition to his principal philosophical themes concerning the nature of the soul and the proper order of society, his corpus provides a rare glimpse into the various lives of Greek people through one man's eyes. Those he discusses range from the humble slave of Meno to the grandiose characters of the sophists Gorgias and Protagoras, from the nameless pastry-chef to the shoe-maker, and from statesman Solon to the scientist Anaxagoras. The enthusiasm with which he throws himself into the creation of vivid dialogues in which these figures are portrayed shows his fine attention to the world around him. It is to our benefit that these sketches of life in Classical Athens have been preserved for posterity, since they often are the litmus papers to which we compare our own beliefs concerning the people and professions in Plato's world.

#### One of the most common professions

Plato mentions in his dialogues is the medical profession. From his earliest writings to his last, he consistently makes reference to doctors, their fields of study, and their craft: He shows an interest in human anatomy and physiology. He frequently discusses topics of disease and human ailments. He mentions the Athenian doctors Eryximachus and Acumenus, as well as the most famous of all Greek doctors, Hippocrates. He describes the cures that his contemporaries use to heal their fellow citizens.

Plato's discussions on the subject of Greek medicine are many. Despite this, to my knowledge, no attempt has been made to categorize passages of medical themes in the *Platonic corpus* and to compare these with the ideas of other authors. Such an

attempt has three benefits. First, it will allow us some insight into the depth of understanding Plato has of the medical art and the impression he holds of it. Second, it will shed light on the sources that Plato is drawing upon for his information. Third, it will provide information on the state of medical knowledge in Athens at this time, when so much of what we know about Greek medicine comes from the predominately Ionic writing in the Hippocratic Corpus.

In the following work I intend to show that Plato does exhibit an interest in the fields of study encompassed by the art of medicine. We shall see that he refers to physicians and their craft throughout his writing career in a variety of contexts. These references reveal a man who was curious about medicine and, for the most part, well-informed on the subject. Despite this interest, he habitually uses lay-vocabulary in his discussions on this theme. Only occasionally does he use technical medical vocabulary. The most common appearance of this technical language in his earlier works is in parody, but its occurrence becomes increasingly more frequent in his later dialogues. The sources for his information vary. He does have specific knowledge of medical theory. More often than not, however, his opinions are more apt to coincide with those of his poet predecessors and the metaphors of the orators than the theories expressed in the Hippocratic Corpus. In all his writings Plato treats the art of medicine with due respect and seems to regard the practitioners of this art as being among the foremost citizens in a community.

The great extent to which Plato refers to medicine in his corpus requires that the scope of this present work be restricted. The vocabulary I shall be discussing is drawn

from six of Plato's dialogues: the *Charmides*, *Phaedo*, *Phaedrus*, *Gorgias*, *Symposium*, and the *Timaeus*. Other works of his will be mentioned, but only when they exhibit the same or similar use of language as he presents in these six dialogues. I shall also limit my analysis to those sections where Plato is explicit about his medical theme, since there are areas in his writings where his technical language does hint at a possible medical connection.<sup>1</sup> In these instances, however, Plato is more often than not drawing not so much upon medical language as he is on the language of scientific thought through abstract expression.

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<sup>1</sup> All translations are my own. When clarification is needed I have consulted Cooper (1997) and the Loeb editions of the Hippocratic corpus, esp. Potter (1995) and Jones (1923).



### **The Medical Vocabulary of Plato**

It is necessary at the outset of this section that I make clear the parameters of the medical vocabulary that I shall be discussing. I shall avoid using the term “technical” to describe a word or phrase used by Plato except in the instances where a concept is expressed in a manner (either through word choice or context)<sup>2</sup> that distinguishes the word or phrase from common language. I have chosen, rather, to use the broad term “vocabulary” in my title so as not to exclude those terms with medical significance that were commonly used by the general population.

The method I have used to identify and analyze medical and physiological terms will become clear in the course of this work. A few words, however ought to be devoted to clarify, and justify, the process.

Plato’s vocabulary when he discusses subjects tends to consist of very common words. This tendency towards common word-use is indicative both of Plato’s status as a

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<sup>2</sup> As a definition of technical language, I shall be using the basic outline proposed by Dover (1997) 114. Here, he classifies technical language into four groups: 1) Words that are never used outside of a specialized area. 2) Words that have synonyms in common language. 3) Words that have a meaning in a technical context that is distinct from the meaning in common use. 4) Words that are considered technical due to their frequent appearance within a specialized field.

layman, and of the fact that medicine as a formalized (or at the very least semi-formalized) skill was in its infancy within the Greek world; at this stage of the science, few terms had acquired a specifically medical sense and were more often than not lucidly descriptive of a condition or treatment.

A chief task before one studying the medical vocabulary of Plato is to conceive an effective means to sort out common words used in a medical sense from the insurmountable instances of the same words employed in a non-medical context. To address this problem I have chosen to analyze the occurrence of certain word groupings in addition to single word-occurrences. While it may be argued that this method of study is somewhat arbitrary, I am confident that the corresponding groupings of the same words within works will provide sufficient evidence to the contrary. Yet to minimize the complexity of the analysis and to limit any exaggeration of importance placed upon word-pairings, I shall be sparing in my inclusion of these cases.

The division of words analyzed will be into four parts: In the first section I shall discuss Plato's use of words related to anatomy and physiology, in the second, those concerning physical conditions and symptoms, in the third, his impressions of doctors and the art of medicine, and in the fourth I shall discuss Plato's vocabulary when describing treatments and cures.

## **1. Anatomy and Physiology**

Plato as a rule rarely discusses human anatomy and physiology within his dialogues. He does occasionally mention general divisions of the body, but saves any protracted analysis of these subjects for the most epistemological of his dialogues, the *Timaeus*. In this present section I shall be discussing how, in Plato's time, little had been added to the Greek knowledge of anatomy since Homer composed the *Iliad*. By comparing the anatomical language in the *Timaeus* and his passing remarks elsewhere in Plato's dialogues with that of his predecessors and contemporaries, I will suggest that his anatomical knowledge would be considered common among Greek (intellectual) laymen, but this does not preclude the possibility that Plato devoted some study to the subject (most probably, derived from animal dissection). I shall also show that Plato's insights into the human body are primarily on matters of physiology. These, however, are generally postulates used to support *a priori* beliefs that are based upon a much older understanding of man.<sup>3</sup>

### **The Greek view towards anatomy and physiology**

Greek knowledge of the human skeleton was dependent upon the attentiveness of the observer. Skeletal remains from exposed bodies must have been available for doctors to examine; it was then just a matter of properly aligning all the pieces of the puzzle

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<sup>3</sup> It is possible to compose entire works of commentary on Plato's vision of anatomy as many authors from Galen onwards have proved. Considering the weighty task of outlining all areas of Plato's understanding, I am compelled to be far less than comprehensive in my analysis. My intent here, as in the following chapters, is to provide some insight into Plato's knowledge through an examination of selected words.

together.<sup>4</sup> They had similar knowledge of human organs. We can assume that the Greeks knew of the most conspicuous internal parts of the human body well before our earliest surviving records. The *Iliad* and *Odyssey*, for example, mention the major organs (σπλάγχνα)<sup>5</sup> including the heart (κράδιη), liver (ἥπαρ), and lungs (πνεύμων) (but not the kidneys), as well as the abdominal cavity (νηδύς, γαστήρ) containing the intestinal tract (έντερα) and bladder (κύστις).

Much of the information concerning human anatomy acquired by the Greeks up until the end of the Classical period was probably derived from the analysis of butchered and sacrificial animals, or from observable injuries sustained by individuals.<sup>6</sup> A firm understanding of how these organs functioned, and a further division of internal organs beyond the most salient, escaped Greek medicine until the Alexandrian period when dissections and vivisections were likely first performed.<sup>7</sup>

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<sup>4</sup> Pausanios describes a bronze statue at Delphi that was said to have been dedicated to Apollo by Hippocrates himself (*Paus.* 10.2.6). This statue, he writes, was of a man whose flesh appeared to have melted off leaving only the bone: μίμημα ἦν χαλκοῦν <άνδρως> χρονιωτέρου...κατερρυηκότος τε ἤδη τὰς σάρκας καὶ τὰ ὀστά ὑπολειπομένου μόνα. It is, of course, unlikely that the statue was dedicated by Hippocrates. We can still infer from this comment, however, that there were individuals who understood the skeletal system, and also that such representations of the skeletal system were still strange to a layman in the second century A.D.

<sup>5</sup> Though in the *Iliad* and the *Odyssey*, σπλάγχνα is only used to mean the higher organs of animals that are cooked and consumed.

<sup>6</sup> Human dissection in Greece was forbidden on religious and moral grounds. Phillips (1973) 41 suggests that aborted embryos and the bodies of exposed children were exempt from these restrictions and could, therefore, be examined. Edelstein (1967) 251-2 notes that there is a possibility that Homeric physicians did practice dissection. He contends that this is unlikely, though, since it is difficult to believe that a physician at that time would have spoiled a human body for the sake of scientific knowledge.

<sup>7</sup> Celsus (*De medicina*, Prooemium 23-4) writes *Necessarium esse incidere corpora*

It is in this respect that the distinction between anatomy and physiology can be made clear; while the Greeks knew early on about the existence of major, distinct, internal organs, the limitations placed by religious observance severely hampered any great insight into internal processes. This is comparable to the physicians of Babylonia who also had severe religious restrictions placed upon them concerning the examination of human corpses. As a result, they too were only aware of the principal organs, and had a skewed knowledge of physiology.<sup>8</sup>

Egyptian knowledge of human anatomy, however, stands in stark contrast to that of the Greeks and Babylonians. Due to their method of embalming, the Egyptians gained an extensive knowledge of human anatomy at a very early date. It was the Egyptian physician who would oversee the removal and treatment of the internal organs over the roughly seventy-day procedure. Through doing so he gained a significant amount of insight into internal mechanics. The extent of the physician's knowledge in this process is reflected by the existence of over one hundred anatomical terms found in the ancient Egyptian language.<sup>9</sup>

The expertise of Egyptian medical and anatomical knowledge did not escape the notice of the Greeks. Herodotus provides us with some particularly useful bits of

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*mortuorum, eorumque viscera atque intestina scrutari; longeque optime fecisse Herophilum et Erasistratum, qui homines a regibus ex carcere acceptos vivos inciderit.* ("It is a necessity to dissect the bodies of deceased individuals and to examine their organs and intestines; Herophilus and Erasistratus practiced this most successfully. These men would take men imprisoned by rulers in order to cut them alive.").

<sup>8</sup> Gordon (1949) 178.

<sup>9</sup> Gordon (1949) 225.

information on these subjects. In Book 2 (86-7) he explains the procedures of Egyptian embalming in quite a detailed manner. His description of the process, however, reflects both the limited knowledge of a Greek layman regarding human anatomy and the restrictions placed upon him by Greek anatomical knowledge in general.

In this section on embalming, Herodotus explains the process using the bare minimum of detail necessary to explain each of the three methods practiced by the Egyptians. The first two descriptions are the most revealing of his medical knowledge. When he discusses the most expensive procedure, Herodotus tells how they pull out the brain (ἐξάγουσι τὸν ἐγκέφαλον) through the nostrils (διὰ τῶν μυζωτήρων). Then, after making an incision alongside of the loins (παρασχίσαντες παρὰ τὴν λαπάρην) they remove all the innards (τὴν κοιλίην πᾶσαν). Next he relates how an average-priced embalming involves filling the innards (again, κοιλίην) with cedar-oil from a clyster-pipe. Yet he notes that they neither dissect (ἀναταμώντες) the body in this procedure, nor remove (ἐξελόντες) the bowels (τὴν νηδύν). He explains that the strength (δύναμις) of the cedar-oil is so great that both τὴν νηδύν (the lower organs) and τὰ σπλάγχνα (major organs) are dissolved (κατατετηκόντα). All that remains of the body at this point is the skin (τὸ δέρμα) and the bones (τὰ ὀστέα).

Herodotus is here probably using κοιλία to refer to all matter contained within the abdominal cavity. He then uses νηδύς to mean specifically the bowels in order to distinguish them from the σπλάγχνα (consisting of the heart, lungs, liver, and kidneys<sup>10</sup>)

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<sup>10</sup> Cf. LSJ s.v. σπλάγχνον where the common constituents of this higher-organ grouping are listed.

of which some do distend into the cavity. We can see here that Herodotus has no interest (or particular need, for that matter) to mention specific organs; it is the division between the higher organs and lower organs that serves his purposes of explanation.<sup>11</sup>

From this passage, however, we do see evidence that Herodotus is drawing upon some technical language for his discussion. His use of δύναμις, for instance, suggests some knowledge of specific medical terminology; the word is seen quite frequently within the Hippocratic Corpus referring to the potential ability of material within the body (as opposed to the σχήματα, or “framework,” that provides the structure).<sup>12</sup> It is true that Herodotus uses the word elsewhere within his *Histories*, mostly in the sense of the strength of a ruler, but it seems that his choice of wording in this context implies some medical connection. Moreover, the word ἀναταμώντες is seen exclusively in the Hippocratic Corpus and later works with the meaning “to incise a body.” It appears, then, that a non-technical (but curious) layman could employ medical terminology when called upon to do so.

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<sup>11</sup> In comparison, the Hellenistic historian Hecataeus of Abdera (Jacoby fr. 25.1499-1528) is in many regards more specific in his account of the Egyptians’ embalming process. Although he does not discuss the different methods of embalming as Herodotus does, he is more specific in describing the first process. After discussing the incision (ἐπὶ τὴν λαγόναν περιγράφει τὴν εὐώνυμον ὅσα δεῖ διατεμεῖν κτλ.) he then goes on to describe the organ removal in greater detail than his predecessor: εἰς καθήσιν τὴν χεῖρα διὰ τῆς τοῦ νεκροῦ τομῆς εἰς τὸν θώρακα καὶ πάντα ἐξαιρεῖ χωρὶς νεφρῶν καὶ καρδίας, ἕτερος δὲ καθαίρει τῶν ἐγκοιλίων ἕκαστον κτλ.).

<sup>12</sup> For this distinction see *Ancient Medicine* 22. Here, the author relates δύναμις to the strength of the χύμαι (humours) within the body. Aristotle notes in *On Philosophy* (fr. 19) that all causes of destruction, both internal and external, are because of a certain δύναμις. Cf. Cornford (1937) 53. Cf. also *Sophista* 248c4: ἡ πάσχειν ἢ δράν...δύναμις (“the ability to be acted upon or to act”).

The writers of the Hippocratic Corpus employ essentially the same vocabulary as Homer and Herodotus when describing the parts of human anatomy. One particular author, that of *De septimestri partu*, describes his layout of the human body quite succinctly while discussing the ῥυσμός (measuring) of symptomatic features:

οἷα ῥυσμός κατατῆκει καὶ ἐς τὰ ἐπιτήδεια ὀστέων καὶ ἰνέων<sup>13</sup> καὶ φλεβῶν καὶ νεύρων καὶ σπλάγχνων καὶ νηδύος καὶ τῶν λοιπῶν καὶ ἐς συντελειην.  
(124)

the passage of time melts away such things as those involved in both the functions of bones, aponeurotica, veins, tendons major organs, bowels and the remaining parts, and involved in their interaction.<sup>14</sup>

From this list of essential parts, we can see that the organs and divisions mentioned by Homer constitute the extent of general Greek anatomical knowledge through to the end of the Classical period. As we might expect, then, Plato in his writings does not add to the anatomical vocabulary already used by Homer.

### Bones and Tendons

Plato, while mentioning the process of Egyptian embalming in the *Phaedo* (80c9), reveals his understanding of the breakdown of the human body after death. He likens the

<sup>13</sup> I have translated ἰνέων below as “aponeurotica,” which is the modern anatomical term for tendons that are stretched to form broad sheets. In the Hippocratic Corpus, it is quite difficult to clearly differentiate ἰνες from νεῦρα. For my defense of “aponeurotica” cf. *Od.* 12.119: οὐ γὰρ ἔτι σάρκας τε καὶ ὀστέα ἰνες ἔχουσιν, ἀλλὰ τὰ μὲν τε πυρὸς κρατερόν μένος αἰθομένοιο δαμνᾶ. The author of *Places in Man* (5) states that ἰνες are very similar (παρόμοιαι) to νεῦρα.

<sup>14</sup> It is notable that this author is quite systematic with his seemingly offhanded listing of human anatomy. He begins with bones, which are the most unique anatomical material. He then groups the cord-like material: the aponeurotica, the veins and the tendons, moving on to the higher organs and the bowels before he makes exception for anything else he had missed.



process of embalming to what happens to a body when it is exposed to the elements (συνπέσον...τὸ σῶμα). He notes that in such a state, the body can remain in stasis for a remarkably long time. But even if the body does rot, such elements as bones and tendons (ὅστᾱ τε καὶ νεῦρα καὶ τὰ τοιαῦτα πάντα) remain. From this we may infer that Plato has had the opportunity to observe the remains of exposed animals, if not specifically those of humans.

He further reveals his understanding of the structural foundations (bones, tendons, and ligaments) of the human body and their role in its kinetics in *Phaedo* 98c5-d6. In this section of the dialogue, Socrates is continuing his reflection upon the mind-body connection and the contradictions he sees in Anaxagoras.<sup>15</sup> As an analogy, he implies that it would be foolish for him to assert that his mind drives whatever he does and then to go on to explain the individual causes (αἰτίᾱς) of each action. By “causes” here, he means specifically the mechanical process of movement. He names the tendons (νεῦρα) as the active agents of kinetics (98d3-5), while the bones (τῶν ὀστέων) and ligaments (τᾶς...συνβολαῖς) as passive. The bones are hard (στερεά) and have divisions (διαφυσάς). All of these parts are surrounded (περιαμπεχόντα) with flesh and skin which hold them together.

I contend that Plato suggests the incongruity of Anaxagoras’ theories here by mimicking the technical language of both natural philosophers and physicians. The context of Socrates’ discussion certainly suggests that Plato would choose to use a

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<sup>15</sup> Socrates relates to us that upon reading that Anaxagoras thought the *nous* (Mind) was the agent behind the movement and order of the Cosmos, he was disheartened to find that Anaxagoras also attempted to explain these phenomena through natural causes.

technical style, but such words as bones, tendons, and ligaments are far too common to imply a technical usage by themselves. The use of στερεά as an adjective appears among medical writings to describe internal parts,<sup>16</sup> and διαφυή is seen again in an anatomical context,<sup>17</sup> but these are common words outside of medical writings, as well. Searching for a cause (αίτία) is certainly in the scope of both philosophers and physician; the word appears early on in the analogy (98c5), thus setting the stage for his explanation. Yet, since the use of these commonplace nouns alone might not have sufficed to make his parody clear, Plato appears to have used verbs to fulfill his needs (a fitting choice in a pastiche on kinesiology).

In this passage, Plato uses a series of verbs to express the arrangement, extension, and retraction of the anatomical parts mentioned above. It is the consistent and redundant use of contracted verbs that gives the exacting effect of a scientific treatise. The συν- prefix, for example, appears five times within the ten-line period.<sup>18</sup> Verbs with συν- / ξυν- prefixes were quite common among the natural philosophers to express the concept of union. Anaxagoras (fr.43.7), for instance, uses συγκεῖσθαι to describe the arrangement of fire to compose the elementary particles (στοιχεῖα) of bodies (τῶν

<sup>16</sup> See *VC* 22.6 *et passim*, *Vict.* 9.10; 64.9, *Carn.* 3.11.

<sup>17</sup> Erotianus (Klein 38.7). Though a late reference (1<sup>st</sup> c. A.D.), it appears in a quotation from "Hippocrates" describing τὴν ῥαφανηδὸν διαφυήν (the radish-like fracture). While a joint is certainly not a fracture, they are both of a similar nature; one is a natural cleft and the other not. What adds some credibility to assigning this quotation to the true Hippocrates is that the work *On fractures* was the only writing from the Hippocratic Corpus which was never deemed spurious in antiquity.

<sup>18</sup> σύγκειται (98c6); συνέχει (98d2); συμβολαῖς, συντείνοντα (98d2); συγκαμφθεῖς (98d5).

σωμάτων) and all matter. The repetition of the συν- prefix is perhaps also intended to parody the pre-Socratic prose writers' tendencies towards alliteration.<sup>19</sup>

Adding to the scientific impression of this passage, Plato uses two different sets of verbs when describing the contraction and extension of the tendons: (ἐπιτείνεισθαι / συντείνουντα; ἀνίεσθαι/χαλῶντα). Compound qualifications such as these are often seen in Plato's technical passages.<sup>20</sup> The paring of ἐπιστείνεισθαι and ἀνίεσθαι, in particular, provides a good example of the technical nature of these verbs. The two words occur within a two-line grouping in three other places within the *Platonic Corpus* (*R.* 412a1, 441e12; *Ti.* 74b5). When they are mentioned in the *Republic*, the words are used to describe harmonic movements in both gymnastics and music. Plato uses the words again in the *Timaeus* when he reiterates his understanding of the tendons and their function. As we see from these sections, Plato consistently employs these two verbs (when grouped together) with relation to physiological kinetics.

It is difficult to identify specific verbs such as those above as having a technical sense, particularly when these are verbs of motion. There are only so many ways in which one can express directional movement. The high number of words with possible medical or scientific applications in this section, and the conglomeration of συν- prefixes, strongly supports a belief that the Socrates' monologue within the *Phaedo* is indeed a parody, or at the very least at pastiche, of technical language.

<sup>19</sup> Cf. Denniston (1952) 127. Here he suggests that the early prose authors, then lacking the structure of poetry, compensated with alliteration and other forms of assonance.

<sup>20</sup> Thesleff (1969) 71

When Plato describes the same kinetic functions within the *Timaeus* (74a7-b7), he does so in a manner that is to be taken as anything but parodic. In this section describing bones (73b1-74e10), he wishes to show us that the Maker (ὁ θεός) has designed these things (as with the rest of the body) with a view to the best. He reiterates that the tendons are responsible for the extension and retraction of our limbs, and that these, along with the bones, are surrounded by flesh. When describing articulation, though, he chooses a different method than in the *Phaedo* to describe the ligaments (συμβολαί) and joints (διαφυαί). Instead of the more exacting approach of using two separate words to describe these as in the *Phaedo*, in the *Timaeus* he uses a single term, στρόφιγξ (74b6), for both the συμβολαί and the διαφυαί. Plato uses the word only once more shortly before in a simile (74a2: οἷον στρόφιγγας, “like [door] hinges”) when he describes the formation of the spine. Στρόφιγξ is an unusual choice, since it never appears to have connections with anatomy outside of the *Timaeus*.<sup>21</sup> Before Plato, the word is used once by Euripides (*Ph.* 1126: εὖ πως στρόφιξιν ἔνδοθεν κυκλούμεναι κτλ.) and Aristophanes again puts the word in the mouth of Euripides (*Ran.* 892: γλώττης στρόφιγξ<sup>22</sup>).

<sup>21</sup> The LSJ (s.v. στρόφιγξ) does cite Pherecrates as using στρόφιγξ to refer to the structure of the vertebrae (Kock, fr. 236). This fragment, however, occurs in an alphabetical list of unconnected words between στρατιγίς (adj. form of στρατηγός, or “general”) and συηνία καὶ ὑηνία (swinishness, or stupidity). From this list there is no way to be certain in what sense the word is being used. Taylor (1928) 530 takes στρόφιγγες at *Ti.* 74b6 also to mean “vertebrae” as with 74a2. However, the similarity of this passage to Socrates’ discussion in the *Phaedo* on general articulation (esp. the participles ἐπιτεινομένων and ἀνιεμένων) suggests that Plato is not being so restrictive in his use of the word.

<sup>22</sup> This passage of the *Frogs* (892-4) is a dig at Euripides’ love for unusual imagery such as the “gods” αἰθήρ ἐμὸν βόσκημα (“my pastured air”) and μυκτῆρες

The word στρόφιγξ, a substantive of the verb στρέφω (to turn/twist), implies a free rotation (as with the examples of the above authors). It is thus used by Theophrastus (*Historia plantarum* 5.5.4) as the turning-hinges<sup>23</sup> of doors (στρόφιγγας τῶν θυρῶν). The turning-hinges of doors, with their hinge and pivot design, are quite comparable to the διαφυαί and συμβολαί (respectively) of joint-structure in the *Phaedo*. It is also interesting to note what Theophrastus tells us about the wood selected for making these hinges. The head craftsmen (ἀρχιτέκτονες) write, so he relates, that these hinges should not be made from the center (ἡ μήτρα) of the wood since its fibers (τὰς ἴνας) are far apart, making this wood too hard. There may be some connection, then, between the idea of τὰ νεῦρα and that of αἱ ἴνες that Theophrastus mentions.<sup>24</sup> It is then quite possible to believe that Plato is creating an analogy between a common wooden household fixture and human anatomy.<sup>25</sup>

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ὀσφραντιήριοι (“sharp-smelling nostrils”). In addition to the rare appearance of στρόφιγξ in writings, its use here adds further credence to the belief that it is an unusual word.

<sup>23</sup> Hort (1916) 449 translates the word as “pivots.” At n. 5, Hort remarks (I believe, rightly) that in this context, the word probably means both the socket and the pivot. This use of one word to describe the two parts of a pivot is the same as is seen in the *Timaeus*.

<sup>24</sup> Cf. n.13 above. The connection made by the Greeks between human and plant anatomy can be seen in the use of similar terminology. In this section alone: μήτρα, καρδία, τὸ σαρκῶδες. Theophrastus explicitly states the ἀνάλογον between animals and plants at 1.1.5 of this work.

<sup>25</sup> Another possibility, though lacking archaeological authority, is that Plato is creating an analogy between human joints and smaller door hinges (as those used in cupboards). Excavation at Pompeii revealed several collections of small hinges made from animal bone (Allison 2004, 52). It is possible that a similar construction technique was used in Greece, but no evidence of this remains.

### Higher Organs (Generic Classification)

When Plato describes the major organs, he usually lists each instead of referring to the group as a whole (σπλάγχνα). Only once does he use the word generically of a major organ within the human body:

Ὡς ἄρα ὁ γευσάμενος τοῦ ἀνθρωπίνου σπλάγχνου, ἐν ἄλλοις ἄλλων  
ἱερείων ἑνὸς ἐγκατατετημένου, ἀνάγκη δὴ τούτῳ λύκῳ γενέσθαι. ἢ οὐκ  
ἀκήκοας τὸν λόγον; (*R.* 565d9-e1)

So then, it is like a man who has tasted a human organ, one cut up in those of other sacrifices, then must change into a wolf. Or have you not heard this story?

In this passage he appears to be using the word in a sense very similar to that seen in the *Iliad* and the *Odyssey*.<sup>26</sup> Homer connects the word with the parts of sacrificial animals which men cook for their own consumption. Plato, in the *Republic*, seems to be drawing upon this connection to sacrifice using very plain, direct, language rather than from a desire to assume a technical medical style.

The technical setting of Plato's second (and only other) use of σπλάγχνον (*Ti.* 72c2) stands in sharp contrast to the epic comparison seen above. Here, Plato is clearly using the word in a scientific sense to describe the location of the spleen:

ἢ δ' αὖ τοῦ γείτονος αὐτῷ <τῷ ἥπατι> σύστασις καὶ ἔδρα σπλάγχνου  
γέγονεν ἐξ ἀριστερᾶς χάριν ἐκείνου

Moreover, the composition of the neighbour to the liver, and the location of this organ on the right-hand side are for the sake of that organ (sc. the liver)

This clause draws heavily upon the scientific jargon of Plato's time. The two subjects of this section, σύστασις and ἔδρα, are seen several times within the Hippocratic Corpus.

<sup>26</sup> Cf. *Iliad* 1.464, 2.427; *Odyssey* 3.9, 12.364

Writers in the Hippocratic Corpus use ἔδρα to mean both the location of something within the body<sup>27</sup> and as a term for the rectum.<sup>28</sup> Σύστασις is used in a wide-ranging sense to mean the arrangement or agreement of a thing or things within the body.<sup>29</sup>

The use of the -σις suffix seen in σύστασις was common among authors of the Hippocratic Corpus when they required an abstract noun. As Browning notes, these -σις endings on verbal stems provided a physician with the ability to create a wide range of uniform concepts, particularly for the coining of symptom- related terms.<sup>30</sup> Moreover, the -σις ending was also heavily used by the early natural philosophers.<sup>31</sup> The word σύστασις, in particular, is reported to have been used by Thales (fr. 3.6), Pythagoras (*Carmen aureum* 51), Diogenes (*test.* fr. 1.9), Empedocles (fr. 80.6; 110.2) and Philolaus (*test.* 27.12).

Plato uses σύστασις frequently in his later dialogues, and especially in the *Timaeus*. In this work Plato draws heavily upon the scientific concepts of the natural

<sup>27</sup> E.g. *Morb.* 1.27: (on pneumonia) καὶ ἔδρην λάβη ἢ τε χολὴ καὶ τὸ φλέγμα ἐν τῷ πλεύμονι, σήπεται καὶ πτύεται. (“and [when] the bile and phlegm take a seat in the lungs, [as a mixture] they fester and are coughed up.”).

<sup>28</sup> E.g. *Fist.* 9: “Ὅταν δὲ ἀφοδεύῃ, τὰ σκέλα ἐκτεινάτω· οὕτως γὰρ ἂν ἥκιστα ἐκπίπτει ἢ ἔδρη. (“Whenever [the patient] defecates, let him stretch apart his legs, for thus will the rectum prolapse the least.”). Cf. Potter (1995) 403 for the translations of ἐκπίπτει and ἢ ἔδρη.

<sup>29</sup> E.g. *De medico* 10: καὶ τὰς συστάσεις (τῶν φύματων) (“the composition [of the ulcers]”).

<sup>30</sup> (1952) 70.

<sup>31</sup> Browning (*ibid.*) 71 writes that the fragments of Parmenides, Heraclitus, Philolaus, Empedocles, and Democritus reveal around 35 new -σις constructions.

philosophers, and it is of little surprise that he also draws upon their terminology.<sup>32</sup> Plato, however, does use it elsewhere in the *Timaeus*, both in an anatomical sense (75b3: ἡ περὶ τὴν κεφαλὴν σύστασις), and pathological sense (89b5: σύστασις νόσων). Such instances show both the technical nature of σύστασις and the flexibility of abstract nouns with the -σις suffix to be used in a variety of contexts. Plato, as we shall see below, uses -σις words in similar discussions of medical themes to express 1) location 2) condition, and in a connected sense 3) disease. These word-forms when used in a medical context are limited to the *Timaeus*. A suitable explanation for this is that such technical language would seem out of place in the mouths of Plato's interlocutors, even when discussing physicians and the body.

### Heart

The parts and arrangement of the organs that compose the σπλάγχνα, with the exception of the heart, are mentioned by Plato only in the *Timaeus*. He discusses the heart (καρδία) the most among the higher organs. In some cases, he makes note of the physical (psychosomatic) reaction of the heart towards fear or excitement.<sup>33</sup> These passing remarks are of some significance, since they provide insight into Plato's theories involving the function of the heart and the division of the soul. In the *Symposium*, Plato links the position of the soul with the the heart: τὴν καρδίαν γὰρ ἡ ψυχὴν ἢ ὅτι δεῖ

<sup>32</sup> A clear example can be found with Plato's use of the word at *Ti*.32c6 where he discusses the arrangement of the world (ἡ τοῦ κόσμου σύστασις) in respect to the four elements. This usage is almost identical to that of Thales (fr.3.6: καὶ σύστασιν τῶν ἐγκοσμίων) and Empedocles (fr. 110.2: ἡ τοῦ κόσμου γένεσις καὶ φθορὰ καὶ σύστασις).

<sup>33</sup> *Ion* 535b7: ὀρθαὶ αἱ τρίχες ἴστανται ὑπὸ φόβου καὶ ἡ καρδία πηδᾷ. *Smp*.



αὐτὸ ὀναμάσαι (*Smp.* 218a3-4). He also points to a specific passage in the *Odyssey* twice within his dialogues that reiterates the concept of the heart as the seat of the soul:

στήθος δε πλήξας κραδίην ἠνίπαπε μύθῳ·  
τέτλαθι δῆ, κραδίη· καὶ κύντερον ἄλλο ποτ' ἔτλης.

(*Od.* 20.17-18; quoted in *R.* 390d4-5, *Phd.* 94d8-e1)

Pounding his heart (Odysseus) rebuked it saying:  
'Be bold, heart! since you have endured more shameful.'

Plato's interpretation of this passage is that, since Odysseus is addressing his heart, it is to be considered a center of thought and emotion distinct from the mind (reason). While it is certainly doubtful that Homer intended such implications when composing this passage, this poetic imagery of the emotional heart (which is common throughout all Greek poetry) does strongly suggest a persistent corresponding belief among the lay population.

In the *Timaeus*, Plato expands upon this understanding of the function of the heart within the body while postulating on the physiological processes the heart performs. Here, he relates the Maker's process in creating the heart:

την δὲ δὴ καρδίαν ἄμμα τῶν φλεβῶν καὶ πηγὴν τοῦ περιφερομένου κατὰ πάντα τὰ μέλη σφοδρῶς αἵματος εἰς τὴν δορυφορικὴν οἴκησιν κατέστησαν. (*Ti.* 70a7-b3)

He established the heart as the knot of the vessels and the fountain for the blood that courses continuously through the body. The purpose for this was so that it stands as a guard-post (between the rational soul and the spirit).

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215e1-2: ὅταν γὰρ ἀκούω...ἢ τε καρδία πηδᾷ.

Plato then continues to explain (70b3-7) how the heart, as the source of blood, is able to send messages through all the narrow channels (διὰ πάντων τῶν στενωπῶν)<sup>34</sup> if it perceives anything to be wrong (τις ἄδικος). A natural extension of this, I infer, is that Plato believes both that the heart is capable of some level of comprehension, and that blood is able to transmit information throughout the body. This appears to corroborate Plato's beliefs as stated earlier in the *Phaedo* and the *Republic*.

In this passage, Plato shows some knowledge of the heart's structure and function to circulate blood. His description does suggest at least a superficial study of the heart, since he provides information about its physical appearance. There is, however, no reason to believe that he is drawing upon any personal observation of human anatomy; any large bodied animal would suffice for such an examination. René Descartes, for instance, suggests in *Du Discours de la méthode* that his readers take this approach before continuing to read his section on the human circulatory system.<sup>35</sup> It would seem the best guess that Plato used a similar source for his information.<sup>36</sup>

<sup>34</sup> This rather vague description, "the narrow channels," is, I think, indicative of the general confusion in early medicine between any of the cord-like structures within the body. It is likely that Plato is thinking of the capillaries, the networks formed by the arterial and venous systems.

<sup>35</sup> Et afin qu'on ait moins de difficulté à entendre ce que j'en dirai, je voudrais que ceux qui ne sont point versés en l'anatomie prissent la peine, avant que de lire ceci, *de faire couper devant eux le coeur de quelque grand animal qui ait des poumons, car il est en tout assez semblable à celui de l'homme*, et qu'ils se fissent montrer les deux chambres ou concavités qui y sont. (*Ordre des questionnes de physique*, Gilson (1961) 104. My own italics).

<sup>36</sup> Theophrastus tells us (*Historia plantarum* 1.1.3) the process of studying plants is the same as the anatomical study of animals: ἡ δὲ ἱστορία τῶν φυτῶν ἐστὶν ὡς ἀπλῶς εἰπεῖν ἢ κατὰ τὰ ἔξω μόρια καὶ τὴν ὅλην μορφήν ἢ κατὰ τὰ ἐντός, ὥσπερ ἐπὶ τῶν ζώων τὰ ἐκ τῶν ἀνατομῶν. ("The study of plants is, to put it

In the above passage, we see Plato using metaphorical language when discussing the appearance, function, and position of the heart. I believe that this is an indication that Plato has either gained this information first hand or, if through a physician, that he has rendered the technical language more concrete for his own benefit or for that of his readers. In this one period, Plato provides the three metaphors as grammatical complements to explain his understanding of the heart: it is the ἄμμο of the veins (appearance), the πηγὴ of the blood (function), and the δορυφορικὴ οἴκησις (function/location) of the torso.

Upon reflection, it is quite easy to see why Plato describes the heart as the ἄμμο τῶν φλεβῶν. The heart does have the appearance of a “knotting” of veins, particularly from an anterior view (which suggests, but does not necessitate, the removal of the organ for examination). It is from this perspective that we have full view of the left and right pulmonary veins and arteries, as well as the venae cavae and aorta. The ventricles then appear to be formed from a conjunction of the blood-passages. Plato’s choice of ἄμμο here to describe the heart is indicative of a desire to elicit for the reader an image of what he is discussing. The same idea can be stated without relying on metaphor, but at the cost of visual imagery.<sup>37</sup>

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simply, the study of the external parts and the study of the entire form of the things within, just like the parts [studied] from the dissection of animals.”).

<sup>37</sup> Cf. Arist. *De generatione animalium* 776b13: ἀρχὴ καὶ τῶν φλεβῶν ἡ καρδία· (“and the heart is the origin of the vessels.”) as with *De partibus animalium* 654b10: Ἀρχὴ δὲ τῶν μὲν φλεβῶν ἡ καρδία. These passages are of special interest since they involve the analysis of animal anatomy, suggesting comparative study between them and humans (as with n. 36 above).

“Ἄμμα, the -μα substantive<sup>38</sup> from the verb ἄπτειν (to fix/fasten), is only seen in Attic prose twice outside of Plato.<sup>39</sup> It appears occasionally in Ionic poetry and prose,<sup>40</sup> where the -μα suffix originated. The tragedians, always eager to use the Ionic forms, also use the word a handful of times.<sup>41</sup> The word does occur twice within the Hippocratic Corpus, but only in the sense of a knot used in sutures.<sup>42</sup> Thus, Plato may be using ἄμμα, with its Ionic -μα suffix either for its poetic imagery, or for the suffix’s use in scientific writings. Regardless of whether Plato’s use reflects contemporary theatre or Ionic vocabulary, it is probable that Plato is using the suffix in its abstract sense. He is not saying that the heart is literally a knot formed by a tying of the blood vessels, but rather is a “fastening-together” of the vessels.<sup>43</sup>

The metaphor of the heart as a πηγὴ is perhaps a more natural expression than the one above. Any study of hydrodynamics from this period probably elicited some image of a natural spring, with which everyone would be familiar. It is not surprising, then, that the same description of the heart appears in the Hippocratic Corpus and again in

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<sup>38</sup> Cf. n.123 below for a more thorough examination of the -μα suffix.

<sup>39</sup> Xenoph. *Eq.* 5.1; Arist. *HA* 587a15.

<sup>40</sup> Sappho, fr. 71; Alcaeus, fr. 66; Herodotus, 4.98.

<sup>41</sup> E. *Hipp.* 780; S. *Tr.* 1018.

<sup>42</sup> *Fist.* 4; *Off.* 8, *et passim*. The flexibility of the -μα suffix in Ionic technical writings is exemplified here in *De officina medici* where ἄμμα (a fastening) is paired several times with ῥάμμα (from the verb ῥάπτειν, “to stitch”).

<sup>43</sup> As Lloyd (1966) 277 notes, the *Timaeus* is the first Greek writing to suggest that the entire world and its constituents were formed by a “craftsman-deity.” Plato often uses the vocabulary of builders to describe the formation of things, e.g. μηχανᾶσθαι (34c1), τεκταίνεσθαι (28c6), and ἀπεργάζεσθαι (30b6). It is also possible to include ἄμμα in this list of building-words.

Aristotle.<sup>44</sup> While it is debatable whether or not πηγή should be thought to elicit any vision of “spring” or “fountain” (especially considering Aristotle’s complementary ὑποδοχή, or “receptacle”), I argue that Plato’s fondness for πηγή in a poetic sense elsewhere in his corpus points to such an interpretation.<sup>45</sup>

Plato’s description of the heart as a δορυφορικὴ οἴκησις is perhaps the most unusual of the three metaphors. The first surviving appearance of the adjective δορυφορικὴ is here in the *Timaeus*. While this may suggest that Plato has coined this adjective, he does use it again without excuse in *Critias* 117c7 (δορυφορικὰ...οἰκήσεις) in a literal sense when describing his envisioned city.<sup>46</sup> Chrysippus (fr. 416.36) is the next to use the word, and does so in a metaphorical sense quite similar to the *Timaeus*.<sup>47</sup> Here, however, he uses the neuter substantive: ἔστιν δὲ ὁ θυμὸς τὸ δορυφορικὸν τοῦ λογισμοῦ “The spirit is the guard (station?) of reason.” Chrysippus disagreed with Plato that the head is the center of reason. He instead believed that the reason’s seat was the

<sup>44</sup> *Oss.2; De semina, de natural pueri, de morbi iv* 33; Arist. *PA* 666a8: αὕτη (sc. ἡ καρδία) γὰρ ἔστιν ἀρχὴ ἢ πηγὴ τοῦ αἵματος καὶ ὑποδοχὴ πρώτη. For the heart is both the original spring and the first receptacle of the blood.

<sup>45</sup> Esp. *Phdr.* 255c1: ἡ τοῦ ῥευματος ἐκείνου πηγή...ἔρῳν (“Love is the spring of that flowing”); *Lg.* 636d8: δύο γὰρ αὗται πηγαὶ μεθείνται φύσει ῥεῖν (“[Pleasure and pain] are two springs released to flow by nature”). Cf. Dover (1997) 126-7 for the metaphorical use of πηγή by Classical authors. He notes in this context that Plato is the most metaphorical of all Greek prose writers.

<sup>46</sup> It is perhaps of some value to note that -κος was the most productive of all adjective-forming denominative suffixes. See Palmer (1980) 256.

<sup>47</sup> In Plato’s explanation of the heart as the δορυφορικὴ οἴκησις, he tells us that it is needed ὅτε ζέσειεν τὸ τοῦ θυμοῦ μένος or “because the passion of the spirit can boil up.” (70b3). For evidence of this lengthy tradition of associating the heart with passion cf. Hesiod’s hendiadys in *Op.* 340: ὥς κέ τοι ἴλαον κραδίην καὶ θυμὸν ἔχωσιν (“[sacrifice to the gods] so that they have a cheerful heart and spirit towards you”).

heart, and as Plato did, appealed to the *Iliad* for proof (fr. 2.905, 906). That both authors use such an uncommon expression in similar contexts suggests to us that either Chrysippus is borrowing this expression from Plato, or that both authors are referencing the same third source. We know from early critics of Chrysippus' works (e.g. fr. 2.27) that he frequently quoted authorities in his works, and often relied upon common opinion and idioms to support his arguments.<sup>48</sup> It is then possible that both αἱ δορυφορικαὶ οἰκήσεις and τὸ δορυφορικόν are both derived from another author or a common idiom.

I suggest, however, that Plato probably coined the specific phrase δορυφορικαὶ οἰκήσεις or, at the very least uses it here in an unusual metaphorical sense. It is likely that Plato, drawing upon the scientific ring of οἴκησις (with its -σις suffix),<sup>49</sup> devised δορυφορικὴ to agree with it. It was also expedient for Plato to extend the metaphor he had started a few lines above. In this section of the *Timaeus*, Plato divides the human torso into sections. Naming his divisions, he first refers to the τοῦ σώματος οἴκησιν τὸ θνητόν (the spirited dwelling-place of the body) at 69e1. Shortly after (69e6-70a1), he likens the separation of the human trunk to the separate living-quarters (again, οἴκησιν) of men and women. It then seems like a natural extension of Plato's initial metaphor to next add a guard station in his arrangement. Using the same noun, οἰκήσις, established above (69e1), Plato effectively enlivens his description with a visual reference for his

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<sup>48</sup> Gould (1971) 135.

<sup>49</sup> In this passage οἴκησις appears to be used in its secondary meaning, "house/dwelling-place." The basic meaning, however, is the verbal abstract "(the act of) living/dwelling." Cf. Cleve (1949) 125, n.1.

reader. The overall impression of this section, although by no means explicit, is that Plato is establishing a microcosm of social order within the human body.<sup>50</sup>

After this “scientific” description of the heart and its functions, Plato reveals the source of his belief. His reasoning in the *Timaeus* behind the purpose of the heart as a mediator between the higher and lower functions of our souls is the very same reasoning that he uses when quoting Homer in the *Ion* and *Republic*:

τῇ δὲ δὴ πηδήσει τῆς καρδίας ἐν τῇ τῶν δεινῶν προσδοκίᾳ καὶ τῇ τοῦ θυμοῦ ἐγέρσει, προσγιγνώσκοντες ὅτι διὰ πυρὸς ἡ τοιαυτὴ πάσα ἔμελλεν οἴδησις γίνεσθαι τῶν θυμουμένων κτλ. (*Ti.* 70c1-4).

The (gods) were aware that all this sort of swelling of excited individuals, with the pounding of the heart at the expectation of terrible things and at the arousal of passion, comes from fire.

This section in the *Timaeus* that discusses the heart goes into far more detail into the organ’s composition and position than do the other works where Plato mentions the heart. It seems that he has done some research into anatomy before composing this work. His technical language here also suggests that he wishes to provide scientific colouring to his explanation, and so add strength to his argument.

Plato reveals that he does have some knowledge of anatomy, though his information is most likely derived from animal dissection. He then uses this observational data to support a concept that has been around at least since the time of Homer. In quoting Homer in these above instances, Plato reminds us that his understanding of the basic human functions is both intimately connected to his own

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<sup>50</sup> An interesting comparison, though one best postponed, would be between the body as

understanding of the soul and essentially the same as those expressed in the earliest occurrences of the words. We see Plato drawing from the same folk-beliefs when discussing the remaining major organs.

### Lungs

The second most frequently mentioned organ by Plato is the lungs (πλεύμα). Once again, there is evidence in the *Timaeus* that Plato had actually observed the lungs. Following from the above passage describing the function of the heart, Plato explains that one of the purposes of the lungs is to be an aid (ἐπικουρία) to the heart. It is like a cushion (οἶον μάλαγμα) that softens the pounding of the heart within the chest cavity. Plato observes that the lungs have the appearance (ἰδεά) of being soft (μαλακήν), bloodless (ἄναιμον), and having a sponge-like quality (οἶον σπόγγου) formed by hollows (σῆραγγας) within the organ. Owing to this, the lungs have the ability to take in both air (πνεύμα) and fluid (πῶμα) which reach the lungs through a “channel” (ἄρτηρία).<sup>51</sup> The circulation of air and water through the lungs helps to cool the excited heart.

As one might expect, most of these words occur regularly within the Hippocratic Corpus; adjectives such as “soft,” “sponge (like),” and “bloodless” are natural descriptions of internal organs, as are the nouns “hollows,” and “channels.” As a close comparison of Plato’s description, the author of *On Ancient Medicine* (22) lists τὰ σπογγοειδέα (the sponge-like) parts of the body including the spleen (σπλήν), lungs

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outlined in the *Timaeus*, and the state as shown in the *Critias*.

<sup>51</sup> I.e. the trachea.



(πνεύμα), and breasts (μαζοί). Even more interesting is the account given by the author of *De articulis* (38). In this passage, directions are given on how one should set a broken nose. The author suggests as a possible (and unusual) pledget for the nostril a piece of sheep's lung. He explains that this works because οἱ σπόγγοι (the sponges) draw in the fluid.<sup>52</sup>

The trachea (ἡ ἄρτηρία) is the only other word used by Plato here in reference to the lungs that has counterparts within the Hippocratic Corpus.<sup>53</sup> Euripides and Sophocles both use the word once within their writings (*Rh.* 785; *Tr.* 1054) in the same sense. Aristotle<sup>54</sup> and Theophrastus also consistently employ the word in their works to mean trachea. The word, however, is also probably used by specialists in a sense other than above. There are several instances within the Hippocratic Corpus where ἡ ἄρτηρία seems to be used either in the generic sense of "channels" or in the specific modern-day sense of "arteries."<sup>55</sup> Anaxagoras, too, perhaps used the term in this manner (*fr.* 10.5, 46.7).

<sup>52</sup> *Art.* (38): ἐγὼ δὲ ποτε πλεύμονος προβάτου ἀποτμημα ἐνέθηκα, τοῦτο γὰρ πως παρέτυχεν· οἱ γὰρ σπόγγοι ἐντιθεμένοι ὑγράσματα δέχονται. ("I once inserted (sc. into the nostril of a patient) a cutting from a sheep's lung, since this happened to be at hand; I did this because the sponges, once inserted, absorbed the fluid"). This passage provides further evidence for the extent of animal dissection. It is unfortunate that the writer of *De articulis* does not elaborate on why sheep's lungs were "by chance" at hand when he was treating a deviated septum.

<sup>53</sup> Cf. *Int.* 1; *Morb.* 2.53; *Epid.* 7.1.

<sup>54</sup> *Spir.* 5.11 does have the word in the plural to mean "arteries." This work, however, is listed among the *Spuria*. See Lesky (1957) 574.

<sup>55</sup> Cf. *Epid.* 4.1; *Oss.* 10; *Art.* 45. There is debate about whether experts in Hippocrates' time made the distinction between veins and arteries. Phillips (1973) 43 states that the early writers did not distinguish between the two. From the above occurrences in the Hippocratic Corpus, however, it appears that they 1) did at least make a distinction

It is interesting to see that the Attic writers are so consistent with their usage of ἡ ἀρτηρία. It is possible that this commonality is owing either to a geographical difference of meaning (Attic/Ionic), or one of profession (layman/physician). I believe the latter is the most probable of these two explanations. The trachea is a far more prominent body-part than are the arteries; a layperson is easily able to confirm the trachea's presence by touching his neck, whereas one must have some very specialized knowledge or interest in anatomy that requires him to mention the channels hidden within the body.

Plato, it appears, is employing the same lay-vocabulary as Euripides and Sophocles when describing the trachea. The word seems to be uncommon, but its use in tragedy suggests that its meaning of trachea must have been understood by theatre patrons who were not versed in medical terminology. As with ἀρτηρία, Euripides and Sophocles also use ἡ σήραγξ (hollow/cleft) only once respectively within their works (*Hel.* 357; Radt, fr. 549). Unlike Plato, who uses it in the *Timaeus* to refer to the alveoli (or hollow pockets in the lungs), these tragedians use it in a geographical sense (which is by far the most common usage of the word<sup>56</sup>). Among medical writings, σήραγξ occurs once in this form in a late Pseudo-Hippocratic writing (*Epistula* 23). The adjectival variation σήραγγώδης (“filled with hollows,”<sup>57</sup> thus essentially a synonym of

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between veins and “channels” (which might include the arteries) 2) and thus, did not use the word exclusively to mean “trachea.”

<sup>56</sup> Cf. also Arist. *HA* 574b21, *Mu.* 395b31 for the meaning “cave.”

<sup>57</sup> Smyth (1920) § 858.16 states that -ώδης suffixes usually denote “fullness” or “similarity.” Palmer notes also (1980) 256 that its original meaning “smell” was watered down even in the Homeric dialect, but the suffix remained “specially productive” up until early Koine. No more so productive, I would argue, than in

σπογγώδης<sup>58</sup>), however, appears six times within the Hippocratic Corpus.<sup>59</sup> In these works, the authors are generally referring to the structure of bones. In *De carnibus*, though, σπαραγγώδες is, like σῆραγξ in the *Timaeus*, given as a property of the lungs.

The phrase οἶον μάλαγμα (*Ti.* 70d3), like δορυφορικὴ οἴκησις discussed above with reference to the heart, is a curious one. As is common with such unclear phrases, some variant readings have occurred.<sup>60</sup> The frequent appearance of these alternatives to μάλαγμα in the Attic literature contemporary with Plato makes it difficult to determine the more probable reading based on common word-usage. Yet if we apply the theory of *lectio difficilior*, μάλαγμα, which first occurs in Plato, would seem to be the true reading.<sup>61</sup> Regardless, the meaning of the analogy is straightforward enough; the lungs provide some cushion or comfort to the heart when it is excited. We can also say for certain that, since οἶον appears in all manuscripts, the phrase was intended to be a metaphor.

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medical writing. The use of analogical language is quite clearly helpful in descriptions of ambiguous and uncommon subject matter: e.g. *Epid.* (3.3) κωματώδης, χολώδεα, δυσώδεα, φλεγματώδεα. Note the flexibility of the suffix in its radical definitions: sleep-full of, bile-look like, bad-smell, phlegm-look like. For the technical nature of the word in Plato cf. Thesleff (1967) 94.

<sup>58</sup> “Spongelike” It is interesting that the modern medical text *Dynamic Anatomy and Physiology* (1958) 402 uses the very same term to describe the lungs.

<sup>59</sup> *VC* 1, 18; *Carn.* 3, 7, 15; *Cord.* 8.

<sup>60</sup> Longius Alcinous: ἄλμα μαλακὸν (soft palpitation), Y Gal. : ἄλμα μαλακὸν (tender grove), F: ἄμμα μαλακὸν. (gentle girdle/knot: cf. ἄμμα used to describe the heart).

<sup>61</sup> Taylor (1928) 505 remarks that μάλαγμα is the true reading. He adds that it is not found in any MS, but rather in ancient quotations of the passage. The word’s corruption in the MSS is explained by its rarity.

The function of the lungs, Plato writes, is to provide comfort for the heart. This is done both through the reception of air (πνεῦμα) and liquid (πῶμα) that provide cooling. The names given (λέγομεν θέσθαι τοῦνομα)<sup>62</sup> to the dual processes of respiration is ἀναπνοή (inhalation) and ἐκπνοή (exhalation) (*Ti.* 78e3). These two words are of special note, since they occur only a handful of times outside the frequent appearances within the writings of the Pre-Socratics, Aristotle, and the Hippocratic Corpus.<sup>63</sup> Plato restricts his use of the word to the *Timaeus*. This is positive evidence that the two words, particularly when seen together, are of a technical nature.

By stating that the lungs take in both air and liquid, Plato suggests that at times he is more prone to follow tradition than to follow empirical evidence. If he had been a witness to the dissection of a mammal, one would think that he would have observed that there was some blood within the lungs. The lungs contain both pulmonary arteries and veins that branch out to the organ's extremities through narrowing capillaries which occupy more surface area than the dermis. It seems unlikely then that any close examination of the lungs would fail to reveal blood. I can only surmise that, if Plato had observed incisions into the lungs, the fine quality of capillaries, although these channels

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<sup>62</sup> Such a phrase as “we say that the name assigned is” seems comparable to the word καλεῖν. Dover (1997) 115 remarks that this is often a useful indicator that a word is of a technical nature; cf. Arist. *Resp.* 471a7: ἀναπνοή γὰρ καλεῖται κτλ. It is of interest that Aristotle here uses ἀναπνοή to mean both inhalation and exhalation, but respectively they are called εἰσπνοή and ἐκπνοή.

<sup>63</sup> The word ἀναπνοή occurs three times within Aesop (8; 66 v.1,2) and once within Aristophanes (*Nu.* 627). Its appearance in the *Clouds* is of some note, since it is used in an oath sworn by Socrates (cf. n. 22 above) along with the “deities” τὸ Χάος ἂν ὁ Ἄηρ. In this context, it would seem that the word had some connection with philosophers and sophists in this time period. Ἐκπνοή does not occur outside of philosophical and medical treatises before the Hellenistic period.

are numerous, would produce little bleeding. In comparison to the far more fleshy (and blood-filled) organs as the heart, liver, and spleen, the lungs would seem to be relatively ἄναιμα.

If Plato was present at the examination of lungs, a similar problem arises as to why he believed they received drink. While it is surprising that no blood would be found in the lungs, it is equally surprising that one would find ingested liquids. It is unlikely that πῶμα can mean anything other than drink; nowhere in Plato's corpus does he use the word in any other sense.<sup>64</sup> This assertion is strengthened by Plato's description of a drink's path through the human body at *Timaeus* 91a4-5.<sup>65</sup> This problem is compounded by Plato's reference at 78c4-6 to the two ἐγκυρτία (probably the trachea and esophagus, and literally "the passages to the fish-basket").<sup>66</sup> Here, he writes that one of these passages goes εἰς τὸν πλεύμονα (towards the lung) while the other goes εἰς τὴν κοιλίαν (towards the bowels). They travel κατὰ and παρὰ τὰς ἀρτηρίας respectively. Above, Plato had used only the singular ἀρτηρία to refer to the passage conveying both air and drink to the lungs. Now, however, he appears to have divided the single trachea into two parts (the bronchi and the esophagus) and to have coined the term ἐγκυρτία to explain them.<sup>67</sup> The meaning of ἀρτηρίας is then unclear in this context. It appears that the

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<sup>64</sup> One of its most notable uses is as the draught of hemlock that Socrates drinks in the *Phaedo*.

<sup>65</sup> (91a5) διὰ τοῦ πλεύμονος τὸ πῶμα ὑπὸ τοὺς νεφροὺς εἰς τὴν κύστιν ἐλθὼν κτλ. ("The drink goes through the lung, down under the kidneys, and towards the bladder.")

<sup>66</sup> Cf. Cornford (1937) 308-12 for further discussion on the ἐγκυρτία.

<sup>67</sup> The word ἐγκυρτία first occurs here in the *Timaeus* and not again until Galen who

sense of the word here is the generic “channel.” It is possible that these are the veins and arteries that run down alongside the wind-pipe,<sup>68</sup> but Plato does not state their function in this section. Regardless of the interpretation, Plato is being inconsistent in his use of ἀρτηρίαί; either he has made the single wind-pipe a plural (the trachea and esophagus) or he has changed the meaning of the word to refer to the vessels within the neck.

The Greeks do not appear to have assigned a specific physiological function to the lungs in non-medical writings as they did with the heart. Homer says nothing more about the lungs (πνεῦμα) than that those of a man were punctured by a spear (*Il.* 4.528).<sup>69</sup> However, some specific references to the lungs by other authors correspond to the theories of Plato. Our earliest evidence of πλεύμα is from a fragment of Alcaeus (LP fr. 347a1), where he mentions the covering of the lung with wine.<sup>70</sup> Wine would certainly be classified under the πῶμα that Plato believes flows into the lungs. Moreover, that the

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cites the same passage in his commentary on the work.

<sup>68</sup> There are several of these including the right and left common carotids, and the external and internal jugulars. Zeyl (1997) 1278 translates the word ἀρτηρίας as the singular “wind-pipe.” This would appear to be a possible rendering only if we suppose that Plato is now making an unstated distinction between the esophagus and trachea, and that he considers the ἐγκυρτία to be either the carotids or jugulars. These, of course, terminate in the heart (from a backwards perspective), and not the lungs and bowels as Plato states. Yet with a diameter of roughly 1 inch, it is possible that after a cursory examination one could suppose the carotids and jugulars are capable of conveying both air and food. It seems though, through transferring the function of the wind-pipe to the veins, we have traded one problem for another; in Zeyl’s rendering Plato is being quite inconsistent with his vocabulary and distinction between singular and plural nouns.

<sup>69</sup> The location for the impact was the chest above the nipple: στέρνον ὑπὲρ μαζοῖο.

<sup>70</sup> (347a1) τέγγε πλεύμονας οἴνωι κτλ. The same expression occurs in a fragment of Euripides (Nauck 983.1): οἶνος περάσας πλευμόνων διαρροάς. (“wine travelling through the channels of the lungs.”); cf. διαρροάς with Plato’s ἀρτηρία.

lungs take in air is clear from external observation of the expansion and retraction of our chests. The dramatists appear to have connected heat with this nature of respiration,<sup>71</sup> and this too has some relation to Plato's system of cooling the heart.<sup>72</sup>

Plato's analysis of the respiratory system is quite similar to his analysis of the heart. The level of detail he provides while describing the lungs shows that he also likely had some opportunity to observe the lungs of some creature (or had close contact with someone who had). In this explanation, as in the heart, he frequently uses analogies to elicit vivid images of the parts ("like a sponge," "it has caves," "like a fish basket"). At such an early stage of scientific research into anatomy, such a method is necessary for a reader to be able to follow an author's discussion. When Plato attempts to describe the function of the lungs, however, it appears that he is drawing his conclusions based upon already well-established ideas.

### Liver

Plato spends little time in the *Timaeus* on discussing the liver compared to the two higher organs discussed above. The function of the liver within the human body is not as clearly outlined by Plato as are the heart and lungs, and this is in all likelihood due to the general lack of knowledge Greeks had concerning the organ. The operation of the heart and lungs can be examined through external observation. In comparison, it is impossible

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<sup>71</sup> See Aeschylus (Radt 177a1), Euripides *Heracl.* 1093, Aristophanes *Pax* 1069.

<sup>72</sup> That is, if we suppose they had some notion of convection. The above references in tragedy (n. 58) mention the warmth of the breath. Since the air we breathe out is usually cooler than that which surrounds us, an observer might have come to the conclusion that the cause of the temperature increase of the exhaled air is owing to the transfer of heat from the heart to the lungs and then to the breath.

to study the liver from outside of the body, and an internal investigation would not provide any salient evidence of its purpose. Despite this, since the liver in a man is roughly seven inches across and almost as wide at some parts, the organ is quite prominent within the abdominal-cavity, and thus must be included in an account of anatomy.

Plato begins his explanation of the liver (*Ti.* 70d7-72b5) by stating that it was established by the Creator in forethought of the most unruly portion of the soul, the passionate (ἐπιθυμητικόν). This part of the soul is located between the diaphragm (φρένες) and the navel (ὀμφαλός), and it is here that the location (κατοίκησις) of the liver is. He describes the healthy liver as being dense (πυκνόν), smooth/polished (λείον), shiny (λαμπρόν), and sweet (γλυκύ). The unhealthy liver is very bitter (πικρότητα), wrinkled (ῥυσόν), rough (τραχύ), and can produce bile-like colours (χολώδη χρώματα). This unhealthy state causes corruption of the lobes (λοβόν), receptacles (δοχάς) and ducts (πύλας).

The purpose for this design of the liver, Plato writes, is so that the faculty (δύναμις) of the mind can be carried and imprinted upon the healthy liver like an image upon a mirror (οἶον ἐν κατόπτρῳ δεχομένῳ τύπτους καὶ κατιδεῖν εἶδωλα παρέχοντι κτλ.). The mind is essentially able to punish the unruly soul for poor behavior by depriving the liver of its sweet qualities, while the unruly soul that submits to the mind is permitted to have a liver in its naturally sweet state (γλυκύτητι...συμφύτῳ). Plato completes his discussion on the liver by describing the relation between the liver's construction and its prophetic qualities.



Plato explains the positions of the liver in the human body in essentially the same manner as the heart and lungs above. As with these organs, the word for the liver's location (κατοίκησις) is the same as the one used for the place of a community or one of its parts. This verbal noun, with the -σις suffix, is used only once before Plato, by Thucydides (*Th.* 2.15), to mean the original settlement of Athens on top of the Acropolis. In the two other occurrences of the word it is used to mean the settlement of people, and thus coincides with the use of the word by Thucydides.<sup>73</sup> We may suspect that this word, with its rare appearance and -σις construction, is again uncommon, and thus gives Plato's account an elevated feel. Plato strengthens the impact of this word (as he has done above with his words for location) by metonymy, transferring the attributes of the organ to its location.

The position that Plato gives for the liver within the human body further suggests an understanding of organ-placement. From Homer's account in the *Odyssey* (9.301, 22.83), however, we know that the location of the liver had been known for some time.<sup>74</sup> The same placement of the liver in relation to the diaphragm is reiterated in the Hippocratic Corpus.<sup>75</sup> This consistency suggests that the location of the liver within the human body appears to have been common knowledge among Plato's contemporaries.

<sup>73</sup> Ephorus (Jacoby 30b14), Hecataeus (Jacoby 21.15)

<sup>74</sup> *Od.* 9.301-2: οὐτάμεναι πρὸς στήθος, ὅθι φρένες ἥπαρ ἔχουσι, χεῖρ' ἐπιμασσάμενος· ("striking against the chest, where the diaphragm holds the liver, feeling with my hands"). The phrase "feeling with (my) hands" implies that the author was aware that the liver could be found by feeling for the bottom of the sternum, a place where a sword could easily penetrate. Cf. (*Od.* 22.83) βάλε δὲ στήθος παρὰ μασθόν, ἐν δὲ οἱ ἥπατι πῆξε θοὸν βέλος. ("and [Odysseus] struck [Eurymachus] in the chest alongside the nipple, and the swift spear quivered in his liver.").

<sup>75</sup> See *Anat.* 1; *Epid.* 2.4.

Any other information on the liver that Plato provides seems to be drawn from a study of animals.

The two qualities that Plato assigns to the liver, sweetness and bitterness, are particularly important in understanding Plato's methods of induction and his sources of information. Plato must derive his information from eating animal organs. This is almost definitive proof that Plato understands the effectiveness of comparative anatomy. These two qualities also have significant importance to the natural philosophers and medical writers alike. The dichotomy between sweetness and bitterness is one of the most common set of opposites. Opposites are of special interest to scientists, since from these the clearest definitions can be made.<sup>76</sup> That Plato was familiar with this use of opposites is clear from his comparisons in *Lysis* 215c3-d8.<sup>77</sup> Plato puts this comparison into a medical context in the *Symposium* when Eryximachus relates that the doctor's role is to harmonize the basic elements (including sweet and bitter) within the human body (186c5-e3). This medical relation between bitter and sweet is supported by Alcmaeon (fr. 4) and by the frequent appearance of these two qualities within the Hippocratic Corpus.<sup>78</sup> Sets of oppositions were very important to Hippocratic doctors, since it was a common belief

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<sup>76</sup> Cf. Melissus (fr. 5,976b33); Empedocles (fr. 90).

<sup>77</sup> In this passage, comparisons are made between the ill and doctor (ὁ κάμνων/ὁ ἰατρός), the dry and wet (τὸ ξηρὸν/ὕγρὸν), cold and hot (τὸ ψυχρὸν/θερμὸν) and bitter and sweet (τὸ πικρὸν/γλυκύν).

<sup>78</sup> E.g. *VM* 14; *NatHom.* 2; *Carn.* 13.

among them that opposites canceled out one another. If the cause of a disease could be assigned to an element, then the remedy was simply the element's opposite.<sup>79</sup>

For Hippocratic physicians who practiced according to the theory of humours, the general aim in healing was to create a balance between the opposing forces. Plato, however, by stating that the liver is best when it is sweet and is the worst when it is bitter appears to be using some other method of judgment. The most likely explanation is that he is basing his opinion on our own sense-perceptions of pleasant and unpleasant while ignoring what is the natural state of an organ.<sup>80</sup> Plato is essentially stating here that things which are bitter, because they are unpleasant to our senses are bad, and vice versa.<sup>81</sup>

The appearance of the liver as described by Plato is, in all likelihood, derived from his observation of a slaughtered animal. He states that the nature (φύσις) and location (τόπος) of it is for the sake of divination (χάριν μαντικῆς). Considering the liver's importance in divination, it would have been common to see it separated from the rest of the organs. The careful inspection and comparison by seers between the livers of different animals, and the varying omens from each, would likely have given rise to

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<sup>79</sup> Cf. *Flat.* 1: τὰ ἐναντία τῶν ἐναντίων ἐστὶν ἰήματα ("Opposites are the cures for opposites") For a in-depth study of oppositions in Greek science cf. also Lloyd's *Polarity and Analogy* (1966). On the particular subject of medicine see 20-2. Lloyd also dedicates a portion of the work (127-48) to Plato's use of polarity (for better and worse).

<sup>80</sup> Clearly not all organs have a pleasant taste. For example, the gall-bladder, which secretes bile, would not be functioning properly if it were to taste sweet.

<sup>81</sup> This is in contrast to Plato's opinion of one's submission to a surgeon; in this instance, we undergo the pains of cutting and cautery for the greater good; cf. page 108-122 below. By this reasoning, the bitterness of a thing, albeit unpleasant to our taste, can

common public knowledge regarding the organ. Further evidence that Plato is acquiring his information from slaughtered animals is from his description of the lobes (λοβοί) and ducts (πυλαί) of the liver. These two words are only once seen together within the Hippocratic Corpus (*Epid.* 2.4), where the author traces the straight vein (εὐθεῖα) from the heart to the liver. The grouping also occurs once before the *Timaeus* in Euripides' *Electra* (827-9). A more direct connection of understanding can be made between the poet and Plato than with Plato and an author of a Hippocratic work. In this passage Orestes has sacrificed a calf and reveals the ill-omened innards:

καὶ λοβὸς μὲν οὐ προσῆν  
σπλάγχνοις, πύλαι δὲ καὶ δοχαὶ χολῆς πέλας  
κακὰς ἔφαινον τῶι σκοποῦντι προσβολάς.

The lobe was not attached to the higher  
organs, and the ducts and the receptacles of bile nearby  
appeared as a terrible assault upon the observer.

This is both evidence that Athenians had identified the lobes and bile receptacles (the gall bladder and possibly the pancreas) within cattle, and proof that these parts were important in liver divination. One can be almost certain that Plato would have been exposed to such information, and thus has transferred observations of animal liver to his schema of human anatomy.

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be bitter with a view towards the best.

### Digestive system

Plato again restricts any discussion of the digestive system to the *Timaeus*. He also spends the least amount time of all the major systems on the processing of food (72e3-73a8). This is a very small space to discuss such a complex section of the body. Yet this relative silence in discussing the lower parts of the torso is indicative of the general confusion in this period regarding the functions and convoluted divisions of its various elements.

Following his method of dividing the body into the various natures of its soul, Plato asserts that those making the body knew of the licentiousness (ἀκολασία) of the part of us that receives liquids and food. This nature results in us greedily consuming much more food than necessary. Thus, so that our bodies would not meet a quick end through disease (φθορὰ διὰ νόσους ὀξεία), the Creators “established the so-called receptacle below the stomach” (τὴν ὀνομαζομένην κάτω κοιλίαν ὑποδοχὴν ἔθεσαν) to store the excess food. In creating this part of the body the gods wrapped the intestines up in coils (εἵλιξάν τε περίξ τὴν τῶν ἐντέρων γένεσιν<sup>82</sup>) lest the food and liquid pass too quickly through the body. Without this coiling, the body would constantly be in want of sustenance, and so be unthoughtful (ἀφιλόσοφον) and uncreative (ἄμουσον) because of gluttony.

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<sup>82</sup> Note that Plato makes the -σις abstract γένεσις the direct object of this sentence. To say that the gods wound the “origins” of the intestines is strange in English. It is, however, indicative of the scientific use of -σις nouns in Classical Greek in which the abstract noun almost always appears as either the subject of a clause or the direct object.

Perhaps the most notable feature of Plato's discussion of the bowels is that he refers to them as literally the "so-called receptacle below the hollow." This hollow (κοιλία) often means the abdominal cavity and, in this sense, is divided with the prepositions ἄνω and κάτω.<sup>83</sup> Plato at times makes no distinction between the higher and lower parts of the abdomen.<sup>84</sup> At 85e9-10, however, he shows that he too is aware of such a distinction, and draws it when the situation warrants:

αὐτὴ (χολή) κρατηθεῖσα ἢ κατὰ πᾶν σῶμα ἐξέπεσεν, ἢ διὰ τῶν φλεβῶν εἰς τὴν κάτω συνωσθεῖσα ἢ τὴν ἄνω κοιλίαν κτλ.

The bile once overcoming is either confounded throughout the entire body, or being driven through the veins towards the lower or higher abdomen etc.

In *Timaeus* 73a2-3 it is unclear whether or not Plato is using κάτω κοιλίαν technically. In Greek literature, κοιλία by itself is common. When it is paired with either ἄνω or κάτω it is usually in a technical sense. It is possible that Plato intends the phrase κάτω κοιλίαν, but not ὑποδοχήν, to be the technical vocabulary implied by the presence ὀνομαζομένην.<sup>85</sup> Yet it seems that at 73a2 the emphasis of "so-called" is on ὑποδοχήν, and not on κάτω κοιλίαν which is in the attributive position.<sup>86</sup> I argue that if Plato wished to stress the technical nature of κάτω κοιλίαν he would have likely worded it as τὴν ὀνομαζομένην κάτω κοιλίαν ἔθεσαν ("the so-called lower-abdomen,"

<sup>83</sup> Cf. LSJ s.v. κοιλία.

<sup>84</sup> Plato uses κοιλία at *Timaeus* 73a3; 78a6, b3, c6, e7; 85e10, d4. These appearances of the word are in the singular and no indication is given in these instances that it is a divisible unit. For the most part, κοιλία is used in the *Timaeus* as a landmark within the body when identifying the lesser-known parts (eg. the veins and arteries).

<sup>85</sup> Cf. Lausberg (1998) § 637 for the use of ὀνομάζεσθαι to denote the technical nature of a word.

omitting ὑποδοχήν ) where the definite article belongs to κοιλίαν, or perhaps τὴν ὑποδοχήν τὴν ὀνομαζομένην κάτω κοιλίαν ἔθεσαν (“the receptacle, the so-called lower-abdomen,” repeating the definite article).<sup>87</sup> The noun to which the definite article belongs grammatically to ὑποδοχήν, while ὀνομαζομένην κάτω κοιλίαν are in the attributive position to “the receptacle.”<sup>88</sup> The word ὀνομαζομένην identifies ὑποδοχήν in this sense as being uncommon (and technical), while κάτω κοιλίαν becomes the locational frame of reference. As revealed in the varied number of ὑποδοχάι within the human body that are described by Aristotle,<sup>89</sup> it would make sense for Plato to qualify his use of the word by adding that it is “the so-called (one) below the stomach.”

Aristophanes does state in *Frogs* (485) that Dionysus’ heart from fear travels εἰς τὴν κάτω μου κοιλίαν (towards my lower-abdomen/stomach). This is indicative that κάτω κοιλίαν did have some use among Athenians. But again, it seems that Aristophanes

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<sup>86</sup> Cf. Smyth (1920) § 1154.

<sup>87</sup> Cf. Gildersleeve (1911) § 610-2 for Plato’s use of similar constructions.

<sup>88</sup> Goodwin (1930) § 959b remarks that “the wise man” cannot be rendered by ὁ ἀνὴρ σοφός. For the same reason, we cannot expect that emphasis is to be placed on κάτω κοιλίαν without it being given a definite article. Cf. also Gildersleeve (1911) § 635 for the attributive or predicative position of the articular copulative participles καλούμενος and ὀνομαζόμενος.

<sup>89</sup> E.g. the breast (*PA* 692a12), the heart (*PA* 666a8), parts of female genitals (*GA* 722b14). The spurious *Problemata* (863b33) states that the bladder is the receptacle for the unprocessed water in the stomach (ὑποδοχὴ γὰρ ἐστὶν ἡ κύστις τοῦ μὴ πεπτομένου ὑγροῦ ἐν τῇ κοιλίᾳ κτλ.). However, Aristotle’s closest example to Plato’s is his comment in *PA* 640b14-5 that the abdomen is the whole receptacle (πᾶσαν ὑποδοχήν) of the ingested liquid, food, and digested material (περιττώματος) in the body.

simply wishes to stress that Dionysus is motioning to a location at the lowest possible extremes of the stomach.<sup>90</sup>

We see a far more refined description of the higher and lower abdomen in the technical writings of the Hippocratic Corpus. The author of *De aere aquis et locis* (4) uses the plural κοιλία to refer to the intestines (where Plato uses ἐντέρα). The higher ones are narrow (σκληράς) while the lower ones are wider (εὐρωτέρας).<sup>91</sup> The phrase also occurs frequently elsewhere in a much more general sense, particularly in the medical notes within *De morbis popularibus*. Κοιλία here is usually in the singular and in reference to the location of some pain.<sup>92</sup> We can conclude that within the Hippocratic Corpus the term appears to be used both in a technical anatomical sense and in a general sense of orientation.

In the *Timaeus* Plato, it seems, is drawing upon the latter of these two. The prepositions κάτω and ἄνω are used not as identifiers of specific organs, but rather as divisions of the body, just as θώραξ and φρήν often denote the higher and lower chest, respectively. The sketch that he makes of the lower region of our trunk is: 1) the ὑποδοχή is the receptacle that refers to 2) the entire “catch-basin” of the intestinal tract that is located 3) ἡ κάτω κοιλία (in the lower abdominal cavity).

<sup>90</sup> Or, as a scholiast glosses, εἰς τὴν [sc. κοιλίαν] περὶ τὰ παιδοσπόρα (“towards the [abdomen] around the genitals”) (*cod. Ambrosianus gr. C 222 inf. Ran.485.1*)

<sup>91</sup> That κοιλία and ἐντέρον are used in the same sense among different writers is further suggested by the appearance of ἄνω and κάτω to distinguish the two divisions of ἐντέρα. See *Acut.* 6, 14; *Oct.* 12, *Carn.* 13.

<sup>92</sup> E.g. *Epid.* 3.2 καὶ ἐν τοῖσι κάτω κατὰ κοιλίην, πόνοι (5.1) ἢ κοιλίη ἐταράχθην κάτω, and ὁδύνη ἴσχει ἰσχυρὴ τὴν κάτω κοιλίην κτλ.



The description Plato gives of the digestive system follows his explanation of the of the heart, lungs, and liver by giving a reason why the Creators designed our bodies is such a fashion, and how this was with a view to the greatest good. In this section, however, he departs somewhat from the vivid similes he gives for organs such as the heart and liver. This tendency for superficial descriptions of the abdominal system, coupled with the brevity in which the subject is discussed, point to both the Greeks' superficial knowledge of digestion and the lack of any discernible psychological function assigned to the entrails before Plato.

### Summary

While Plato does occasionally discuss human anatomy and physiology in several of his dialogues, he only approaches the subject systematically in the *Timaeus*. Yet, throughout the corpus, he appears to maintain a consistency of sources throughout his descriptions. There are several times when Plato's language agrees with that of writers in the Hippocratic Corpus and other scientific works. This comparison is generally restricted to the use of abstracts (such as *οὐστᾶσις*) and the use of descriptive metaphors. Both of these show Plato's familiarity with technical writings, but they go little distance in showing a connection of thought between him and the medical writers: The use of abstracts in scientific writings is a matter of both necessity and style, and descriptive metaphors often arise naturally from observation.

We do find a strong connection between the ideas of Plato and those of his literary predecessors. Both Homer and the tragedians (in particular Euripides) provide insight into the workings and makeup of the human body that share a close connection with

Plato's understanding. This implies that Plato is drawing upon traditional ideas of the body that were alive among the general population of Athens and not restricted to the cutting edge of medical science. When Plato discusses the body in the *Timaeus*, he follows closely the basic concepts of the poets and dramatists. His intent in this work is to harmonize biological observations with his metaphysics, and the overall impression of the dialogue is that Plato wishes to conform general public knowledge of the body to his pre-established ideas of the soul. This approach to the study of the human body and health, the attempt to shape medical knowledge to one's beliefs, appears to be common among the medical community<sup>93</sup> and exemplary of the struggle between dogmatism and intellectual growth during the Classical period.<sup>94</sup>

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<sup>93</sup> The author of *On Ancient Medicine*, for instance, spends close to the first half of the work criticizing those physicians who assume a postulate (ὑπόθεσις) before undertaking an examination of the human body and health. Cf. Jones (1946) 26-32 for a discussion on the application of ὑπόθεσις in both the Hippocratic Corpus and the works of Plato.

<sup>94</sup> For an in-depth discussion of this intellectual struggle, see Lloyd (1987) 109-71.

## 2. Physical Conditions and Symptoms

Terminology for sickness can be classified in two general categories: Those terms used by the public and those terms used by physicians. In lay-vocabulary, sicknesses are almost always stated in generic terms for illness or pain (e.g. νόσος, ἄλγος). The illness or pain is then qualified by its location (e.g. Aesch. *Pers.* 749: νόσος φρενῶν; *De affectionibus interioribus* 18.11: τῇ κεφαλῇ...ἄλγος). As seen above, medical writers still used general terms for illness coupled with its location. Among these more salient descriptions, however, appeared a wide variety of medical shorthand seen throughout the Hippocratic Corpus.<sup>95</sup> Common symptoms and reactions (e.g. πυρετός or fever, ἔμετος, or vomiting<sup>96</sup>), as we may expect, occur frequently in both lay and medical writings.

In the following examination we shall see that Plato, for the most part, adheres to the terms used by the general public. Only the most basic of these terms for afflictions span multiple dialogues. Words that describe a specific illness or symptom are rare within the dialogues. Yet, when they do appear, their nature suggests some contact with the medical community and its vocabulary.

<sup>95</sup> These were alternately formed either from verbs describing symptoms (e.g. ψώρα from ψάω; ἄσθμα from ἀσθμαίνω) or from the location of the illness (e.g. ὑπογλωσσίς, sickness of the tongue; πλευρίτις, affliction of the pleura, or membranes of the lungs). See Potter (1988) 333-9 "Index of Symptoms and Diseases" for a comprehensive list of diseases that appear within the Hippocratic Corpus.

<sup>96</sup> The -τός suffix is commonly seen in I.E. verbal adjectives. Although originally the voice expressed by the word varied, the passive meaning became more common (Palmer 1980, 256). Sicknesses such as πυρετός and symptoms (and treatments) such as ἔμετος, as they are today, must have been very common occurrences in all cultures. Pointing to this, the Indo-European suffix -τός in these words suggests that they are quite old (and certainly predate the use of -σις in pathology). Therefore, medical terms in -τός should not be considered technical.

### Lay-vocabulary of afflictions and symptoms

One of the earliest dialogues where Plato uses lay-vocabulary when discussing illness is the *Charmides*. In this work Socrates' friend Critias relates that his nephew Charmides, an Athenian youth renowned for his attractiveness, has lately been suffering from headaches when he got up in the morning (βαρύνεσθαί τι τὴν κεφαλὴν ἔωθεν ἀνιστάμενος [155b4]). This affliction becomes an ideal vehicle for Socrates to begin a conversation with Charmides, since he assumes the guise of one who possesses some unique cure for the ailment. Since Plato is not interested in discussing the nature and cure of headaches, but rather temperance (σωφροσύνη), he does not dwell for very long on a description of the problem. In fact, Critias is the only character to mention that Charmides' head hurt at all. In all other instances where Charmides' affliction is discussed, the speaker refers only to ἡ κεφαλὴ and does not clarify what is wrong.

The standard translation for Charmides' ailment is "headache." Literally, it is a weightiness of the head, or a burden upon it. Plato uses the phrase only once in his dialogues, but the phrase does occur a handful of times in other classical works.<sup>97</sup> However, these occurrences of what has been rendered "headache" are far surpassed in number by the more salient κεφαλαλγία and its cognates (though none of these occur in the works of Plato). In addition to frequent occurrences in the Hippocratic Corpus,<sup>98</sup> κεφαλαλγία is also used by the Attic authors Antiphon (fr. 34.1) and Xenophon (*An.* 2.3). Thus, seeing that Plato's "burdened head" is rather rare among his contemporaries,

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<sup>97</sup> In the Hippocratic Corpus: *Flat.* 10. 4.; *Vict.* 73.2, 83.2; *Epid.* 7 1.84.2. Arist. *Pr.* 873a3, 916b16.; Theophr. *De igne*, Fr. 39.11.; Ariston, Fr. 389. 4.

<sup>98</sup> κεφαλαλγία occurs over 60 times within the Hippocratic Corpus.

the question arises as to why he would have chosen such an expression when he had a clear, and perhaps more common, expression to use.

Both βαρύνεσθαι κεφαλὴν and κεφαλαλγία rarely occur in Attic Greek. It could be that these two expressions are synonyms, and thus Plato perhaps has merely made an arbitrary decision when using this phrase; he might have used either βαρύνεσθαι κεφαλὴν or κεφαλαλγία with the same effect. From the existing evidence, however, the term “weightiness of the head” appears to have a somewhat different meaning than “headache” when it appears elsewhere.<sup>99</sup>

If we consider all cases of βαρύνεσθαι κεφαλὴν outside *Charmides*, a translation of “headache” is not clearly justified. In *De diaeta* 83.2, *De morbis popularibus*, and *Problemata* 916b16 the heaviness of the head occurs after one awakes or is about to go to sleep. This suggests that the most suitable translation should be something along the lines of “excessive drowsiness.” Charmides is said not to have *chronic* headaches, but only when he wakes up in the morning (ἔωθεν ἀνιστάμενος).

In *De morbis popularibus*, a collection of bedside notations, a patient is reported to have woken up early with καρηβαρικός, which is defined by the author: κεφαλὴν ἐβαρύνετο. The need to further describe the ailment instead of using the more common

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<sup>99</sup> A similar distinction appears to have been made in Latin. For example, Celsus writes *capitis dolores* when referring to headaches. In one instance, however, when he wishes to make distinction between headaches and another ailment of the head, he writes: *In capite autem interdum acutus et pestifer morbus est, quem ΚΕΦΑΛΑΙΑΝ Graeci uocant... Interdum autem in capite longa inbecillitas sed neque gravis neque periculosa* (*De med.* 4.2). (“Sometimes there is a sharp and vexing ailment in the head, which the Greeks call *kephalaian*... Occasionally, however, there is a lengthy weakness of the head, but it is neither severe nor dangerous”) It seems quite possible that Plato’s βαρύνεσθαι κεφαλὴν and Celsus’ *capite inbecillitas* could refer to the same

κεφαλαλγία suggests that there is some difference between the two. In *De diaeta* 73.2, those patients who suffer from surfeitness (ἀπὸ πλησμονῆς) suffer from pain (ἀλγέουσι) and heaviness (βαρύνονται) of the head.<sup>100</sup> Unless these are examples of pleonasm (which would appear somewhat out of place in these overtly unrhetorical works),<sup>101</sup> “pain” and “heaviness” appear to be used in different senses.

In the remaining examples, *Problemata* 873a, *De igne* Fr. 39, and Ariston’s Fr. 389, there is some ambiguity as to the nature of the ailment. The *Problemata*, falsely attributed to Aristotle, inquires into why the scent of wine βαρύνει κεφαλὴν. *De igne* states that smoke dissipated by the wind βαρύνει τὰς κεφαλὰς καὶ ὅλα τὰ σώματα. In the last example, Ariston relates that discussing philosophy at the table both ruins the food and βαρύνει τὴν κεφαλὴν. None of these selections necessarily implies a person under these conditions suffers from a headache. Each could very well convey the sense of “dizziness,” or “grogginess.”

The appearance of βαρύνεσθαι κεφαλὴν in various contexts points to the vagueness of the expression. The phrase occurs in the Hippocratic Corpus joined with ἀλγέω which suggests that βαρύνεσθαι need not refer to a pain in the head.<sup>102</sup> I propose

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ailment which is distinct from a headache.

<sup>100</sup> *Vict.* 73.2: Πάσχουσι δὲ τινες καὶ τοιάδε ἀπὸ πλησμονῆς· τὴν κεφαλὴν ἀλγέουσι καὶ βαρύνονται κτλ. (“Some people also suffer these sorts of things from surfeitness; they both feel pain and are weighty in the head.”).

<sup>101</sup> There is the occasional example of pleonasm in the Hippocratic corpus. Dover (1997) 146, for example, points out ἀποβαλὼν καὶ ἀποδοκιμάσας (“discarding and rejecting”) in *On Ancient Medicine*. Being a polemic of sorts, however, this work does exhibit some subtle rhetorical devices. Cf. Jones (1946) 92.

<sup>102</sup> It is possible, however, that καί in the above quote (n. 99) is not copulative, but rather expresses an alternative expression or synonym. If this is so, then ἀλγέουσι and

that Plato, in choosing to use a less familiar expression, does so either because he means that Charmides is suffering from something else besides a headache (such as grogginess or dizziness) or because he wishes to portray Critias as being vague when discussing his nephew's medical condition. It is indeed possible that Critias' reason for this is so that he might politely discuss Charmides' health, a matter of some privacy.<sup>103</sup>

This "heaviness of the head" is characteristic of Plato's vagueness within the majority of his dialogues concerning the subject of human conditions. It is primarily the symptoms of an ailment or nature of bodily functions that he mentions, and these only a handful of times. Such functions of the body as to "vomit" (ἐμείν), "defecate" (κάτω διαχωρεῖν), "hiccough" (λύγξ), and "yawn" (χασμάομαι) are all ἅπαξ λέγομενα within his *Corpus*. One might expect this; Plato certainly has no specific need to dwell on these topics in order to further his philosophical themes. As one also might suspect, such words occur frequently within medical writings and in passing within comedies and works on nature.<sup>104</sup>

The word "to vomit" (ἐμείν) appears together with "to defecate (profusely)" (κάτω διαχωρεῖν) in *Phaedrus* 268b1-2. The context of the words here (dependent upon ποιεῖν) leaves the impression that they are comparable to articular infinitives.<sup>105</sup>

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βαρύνονται ought to be seen as equivalents (i.e. "the pain, that is to say, the weightiness"). Cf. Denniston (1950) s.v. Κάί 1.5.

<sup>103</sup> We use similar expressions of periphrasis in English when discussing another's health such as "He's taken ill." or "She's feeling under the weather today."

<sup>104</sup> While these words' usages in comedy and natural treatises are interesting, they are, in most cases, self-explanatory and beyond my current scope.

<sup>105</sup> For precedents in Plato of noun substantives without the article, see Riddell (1877) 157 § 84. Denniston (1952) 24-5 remarks that periphrases of verbal abstracts with

The absence of this infinitive construction within the Hippocratic Corpus in favour of ἔμειτος and διαχώρημα suggests that the use of this construction did not have wide currency among Hippocratic physicians. In contrast, a fragment from the comic poet Nicophon (*Seir.* 1) shows a strong similarity to Plato's use:

Εάν δέ γ' ἡμῶν σῦκά τις μεσημβρίας  
 τρώγων καθεύδῃ χλωρά, πυρετός εὐθέως  
 ἥκει τρέχων, οὐκ ἄξιός τριωβόλου·  
 κᾶθ' οὗτος ἐπιπεσὼν ἐμείν ποιεῖ χολήν.

If anyone sleeps at midday after eating our green figs,  
 a fever will come straight away, and (the trouble's)  
 not worth half a drachma; for then he will fall  
 and make sick with bile.

This passage, with its colloquial tone, is clear evidence that the ποιεῖσθαι + infinitive construction is not technical. Plato perhaps chose to express these medical techniques of doctors in this manner because this is the way a layman would have expressed them. Yet it is also possible that an Athenian physician would use the same terms as the lay community under certain circumstances, and may even have preferred the expression over the more technical ἔμειτος.<sup>106</sup>

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some form of ποιεῖσθαι, as with all abstracts of this kind, are far more common in earlier Greek than later. Those periphrases governed by ποιεῖσθαι, however, remain some of the most active constructions of verbal abstracts throughout Classical prose. Cf. also Smyth (1920) § 1722.

<sup>106</sup> It seems likely that a Greek physician, as our modern day doctors do, would avoid overly technical language when speaking with patients. Cf. *Praeconceptiones* (13), a work written as a guide book for bedside visits. The author speaks out here against those physicians who use jargon (λόγους ἐκ μεταφορῆς) in the presence of envious laymen (ἰδιωτέων...διαζηλευομένων).



The words ἐμῆν and κάτω διαχωρεῖν are specifically mentioned by Socrates in the *Phaedrus* as bodily functions that Phaedrus and Socrates' mutual acquaintance Eryximachus and his father Acumenus (both physicians) are able to induce in a patient. These, Socrates proposes, might be used as benchmarks of a physician's craft. It is doubtful that Plato would have had any direct contact with the *ipsissima verba* of these two physicians, so it is risky to suggest that these are the actual words the physicians would have used. Yet, the wide study of these as symptoms and treatments is typical within the Hippocratic Corpus, and presumably important to doctors throughout Greece. Their importance in making a diagnosis for the patient cannot be stressed enough, considering the absence at that time of any means of exploratory surgery and the fact that a great portion of Greek medicine was based upon the theory of humours/bile which could only be examined by the doctor through excretion.<sup>107</sup>

As we see in *Symposium* 185, the process of hiccupping (λύγξ) is dealt with by Plato in a medical context, too. In this well-known scene, Eryximachus (the same doctor mentioned in the *Phaedrus*), must take Aristophanes' place in rotation to deliver an encomium on love because of the latter's hiccupping-fit. Before he begins to describe his vision of love, Eryximachus is eager to offer a cure to Aristophanes.<sup>108</sup> If there is any question whether hiccupping is of any serious interest to the Greek physician,<sup>109</sup> we find proof from the word's frequency within the Hippocratic Corpus.

<sup>107</sup> Cf. the Hippocratic work *Prog.* 11 for an account of the analysis of stool (διαχώρημα) and for vomit (ἔμετος) *Prog* 13 in prognosticating illnesses.

<sup>108</sup> Cf. page 122-7 below for an analysis of Eryximachus' cure.

<sup>109</sup> The qualities of this scene fit both characters equally well, and this is perhaps why it is so memorable. We can just as easily imagine a doctor such as Eryximachus being

A particularly interesting example of the use of λύγξ outside of the Hippocratic Corpus is the word's sole appearance in Thucydides. In 2.49 of his *Histories* the word is used in quite a different sense than that of Plato's Eryximachus. The appearance of λύγξ here in the discussion of the plague of Athens obviously does not carry the meaning "hiccough." Thucydides describes the λύγξ as being in vain (κενῇ) and followed by a strong spasm (σπασμὸν...ἰσχυρόν). This is indicative of the ambiguity of many of the terms used to describe functions of the body.

We find a similarly frequent appearance of "yawning" within the Hippocratic Corpus as with the above functions/reactions. Plato, however, treats the word differently than the processes of vomiting, passing stool, and hiccoughing: "yawning" alone among those terms Plato mentions does not occur in a specifically medical context. Whereas the three previous processes are related to doctors (and specifically Eryximachus), the comment on yawning appears in passing, and all but unrelated to the topic at hand. In the *Charmides* Socrates uses the contagious nature of yawning as a simile for the contagiousness of his own perplexity (regarding the "knowledge of knowledge") as it is passed on to Critias:

Καὶ ὁ Κριτίας ἀκούσας ταῦτα καὶ ἰδὼν με ἀπορούντα, ὥσπερ οἱ τοὺς  
χασμωμένους καταντικρὺ ὀρώντες ταύτῳ τοῦτο συμπάσχουσιν (169c3)

So Critias, hearing these things and seeing that I was at a loss, just like those who see people they are with yawning suffer the very same thing

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eager to assist in a cure for hiccoughs as we can picture Aristophanes playing the "ham" during his hiccoughing fit.

The infectious property of a yawn appears to be one that interested the Greeks,<sup>110</sup> hence its mention here serves as an effective reprieve for the reader after quite a long analysis of ἐπιστήμη (knowledge) through which Socrates, as narrator, draws our minds back to the characters within the dialogue.

The majority of the bodily functions mentioned by Plato, with the exception of yawning, are in the context of the physician's art. While it may be argued that the frequency of the words creates too small a grouping from which to glean much information (four words in three instances), the very uncommonness of the terms within Plato's writings is significant. These words, all pertaining to bodily functions, are not limited within Greek literature to medical writings and Plato alone, and so could easily also have been used by Plato in several different contexts; these functions are, after all, experienced by all of human-kind. However, Plato has chosen, or has felt the need, to limit most of these actions to the sphere of medical care. It appears that the most reasonable explanation for this is that Plato is working within a genre that allows for some degree of colourful humour,<sup>111</sup> but requires that most body functions be treated clinically. To relate that one of his characters, aside from the comic poet Aristophanes (who is intimately associated with the μοχθηρία of comedy),<sup>112</sup> has engaged in one of these acts would be distasteful.<sup>113</sup> If an assault upon a person's character is ever made in

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<sup>110</sup> See Arist. *Pr.* 962b.

<sup>111</sup> As when Socrates catches a glimpse of Charmides εἶδον τε τὰ ἐντος τοῦ ἱματίου (*Chrm.* 155d).

<sup>112</sup> Aristophanes' unflattering hiccupping-fit could also be a subtle jab at the author of the far more unflattering representation of Socrates, the *Clouds*.

<sup>113</sup> Dover (1997) 115 remarks that non-technical prose at this time, while quick to describe moral faults, tended to avoid "aesthetically distasteful" subject matter.

the dialogues of Plato, it is in light of the man's intellectual prowess or moral character and not his bodily functions. The one act that does not appear in a medical context, yawning, is the sole function among this group that presumably would not be found offensive in public.

Plato also uses generic language when discussing physical afflictions. Within the six works in this study, nowhere outside of the *Timaeus* is he more specific than where the ailment is located or where the pain is focused. The majority of instances where Plato mentions illnesses or afflictions it is in the most general of terms: νόσος (disease),<sup>114</sup> πάθημα (suffering), ἀλγηδών (pain) and λοιμός (infection/plague) are the most common. He occasionally quantifies these with complements such as ἀνίατος (incurable) and ὕπουλος (festering). The greatest density of these disease-terms are seen in the *Timaeus*. Nonetheless, these words show regular appearance within the works.

The nouns ἀλγηδών and λοιμός, and adjectives ἀνίατος and ὕπουλος appear relatively few times within the dialogues in our examination compared to νόσος and πάθημα. Within the six primary works of my investigation,<sup>115</sup> the terms ἀλγηδών and ἀνίατος are seen only in the *Gorgias* and *Phaedo*,<sup>116</sup> λοιμός<sup>117</sup> in the *Symposium*, and ὕπουλος only in the *Gorgias* and *Timaeus*. The occurrences of ἀλγηδών and ἀνίατος within the *Gorgias* and *Phaedo* alone appear to be due to a specific common theme

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<sup>114</sup> Including its cognates νόσημα, and νοσώδης.

<sup>115</sup> *Chrm*, *Grg.*, *Phdr.*, *Phd.*, *Smp.*, *Ti*.

<sup>116</sup> *Αλγηδών*: *Grg.* 477e2, 478c2, 525b7; *Phd.* 65c4, 94d3. *ἀνίατος*: *Grg.* 480b2, 512a3,7, 525c2,4,e4, 526b8; *Phd.* 113e2.

<sup>117</sup> *Smp.* 188b1, 201d4.

within the dialogues; namely Plato's belief in subordination to a higher power and how this relates to justice and the greater good (even when such a submission guarantees ἀλγηδών). It then should be of little surprise that Plato uses these words quite frequently in his dialogues dealing with public order, most notable among these being his *Republic* and *Laws*.

This analogy between medical treatment and law occasionally found its way into the speeches of Athenian orators, too. The unpleasantness of many medical treatments must have been great. Yet these treatments, by their very nature, must have been considered beneficial to the patient. Thus, such a simile with political and forensic matters is particularly fitting.<sup>118</sup> An excerpt from Demosthenes' summation to part one of his *Against Aristogeiton*<sup>119</sup> is illustrative of this analogy:

ἀνίατον, ἀνίατον, ἄνδρες Ἀθηναῖοι, τὸ πρᾶγμ' ἔστι τὸ τούτου. δεῖ πάντας, ὥσπερ οἱ ἰατροί, ὅταν καρκίον ἢ φαγέδαιναν ἢ τῶν ἀνιάτων τι κακῶν ἴδωσιν, ἀπέκασαν ἢ ὅλως ἀπέκοψαν, οὕτω τοῦτο τὸ θηρίον ὑμᾶς ἐξορίσαι, ῥίψαι ἐκ τῆς πόλεως, ἀνελεῖν, μὴ περιμείναντάς τι παθεῖν, ὃ μήτ' ἰδίᾳ μήτε δημοσίᾳ γένοιτο, ἀλλὰ προεϋλαμβηθέντας.  
*Ad Aristog. I* (95.5-96.1)

Untreatable! [simply] untreatable, men of Athens, is this man's situation. Just like doctors who find a cancer or malignant ulcer or some other incurable problem either burn off or cut off the entire (sc. affected area), so all of you must drive out this beast, cast him from the city, remove him, lest with him remaining here you suffer – may that never happen either privately or publicly – but rather let him be taken well in advance.

<sup>118</sup> It is perhaps of some note that medical terminology is also used to describe when a litigant wishes *iudicem benevolum parare* (to obtain a benevolent judge). Aristotle calls this technique ἰατρεύματα (*Rh.* 1415a). Cf. Lausberg (1998) § 273.

<sup>119</sup> Due to the composer's use of phrases not used in the authenticated speeches of Demosthenes and its epideictic nature, this speech has been considered spurious since at least the time of Dionysius of Halikarnasos who called them ἀηδεῖς and φορτικοί. See Vince's introduction (1935) 514-5.

Demosthenes' emphatic use of ἀνίατον, both in position and repetition, suggests the possible strength of this word to an orator.<sup>120</sup> The implication of this term when attributed to one's character is more than that the person is doomed; the man is a danger to those around him because of his pollution and, for the betterment of all, should not remain living. At the very least, he should be allowed no contact with the city. This appears to be the very concept that Plato holds when applying ἀνίατος to a person. In every example where Plato uses the metaphor (which is also every time Plato uses ἀνίατος), the incurable person's only redeeming quality is that he can deservedly be subjected to extreme punishment – either in this life or in Hades – and so serve as an example for those who are ἱάτοι, or “curable.” Plato summarizes this particularly well in *Laws* 735e:

ἔστι δ' ὁ μὲν ἄριστος ἀλγεινός, καθάπερ ὅσα τῶν φαρμάκων τοιούτοτροπα, ὁ τῇ δίκῃ μετὰ τιμωρίας εἰς τὸ κολάζειν ἄγων, θάνατον ἢ φυγὴν τῇ τιμωρίᾳ τὸ τέλος ἐπιτιθεῖς· τοὺς γὰρ μέγιστα ἐξημαρτηκότας, ἀνιάτους δὲ ὄντας, μεγίστην δὲ οὖσαν βλάβην πόλεως, ἀπαλλάττειν εἴωθεν. (*Lg.* 735d8-e5)

Like such medicines, he is the noblest administrator of pain who by justice leads [another] through punishment to chastisement, and establishes the most extreme forms of punishment to be either death or exile; for he immediately expels those who commit the worst offenses and who are the greatest harm to the state.

It is difficult to surmise how prevalent this metaphorical use of ἀνίατος might have been among Plato's predecessors. Antiphon's metaphorical use of the word is the first example we have in Classical literature, and Plato's is the second. It is perhaps enough to state that the idea of a person who is morally incurable was not Plato's

<sup>120</sup> Cf. Antiphon, *Tetr.* I, 4.12: ἀνίατος γὰρ ἡ μετάνοια τῶν τοιούτων ἐστίν. (“Thus, it is incurable to ignore these [sc. offenses].”)

invention. So too, whether or not it was under Plato's influence, it is clear that writers such as Demosthenes and Aristotle (in several instances) felt that this metaphor would be helpful to demonstrate their points.

The noun νόσος and its cognates νοσώδης and νοσήμα<sup>121</sup> as a sum comprise by far the greatest number of disease-words within our dialogues, appearing a total of sixty-nine times.<sup>122</sup> The common nature of these words almost guarantees that they will frequently appear in any work in which diseases and matters of health are discussed. Yet, the breakdown of the numbers provides us with some interesting information about Plato's word-usage. Specifically, the distribution of the two highest occurring words (νόσος [27], νοσήμα, [28]) is nearly identical. Even if we are to disregard their appearances within the especially scientific *Timaeus*, we are still left with a close-matched grouping: (νόσος [11], νοσήμα [9], or expressed in a ratio, 1.2:1). This pattern is of some interest if we consider that νόσος is a more loosely defined term for "affliction" than νοσήμα.<sup>123</sup> Evidence of this can be seen in both of the words' usages within tragedy (where we see a much higher use of metaphorical language than in prose). Aeschylus, from whom we have our earliest evidence of the use of νόσος and νοσήμα within tragedy, employs these words in a ratio of 9:1, with all occurrences of the latter (x

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<sup>121</sup> Νοσώδης is a contraction of νόσος and εἶδος. Νοσήμα is a nominal abstract expressing result from the verb νοσέω.

<sup>122</sup> Distribution: νόσος (27), νοσήμα, (28) and νοσώδης(14)

<sup>123</sup> Cf. LSJ s.v. νόσος, and νοσήμα. Νόσος can have a variety of meanings, ranging from "the physical manifestation of disease in god-form (in Homer)" to "disease" to "general distress." On the other hand, νοσήμα, while at times being used metaphorically for a generic "grievous affliction," seemed to maintain a stronger connection to the original concept of "sickness" or "disease" in the biological sense.

3) appearing within *Prometheus Bound*. This significant ratio-gap between usage in tragedy is continued with Sophocles (11:1) and Euripides (17:1). Νόσημα does appear occasionally in a metaphorical context. However, the great difference between the two words' use in dramatic works does indicate to us that there is a strong preference for the use of νόσος in metaphorical language.<sup>124</sup>

The -μα suffix seen in νόσημα was commonly used to form abstract substantives in tragedy, so it is significant to find that νόσημα is used far less frequently than νόσος. Palmer writes that a primary reason for the use of this suffix was to change ordinary words into more poetic-sounding forms.<sup>125</sup> Yet, in addition to being seen in tragedy, the -μα suffix was also common in Ionic scientific language. If νόσημα had already become familiar as a term denoting a specific medical illness before the -μα suffix became popular in tragedy, then this would perhaps deter the likes of Sophocles and Aeschylus from using the word more often. Owing to the word's scanty appearance prior to the 5<sup>th</sup> century, it would be rash to push this theory very far. However, the earliest surviving works that use the term do suggest an early connection to the Ionic dialect.<sup>126</sup>

<sup>124</sup> Such low occurrences of νόσημα within tragedy may also be explained by the tendency of the genre to be somewhat conservative in regards to vocabulary.

<sup>125</sup> 1980 (137-8). He cites as an example a passage from Sophocles' *Philoctetes* in which the contents of the hero's cave are mentioned: ἔκπωμα, τέχνηματα, θησαύρισμα (35-7). Cf. also Dover (1997) 117.

<sup>126</sup> Νόσημα is first seen in *Apophthegmata* 4.1 (7-6 B.C.), next in Aesop (*dodecasyllabi*, Fable 16), then in Aeschylus (*P.V.* 225, 685, 978). The first appearance of νόσημα is in the Hippocratic Corpus. We may surmise that both the *Apophthegmata* and Aesop's *Fables* have strong Ionic influences, and the Hippocratic Corpus is definitely Ionic (although some works were likely not written by Ionians).



In fifth century prose, when the first real signs of systematic scientific research began to appear, the ratio between the occurrence of νόσος and νόσημα is far lower than in tragedy. For example, Thucydides uses the words in a ratio of 5:1. What is of particular interest in this regard is that his use of νόσημα (x 5) within all of his *Histories* is isolated solely to Book 2 in his account of the plague of Athens and its transmission. This provides us with reasonable evidence to suggest that, at least in the prose of Thucydides, the proper role of νόσημα was in discussions of “disease” in its limited biological sense. Aristotle has a slightly higher ratio than Thucydides with that of 7:1,<sup>127</sup> and again, all occurrences of νόσημα are in discussions about physiology. In fact, exactly half the number of Aristotle’s usage of νόσημα (x 12) is found in his *Historia animalium*, providing further indication of its limited use to describe specific diseases. Moreover, if we examine the ratio of *HA* alone we find that it is almost identical to that found within our selected group of Platonic works: *HA*=1.5: 1, *P.*=1.2: 1.<sup>128</sup> From this information, it is possible to state at least tentatively that an increase in the technicality of subject-matter within a work (dealing with a theme of physiology/biology) has some positive correlation to the use of νόσημα in preference to νόσος.

<sup>127</sup> I have left out his *Problemata* from this search due to its dubious attachment to Aristotle.

<sup>128</sup> So too, Theophrastus’ works show a ratio of 1.1:1. Of these there are 9 occurrences of νόσημα within his *Historia plantarum*, and the remaining 12 appear in his *De causis plantarum*. We find a similar pattern when looking at the Hippocratic work *De morbis popularibus* which exhibits a ratio of 1.1: 1 (of course examining the Ionic forms νοσός and νοσήμα, but also 12 occurrences of the Attic νόσημα). I have selected this work as indicative of the Hippocratic writings at large specifically because of its length (spanning 7 books, and 43,404 words [Littré, vols.2-3, 5]) and because it contains over 500 case histories and constitutions composed by a number of medical practitioners.

The significance of these ratios is that, from a statistical analysis, there is a trend to use νόσος in more metaphorical language. Yet the converse of this does not apply: an increase of a work's technicality does not seem ever to cause νόσημα to outstrip νόσος in use. Even in the most technical writings of the 5<sup>th</sup> and 4<sup>th</sup> centuries, νόσος is seen roughly the same number of times as νόσημα. This balance is maintained because of the tendency of writers to discuss both the general (νόσος "disease") and the specific (νόσημα "the [specific] illness").

When we examine the specific instances where Plato uses these two words, this hypothesis seems to hold true. Within our selection of dialogues Plato uses neither νόσος nor νόσημα in a metaphorical sense.<sup>129</sup> Yet he does use these words sparingly in similes (indicated by the use of ὥσπερ).<sup>130</sup> Plato, then, is quite literal in his use of these disease-terms, and appears to take care not to skew his discussions with overly loose or inappropriate connections of thought (at least when using illness-oriented language). Since all but one of the six works analyzed are not specifically concerned with the afflictions of the human body, and that these disease-words do appear regularly, a picture of Plato's use of extended comparison through analogy begins to take form.

<sup>129</sup> I am here drawing a distinction between metaphor and simile. The use of metaphor naturally implies a closer connection between two dissimilar ideas than does a simile. In metaphorical language, there is a tendency to overlook the common element(s) through which the objects of the comparison may be treated as similar and thus view it instead as a 1:1 description. Cf. Black (1979) 31-2.

<sup>130</sup> Cf. *Ti.* 23a7 for the use of νόσημα in a simile; *Grg.* 495e9 and *Phd.* 95d2 for the use of νόσος. There is one instance that by some may be considered a metaphor: in *Grg.* 480b2 Socrates mentions τὸ νοσήμα τῆς ἀδικίας. However, its use as a simile has almost been implied in the line above when he states that a man goes "before the courts as (sc. one with an illness) goes before a doctor" (ὥσπερ παρὰ τὸν ἰατρον).

The word λοιμός is used by Plato within just one of the dialogues in our selection, and only three times in his entire corpus.<sup>131</sup> Within the *Symposium* λοιμός is used first in Eryximachus' description of love. Plagues, he states, are caused by Love, as are many *other* diseases. Later, Socrates tells how Diotima held the plague off from Athens by directing the citizens as to what sacrifices to make. What is notable about these two examples is the particular definition that the word takes. According to Eryximachus, plagues (λοιμοί) appear to be defined under the general heading of diseases (νοσήματα).<sup>132</sup> This definition is further supported when Socrates discusses the extent of Diotima's power:

καὶ Ἀθηναίοις ποτὲ θυσάμενοις πρὸ τοῦ λοιμοῦ δέκα ἔτη ἀναβολὴν ἐποίησε τῆς νόσου *Smp.* 201d3-4.

and (Diotima) once held off *the sickness* for ten years *before the plague* (by having) the Athenian citizens sacrifice

The plague, as both Eryximachus and Socrates suggest here, is a sickness, but as is implied, not all sickness are plagues. The way in which the word is used, particularly in the example of Diotima and her abilities, portrays the sense that λοιμός is an event, something which descends (metaphorically) upon a people and affects them on a mass scale. In English, the definite article is important to render the sense of the clause: "before *the* plague...the (sc. general) sickness."

This seems to be the same way in which Thucydides uses the word. As in the case of νοσήμα and νόσος, he only uses λοιμός during his discussion of the plague of

<sup>131</sup> *Smp.* 188b1, 201d4; *Lg.* 906c5.

<sup>132</sup> Οἱ τε γὰρ λοιμοὶ φιλοῦσι γίγνεσθαι ἐκ τῶν τοιούτων καὶ ἄλλα ἀνόμοια πολλὰ

Athens within Book 2.<sup>133</sup> When he first mentions the plague in this book, he refers to it as a νόσος (47.3).<sup>134</sup> Yet the gravity of its effects is postponed until two clauses later at the end of the period:

οὐ μέντοι τοσοῦτός<sup>135</sup> γε λοιμός οὐδὲ φθορά οὕτως ἀνθρώπων οὐδαμῶς ἐμνημονεύετο γενέσθαι.

never had *so great* a plague nor so great a destruction of men been recollected.

A simple explanation why Thucydides chose a different word for the plague in this clause may be that he wished to avoid monotony within the sentence. However, if we look forward to 54, the second (and final) place where Thucydides uses λοιμός, a possible link appears between the word and divine agency. In this section, he tells of a verse the older men would sing: "Ἦξει Δωριακὸς πόλεμος καὶ λοιμός ἅμ' αὐτῶ. The word is certainly old. The first use of it appears in *Iliad* 1.61<sup>136</sup> when Achilles addresses the Achaeans as to the possible outcome of the plague: εἰ δὴ ὁμοῦ πόλεμος τε δαμᾶ καὶ λοιμός Ἀχαιούς and to suggest the help of a priest or seer ὅς κ' ἔποι ὅ τι τόσσον ἐχώσατο Φοῖβος Ἀπόλλων. The appearance of this word at the very outset of Greek literature and in such a prominent place within it suggests the word carried with it some

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νοσήματα

<sup>133</sup> However, Thucydides does look forward to the events of the plague in 1.23.3: καὶ ἢ οὐκ ἥκιστα βλάβασα καὶ μέρος τι φθείραςα ἢ λοιμώδης νόσος· ("And not the least harmful (of disasters) and that which destroyed a good share (of the population) was the plague-like disease.").

<sup>134</sup> ἡ νόσος πρῶτον ἤρξατο γενέσθαι τοῖς Ἀθηναίοις; ("the disease first began among the Athenians").

<sup>135</sup> Cf. Smyth (1920) § 1180a for the emphatic use of τοσοῦτός.

<sup>136</sup> This is also the only time it is used in the *Iliad*.

connection to this origin throughout its use in Classical Greek. The second time the word is used in Greek literature is in Hesiod's *Works and Days* (243). We again see a divine agent as the cause of the plague, and even a closer parallel to Thucydides' statement in 2.54:<sup>137</sup>

τοῖσιν δ' οὐρανόθεν μέγ' ἐπήγαγε πῆμα Κρονίων,  
λίμον ὁμοῦ καὶ λοιμόν, ἀποφθινύθουσι δὲ λαοί·

To them from the heavens did the son of Kronos send great distress  
—both famine and plague— and the masses were destroyed.

The appearance of λοιμός here in *Works and Days*, as with Homer in the *Iliad*, is the only one in Hesiod's works. As with Homer, Hesiod uses the word in a comparably important place. Here he explains the reason for plagues; they are sent along with famine upon a whole city to rid it of bad men.<sup>138</sup>

The occurrence of a plague as the result of a divine agent is suggested in both occasions when the word is used in the *Symposium*, as well as in the *Iliad* and *Works and Days*. The second appearance of λοιμός (2.54) within Thucydides, if we assume that the existence of an omen suggests a divine knowledge or presence, also implies that for Thucydides men of old believed in a connection between the divine and plagues. His emphatic use of λοιμός in 2.47 is perhaps intended to suggest the idea not necessarily that a god was the reason for the plague, but rather that not even has a god rained down such disease and destruction within the recollection of mankind. This use would be comparable to the concept that “plague and pestilence” would bring to the mind of one

<sup>137</sup> Thucydides suggests here that λίμος not λοιμός was the intended word in the verse, and that this omen was corrupted upon the appearance of the plague.

<sup>138</sup> ξύμπασα πόλις κακοῦ ἀνδρὸς ἀπηύρα

familiar with the Bible; specifically God's use of these diseases to punish sinners on a massive scale.

The link between the divine and λοιμός is quite strong in the *Symposium*, but this is not the case in all of his dialogues. For example, Plato implies in the *Laws* that plagues are (or at least, can be) natural occurrences:

φαμέν δ' εἶναί που τὸ νῦν ὀνομαζόμενον ἀμάρτημα, τὴν πλεονεξίαν, ἐν μὲν σαρκίνοις σώμασι νόσημα καλούμενον, ἐν δὲ ὥραις ἐτῶν καὶ ἐνιαυτοῖς λοιμόν, ἐν δὲ πόλεσι καὶ πολιτείαις τοῦτο αὐτό, ῥήματι μετεσχηματισμένον, ἀδικίαν. (*Lg.* 906c)

But we say that the offense just now named, 'greediness,' when occurring in the body is called 'disease,' when in (certain) seasons of the year and sporadically it is called 'plague,' and when it occurs in a city and in political offices, by change of name it is called this very thing: 'injustice.'

It is important to keep in mind, however, that in both instances in the *Symposium* Plato (through his characters) is telling stories. Plato certainly has an overall purpose within each dialogue. As a result, he sometimes alters his definitions and word usage dependent either upon the subject's role in an analogy or its part in the large theme of a dialogue.<sup>139</sup> What may seem like inconsistencies between dialogues can most often be explained through examining Plato's specific purpose in each situation. In the *Laws*, Plato (through the character of the Athenian) is a proponent for the gods. Just before the quotation cited above (in 905e-f.), he is inquiring into a possible analogy between the gods and terrestrial rule. One comparison he makes is that of the role of doctors to defend the body in the war against diseases. What he wishes to prove in this conversation is that one role of the gods is to provide and instill justice (thus, doctors are

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<sup>139</sup> Cf. page 78-83 below.

to diseases as gods are to injustice). Plato has just compared the gods to doctors defending against diseases, so, if we consider the analogy he has just set up, it would fatally weaken Plato's argument to state that the gods both defend against diseases of justice (or injustices) and are also the cause of such disease.

In this instance, there is very little room for gods in Plato's aetiology of λοιμός. But he does not entirely break away here from his implied definition of λοιμός. This link to time (the plague as an event, as differentiated from the disease as an affliction) is similar to what is implied in the description of Diotima's activities discussed above.<sup>140</sup> It again is described as something that affects people not just individually, but on a large scale. This could provide one explanation as to why Plato uses the word so rarely.

A god may be believed to deliver a disease to a group of people, and this certainly is an effective threat to ensure religious piety. However, if one weighs the ethical implications of a heaven-sent plague upon people on a mass scale as Plato must have, certain moral problems inevitably begin to arise; when pious friends and family are killed along with wrong-doers, a god's vision of justice must be called into question.<sup>141</sup> This seemingly random effect of λοιμός upon a community, and how this differs from a

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<sup>140</sup> Page 62 above.

<sup>141</sup> There is, of course, the Greek notion of "μίᾱσμα." However, this belief in a pollution that is passed down through generations or through a city seems somewhat at odds with Plato's philosophy. For Plato, there is accountability for one's actions. Cf. Sedley (1996) 361. Here, citing *Republic* 444b-e, Sedley remarks that for Plato "those who are unjust are likely to have acquired their immoral disposition by engaging in the wrong kind of activities and can be restored to moral health only if they can be induced to change their lifestyle." In other words, according to Plato, the sins of the father are not passed to the son. It is the father's duty to rectify his own transgressions of moral behavior.

generic νόσημα, is stated quite clearly in one of the few examples within the Hippocratic Corpus where λοιμός is mentioned:

ἔστιν δὲ διςσὰ ἔθνεα πυρετῶν...(which are the most common diseases). ὁ μὲν κοινὸς ἅπασιν καλεόμενος λοιμός· ὁ δὲ διὰ πονηρὴν δίαιταν· ἰδίη τοῖσι πονηρῶς διαιτεομένοισι γινόμενος· (*Flat.* 6.3-4)

There are two types of fever...The one that is common to everyone is called a plague. The other one arises [because of a bad regimen] in those who conduct their day-to-day life poorly.

The indiscriminate nature of a plague is clear enough, but it is important to stress that the fevers that are not λοιμοί are found “in those who possess poor regimens”<sup>142</sup> and so the afflictions are not to be considered κοῖνοι ἅπασιν. This is perhaps the very reason why we see Plato’s use of λοιμός limited to peripheral narrative that is not really connected in any strong way to his beliefs; in contrast, in several instances he uses νοσήμα of the body (in an analogical sense) to draw parallels with the νοσήμα of the soul. In both examples, the one(s) affected must pay the price:

Ἐὰν δέ γε ἀδικήσῃ ἢ αὐτὸς ἢ ἄλλος τις ὧν ἂν κήδηται, αὐτὸν ἐκόντα ἵεναι ἐκεῖσε ὅπου ὡς τάχιστα δώσει δίκην, παρὰ τὸν δικαστὴν ὥσπερ παρὰ τὸν ἰατρόν *Grg.* 480a6-8

<sup>142</sup> The repetition of πονηρὴν... πονηρῶς appears to stress the significance of the the unruly lifestyle upon causing the second type of fever. Nelson (Jones, 1923. p.233, n. 6) deletes διὰ πονηρὴν δίαιταν. The repetition could certainly be viewed as being a redundancy, but either way, the point is the same. Plato suggests in *R.* 425e10 that he too believes in a connection between illness and lifestyle. Here, drawing a simile with people who fail to abandon laws which do not work, he writes: βιώσεσθαι τοὺς τοιούτους [sc. “lawmakers”] ὥσπερ τοὺς κάμνοντας τε καὶ οὐκ ἐθέλοντας ὑπο ἀκολασίας ἐκβῆναι πονηρᾶς διαίτης. The word ἐκβῆναι is of particular importance here, since it implies that the pain is caused from a preexisting poor regime that must be altered if the pain is to stop.



And if someone ever commits a wrong, or if someone he is dear to commits one, he must willingly go there (sc. the *dikasterion*), (to stand) before the *dikast* just as before a doctor, so that he can suffer punishment.

This analogy would simply not work if Plato had used λοιμός. The infliction of punishment upon guilty and innocent alike as a simile, be it state-imposed “justice” or disease, is of no use to him. Pain is useful for purification or to set an example. Yet it serves no purpose in bodies and souls that are for the most part clean, and no positive example can be made through the suffering of an innocent man. This is sure to be the case in a widespread and indiscriminate illness such as a plague. Whether or not a divine agent is involved, the results are the same.

A common sickness, as opposed to a plague, contains all the necessary elements for Plato’s simile and so explains his regular employment of the word. An explanation for a single person’s illness does not need to include a god if one can point to regime as being the cause; it is far easier to call into question the healthiness of one person’s lifestyle than that of an entire city’s. It is very possible that Plato believed that a god was behind some or all plagues and diseases, but only νόσηματα of individuals are caused by offenses of volition, treatable by a change towards a better lifestyle, and thus handed down in some just manner.

### **Technical vocabulary of afflictions and symptoms**

Plato does use terms for diseases that can be classified as technical on very rare occasions. Specific descriptions of diseases are of limited use within the dialogues, so it is only under special circumstances that Plato mentions them. Their appearances are often accompanied by some form of ὀνομάζεσθαι (“to be named”) or λέγεσθαι (“to be

called”). This tendency of Plato points to the technical nature of the words, and their uncommon use among the non-medical community.

In the *Republic*, while expressing his disdain for idleness, Socrates reveals Plato’s negative feelings towards the necessity to create new disease-terms:

Τὸ δὲ ἰατρικῆς, ἦν δ’ ἐγώ, δεῖσθαι ὅτι μὴ τραυμάτων ἕνεκα ἢ τινῶν ἐπετείνων νοσημάτων ἐπιπεσόντων, ἀλλὰ δι’ ἀγρίαν τε καὶ δίαιταν οἷαν διήλθομεν, ῥευμάτων τε καὶ πνευμάτων ὥσπερ λίμνας ἐμπιπλάμενους φύσας τε καὶ κατάρρους νοσήμασιν ὀνόματα τίθεσθαι ἀναγκάζειν τοὺς κομψοὺς Ἀσκληπιάδας, οὐκ αἰσχρὸν δοκεῖ; (*R.* 405c8-d4)

The (practice) of the medical art is required not because of wounds or some yearly attacks of diseases, but rather because of laziness and diet that we practice. To these ‘flowings’ and ‘gases’ that fill us like swamps, the clever followers of Asklepios are compelled to ascribe the names ‘flatulence’ (lit. “blowing”) and ‘catarrh’<sup>143</sup> (lit. “a flowing down”) - is this not shameful?

It is clear why Plato would be adverse to the afflictions of gas and catarrh if he assigns their origins to our own poor habits. He also seems to show a distaste for the labels assigned to these conditions in stating that the doctors are compelled (ἀναγκάζειν) to create them. He does not, however, elaborate on why he feels this. It is possible that Plato feels such ailments are avoidable, and the doctors are then forced to create names for unnecessary diseases. It is also possible that Plato finds the euphemistic nature of these disease-terms, both verbal nouns, to be distasteful.<sup>144</sup>

<sup>143</sup> Describing the inflammation of any mucus membrane that results in a discharge of fluid.

<sup>144</sup> Φύσα (“flatulence”) is from the verb φυσᾶν (“to blow”). Κατάρρως (“catarrh”) is from the verb καταρρεῖν (“to flow”). It is quite clear from this passage that Plato puts most of his stress on the unnecessary nature of these ailments. Plato’s distaste for the names, however, is perhaps suggested by the pairings of ῥευμάτων/πνευμάτων and φύσας/κατάρρους along with ἀναγκάζειν.

We know from the frequent appearances of φύσα and κατάρροος within the Hippocratic Corpus that these two words were commonly used by physicians. The presumably common nature of flatulence and runny-noses would have also ensured that these terms were familiar to laymen. Evidence of this is that both words not only occur in the works of Plato, but also in those of Aristotle. The near-absence of these words in a physiological sense,<sup>145</sup> however, in works outside of medical writings suggests that they retained a technical identity despite the common nature of the problems with which they correspond.

The remaining technical terms for illnesses are again limited to a small section in the *Timaeus* (84c7-86a8). In this section, Plato continues to show his interest in the etymology of disease-terms. When discussing the first disease in this section, Plato returns to a discussion of the tendons not unlike that in the *Phaedo* (98c5-d6).<sup>146</sup> His purpose in this passage, however, is to describe the effects of disease upon them:

ὅταν περὶ τὰ νεῦρα καὶ τὰ ταύτη φλέβια περιστὰν καὶ ἀνοιδῇσαν τοὺς τε ἐπιτονούς καὶ τὰ συνεχῇ νεῦρα οὕτως εἰς τὸ ἐξόπισθεν κατατείνῃ τούτοις· ἃ δὲ καὶ ἀπ' αὐτοῦ τῆς συντονίας τοῦ παθήματος τὰ νοσήματα τέτανοί τε καὶ ὀπισθότονοι προσερρήθησαν. (*Ti.* 84e5-9)

Whenever (air) surrounds the tendons and the veins (located) there and swells up the *epitonoí* (the great muscles of the arm and shoulder) and the attached nerves, it then bends them backwards. From this suffering of combined-stretching, the diseases “stretchings” (*tetanoi*) and “backwards-stretchings” (*opisthotonoí*) have been named.

<sup>145</sup> The word φύσα, for example, can be used to mean “bellows,” as in Aristophanes’ *Nu.* 405.

<sup>146</sup> Cf. page 12 above.

The diseases τέτανοι and ὀπισθότονοι are both mentioned frequently within the Hippocratic Corpus. This frequency in a variety of works shows that these ailments were relatively common among the Greek populations. Although these diseases are discussed in greater detail within this collection than they are by Plato, the symptoms are very consistent. The absence of any mention of these diseases outside of Plato and the Hippocratic Corpus shows that Plato had good reason to state that these symptoms have been given these names (προσερρήθησαν); the specific labeling of this pain (παθήματος) through diagnosis appears to remain in the domain of the medical community. Doctors appear to have been familiar with the disease, but it is likely that the lay-community did not assign such names to their afflictions.

Plato in this section also comments on the naming of epilepsy, a disease that received a great deal of attention among ancient writers because of the belief that it was brought on by the gods: νόσημα δὲ ἱερᾶς ὄν φύσεως ἐνδικώτατα ἱερὸν λέγεται (Ti. 85b1-2). He states here that the cause of this disease is due to black bile (χολή μελαίνη) that travels towards the most divine circuits (περιόδους...θεοτάτας), located in the head. This bile scatters these circuits and disturbs them causing sleep.

This statement that Plato makes bears some similarities to the opening line of the Hippocratic treatise dedicated to the sacred disease, *De morbo sacro*: Περὶ μὲν τῆς ἱερῆς νόσου καλεομένης ᾧδ' ἔχει ("This is the state of the the so-called sacred disease"). The author of this work, however, argues that this illness is no more sacred than any other disease. He also contradicts Plato as to the physical cause of the disease. He believes that the "sacred disease" afflicts those who have too much phlegm, but not those who have a surplus of bile. In general, writers within the Hippocratic Corpus

sought to demystify the origin of afflictions. The work *De morbo sacro* is the only one within the corpus that has any significant mention of divine influences.

By assigning the disease to an excess of bile which is forced upon the most divine part of the body, Plato is essentially revealing, on a small scale, his main intent in the *Timaeus*: to harmonize the theories of natural philosophers with his metaphysics. If one is to believe that both the theories of the physicians and the theories of Plato are correct, then they must be shown to be compatible with one another. In the instance of the “sacred-disease” we see that Plato uses the verb λέγεται to lend support for his harmonization of the natural and spiritual worlds. This use, however, is in direct contrast to the author of the *De morbo sacro*’s use of καλεομένης. When the author of *De morbo sacro* uses καλεομένης he does so leaving the impression that people do call it sacred, but that they are incorrect. When Plato uses λέγεται, however, he seems to be drawing proof for his argument that the head is divine from the idea that the disease is called sacred by common consensus. It is impossible for Plato to prove that either the head or the disease is divine. But by suggesting that it is general knowledge that epilepsy is a disease from the gods, and by proposing a biological agent working upon the divine, Plato has effectively (though unscientifically) dealt with two problems at once.

The remainder of the technical terms for diseases that Plato uses within this section of the *Timaeus* lack the addition of any form of “so-called” that suggests Plato’s special interest in their names. They are, however, all used as examples of diseases caused by an overabundance of a specific humor.<sup>147</sup> The ailments mentioned are white-

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<sup>147</sup> Plato generalizes the diseases like ἀλφός saying, καὶ τὰ τούτων συγγενῇ νοσήματα (“and the diseases related to these”). He does the same when discussing

leprosy (ἀλφός), diarrhea (διαρροία), and dysentery (δυσεντερία). Although this present work will not allow us to go into any great detail regarding the relationship between these diseases and their causes, a few comments will be made on their occurrences in other works.

The three diseases listed in the above paragraph, with the exception of δυσεντερία, are used only once by Plato. They are, however, seen in several Hippocratic works. The intestinal disorders appear most frequently. The author of the treatise *Airs Waters and Places* (3) mentions both διαρροία and δυσεντερία. Yet the majority of instances are in the collections of notes on specific cases that physicians have made.<sup>148</sup> In Attic writings, Aristotle mentions both of these several times in his corpus.<sup>149</sup> Theophrastus also mentions each of these once in his *Historia plantarum* (9.20.3, 4.4.5). These ailments are mentioned by the authors in passing while discussing a variety of subjects ranging from a cure for the illnesses (Arist. *HA* 522b10) to the effects caused by some fruits (Theoph. *HP* 4.4.5). The relatively frequent appearance of these sicknesses both in Attic writings and in the bedside notations in the Hippocratic Corpus suggests to us that both of these were well-known conditions in Greece. This also provides an explanation why Plato uses δυσεντερία outside of the *Timaeus* in the *Theaetetus*. As is common in Plato's dialogues, the introduction of the *Theaetetus* begins with a description

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διαρροία and δυσεντερία: καὶ τὰ τοιαῦτα νοσήματα πάντα ("and all the other such diseases"). N.B. Plato's use of νοσήματα when referring to specific types of diseases. For a discussion on a similar classification of disease-types in Hippocratic prognostication, cf. Edelstein (1967) 66.

<sup>148</sup> E.g. *Prorrhethicon* 2.4; *Coa praesagia* 229; *De morbis* 1.7, 2.48

<sup>149</sup> διαρροία: *GA* (728a22), *HA* (522b10, 605a27), and *Pr.* (873b3). δυσεντερία: *GA* (775b32), *HA* (638a15, 638a37), and *Pr.* (860a31, 861b4, *et passim*).

of its dramatic setting. Here, Euclides meets Terpsion who had been looking for him. Euclides explains that he has been at the harbour with Theaetetus before he was transferred to Athens. Euclides explains that Theaetetus had been injured while with the army, and that a disease had broken out among the soldiers: τὸ γεγονὸς νόσημα ἐν τῷ στρατεύματι (142b2-3). To this Terpsion exclaims, “Surely it isn’t dysentery?” By surmising that the disease was dysentery, Terpsion gives us reason to believe it was one of the more common sicknesses; camp conditions must have been particularly good breeding-grounds for dysentery. Herodotus (8.115) and Polybius (32.15.14) both mention the outbreak of this disease among armies.

Ἄλφός is seen far fewer times than the above intestinal disorders. In all its instances in the Hippocratic Corpus it is paired with its close cousin λέπρη (leprosy); both are diseases of the skin, but white-leprosy is not contagious. When discussing ἡ δυσχέρεια (disgustingness) in his *Characters*, Theophrastus suggests to us that it would not be unusual to see a man in Athens afflicted with this condition.<sup>150</sup> When Plato mentions the affliction, he stresses its whiteness, calling it λεύκας ἄλφους.<sup>151</sup> This redundancy is a little unusual; the illness is not seen with this complimentary adjective

<sup>150</sup> *Char.* 19.2: οἷος λέπραν ἔχων καὶ ἄλφον καὶ τοὺς ὄνυχας μεγάλους περιπατεῖν καὶ φῆσαι ταῦτα εἶναι αὐτῷ συγγενικὰ ἀρρωστήματα· (“[The disgusting man] is the sort of man who has leprosy, alphos and long fingernails and walks around saying that these things are hereditary sicknesses”). Cf. *Aff.* (35): Λέπρη καὶ κνησμὸς καὶ ψώρα καὶ λειχήνες καὶ ἀλοφὸς καὶ ἀλώπεκες ὑπὸ φλέγματος γίνονται· ἔστι δὲ τὰ τοιαῦτα αἴσχος μᾶλλον ἢ νοσήματα· (“Leprosy, itching, psoriasis, ring-worm, alphos and alopecia are caused by phlegm: these sorts of things are an embarrassment rather than diseases.”)

<sup>151</sup> Cf. LSJ s.v. ἄλφός. This word originates from the root “ΑΛΦ” meaning “white.” Cf. Lat. *albus*.

until the first century A.D.<sup>152</sup> The phrase in Plato, with its pleonastic adjective λεύκας, does seem to have a poetic ring to it. Like with the “sacred disease,” however, it seems that he is basing his opinion on the relationship between the colour of the ailment and the colour of the proposed cause: λεύκας ἀλφούς, he states, is caused by τὸ λευκὸν φλέγμα (white phlegm). It appears that he provides support for his postulate that white phlegm is the cause of the disease by stressing the “whiteness” of ἀλφός (which contains the root “white”) through the unnecessary and redundant inclusion of λεύκας (essentially rendering the phrase “white white-leprosy”).

### Summary

When Plato mentions afflictions and reactions of the body – headaches, vomiting, passing stool, hiccoughing and yawning – it is nearly always in a medical context. This implies that Plato had some interest in and knowledge of the medical practitioner’s role in healing. The words are often seen in dramatic works outside of a technical sense, so we know that they did have wide use among the general population. It is clear from the context, however, that he has some faith in the physician when curing symptoms or inducing reactions. From his use of these words limited to medical contexts it is implied that he felt such subjects were best discussed in clinical settings. Plato refers to hiccoughing and yawning in interludes or asides among more pithy investigations, so it is possible that by discussing these words in a medical context he can enjoy both the benefits of the light-hearted subjects while maintaining decorum in his dialogues.

He also uses the adjectives ἀνίατος and ἀλγηδών with similar restrictions. Instead of being limited to medical contexts, however, Plato uses these words strictly in a



metaphorical sense when discussing subordination to a higher power. From its appearance in other writing, we know that this metaphor was active in Athens and in all likelihood was not invented by Plato.

When using νόσος and νόσημα, Plato also appears to be following the general trend of Athenian usage. While νόσος is seen far more times than νόσημα in dramatic works, in prose works there tends to be a closer balance between the use of the two words. This seems indicative of prose writers' greater focus on specific ailments and of a corresponding absence of discussions on generic "disease" and metaphorical uses of the terms. Plato, as we have seen, conforms to the practice of these authors in using the words in limited contexts; never does he use the words in a metaphorical context. Yet he almost always uses νόσος in spiritual and ethical analogies. Plato uses λοιμός the least when mentioning generic diseases. In the two instances where the word does occur, he conforms with his predecessors Homer, Hesiod, and Thucydides by using it in connection with divine cause.

Specific technical names for diseases and ailments are uncommon in Plato's writings. When they do appear, Plato seems to have particular interest in the formation of the words. Conditions such as flatulence (φύσα), catarrh (κατάρροος), and "stretchings" (τέτανοι) are discussed not so much with an interest in the biological origins as an interest into what their names reveal about their natures. There are times when Plato does not explicitly show interest into the naming process (e.g. by using λέγεται), such as in the cases of epilepsy and white-leprosy. Even in these instances, though, his explanations for them are more closely linked to an analysis of their names

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<sup>152</sup> Dioscorides *Euporista* 1.112.

than with an analysis into the true causes of the disorders and diseases. This suggests that Plato is, as in his study of anatomy, drawing evidence from personal reflection rather than through the scientific inquiry that we often see in the Hippocratic Corpus.

### **3. Doctors and Their Art**

I shall next discuss Plato's use of words and phrases concerning medical practitioners. In this area of inquiry, once again we see that Plato does not wish to cloud his meaning with jargon, but rather approaches the subject of medicine (physician, medicine, outcome) from the vantage point of a layman. Within his dialogues Plato provides us with unique insight into how the people of Classical Athens may have viewed the medical profession and the expectations they had for the practitioner to produce results. Yet it is important to remember that Plato generally avoids prolonged discussions concerning the medical profession, but rather employs such discussion to illustrate his point through comparison. As a result, we see that Plato is sometimes inconsistent with his descriptions of doctors and their craft.

In order to investigate Plato's understanding and opinion of physicians, my analysis of terms concerning doctors and medicine will begin with definitions of ἰατρική and ἰατρός that Plato provides within his dialogues. Next I shall examine his discussions on the conflict between skilled physicians and pretenders, as well the different ideologies that physicians follow. From this I shall look at adjectives and complements that Plato uses to define ἰατρός and ἰατρική. Through this approach we shall see that there are some underlying, although not immediately apparent, patterns in his treatment of physicians and the medical art. We shall also see that Plato likely is not the first to use the analogy of the doctor and the medical art to illustrate his concepts. Similar analogies also appear in the writings of his contemporaries, and there is evidence that some of these might have been created by the historical Socrates.

### Definitions of the medical art

Plato, always striving for clear delineations in his subject matter, provides a handful of definitions for the medical craft within his dialogues. Perhaps the most clear and concise definition Plato would give for the medical art is found in *Charmides*. 171a8:

Καὶ ἡ ἰατρικὴ δὴ ἑτέρα εἶναι τῶν ἄλλων ἐπιστημῶν ὠρίσθην τῷ τοῦ  
 ὑγιεινοῦ εἶναι καὶ νοσῶδους ἐπιστήμη. (171a8)

And the medical art is defined as separate from the other skills by reason that it is the knowledge of the healthy and unhealthy.

This definition, relying upon two opposites (healthy and unhealthy) shows a precision anticipating the method used in the Platonic *Definitions* and the description of character types in Aristotle's *Nichomachean* and *Eudemian Ethics*.<sup>153</sup> In other instances, however, he places the emphasis on areas of medical knowledge that depend upon his current theme.

Sometimes he places particular importance upon a doctor's knowledge of health:

Οὐκοῦν καὶ ἰατρική, ἔφην, ἐπιστήμη ἐστὶν τοῦ ὑγιεινοῦ; (*Chrm.* 165c8)

So then, I said, the medical (skill) is a knowledge of health?

and:

ἐν αὐτοῖς τοῖς σώμασιν τοῖς μὲν ἀγαθοῖς ἐκάστου τοῦ σώματος καὶ  
 ὑγεινοῖς καλὸν χαρίζεσθαι καὶ δεῖ, καὶ τοῦτό ἐστιν ᾧ ὄνομα τὸ ἰατρικόν,

<sup>153</sup> Cf. also *Grg.* 495e5-9: Ἄρ' οὖν...ἀνάγκη περὶ αὐτῶν (sc. τῶν εὖ πράττοντων καὶ τῶν κακῶς πράττοντων) ἔχειν ὥσπερ περὶ ὑγείας ἔχει καὶ νόσου; οὐ γὰρ ἅμα δὴπου ὑγιαίνει τε καὶ νοσεῖ ὁ ἄνθρωπος, οὐδὲ ἅμα ἀπαλλάττεται ὑγείας τε καὶ νόσου. ("So, is it not necessary that these types (i.e. those doing good and those doing bad) be analogous to health and disease? For neither can a man be both healthy and sick, nor can he be freed from both health and disease at the same time.")

τοῖς δὲ κακοῖς καὶ νοσώδεσιν αἰσχρόν τε καὶ δεῖ ἀχαριστεῖν, εἰ μέλλει τις τεχνικὸς εἶναι. *Smp.* 186c1-4

in those bodies, one must encourage that which is good in regards to the good and healthy (loves) of the body – and this is the very report of medicine – but also one must discourage that which is base in bad and diseased men if one intends to be a skillful (practitioner of medicine).

The two above definitions are conditioned by the subjects of the dialogues, but must still represent beliefs held by the community. The second example from *Charmides* (165c8) in particular, I think, ought to be considered the most concise definition an Athenian would give when asked what the knowledge of medicine is. The question (to which a “yes” response is expected and given) serves as a premise from which Socrates wishes to pursue the definition of ἐπιστήμη. The proposed definition, then, must be correct (or at the very least, appear to be so) if Socrates is to elicit a true and proper response from Charmides. Eryximachus suggests a similar definition for the medical art; it is, in short, the promotion of the healthy, but he adds that it is also the hindrance of the unhealthy. In these instances, both Socrates (as a layman) and Eryximachus (as a professional) appear to share the same fundamental understanding of the medical art.<sup>154</sup>

To state that the science of medicine is the science of health in its various states is probably nothing that Plato or any of his contemporaries would consider groundbreaking. Yet the emphasis he places on health (ὑγίεια) as the object of a medical practitioner’s

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<sup>154</sup> Plato must have rendered the *dramatis personae* of the *Symposium* so that there would be some realistic representation of either a person (e.g. through specific idiosyncrasies the individual was known to have) or his craft (e.g. through specialized vocabulary and ideologies). If he did not, the work would almost certainly be considered stilted among his contemporaries. So there is some stock in believing that what Plato puts into the mouth of Eryximachus when it concerns the definition of medicine is not contrary to popular expectation. Yet I am compelled to concede that Plato, as with all writers, is seeing the world (as well as the composition and unity of his work) through

knowledge is somewhat different from what a bystander today might suggest. Most people today would say that the medical art has illness as its primary object of interest. Plato, in his second definition from the *Charmides* (165c8), has omitted any mention of disease or illness. In the *Symposium*, he stresses the promotion of health by separating it with a parenthesis (καὶ τοῦτό ἐστιν ᾧ ὄνομα τὸ ἰατρικόν) before even mentioning illness.<sup>155</sup> A knowledge of health, according to Plato in both these definitions, is the *sine qua non* of the medical profession; but, if one is to be τεχνικός in the field, he must also have a knowledge of diseases.

Plato is probably implying that the medical art is concerned both with maintaining a healthy state and treating illnesses *with a view* to health. Also suggested is the medical practitioner's interest in the proper upkeep of the body. In medical practice during Plato's lifetime, the regimen for maintaining a healthy body – and this includes diet and exercise – was of chief importance among the medical community. I have discussed above above that there was often the belief that a person was responsible for his physical condition through either his proper or his improper behavior. From the evidence in the Hippocratic Corpus, it appears that a greater importance than today was placed upon a doctor knowing what makes a healthy man healthy than a sick man sick.<sup>156</sup>

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only one set of eyes.

<sup>155</sup> Eryximachus might not have even felt it necessary to mention illness if he had not been compelled to do so because of the antithesis he is setting up between good and bad Love.

<sup>156</sup> Cf. Phillips (1973) 75-92 for a synopsis of Hippocratic writings concerned with preventative medicine. In addition to diet and exercise, the Hippocratic writers were also aware of the health benefits of personal hygiene and public sanitation.

Preventative medicine was, and still is, a much easier course of action than pathological medicine. If a proper balance between diet and exercise could be reached, writes the author of *Regimen*, all men would be healthy:

εἰ μὲν γὰρ ἦν εὐρετὸν ἐπὶ τούτοις πρὸς ἐκάστου φύσιν σίτου μέτρον καὶ πόνων ἀριθμὸς σύμμετρος μὴ ἔχων υπερβολὴν μήτε ἐπὶ τὸ πλεον μήτε ἐπὶ τὸ ἔλασσον, εὖρητο ἂν ὑγείη τοῖσιν ἀνθρώποισιν ἀκριβῶς. (*Vict.* 2)

For if, in addition to these things,<sup>157</sup> the proper balance of food and exercise were to be found for each man's body so that there is neither an imbalance towards the greater nor one towards the lesser, health for men would be securely found.

Plato often chooses to focus his definitions of medicine on its role in maintaining positive health.<sup>158</sup> However, he does not neglect to acknowledge a doctor's role in healing the sick. Sometimes, he even eliminates any word of health-maintenance in favour of a sole emphasis on treatment. In the *Gorgias*, for example, Plato specifically extends this care for the body (ἡ τοῦ σώματος θεραπεία) to include the profession of gymnastics as well as that of medicine (*Grg.* 464b5). This connection between the two professions is also reflected in the *Phaedrus*, where Plato places the souls of both professionals alone in the 4<sup>th</sup> category<sup>159</sup> (*Phdr.* 248d5). In these examples, gymnastics and medicine represent two sides to the same coin; a person goes to a gym to maintain his health, but goes to a doctor to restore it. Health in this context is the domain of the gymnastics instructor and illness the domain of the doctor. In *Lysis* 217a5-8, Plato goes so far as to state that a person who is of good health has no need for a doctor:

<sup>157</sup> That is, a knowledge of the stars and seasons.

<sup>158</sup> Cf. Stalley (1996) 360 for a short discussion on Plato's focus on regimen in the *Timaeus* and the *Laws*.

<sup>159</sup> In this passage Plato describes the nine strata of souls ranging from those who have

ἰκανῶς γὰρ ἔχει, ὥστε ὑγιαίνων οὐδεὶς ἰατρῷ φίλος διὰ τὴν ὑγίειαν. ἦ γὰρ; – Οὐδεὶς. – Ἀλλ' ὁ κάμνων οἶμαι διὰ τὴν νόσον. – Πῶς γὰρ οὔ;

The situation is thus, so that one who is healthy, because of his health, is no friend to a doctor. Isn't this so? – Yes. – But one who is in pain, I believe (is a friend to a doctor) because of (his) sickness. – How could it be otherwise?

It is reasonable to state that a healthy person would not actively seek out a doctor, since he does not need to change a regimen that has been proven effective. A sick person, on the other hand, must attain medical aid to help him to correct his unhealthy practices. For this help to be effective a doctor must have certain attributes. Plato tells us in *Gorgias* 450a that the medical craft makes one both able to possess knowledge about the sick and to speak about the sick. Here, Plato wishes to elicit some information about rhetoric, so he overemphasizes the role of speaking. However, it is clear from this that, as Eryximachus suggested in the *Symposium*, a skilled (τεχνικός) doctor must be able to recognize sickness and direct a patient on how to remedy it.

### **Pretenders to the art of medicine**

Plato was quite aware that not all doctors were created equal. There are examples within his dialogues that clearly suggest he was familiar with individuals who either feigned knowledge about the medical profession or were simply ineffective as physicians. In the *Charmides*, for instance, Socrates is asked by Critias to pretend (155b5: προσποιήσασθαι) to be knowledgeable of the proper drug to cure Charmides' headache. Although this example does not explicitly make a connection between Socrates and a

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see the most Truth (philosophers) to those who have seen the least (tyrants).



doctor, the overall theme of the dialogue portrays Socrates and Charmides as interacting on a physician/patient level. Near the close of the work, Plato brings the reader's mind back to the initial impetus of their conversation. Here, he uses the example of a man pretending (170e1: προσποιούμενον) to be a doctor while Socrates examines the limits to a temperate man's knowledge. It is difficult to tell with certainty in this example what sort of guise a person pretending to be a doctor would don. He could be a man who makes no pretenses about being a professional doctor, yet professes to know what things are good and what things are bad for the body. He could also be a man who is actively trying to pass himself off as a skilled practitioner of medicine. The latter of these two possibilities is perhaps the most probable in this occasion; Socrates is trying to show to Charmides that a temperate man, if by this is meant a man with a knowledge of knowledge, would be unable to tell if one προσποιούμενον ἰατρὸν εἶναι ("pretending to be a doctor") was or was not a real doctor. In this example, the sense seems to be that there is some deception intended on the part of the pretender to convince another that he is a doctor. However, in *Gorgias* 464d4 we also see an example of one without pretenses to be a doctor, namely a pastry chef (ὀψοποιός), laying claim (προσποιεῖται) to knowing what is the best for one's body. The deceit in this example, then, is for a non-professional to pretend to know more than a professional about what is healthy for a person.

The appearance of those who either deceive people into believing they are doctors or of those who usurp the abilities of the medical profession must have been relatively common in Plato's Greece. There were no governing bodies outside of loosely knit

guilds that dictated who could call himself a doctor.<sup>160</sup> In such an environment, specialized training (if there was any at all) must have differed greatly in quality. As Socrates suggests in *Gorgias* 514d, the ability of a doctor to produce positive results is what ensures his continued livelihood.<sup>161</sup> While a doctor who regularly healed (or at least appeared to heal) his patients might have been assured a consistent income, the exact limitations to a doctor's powers and to his areas of investigation were only in the infancy of being defined.

### Criticism of physicians and their schools

Within the Hippocratic Corpus there is no specific mention of a person literally pretending (προσποιούμενος) to be a doctor. However, the author of *On the Sacred Disease* does criticize those who use magic and purification to try to cure epilepsy for laying claim to an area that concerns only doctors. In this example, there are some strong parallels with the pastry chef of Plato's *Gorgias*: the offense of both is attempting to reign over a doctor's art (τέχνη). There is even strong evidence that an impostor has made his way into the Hippocratic Corpus. The author of *De arte*, owing to that work's highly rhetorical feel, is generally believed to have been written not by a doctor, but by a sophist.<sup>162</sup>

<sup>160</sup> Cf. the *Hippocratic Oath*, the most famous of all Hippocratic writings, which is now commonly believed to be an oath sworn by members of a specific medical guild. For a lengthy discussion on this work, cf. Edelstein (1967) 4-63.

<sup>161</sup> (*Grg.* 514d3-8) **Soc:** So, if striving for public duty we summoned one another, (both) being competent (ἱκανοί) doctors, we would no doubt examine each other – I you, and you me – ‘By the gods, come now: How does Socrates direct the body towards a healthy state? or what man – either slave or free man – has been cured of a disease because of Socrates?’

<sup>162</sup> Potter (1988) 15.

Authors of works within the Hippocratic Corpus appear more willing to criticize their peers than to say that someone is pretending to be a doctor. In the opening to *On Ancient Medicine*, for example, the author is quite blunt about the matter: εἰσὶν δὲ δημιουργοὶ οἱ μὲν φαῦλοι, οἱ δὲ πολλὸν διαφέροντες (“There are some useless practitioners, but others are quite different”) (1.11-12). If this statement causes any ambiguity as to the number of bad doctors compared to the good, the author is more direct later: οἱ κακοὶ τε καὶ οἱ πλεῖστοι ἰητροί (“the bad doctors that make up the majority”) (1.29-30). The author of *Precepts* appears to acknowledge a similar inconsistency of skill among practicing doctors when he mentions οἱ τὰ τῆς ἰατρικῆς ἔργα κακῶς δημιουργέοντες (“those practicing medicine badly”) (1.25).<sup>163</sup> There are several examples of this pessimism concerning the average doctor’s skills within the Hippocratic Corpus. These authors address the topic of gross ineptitude among physicians with some degree of enthusiasm, and expectedly other medical writers defend against such statements with equal zeal.<sup>164</sup> Since a person’s well-being is at stake when

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<sup>163</sup> It is notable that the authors of both *On Ancient Medicine* and *Precepts* choose to use the word δημιουργός when referring to good and bad doctors. The word is used infrequently in the Hippocratic Corpus. It is seen 18 times in total; 11 in *De arte*, 3 times in *On Ancient Medicine*, 2 times in *Precepts* and 2 times in the *Epistulae*. All of these works are heavily weighted towards, if not wholly focused upon, discussing the role of doctors within society. They all but ignore discourses on any specific disease. A doctor is only good or bad in respect to his ability to address the health concerns of his community, and it is his τέχνη as a δημιουργός that defines him. Plato frequently describes doctors as δημιουργοί and groups them along with the shipbuilder (ναυπηγῶν; *Grg.* 455b3), ship-pilot (κυβερνητής; *R.* 360e7), and gymnastic-master (παιδοτρίβης; *Grg.* 504a2).

<sup>164</sup> Particularly notable are the authors of *De arte* and *De morbo*.

selecting a doctor, it is little surprise that this debate over good and bad doctors would spill onto the streets of a city such as Athens.

Plato appears to have picked up on this when he employs the analogy of the good and bad doctor in some of his dialogues. One of the clearest instances of this occurs in *Protagoras* (345a f). In this passage, Socrates is discussing the natures of good and bad people in the context of Pittacus' maxim, "Oh men, it is difficult to be good" ( ὦ ἄνθρωποι, χαλεπὸν ἐσθλὸν ἔμμεναι). For Socrates, in order to become a bad doctor one must first display some dexterity in the field, otherwise he would never have had the chance to be a bad one. In the broad application of this maxim, a man cannot become bad if he has always been bad; he can only become bad if he had once been good. This line of argument, at its conclusion, is intended to provide support for Plato's central ethical theme: the natural state of everything and everyone is oriented towards the good. It is only when there is corruption of the good (by deterioration through time, turmoil, illness, etc.) that the bad comes into being.<sup>165</sup>

In the *Charmides*, Socrates questions the ability of Greek doctors to treat most diseases since they focus their attentions not upon the body as a whole system, but only upon the area(s) affected:

ἀλλὰ τοῦτο καὶ αἴτιον εἶη τοῦ διαφεύγειν<sup>166</sup> τοὺς παρὰ τοῖς Ἑλλήσιν ἰατροὺς τὰ πολλὰ νοσήματα, ὅτι τοῦ ὅλου ἀμελοῖεν οὐ δέοι τὴν

<sup>165</sup> It is interesting to compare this concept with the mantra of the modern Free-Mason society: "We cannot make a bad man good, but we can make a good man better."

<sup>166</sup> It seems to me that Plato is likely inverting the meaning of διαφεύγειν here. Although it is used by Plato in the general sense of escaping (cf. *Soph.* 231c6, *Smp.* 184a2, *Grg.* 473e1), it is also commonly used in medical works of escaping a disease (cf. *Acut.* 11.63, *Morb.* 1.12). See Page (1953) 105 for Thucydides' use of the word during his account of the plague in Book 2 of his *History*.

ἐπιμέλειαν ποιῆσθαι, οὐ μὴ καλῶς ἔχοντος ἀδυνατον εἶη τὸ μέρος εὖ ἔχειν. (*Chrm.* 156e3-6)

and this may be the reason that many diseases escape (sc. the treatment of) physicians among the Greeks. It is because they neglect the whole for which one must show care. If (the whole) is not well, then it would be impossible for a part of it to be well.

It is important to note that Socrates is not stating his own opinion here, but rather relating the opinion of a doctor Zalmoxis.<sup>167</sup> Socrates, as the tale goes, had the opportunity to meet with this doctor while he was stationed in Potidaea (Southern Thrace), and it is from this man that he learned a cure for Charmides' headache. Socrates gives the impression that there is a vast difference between the abilities of Thracian doctors and those of Greeks. It is difficult to say whether this contrast between good (Thracian) and bad (Greek) doctors is a personal attack upon Greek medical knowledge. Socrates, owing to a rare visit by a Greek to Thracian territory, is probably in part exploiting his companions' unfamiliarity with Thrace and its culture in order to impress the young man with a strange and magical cure for his affliction. By making the statement come from the Thracian doctor that the Greeks are unprepared to treat most diseases, Socrates can avoid the appearance that it is he who is critical of his countrymen's medical skills.

If we are to take the Thracian doctor's criticism of Greek medicine as anything but ignorance of Greek medicine or pride in Thracian medical knowledge, we are still left

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<sup>167</sup> Herodotus provides the first literary reference to Zalmoxis (Ζάλμοξις). He states that Zalmoxis was either a god worshiped by the Getae or a former slave of Pythagoras (*Hist.* 4.94-5). According to Socrates, Zalmoxis was a god-king who ruled Thrace. Socrates remarks that Zalmoxis had doctors befitting of a god; they are said to be able to make men immortal.

with some difficulty over how we ought to read Socrates' statement that Greek doctors do not treat the body as a whole (τὸ ὅλον) but rather are concerned with its parts (τὰ μέρη). It appears that Socrates here is making some qualified statement about Greek medicine. Plato makes a well-known statement about Hippocrates in the *Phaedrus* that seems to be at odds with Socrates' statement in the *Charmides*:

**ΣΩ:** Ψυχῆς οὖν ἀξίως λογοῦ κατανοῆσαι οἷε δυνατόν εἶναι ἄνευ τῆς τοῦ ὅλου φύσεως;

**ΦΑΙ:** Εἰ μὲν Ἱπποκράτει γε τῶ τῶν Ἀσκληπιαδῶν δεῖ τι πιθέσθαι, οὐδὲ περὶ σώματος ἄνευ τῆς μεθόδου ταυτῆς. (270c1-4)

**Soc.:** So do you think that it is possible to know the soul thoroughly without knowing the whole of one's natural-self?

**Phdr.:** Well, if we are at all to believe Hippocrates, the descendant of Asklepios, we cannot even (sc. know) about the physical body without this method (of analyzing the whole).

Plato suggests here that Hippocrates does in fact believe that a (Hippocratic) doctor must understand the whole of a man's nature to be able to know about the specific nature of each part. In the following passage Socrates briefly outlines the method of Hippocrates as he understands it: one first determines whether the object of examination is simple (ἀπλοῦν) or manifold (πολυειδές), then, on the basis of its nature, one must consider either what its effects are or how it is affected. It seems the goal of Hippocrates was towards a single understanding of illness. This is quite in line with the theories of the early Ionian philosophers Thales, Anaximenes, and Anaximander, who all wished to assign as few foundational elements to the Universe as possible.

The definition of Plato's τὸ ὅλον has been widely discussed among modern scholars. The general consensus seems to be that τὸ ὅλον refers not to the whole of man,

but to the universe. Indeed, τὸ ὅλον is used by natural philosophers in a technical sense to mean “everything.”<sup>168</sup> Jones argues in favour of this opinion by noting that the addition of ἀνθρώπου would be needed in the above quote to say “the whole of man.”<sup>169</sup> Jaap Mansfeld also believes in reading τὸ ὅλον in this passage to mean the entire universe; he shows convincingly how certain parts of the *Phaedrus* are influenced by the opinions of early natural philosophers, and how Plato’s own process of division agrees with such an understanding of the world.<sup>170</sup>

The scope of the present work does not permit extensive of investigation into this difficult subject, yet a few words on the matter are needed to clarify my position. I have no doubt in Mansfeld’s findings that Plato intended τὸ ὅλον to mean “the universe,” and that Plato’s ἡ τοῦ ὅλου φύσις, which notably comes before any mention of Hippocrates, refers to the nature (or makeup) of existence. When it comes to the method of Hippocrates, however, we must be careful to differentiate between Hippocrates the natural philosopher and Hippocrates the practicing physician. In this regard, it is important to note that *Phaedrus* is the first to name him in this passage. This is in the context of one knowing about the body (περὶ σώματος). The Hippocratic Corpus contains several occurrences where some variation of τὸ ὅλον σῶμα is mentioned.<sup>171</sup> From this we know that at times physicians viewed the body as an alloy of parts, or as a single unit. The use of τὸ ὅλον as it appears in a medical context may be considered

<sup>168</sup> Cf. Anaxag. DK 14.45; Emped. DK 25.81; Parm. DK 8.7.

<sup>169</sup> (1946) 17.

<sup>170</sup> (1980) 360-1. Cf. also Scarborough (1976) 223-5.

<sup>171</sup> *Art.* 67; *Int.* 54; *Nat. Mul.* 41; *Mul.* 220; *Superf.* 29. Cf. also Diog. Apoll. fr.6.

technical, a shorthand for ἡ τοῦ ἀνθρώπου φύσις.<sup>172</sup> When Socrates first mentions Hippocrates at 270c9 he states, “Consider what Hippocrates and true reason (ὁ ἀληθὴς λόγος) say about the [subject of] nature (φύσις<sup>173</sup>).”

My contention is this: Socrates uses τὸ ὅλον and ἡ φύσις at 270c2 in the cosmological sense before any comment about Hippocrates. Next, in reply, Phaedrus first introduces Hippocrates and his knowledge of τὸ σῶμα on the basis of an understanding of τὸ ὅλον. Phaedrus, I believe, through an analogy from the vocabulary of the natural philosophers, is using τὸ ὅλον in this instance in its medical sense seen in the occurrences in the Hippocratic Corpus. Socrates continues his discussion of ἡ φύσις in generic terms, as both Hippocrates and true reason would see it, transcending the technical meanings of the two words in natural philosophy and medicine. As I have shown, both τὸ ὅλον and ἡ φύσις have distinct technical meanings in cosmology and medicine. Socrates introduces the terms in their former meaning, but Phaedrus, through the use of analogy, transfers their meaning into that of medical jargon. Socrates

<sup>172</sup> Which is, in passing, a title of a work within the Hippocratic Corpus, περὶ φύσιος ἀνθρώπου, a work attributed to Hippocrates' son-in-law Polybus. Cf. Mansfeld (1980) 344.

<sup>173</sup> Φύσις was of special interest to the cosmologists and physicians. The earliest Ionic philosophers attempted to assign a single φύσις to the *Kosmos*. This attempt was abandoned and replaced by alternate theories which retained the same term. For example, Atomists held that there were an infinite (ἄπειρος) number of φύσεις (*Phys.* 184b20-1). Empedocles, on the other hand, believed that there were four basic elements, and that each one possessed its own φύσις. This elemental understanding of the *Kosmos* was transferred by analogy to the construction of the human body and disease (cf. *de Arte* 11.9; *NatHom.* 3.15). From the strong undertones of Empedocles' philosophy found throughout the *Timaeus*, it is clear that Plato had a similar understanding. Cf. Taylor (1928) 18, and Thesleff (1967) 93 for the scientific nature of the word. Cf. also Burnet (1920) 9-11, 363-4 for a concise overview of the word's history in philosophical thought.



concludes the analysis by describing in abstract terms the relationship between whole and part and between active and passive. The point to this union is that everything is both a part of something and a whole.<sup>174</sup> Hippocrates may very well have studied the relationship between man (a part) and the universe (the whole). This is of great importance to natural philosophers, yet it is valuable to a medical practitioner only as a diagnostic tool when ἡ τοῦ νόσου δύναμις is an agent outside of the body. When a part of the body is the problem, or when it is recognized as the area affected, a successful physician ought to take thought of the effects this part has upon the whole of the person (i.e. prognosticate) in order to apply the proper cure.<sup>175</sup> In short, Hippocrates perhaps did feel it was necessary to know the nature of the universe if one wished to know the nature of man. Yet as we can infer from the technical use of these words elsewhere in a medical context, Hippocrates must have used τὸ ὅλον and ἡ φύσις in a medical context.

The selection from the *Charmides* cited above adds further evidence that there were likely at least some doctors who did treat the body as a ὅλον. In the sentence which precedes the quote I have cited, Socrates does not suggest that the “Thracian” doctors

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<sup>174</sup> Cf. Wilber (1996) for an interesting modern account of *holons* (levels of entities that can be said to be whole, or that have a level of autonomy) and their relationship to the parts (the communion of lower *holons*). It is Wilber’s opinion that there is an infinite chain of relationship between parts and wholes that as a sum comprise the *Kosmos*. His theory is comparable to the Atomists who believed in an infinite number of base elements (cf. n. 178, below). The Atomists, however, were reductionists, whereas Wilber is both a reductionist and productionist (i.e. he also believes in an infinite sequence of higher forms that both include and transcend the lower forms. This infinite sequence of production is what Aristotle found fault with in Plato’s theory of Forms).

<sup>175</sup> For an account of the conflict between philosophy and medicine, cf. Cornford (1942). In this work he compares the natural philosophers’ *a priori* study of the κόσμος with the physicians’ *a posteriori* study of health.

progressed their study beyond the confines of the human body into the realm of the *kosmos*.<sup>176</sup> Here, Socrates extends the treatment of an individual only so far as his soul which is, to qualify its nature, the *sine qua non* of human existence; the alpha and omega. While there is no mention of Hippocrates in this section, the strong parallels in method between him and the Thracian physicians suggests that Plato had a method of treatment in mind that was actually practiced.

There are some Hippocratic works that appear to follow a concept of a single unit as the goal for health or for the understanding of a healthy body. The author of *On Ancient Medicine* wrote that the best foods for the body were those that were whole (ὅλον) and simple (ἀπλόον) (14.41). The reason for this, he states later within the chapter, is that complex foods confound the body and lead to a disruption in health. The authors of *Regimen I* and *Places in Man* have a similar concept of health. The author of *Regimen I* writes that if one wishes to write correctly about the proper regimen of the human body he must first know (and know thoroughly) the nature (φύσις) of the whole of man (2.1-3).<sup>177</sup> The author of *Places in Man* (2) reveals that he is of the same school of thought when he comments: Φύσις δὲ τοῦ σώματος ἀρχὴ τοῦ ἐν ἱητρικῇ λόγου (“The beginning of medical study is the nature of the body”). The method of research implied here does not rule out a manifold understanding of the human body, but it does

<sup>176</sup> ὅτι ὥσπερ ὁπσθαλοὺς ἄνευ κεφαλῆς οὐ δεῖ ἐπιχειρεῖν ἰᾶσθαι οὐδὲ κεφαλὴν ἄνευ σώματος, οὕτως οὐδὲ σῶμα ἄνευ ψυχῆς, κτλ. (*Chrm.* 156e1-2); (“because just as one must neither treat the eyes apart from the head, nor the head apart from the body, thus one must not treat the body without the soul, etc.”)

<sup>177</sup> Φημὶ δὲ δεῖν τὸν μέλλοντα ὀρθῶς συγγράφειν περὶ διαίτης ἀνθρωπίνης πρῶτον μὲν παντὸς φύσιν ἀνθρώπου γινῶναι καὶ διαγινῶναι· (“I assert that one who intends to write accurately about the regimen of man must first know – and know thoroughly – the nature of *all* of a man.”).

suggest a view of the body that leans towards a holistic understanding as opposed to a collection of parts.<sup>178</sup>

In *Gorgias* 501a, Plato appears to have a similar understanding of the science of medicine. Here, however, he elaborates on the method that a physician uses to gain knowledge of the human body by dividing the process into three parts:

ἡ δ' ἰατρική... μὲν τούτου οὐ θεραπεύει καὶ τὴν φύσιν ἔσκεπται καὶ τὴν αἰτίαν ὧν πράττει, καὶ λόγον ἔχει τούτων ἐκάστου δοῦναι (*Grg.* 501a1-3)

The art of medicine examines the nature of the thing in its care, provides a cause for things it does, and is able to provide an explanation for each of these.

The search for the nature (φύσις), cause (αἰτία), and explanation (λόγος) of the Universe and all its parts was a primary drive of the early natural philosophers.<sup>179</sup> Such a method was easily adapted and expanded to fit the needs of physicians. In this passage from the *Gorgias* Plato does not say anything about the medical art's investigation into an

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<sup>178</sup> For a Hippocratic critique of the treatment of the body as a single unit, cf. *Nat. Hom.* 2: ἐγὼ δέ φημι, εἰ ἓν ἦν ὁ ἄνθρωπος, οὐδέ ποτ' ἂν ἤλγεεν· οὐδέ γάρ ἂν ἦν ὑφ' ὅτου ἀλγήσειεν ἐν ἑῶν ("But I assert that if man were a single unit, he would never feel pain; for he would never feel pain from anything if he were one"). Although the author does not explicitly state it here, he implies by the phrase ὑφ' ὅτου that his belief is based upon an understanding of δύνάμεις (powers of action or reaction). In the *Timaeus* 32d5-33b1, Plato appears to hold a similar belief to that in *The Nature of Man*. Here Plato states that the arrangement of the *kosmos* (ἡ τοῦ κόσμου σύστασις) is formed from the complete sum of the four ὅλα (Empedocles' fire, water, earth, and air). Since the κόσμος is a complete unit composed from all other units (ἓνα ὅλον ὅλων ἐξ ἀπάντων), it is exposed to no outer power (δύναμις) that may affect it. Therefore, it is exempt from all deterioration and disease. What is most notable in the context of this present work is that Plato seems to believe in expanding spheres of ὅλα (i.e. there is more than one whole in the universe). From this, it is possible that Plato would also say that man too is a unit; he is τι ὅλον, but he is still both composed of and a part of different levels of wholes.

<sup>179</sup> Cf. Anaximander, DK 3.9a; Empedocles, DK 64.154; Democritus, DK 30.106.

understanding of the whole. While the inclusion of φύσις may suggest the study of man's entire nature, the generality of the comment means that it could just as easily be applied to the nature of a specific organ or even the nature of a disease. This may suggest that the method that Plato describes here strays from the general pathology of the school of Cos, with its focus on τὸ ὅλον, to a science that also allows for a specific study of τὸ μέρος.<sup>180</sup> Hippocrates was renowned for his scientific approach which coincided with those of the Ionic natural philosophers. The study of medicine, however, if it is to be successful, must not forsake the parts for the whole: ignorance or disregard for something's constituents inevitably leads to a misunderstanding of the entire system. This is particularly true in pathology, since the whole becomes sick because of the parts, not the parts because of the whole. The Hippocratic method could provide an explanation for the φύσις of the body, but it was not properly suited to provide treatment. As Jones remarks, "Hippocrates did the wrong thing well."<sup>181</sup>

Hippocrates' school of medicine, however, was not the only one active in Greece at this time. Hippocrates was clearly well known in the lifetime of Plato, but this does not mean that his medical techniques were widely practiced by Greek doctors at large. The existence of another more common means of treatment among doctors in Plato's sphere of contact provides us with a possible explanation for why he would have commented in the *Charmides* that Greek physicians do not treat the whole of man. For example, a close rival to Hippocrates' Coan school, the Cnidian school of medicine, was

<sup>180</sup> Cf. *Alim.* 16. Here, the author refers to both the protection of the whole and its parts (σκέπη ὅλου καὶ μέρους) and the unclear cause (of internal ailments determined) either from the whole or the part (αἰτία ἄδηλος καὶ μέρει καὶ ὅλῳ).

<sup>181</sup> (1923) xvii.

fundamentally at odds with the Hippocratic method. Instead of focusing on a single understanding of diseases, the Cnidian school believed that a proper understanding of medicine required a manifold understanding of the human body and disease. Only a handful of the works in the Hippocratic Corpus exhibit Coan influences, and these generally comprise the more speculative of the medical works.<sup>182</sup>

From this difference between the Coan and Cnidian schools and their respective single and pluralistic understandings of illnesses, there may be some foundation for suggesting the following explanation for the apparent inconsistency between the positions that Plato takes in the *Charmides* and *Phaedrus*: If the majority of the extant Hippocratic works follow the Cnidian school rather than the Coan school, and the Hippocratic Corpus provides us with a roughly accurate model of Greek medicine in the fifth century, then there is some merit in stating that Plato, while criticizing Greek doctors in the *Charmides*, is thinking of doctors who practiced medicine in a manner unlike that prescribed by the Coan school. Furthermore, if what I propose is correct, then there is good reason to believe that the medical profession in Athens in the time when Plato composed the *Charmides* consisted mostly of doctors with an understanding of illness focused more upon τὰ μέρη (the parts) than τὸ ὅλον (the whole).

Plato's strong defense in the *Charmides* and the *Phaedo* of the treatment and understanding of τὸ ὅλον suggests to us that he was, at least on a philosophical level, a proponent of Hippocrates' method. In the *Phaedo* and the *Charmides* Plato remarks that we must know the soul in order to know the body, and that we must also care for the soul

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<sup>182</sup> Cf. Jones (1923) xiv-xix

if we are to be healthy. In the following section I shall examine Plato's use of the "good doctor" in analogies with the soul, how this compares with his view on the art of medicine, and what relation these concepts have to the ideas of the historical Socrates.

### The "good doctor," and his good profession

From the above evidence, we can be certain that Plato and his contemporaries were well aware of both good and bad physicians within their respective communities. This is confirmed by the coupling in Greek literature of "doctor/medicine" (ἰατρός/ἰατρική) with the adjective "good" (ὁ ἀγαθός) in apposition. This type of phrase occurs four times within the Hippocratic Corpus: in *Prognosticon* (1.18), *Praeconceptiones* (7.6), *De arte* (6.7), and *De morbis popularibus* (6.26). In *De morbis popularibus*, perhaps the most truly scientific collection in the Hippocratic Corpus,<sup>183</sup> the author comments that similarities of symptoms are problematic for good doctors (presumably this is because a good doctor is observant and so he pays attention to symptoms). In the first three examples,<sup>184</sup> however, the authors are attempting to convince the reader that by following the methods they suggest, one will become an ἀγαθὸς ἰατρός. In all three of these works, the writers imply that they are ἀγαθοὶ ἰητροί, and so are in turn able to make one an ἀγαθὸς ἰατρός. As we shall see below, this relationship between a skilled physician and apprentice appears to have been active in analogies.<sup>185</sup>

<sup>183</sup> This work, a collection of notations from different physicians, contains no rhetorical pretenses. The sole aim of *De morbis popularibus* appears to be towards recording illnesses so that other doctors may be able to compare a disease's nature.

<sup>184</sup> *Prog.*, *Praec.*, and *de Arte*.

<sup>185</sup> E.g. between sophist and student; between philosopher and one seeking wisdom.

The words ἰατρός and ἀγαθός also appear linked together several times outside of the Hippocratic Corpus. Three examples are from immediate contemporaries of Plato: Isocrates (fr. 30.1), Xenophon (*Cyrp.* 1.6.22), and Antisthenes (*Declam.* fr. 14.4). As one might expect, all three of these are used as analogies.<sup>186</sup> Isocrates likens reckoning (τὸν λογισμὸν) to a good doctor as being helpful when one is in distress. Xenophon writes that if one wishes to appear to be a good doctor (or farmer, or equestrian, or piper) when he is not, then he must have as much knowledge so as to maintain that appearance. Antisthenes, when asserting that a ruler serviceable (ἱκανός) in regard to virtue has no need of others when making decisions, draws a comparison with a good doctor having no need of others to diagnose an illness.

Plato uses the concept of the ἰατρός ἀγαθός in much the same way as Isocrates, Xenophon, and Antisthenes. In his dialogues ἀγαθός appears four times as a modifier to ἰατρός:

- εἰ βουλοίμεθα Μένωνα τόνδε ἀγαθὸν ἰατρὸν γενέσθαι, παρὰ τίνας ἂν αὐτὸν πέμποιμεν διδασκάλους; (*Men.* 90b7)

If we wished for this man Meno here to become a *good* doctor (i.e. one who successfully treats his patients), to what people would we send him to act as teachers?

- τίς δὲ εὐπραγία ἀγαθὸν ἰατρὸν ποιεῖ; δῆλον ὅτι ἡ τῶν καμνόντων τῆς θεραπείας μάθησις. (*Prot.* 345a5)

But what success makes a doctor good? Of course, it is learning the treatment of those who are in pain.

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<sup>186</sup> The phrase occurs several times after Plato as well; e.g. Zeno (fr. 286.3), Philo Judaeus (*De vita Mosis* 1.42), Onasander (*Strat.* 30.1), and Galen (*De difficultate respirationis* 7.930.1)

- δέῃ τὸν ἀγαθὸν ἰατρὸν τε καὶ νομοθέτην πόλεως μὴ ἦττον ἢ σοφὸν μελιττουργὸν πόρρωθεν εὐλαβεῖσθαι...[sc. πρὸς τοῦ τῶν ἀργῶν τε καὶ δαπανηρῶν ἀνδρῶν γενοῦ] (R. 564c1)

The good doctor and law-givers of the city, not unlike the wise bee-keeper, must take caution from afar (against men of idle and extravagant nature).

- ἄρ' οὐκ ἀγαθοὺς δέῃ ἐν τῇ πολει κεκτήσθαι ἰατρούς; (R. 408c7)

So then, must we not acquire good doctors in (our) city?

When using ἀγαθός to describe the general art of medicine (ἰατρική), Plato uses the neuter substantive, thus making the statement absolute:

ἰατρικὴ δὲ ὠφέλιμον καὶ ἀγαθόν (Lys. 217b1)

the art of medicine is a helpful and a good *thing*.

and:

καὶ ἐτίθην τῶν μὲν περὶ τὰς ἡδονὰς τὴν μαγειρικὴν ἐμπειρίαν ἀλλὰ οὐ τέχνην, τῶν δὲ περὶ τὸ ἀγαθόν τὴν ἰατρικὴν τέχνην. (Grg. 500b3-5)

And I established that the art of cooking, being directed at pleasure, is a knack, but not a skill; I then established that the medical art, being directed towards the good, was a skill.<sup>187</sup>

I have made five observations from the use of this phrase in the above examples:

1) Quite clearly, the sense of ἀγαθός, when applied to physicians, could just as easily be conveyed by the word τεχνικός (skilled). 2) The phrase ἀγαθὸς ἰατρός by the time of Plato had become somewhat of a stock expression. 3) The need to qualify the word ἰατρός with the adjective ἀγαθός in these examples suggests to us that the public

<sup>187</sup> Note the use of the neuter substantive of ἀγαθός in the above two examples; the art is “a good” and “concerned with the good.” This is somewhat different than saying “the medical art is good.” cf. Arist. *MM* (1.1.19) ἀλλὰ μὴν τὸ πότε ἀγθὸν ἐν ἰατρικῇ ὁ ἰατρός οἶδεν... πότε μὲν γὰρ δεῖ τεμνεῖν ὁ ἰατρός οἶδεν (“But a physician certainly knows the good in medicine, for a physician knows when he must cut”).



recognized some physicians as being κακός. It appears that one could not take for granted that a doctor, by the title alone, was deserving to be called ἀγαθός. 4) The metaphorical use of this phrase (to signify an apex of skill and/or usefulness) provides some reason to believe that an ἰατρός, when he is ἀγαθός, was well respected and admired in his community. 5) At least according to Plato, the art of medicine is absolutely a good, since it is a skill (τέχνη) used to promote and maintain health (which is also a good). However, a physician by nature is neither good nor bad, but is distinguished through his ability (τέχνη) in his craft.<sup>188</sup> Thus, the onus is on each physician to prove whether or not his own personal method of ἰατρική is beneficial.

The four authors who use the analogy of the ἀγαθὸς ἰατρός, Isocrates, Xenophon, Antisthenes, and Plato all had connections with Socrates, and may have been drawing upon an analogy coined by Socrates himself. Indeed, the entire analogy between medicine and the soul could very well have started with the historical figure. Socrates seems to have viewed the human soul (ψυχή) in an original way, and he was perhaps the first to prescribe the treatment or care of the soul (ἡ θεραπεία τῆς ψυχῆς).<sup>189</sup> Both Antisthenes and Xenophon use the phrase without any apparent derivation from Plato's dialogues, and Isocrates also seems to be familiar with this care.<sup>190</sup> Owing to the abstract

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<sup>188</sup> Cf. *Smp.* 186c1-4, pages 79-80 above.

<sup>189</sup> Cf. Cushman (1958) 17 for an account of Socrates' new understanding of ἡ ψυχή. Here, Cushman defines the Socratic ψυχή as not only a necessary element for life, but also as the source of human consciousness and intelligence.

<sup>190</sup> Cf. Burnet (1916) 243-5. Burnet cites two passages from the *Apology*, 29d and 30a, that strongly suggest that the concept of "the care for the soul" was a created by Socrates. For further discussion of Socrates' care for the soul and the use of medical metaphor in philosophy, as well as a recent bibliography on the topics, cf. Joyal (2005)

nature of ἡ ψυχὴ, the new understanding of the soul that Socrates taught necessitated some form of analogy. Both the analogy of Socrates as intellectual midwife<sup>191</sup> and the analogy of the doctor were ideal concrete comparisons to this form of θεραπεία that Socrates wished to pass on to his interlocutors.

It should be noted that these two practices, midwifery and medicine, are treated quite differently from one another in the context of the treatment of the soul. As a midwife, Socrates was responsible for challenging the preconceptions of his fellow Athenians. The souls of these men, although not corrupt, were made stronger through the elimination of ignorance and the active pursuit of wisdom. In contrast, as we have seen in the above chapter on disease, a doctor of the soul is most often needed when there is some corruption of the soul's nature. The soul must be corrected by punishment. In the following chapter on treatment and cures I shall further discuss how Plato views the punishment of the soul as analogous to the treatments of a physician.

### Summary

Plato spends significant time discussing both the art of medicine and the role of doctors in society. In these discussions on the subject he shows some inconsistencies in the emphasis he places on the study of the healthy and the study of the unhealthy. When the discussion is focused on the role of the doctor, Plato tends to stress his ability to cure the sick. When the discussion is focused on the definition of the art of medicine

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esp. 105-6.

<sup>191</sup> For Plato's discussion on Socrates' maieutic art cf. esp. *Th.* 184b. Sedley (2004) 8 explains that Socrates is to be seen as intellectually barren and cannot give birth to a "brainchild." The pain that his interlocutors suffer as he tests their opinions is the labour pain of their brainchildren.

(ἰατρική), however, he generally applies more force to its role in the understanding of the healthy than he does to the understanding of the unhealthy. This difference between what a doctor does and what the medical profession is provides insight into the Greek medical community as Plato knew it; implied in this distinction is that the practice of doctors quite often strayed from the ideal.

It is clear from both the Hippocratic and Platonic writings that there was a wide gulf between Greek doctors in regards to their τέχνη. Doctors were considered δημιουργοί in the society, and thus worked for the good of the entire community by maintaining health and assisting in curing illnesses. A desirable position within the community is attached to such responsibility. It is inevitable, then, that pretenders to the art or “quacks” would wish to insinuate themselves among the more competent of these professionals. In addition to those who hoped to pass themselves off as doctors, Plato suggests that there were rival medical schools active at the time that had divergent ideas of the treatment of disease and the structure of the body. He explicitly mentions the practice of Greek doctors to treat the body as a structure composed of manifold parts that must each be treated separately. This is opposed to the method of Hippocrates that views the body as a united system that must be treated as a whole. The impression we receive is that his preference was for the latter.

While discussing the varying levels of physician’s skills, Plato appears to be using the metaphor of the good doctor that was active among the citizens of Athens. The analogy between the good doctor and the treatment of the soul is quite possibly the creation of the historical Socrates. Whether or not this is true, we can conclude from the occurrences of the idiom in the writings of Plato’s contemporaries both that in the minds

of Athenians the art of medicine was by its very nature good and that a doctor, when able to produce favourable results consistently, was considered to be among the foremost of the city's professionals.

#### 4. Treatment and Cures

The treatments and cures mentioned by Plato, for the most part, coincide with the standard practices of Hippocratic physicians. The most common of these in Plato is the administration of drugs (φάρμακα). This is followed by the passing appearances of burning (καύσεις) and cutting (τομή). There is also one reference to the practice of medical cupping in the *Timaeus* (ἰατρικὰ σικύα). I shall end this chapter with discussions on what might be called Plato's two medical case studies: Socrates' cure for Charmides in the *Charmides* and Eryximachus' cure for Aristophanes in the *Symposium*. It must be noted that Plato also spends a great deal of time writing on the subject of dietetics.<sup>192</sup> He acutely stresses the relationship between a person's lifestyle and health and compares this with the maintenance of the soul. We have touched upon this subject above. Considering the wide use of this simile in the corpus, however, I shall be unable to do it justice in this present chapter.

##### **The use of drugs**

The use of φάρμακα to heal or harm appears to have been well established by the time of Homer. In the *Iliad* and the *Odyssey*, the word occurs in both senses and is used by both healers and practitioners of sorcery.<sup>193</sup> Pindar informs us of the tradition that

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<sup>192</sup> Cf. Stalley (1996) 360. Plato's discussions on dietetics often appears in analogy to punishment.

<sup>193</sup> For its use in healing cf. *Il.* 15.393-4, ἐπὶ δ' ἔλκει λυγρῷ φάρμακ' ἀκέσματ' ἔπασσε ("and upon the sad wound he plastered medicinal drugs"); for its use to harm see *Od.* 10.213, ἐπεὶ (Κίρκη) κακὰ φάρμακ' ἔδωκεν ("then [Circe] administered bad drugs"). It is notable that the word is seen in Homer only in the concrete neuter (φάρμακον).

there was a divine origin even to the medical use of drugs.<sup>194</sup> The tragedians continue to use the word in a similar manner to their poetic predecessors.<sup>195</sup> It is not until the Hippocratic Corpus, however, that we receive any significant information about the nature of these φάρμακα. It is clear from these medical writings that the study of *materia medica* was well developed by the 5<sup>th</sup> century. A list compiled by Paul Potter limited to six works of the Hippocratic Corpus contains over two-hundred different natural substances used in the art of healing.<sup>196</sup>

The word φάρμακον and its variants<sup>197</sup> occur ninety-six times within Plato's corpus. This heavy use is indicative of the long tradition of φάρμακα, the word's metaphorical use, and Plato's interest in the medical community. The tradition of *materia medica* in Greece had existed well before the appearance of any scientific approach to medicine. The basic meaning of the word as used by Plato could be defined as something that is ingested with the intent either to heal or to harm someone. The ability of φάρμακα to harm is clear from the use of the word to describe the πῶμα (draught) that Socrates is made to drink at the time of his execution.<sup>198</sup> Those using φάρμακα in a mystical

<sup>194</sup> N. 3.53-5: Βαθυμήτα Χείρων τράφε λιθίνω' ἱασον' ἔνδον τέγει, καὶ ἔπειτεν Ἀσκληπίον, τὸν φαρμάκων δίδαξε μαλακόχειρα νόμον ("Deep-counseling Cheiron reared Jason in a stone-thatched roof, and there within taught him the gentle-handed custom of drugs [created by] Askepios").

<sup>195</sup> Only concrete nouns (φάρμακον, φαρμακεύς) and verbs are seen. The abstract φαρμακεία is conspicuously absent in their works. This word occurs only once in drama in a fragment of Menander (Kock fr. 535.9).

<sup>196</sup> (1983) 355-61. The list is drawn from *Affectiones, De morbis* 1-3, *Internal Afflictions*, and *Regimen in Acute Diseases*.

<sup>197</sup> Including φαρμακεία, φαρμακεύς, φαρμακεύω, φαρμακοποσία, φαρμάκευσις and φαρμακευτική.

<sup>198</sup> *Phd.* 63d6: ὁ μέλλων σοι δώσειν τὸ φάρμακον ("the one who is about to give you

manner (and often with malicious intent) were classified by Plato among γόητες, or “wizards” (*Smp.* 203d8). From a passage in the *Cratylus*, however, it is clear that Plato recognized both the medical and supernatural powers of drugs and made a distinction between the two:

πρῶτον μὲν γὰρ ἡ καθαρσις καὶ οἱ καθαρμοὶ καὶ κατὰ τὴν ἰατρικὴν καὶ τὴν μαντικὴν καὶ αἱ τοῖς ἰατρικοῖς φαρμάκοις καὶ αἱ τοῖς μαντικοῖς περιθειώσεις... (δύναιτ' ἄν) καθαρὸν παρέχειν τὸν ἄνθρωπον καὶ κατὰ τὸ σῶμα καὶ κατὰ τὴν ψυχὴν· ἢ οὐ; (*Cra.* 405a7-b4)

For first of all, the purging and purifications in the respective arts of medicine and sorcery, and both the drugs of the medical profession and the purifications through fumigation of magic... (are able) to render a man pure both throughout his body and throughout his soul. Is this not so?

The most common use of the word by Plato is in the sense of medical drugs.

Furthermore, it seems that by his time the medical φάρμακον was the most common meaning assigned to the term. This is evident from Plato's general practice of using the word in the medical sense without qualification. Both Herodotus and Thucydides use only φάρμακον, and this in a similar sense.<sup>199</sup> In comparison, when Plato chooses to use the term in a magical sense, he will either use φαρμακεία<sup>200</sup> or include some reference to a γόης.<sup>201</sup> In all other cases, Plato assumes his reader will interpret it as being used in a

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the poison”).

<sup>199</sup> In contrast, Homer uses an epithet to distinguish between helpful and harmful drugs. Cf. LSJ s.v. φάρμακον.

<sup>200</sup> Palmer (1980, 251) remarks that the -εία suffix was primarily used to form abstracts from σ-adjectives (ἀλήθεια, ἄδεια, ἀσέβεια, etc.). It is likely that the abstract φαρμακεία was formed from the noun φαρμακεύς (poisoner/sorcerer). This would explain its earlier usage in the sense of a drug with negative effects.

<sup>201</sup> For the former, cf. *Lg.* 933b6 (although this is not to imply that φαρμακεία is used by Plato exclusively in a magical sense; he does use it in *Prt.* 354a6 and *Ti.* 89b4,c6 when referring to medicine and in *Cra.* 434b1 in reference to pigment). For the latter,

medical context. Xenophon appears to use the terms interchangeably in a passage in *Memorabilia*.<sup>202</sup> It does seem that φαρμακεία begins to be used more frequently in the sense of drug as we approach the Hellenistic period. For example, there is a handful of places in works attributed to Aristotle where the word is used in a medical context.<sup>203</sup> Φαρμακεία is used in a similar sense within several works in the Hippocratic Corpus. The majority of these occurrences are in the later *Epistulae* and the collected quotations of the *Aphorisms* and *Coa praesagia*.<sup>204</sup> A waxing in the use of φαρμακεία being used in a medical context, coinciding with a waning of φάρμακον as we draw closer to the end of the Classical period, would help to explain Plato's change of usage at *Timaeus* 89b4 and c6; in such a technical work as this it would be less usual to see the appearance of a colloquial and imprecise term.

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cf. *Lg.* 649a3 and *Smp.* 203d8 quoted above.

<sup>202</sup> *Mem.* 4.2: Εαν δέ τις υἱὸν ἑαυτοῦ δεόμενον φαρμακείας καὶ μὴ προσιέμενον πάρμακον ἐξαπατήσας ὥς σιτίον τὸ φάρμακον δῶ. A possible rendering could be as follows: "If someone has a son who is in need of *medicine* (φαρμακείας) but won't take the *drug* (φάρμακον), and the man deceives the boy (by telling him) that drug he gave was food."

<sup>203</sup> E.g. *HA* 616b23; *EE* 1214b33; *Pr.* 962a3, *Pol.* 1337b41.

<sup>204</sup> I suggest that these collections, since they represent a considerable tradition of medical study, were quite possibly compiled rather late. It is possible that later scribes generally were more prone to use the abstract in the place of the concrete (e.g. φαρμακεία for φάρμακον). The use of the abstract for the concrete is a common Greek idiom, and the more frequent appearance of φαρμακεία in later Hippocratic works may represent a growing trend among physicians and other scientific groups. Cf. Denniston (1952) 38 for the use of the abstract for the concrete, and *ibid.* 29-30 for the resurgence of abstract subjects in prose after the orations of Lysias.



### The use of cautery and surgical cutting

The two most frequent invasive approaches to healing available to a physician were cutting and burning. Both of these had a variety of applications among the ancient medical community. Internal surgery at this time was generally limited to the setting of bones or trepanning.<sup>205</sup> Any statistically successful internal operation would have to wait for some time until the invention of anesthesia. Cutting and burning, then, were mostly limited to blood-letting and the treatment of external wounds.<sup>206</sup>

Plato mentions the practices of cutting and burning (usually in tandem) several times in his dialogues. He does not, however, go into any detail when discussing them. When they occur, Plato uses them invariably as examples of pain, and usually metaphorically when arguing that submission to (bad) pain can be a good when the end result is for the best.<sup>207</sup> This use is summarized well in the following excerpt from the *Protagoras*:<sup>208</sup>

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<sup>205</sup> These subjects are fully discussed in *De fracturis* and *De capitis vulneribus*.

<sup>206</sup> Cf. Phillips (1973) 86-7 for a summary of Hippocratic works that describe these processes. Bleeding is used to treat such ailments ranging from eye disorders to dysuria (difficulty in urinating). Cautery is used for various reasons including the closing of wounds as well as draining empyema (the accumulation of pus) from the lungs and reducing fistulae (abnormal passages between hollow organs, abscesses, cavities, or the skin).

<sup>207</sup> Only in the *Timaeus* (65b2, d7) does Plato discuss burning a cutting without using the terms as moral metaphors. It is instead the matter of sense-perception that he is concerned with here.

<sup>208</sup> For a similar, but more pessimistic, sentiment on a physician's practice of cutting and burning cf. Heraclitus fr. 58. This passage too is intended to show the equality of τὸ ἀγαθὸν καὶ τὸ κακόν. Cf. also Xen. *An.* 5.8.19.

᾽Ω ἄνθρωποι οἱ λέγοντες αὐτὰ ἀγαθὰ ἀνιάρᾳ εἶναι...(οἶον) τὰς ὑπὸ τῶν ἰατρῶν θεραπείας τὰς διὰ καυσεων τε καὶ τομῶν καὶ φαρμακειῶν καὶ λιμοκτονιῶν γιγνομένης, ὅτι ταῦτα ἀγαθὰ μὲν ἐστίν, ἀνιάρᾳ δέ; (354a3-7)

There are men who say that some things are both beneficial and grievous; such things as treatments performed by doctors, those involving burning and cutting, drugs and depletion. (Don't they say these things) because they are on one hand beneficial, but on the other hand, grievous?

In almost every place where cutting and burning are mentioned in the dialogues of Plato, the words καῦσις and τομή are used. The term καῦσις, first seen in Anaximenes (fr.6.8) then in Herodotus (2.40), appears to be of Ionic origin. From both these occurrences, it seems that the word was used to mean generically "the act of burning."<sup>209</sup>

The first appearance of the word in Attic outside of Plato is in Isocrates' *De pace* (40):

καταγέλαστόν ἐστιν τὰς μὲν καύσεις καὶ τὰς τομὰς τῶν ἰατρῶν ὑπομένειν ἵνα πλειόνων ἀλγηδόνων ἀπαλλαγῶμεν, τοὺς δὲ λόγους ἀποδοκιμάζειν πρὶν εἰδέναι σαφῶς κτλ.

It is extremely laughable that we endure the burnings and cuttings of doctors in order to be freed of manifold pains, yet we reject the arguments before we clearly understand (them) etc.

It appears that at this time the word had already developed a technical sense in medicine. Plato does use the word once at *Theaetetus* 156b4 in the same sense as the earlier Ionic writers. καῦσις, however, is used by Aristotle solely in a medical context in moral analogies similar to those used by Plato.<sup>210</sup> The word is used by Theophrastus in a variety of contexts to mean "a burning," but never in a medical sense. After

<sup>209</sup> Anaximenes uses the word when postulating that the earth receives heat (θερμῇ) from the burning of the sun. Herodotus uses the word when mentioning the burning of sacred items.

<sup>210</sup> *MM* 2.3.6, *EN* 1137a15.

Theophrastus it occurs in only one other work before the Christian era, Philo's *Parasceuastica et poliorcetica*. The word occurs sixteen times within the Hippocratic Corpus.<sup>211</sup> With the exception of *Prorrhethicon* 2.15, all appearances of the word are in the singular. This becomes of particular note when a comparison is made with the use seen in the writings of Plato and his Attic contemporaries.

Plato uses καύσις six times in his corpus and, apart from the *Theaetetus*, all of these are in a medical context.<sup>212</sup> The only time when the word is used in the singular is at *Republic* 406d2:

Τέκτων μέν ἦν δ' ἐγώ, κάμνων ἀξιοῖ παρὰ τοῦ ἱατροῦ φάρμακον πιῶν  
ἐξεμέσαι τὸ νόσημα, ἢ κἄτω καθαρθεῖς ἢ καύσει ἢ τομῇ χρησάμενος  
ἀπηλλάχθαι· (R.406d1-3)

And I said, 'A builder who is in pain would think it right that drinking the medicine of a doctor he will expel the illness, or else by purging, relying upon burning or surgery, he will be freed;'

In this passage, Plato is somewhat compelled to depart from the more common usage of the word by both the construction and the context. By using the aorist participle χρησάμενος (relying upon), which takes a dative, he must use the word outside of the more common nominative or accusative forms.

As we can see from a comparison with the excerpt from *De pace* above as well as Aristotle's *Nichomachean Ethics* and *Magna Moralia*, this expression of the "cuttings and burnings" appears to have been somewhat of a stock idiom describing the treatment by

<sup>211</sup> *Prorrh.* 2.15; *Art.* 11, 50, 62; *Int.* 9.31; *Morb.* 2.62, 3.16; *Epid.* 6.6.3, 7.1.79; *Art.* 50, 62; *Vid. Ac.* 1, 4; *Medic.* 5, *Vect.* 36.16, *Liqu.* 4.

<sup>212</sup> *Prt.* 354a5 (καύσεών); *Tht.* 156b4 (καύσεις); *R.* 406d2 (καύσει), 426b (καύσεις); *Ti.* 64d8 (καύσεις), 65b2 (καύσεις).

doctors. Also confirmed by the use of καῦσις in Plato's works and those of his fellow Athenians is that there is a far more common practice of using the word in its plural form (i.e. a generalizing plural) when in a medical sense. It is quite possible that this tendency towards the plural form has some relation to the understanding of the process, where several "cuttings" or "burnings" were necessary.<sup>213</sup> The singular abstract is much more likely to be used in a non-medical context. Theophrastus, for example, uses the word several times in his *Historia plantarum*. All of the times καῦσις is seen here, it is used both in the singular and in non-medical discussion.

The use of τομή, an abstract substantive from τέμνειν, is quite similar to that of καῦσις. It does appear, however, to have a much longer history than καῦσις. Palmer remarks that Greeks inherited the -η stem substantives, and that these nouns were common even after the Classical period.<sup>214</sup> The earliest appearance of τομή is at *Iliad* 1.235 where it means "stump." Here we can see the original sense of resulting action from τὸ τέμνειν. Its first appearance in a medical context is in Pindar.<sup>215</sup> This attests to its relatively early inclusion in the medical vocabulary.

By Plato's time, it appears that both τομή and καῦσις had been yoked together in the Greek medical lexicon. On all occasions except one, Plato mentions τομή and καῦσις together when discussing a physician's art. At *Republic* 407d-c9-e2, Socrates states that

<sup>213</sup> Cf. Smyth (1920) § 1000. In abstracts, the plural is often used to express "single kinds, cases, occasions, [and] manifestations of the idea expressed by the abstract substantive." Cf. also Denniston (1952) 38-9.

<sup>214</sup> (1980) 251.

<sup>215</sup> P. 3.53: The Magnesian Centaur was said to have made men "right" by cutting ( τοὺς δὲ τομάῃς ὀρθούς.).

Asklepios recognized those citizens who were healthy by nature and diet (φύσει τε καὶ διαίτῃ). He would reveal the medical art to the “state” (ἔξει) of these people and expel the diseases with drugs (φαρμάκοις) and surgery (τομαῖς). Those who have an unhealthy nature are considered unworthy for treatment:

ἀλλὰ τὸν μὴ δυνάμενον ἐν τῇ καθεστηκυίᾳ περιόδῳ ζῆν μὴ οἶσθαι δεῖν  
θεραπεύειν, ὥς οὔτε αὐτῷ οὔτε πόλει λυσιτελεῖ; (R. 407d8-e2)

But wasn't it so that (Asklepios) thought it unnecessary to treat a person who is unable to live in the established track, since the man would be inexpedient to both himself and his city?

Socrates' interlocutor next remarks that Asklepios must have been quite a statesman (πολιτικόν). Inherent in this passage is the relationship between the doctor and the politician, as well as the curable and the incurable. That this metaphor continued to be used is evident from its appearance in Plato's *Laws* and Demosthenes' use of it in *Against Aristogeiton*.<sup>216</sup>

The absence of cautery in this passage is an anomaly in the Platonic corpus, since καῦσις appears with τομή in every other instance. This excerpt does show, however, that Plato had an understanding of the mythical tradition of Asklepios and the extent of the god's medical knowledge. In the testimonia that survive, no connection is made between Asklepios and καῦσις.<sup>217</sup> Asklepios is, however, credited with the invention of pharmacology and surgery. This tradition is summarized by the later author Diodorus Siculus (1<sup>st</sup> c. B.C.):

<sup>216</sup> Cf. page 56 above.

<sup>217</sup> Cf. Edelstein, E.J. 1945, testimonia 337-413.

Ἀπόλλωνος δὲ καὶ Κορωνίδος Ἀσκληπιὸν γενηθέντα, καὶ πολλὰ παρὰ τοῦ πατρὸς τῶν εἰς ἰατρικὴν μαθόντα, προσεξευρίεν τήν τε χειρουργίαν καὶ τὰς τῶν φαρμάκων σκευασίας καὶ ῥιζῶν δυνάμεις, καὶ καθόλου προβιβάσαι τὴν τέχνην ἐπὶ τοσοῦτον, ὥστε ὡς ἀρχηγὸν αὐτῆς καὶ κτίστην τιμᾶσθαι. *D.S.* 5.74.

Asklepios was born from Apollo and Coronis, and he learned many things related to the art of medicine from his father. In addition, he discovered the skill of surgery, the application of drugs, and the strength of roots. On the whole, he stood out in skill to such an extent that he is honoured as (medicine's) leader and inventor.

The other medical occurrences of τομή within Plato are with καῦσις, and we find that it too is frequently in the plural.<sup>218</sup> The one exception is when it appears in the dative with καύσι cited above. The singular of the word, however, is used several times by Plato to mean a "cutting." Such contexts range from the cutting of shoes (*Chrm.* 173d9) to the division of names (*Lg.* 944b6).<sup>219</sup> Of the nine appearances of τομή outside of a surgical context, only once does Plato use the word in the plural (*Lg.* 738a8). The appearance of the word in this context, where Plato is dividing up land, points forward to its frequent appearance in mathematical works.<sup>220</sup>

In the *Gorgias*, Plato strays from the more common nominal derivative of τέμνειν. Here, he uses the -μα suffix to form the noun τμήμα (*Grg.* 476c8, d1). In comparison with the -η suffix, those words with -μα appear to have had a more clearly

<sup>218</sup> *R.* 407d3 (τομαίς), 426b1 (τομαί); *Ti.* 64d7 (τομαί), 65b2 (τομάς), *Prt.* 354a5 (τομῶν).

<sup>219</sup> In these contexts, the singular generally seems to be used in a more abstracted sense than the plural (cf. n. 210 above). The action here is not stressed so much as the process. For the possible changes of meaning between singular and plural abstracts, cf. Bers (1984) 34-40.

<sup>220</sup> E.g. *Arist. LI* 968b19 *et passim*; *Eudemus* 133; *Euclides* 6.3 *et passim*.

defined relation to the original action. As with νόσημα discussed above,<sup>221</sup> Plato seems to be using the voice of τμήμα more rigidly: it is the resulting action of a cut rather than the act of cutting that he is interested in.<sup>222</sup> This is evident from the playful dichotomy between the active and the passive that he draws in this passage:

Καὶ εἰ μέγα γε ἢ βαθυ τὸ τμήμα ἢ ἀλγεινον, τοιοῦτον τμήμα τέμνεται τὸ τεμνόμενον οἷον τὸ τέμνον τέμει;

And, I suppose, if the cut is great or deep or painful, such a cut, being cut, is cut in the same manner as the agent of cutting cuts it?

It is clear that Plato needed to deviate from the more common medical term τομή in favour of τμήμα in this passage. It is not the technical practice of the physician's skill that he wishes to discuss, but rather the act itself.

In the Hippocratic Corpus, both καῦσις and τομή appear more than twice as often in the singular as in the plural. καῦσις is used eight times in the singular and three times in the plural. Τομή is used twenty-seven times in the singular, but only nine times in the plural. What is notable about this pattern is that these words, when in the plural, almost always appear within the speculative treatises. When in the singular, however, they are more likely to appear in the works recording the treatment of specific ailments and individuals. From the contexts of each, it is easy to see why the plural is favoured in the speculative writings, but not in the general case-studies. In the former, the author is

<sup>221</sup> Cf. page 59 above.

<sup>222</sup> Τμήμα is used by Plato here in a unique sense. Elsewhere the word is used to mean a portion or part cut off (LSJ s.v. τμήμα). Outside of Plato, all occurrences of the word appear in scientific writings, e.g. Antipho Soph. fr.13; Arist. *Cael.* 290a3; Eudox. fr. 67. Plato is perhaps drawing upon the technical nature of the word in this sense at *Smp.* 191d6, e3, 6 when Aristophanes uses mock technical language to describe the

concerned with the general practices of physicians whereas in the latter the author is more concerned with specific treatments through each. This seems to be the same reason why the non-technical writers such as Heraclitus, Plato, and Aristotle are in the habit of using these words in the plural: they are, like the speculative writers in the Hippocratic Corpus, concerned with the general practices of physicians. The use of the plural in these instances conveys the sense of a gnomic statement.

By comparing the appearance of the word καὖσις (x11) with that of τομή (x36) within the Hippocratic Corpus it is possible to glean that τομή was the more widely practiced of the two procedures. That τομαί appears to be more firmly entrenched in the physician's collection of treatments also points to an earlier use of the cutting technique in medicine. The two earliest accounts we have of medical techniques, the *Iliad* and the *Odyssey*, go some way to confirm this belief. When Homer gives any information on the practice of a physician, only two techniques are ever mentioned, the use of φάρμακα and the practice of cutting.<sup>223</sup> These are believed to be the oldest techniques available to healers.<sup>224</sup>

By mentioning καὖσις and τομή together in almost every instance, despite the fact that the practice of τὸ τέμνειν appears to be a much more common technique, Plato shows us that he is not specifically interested in the common practices of physicians. Instead, he seems to be borrowing a pre-existing metaphor in which the patient is

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division of early humans.

<sup>223</sup> Cf. *Il.* 11.513-4 and *Od.* 4.231. Homer never uses an abstract noun when he mentions surgery. He does use the verb ἐκτάμνειν in the passage in the *Iliad* (513).

<sup>224</sup> Edelstein, L (1945) 141.



subjected to pain for his greater good. By mentioning καύσις and τομή together in almost every instance where he uses them in a medical sense, Plato shows us that he is not interested in describing their individual applications by physicians, but rather that he is interested in their established metaphorical sense, the submission to pain for the greater good.

### **The use of medical cupping**

We can extract little information from the one line in which Plato mentions medical cupping:

τὰ τῶν περὶ τὰς ἰατρικὰς σικύας παθημάτων αἴτια (Ti. 79e10-80a1)  
the causes of the effects from medical cupping

Medical cupping is a form of blood-letting in which the patient's skin is broken, and then covered with heated metal cups. As the air in the heated cups cools and condenses, a vacuum is formed that draws out a controlled amount of blood from the patient. In the above section from the *Timaeus*, Plato is concerned with the nature of air, not the art of medicine, so he does not elaborate on this process. We know that medical-cupping was practiced in Athens, so Plato would have had the opportunity to observe the technique first-hand. The earliest evidence of cupping from an Athenian source is from the fifth century comic Crates.<sup>225</sup> After Plato, the word is used in a medical context by

<sup>225</sup> Kock, fr. 41.1: ἄλλα σικύαν ποτιβαλῶ τοι, καναταλῆς ἀποσχάσω. ("but I shall apply a cup to him and open up a vein for a drop [of blood]").

Aristotle once in his *Rhetorica* (1405b3) and Athenaeus the Grammarian reports that Speusippus (fourth cent.) too used the word (fr. 7.2).<sup>226</sup>

The word σικύα (lit. “gourd”) is seen in eight works within the Hippocratic Corpus to mean a medical cup.<sup>227</sup> In these instances, the defining adjective ἱατρικά is never used. If we consider the context of the word, the technical meaning of the word is obvious. Since σικύα can also mean “gourd,” however, clarification might be necessary in some instances. This is a probable explanation for Plato’s addition of the adjective in the *Timaeus*. In this context, a work involving various subjects, the use of the σικύα needs to be limited. The work *De elocutione* (dating to around the first cent. B.C.) provides some proof for this interpretation:

Διὸ καὶ τὰ μυστήρια ἐν ἀλληγορίαις λέγεται πρὸς ἑκπληξιν καὶ φρίκην, ὥσπερ ἐν σκοτῶ καὶ νυκτί. ἔοικεν δὲ καὶ ἡ ἀλληγορία τῷ σκοτῶ καὶ τῇ νυκτί. Φυλάττεσθαι μέντοι καὶ ταύτης τὸ συνεχές, ὥς μὴ αἰνίγμα ὁ λογος ἡμῖν γένηται, οἷον τὸ ἐπὶ τῆς σικύας τῆς ἱατρικῆς.

ἄνδρ’ εἶδον πυρὶ χαλκὸν ἐπ’ ἀνέρι κολλήσαντα (§ 101-2).<sup>228</sup>

For thus the (Dionysian) Mysteries are said in allegories with a view to (producing) confusion and awe such as, “in darkness and in night.” So also “in the darkness and in the night” seems to be allegorical. In relation to this, one must be on guard against the frequency (of allegorical language), such as in the case of the medical cup:

‘I saw a man who by fire fixed brass upon a man.’

<sup>226</sup> In this fragment, Athenaeus states that Diocles (4<sup>th</sup> c. Med.) called a medical cup a πέπων, while Speusippus appeared to be ignorant of this term and used only σικύα. Speusippus’ use of this term is of some note, since he was both the nephew of Plato, and his successor.

<sup>227</sup> *VM* (22), *Art.* (48), *Vid. Ac.* (9), *Ep.* (24), *Epid.* (5.1.8), *Morb.* (2.26), *Aff.* (4), *Mul.* (110).

<sup>228</sup> This is the same line quoted by Aristotle at *Rh.* 1405b1.

In this instance, there is the need to qualify the sort of “gourd” the author means. Just as in the above quotation, Plato seems to be compelled to define the medical nature of the σικύα that he will be discussing. The rarity in which it occurs in the writings of Plato, those of his fellow Athenians, and in the Hippocratic Corpus, in comparison with cutting, burning, and drugs, suggests that the application of medical cupping may not have been as widely practiced as the other treatments. This inference is further supported by the proverb cited above. Implicit in this mysterious language is the sense of awe that the observer had when witnessing medical cupping.

### **Socrates’ cure for Charmides**

In the above chapter on afflictions of the body I discussed the dramatic circumstances of the *Charmides*. Socrates, coming fresh from military service, reunites with his good friend Critias. The subject soon falls upon Critias’ nephew Charmides and his upstanding character. Since Charmides has been suffering from an ailment of the head, Critias suggests that Socrates assumes the guise of a physician in order to examine him.

Socrates, fresh from military service in Thrace, relates that he has learned a special cure from the doctors of Zalmoxis.<sup>229</sup> The cure for Charmides’ affliction that Socrates prescribes at the beginning of the dialogue, consisting of a leaf (φύλλον) applied along with a “charm” (ἐπωδή), has a relationship with both medicine and its companion in ancient healing, magic. The leaf as a cure is described in texts covering both ends of

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<sup>229</sup> Cf. n. 166 above.

this spectrum. For example, its magical properties are mentioned very frequently in the collection of magical writings called the *Cyranides*. Of particular interest in this work is a cure for a headache (κεφαλαλγία)<sup>230</sup> effected by making a stock of rue leaves (πήγανα) that when steeped emit a sharp smell. Such a cure can almost be considered not magic, but rather a homeopathic remedy acting somewhat like smelling-salts. The leaf as an aid to health is found very frequently within the Hippocratic Corpus, particularly in *De ulceribus*, *De natura muliebri*, and *De mulierum affectibus*. Plato, however, only mentions leaves in the *Charmides* and once in the *Republic* (372b) in a reference to making bread. Φύλλον is a rare word in his corpus and its use in the *Charmides* is unique; never again does he provide so much detail regarding the administration of a supernatural cure.

The second part of Socrates' remedy, the "charm" as it is generally translated, is somewhat outside of the medical scope as I have defined it, but it requires some analysis due to its use here in the context of healing. By definition, an ἐπωδή (ἐπαιδὴ in Ionic and poetic) can be a song sung to, or over, an enchantment, charm, or a spell used for healing (LSJ s.v. ἐπωδή). The first recorded instance of its use is in *Odyssey* 19.457. Homer uses it here as a cure by which the sons of Autolukos bind the wound of Odysseus, or perhaps more accurately, cause the blood to clot (ἐπαιδῇ δ' αἷμα κελαινόν ἔσχεθον) and close the wound.

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<sup>230</sup> *Cyranides* 5.16.

From this point in literature, the charm is seen regularly in both poetry and prose. In some cases, it has the ability to attract an individual's affections or friendship.<sup>231</sup> Xenophon portrays Socrates as using it in a similar manner in the *Memorabilia* (3.17). In this instance, Socrates tells Theodote, a beautiful woman of questionable character, that he is learning charms and specific love-charms (φίλτρα) along with some women relatives of his (φιλαί). Such a statement comes as quite a shock to Theodote (Ἐπίστασαι γάρ, ἔφη, καὶ ταῦτα, ὧς Σωκράτης; ("So," she said, "you even understand these things, Socrates?"). However, as Xenophon implies from what precedes the revelation, Socrates is just having a little fun at the lady's expense. Such an unexpected statement, not unlike Socrates' bold claim for a cure in the *Charmides*, may be suggestive of a peculiar character-trait of the real-life Socrates.<sup>232</sup>

In the 6<sup>th</sup>-4<sup>th</sup> centuries B.C. the use of a charm for healing or harm is seen in both poetry and prose. When it is mentioned in poetry, it is either reminiscent of its usage on the Homeric battlefield,<sup>233</sup> or is put in the hands of some other mythical character.<sup>234</sup> There is some late evidence that Sophocles composed songs (ὠδαί) in honour of Asklepios, but their role in healing is unclear.<sup>235</sup> When a charm is mentioned in Classical

<sup>231</sup> Cf. Aeschines, *In Ctesiphon* 192; Soph. *OC* 1194.

<sup>232</sup> Cf. Socrates' account in the *Symposium* of his education from Diotima on the subject of Love, esp. 210e1-6.

<sup>233</sup> E.g. Soph. *Ajax* 582-3: οὐ πρὸς ἱατροῦ σοφοῦ θρηνεῖν ἐπωδὰς πρὸς τομῶντι πῆματι. ("it is not befitting of a wise doctor to wail charms against a cutting-wound.").

<sup>234</sup> E.g. Pindar, *P.* 3.51 which describes the Magnesian Centaur as treating patients with "charms" but also with potions, drugs and the knife depending on the ailment. For the metaphorical use of ἐπωδή to heal cf. also E. *Hipp.* 477.

<sup>235</sup> Cf. Philostratus *VA* 3.17.

prose outside of Plato, however, it is never in a favourable sense.<sup>236</sup> The spurious work *In Aristogeiton* attributed to Demosthenes tells of two people familiar in the magical arts, a female servant of Theoris of Lemnos and her lover Eunomus (the brother of Aristogeitos). Democritus reports that the servant was put to death by the Athenians for being a “filthy sorceress” (τὴν μιαρὰν...τὴν φαρμακίδα), but only after she had given Eunomus drugs and charms (τὰ φάρμακα, τὰ ἐπωδαί). Armed with this knowledge, Eunomus professed that he was able to cure epilepsy (τοὺς ἐπιλήπτους...ἰᾶσθαι) though he was gripped with wretchedness (ἐπίληπτος).<sup>237</sup>

This claim that a charm had a special ability in curing epilepsy might be written off as a clever play on words were it not for its appearance at the outset of the Hippocratic work *On the Sacred Disease*. The author of this work is concerned with dispelling the myth that epilepsy is brought about from divine origins (Θεῖον τι πρῆγμα). Most people, no doubt counteracting supernatural causes with an equally supernatural cure, are said by the author of the work to treat the condition with purification and charms (καθαρμοῖσι... καὶ ἐπασιδῆσιν).

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<sup>236</sup> Another late source from the 12<sup>th</sup> century A.D. (Schol. ad Tzetz. *Allegor. Iliad*, cited in Kern [1922] 327), however, states that both Pythagoras and Empedocles, along with charm-wielders (οἱ μάγοι), used averting sacrifices (ἄποτροπιάσματα) and charms (ἐπωδαί) to avert plagues and other diseases (λοιμικὰ καὶ ἕτερα μετατρέπειν νοσήματα). If this passage is accurate, and we consider the traditional relationship between Zalmoxis and Pythagoras, then this suggests some underlying connection between Socrates’ charm in the *Charmides* and real practices of the Pythagoreans. Tzetzes, though, is notorious for his errors (OCD s.v. Tzetzes), so we ought not to give too much credit to this passage.

<sup>237</sup> A clever example of paronomasia. Cf. Smyth (1929) § 3040.

The belief in the power of charms to heal was clearly quite alive in the Classical period. Socrates was alive to see the early stages of Greek medicine as a scientific τέχνη. The lines between science and faith were not clearly drawn in this period, and they remain blurred even today. We have it on good authority that many treatments prescribed by Greek physicians originated from temple practices.<sup>238</sup> The cure that Socrates prescribes, consisting of both a leaf and a charm, has strong parallels to this tradition. Portrayed as a healer here, Socrates uses basic techniques that appear already to have had a long tradition in Greek culture. The source for the specific cure, however, coming from Thrace, carries with it an air of novelty. In the following section I shall examine a very different form of treatment. In the *Symposium*, Eryximachus' cure for Aristophanes shows the growing tendency of physicians contemporary with Plato to restrict the use of supernatural treatments in their practices.

### **Eryximachus' cure for Aristophanes**

The cure that Eryximachus prescribes to Aristophanes in the *Symposium* is one of the better-known passages within Plato's writing.<sup>239</sup> At 185c4, Pausanias has just finished his speech on Love, and Aristophanes is next in line to speak. He must pass his turn on to Eryximachus, however, since he has come down with the hiccoughs (λύγξ). In

<sup>238</sup> Jayne (1925) 235-6 cites several ancient references to this including Strabo (4.2), Pliny (*Hist.Nat.* 20.100), and Iamblichos (*Myst.* 3.3).

<sup>239</sup> Cf. Craik (2001) for a comprehensive examination of this passage in the *Symposium* and the vocabulary used in it. In this work Craik shows that there are parallels between Eryximachus and the Hippocratic corpus, esp. *VM*, *Vict.* 1, and *NatHom*. She concludes, however, that it is difficult to identify from this passage any specific Hippocratic work that might have been in circulation in Athens either during Eryximachus' life or that of Plato's.

addition to the request to take his spot in order, Aristophanes also asks Eryximachus to cure him of his condition. Eryximachus provides three different methods to stop the hiccoughing, each one stronger than the last. The first remedy is for Aristophanes to hold his breath as long as possible (σοι...ἀπνευστὶ ἔχοντι πολὺν χρόνον παύσεσθαι ἢ λύγξ). If this does not work, he is to gargle with water (ὔδατι ἀνακογχυλίασον.). But if the hiccoughing is very resilient (πάνυ ἰσχυρά), Aristophanes is to find something with which to tickle his nose and sneeze. Eryximachus reiterates that even if it is very strong (καὶ εἰ πάνυ ἰσχυρά ἔστι ) the hiccoughing will stop.

In the above passage, Eryximachus does not use much technical jargon. This is owing to the simplicity of the cures provided. The only words that appear to have any sort of technical nature are ἀπνευστί (185d6), ἀνακογχυλίασον (185e1), and ἰσχυρά (185e1,3). Both the adverb ἀπνευστί and the verb ἀνακογχυλιάζω appear only a handful of times before the end of the Classical period. Plato, here in the *Symposium*, is the first to use ἀπνευστί. The word occurs only once in the Hippocratic Corpus, twice in Aristotle, once in Theophrastus, and in two comedic works.<sup>240</sup> Ἀνακογχυλιάζειν shares a similar rarity, being seen outside of *Symposium* in only three comic works and a fragment from Diocles.<sup>241</sup> The adjective ἰσχυρός, on the other hand, is prolific in all genres throughout the Classical period, and is not explicitly a medical technical term. It

<sup>240</sup> *Int.* 12; *Arist. Pr.* 898b23, *Resp.* 475a23; *Thphr. Char.* 2.9; Antiphanes (Kock) fr. 74.14; Alexis (Kock) fr.244.

<sup>241</sup> Eupolis (Kock) fr. 275; *Ar. Vespae* 589; *Pl.Com.* (Kock) fr. 196; *Dioc.* fr. 153.



is, however, particularly prominent in the Hippocratic Corpus where it is used as an intensifier for pains, potency of food and drugs, and changes within the body.<sup>242</sup>

From the common vocabulary he uses, it appears that Eryximachus is not putting on airs for his fellow revelers; the cures are set forth in plain language in a clear order that is easy to understand. The manifold layering of treatments suggests that Eryximachus might be parodied as being pedantic.<sup>243</sup> These remedies, however, might very well have been well-known antidotes to hiccoughs. For example, in Aristotle's *Problemata* (926a1-4) we find sneezing (ὁ πταρμός) and holding one's breath (ἡ ἀπνευστία) discussed in the same section as possible remedies. It is also interesting to note that in this section of the *Problemata* sneezing is given first position among the cures whereas holding the breath is a successful treatment against weaker hiccoughs (τὰς ἀσθενεῖς λύγγας).<sup>244</sup> This provides evidence that there is some consistency in treatment for the varying degrees of hiccoughs. If we suppose that the author of the *Problemata* was drawing upon the *Symposium* for cures from hiccoughing, which is a very real possibility, nevertheless, the cures' inclusion in the work strongly suggests that they were recognized as effective treatments.

I argue that Eryximachus' language and cures are not rendered by Plato to be parodies of the medical profession. He uses common language to suggest remedies that

<sup>242</sup> Cf. also Thucydides 49.3, 6. Page (1967) 102 remarks that Hippocratic physicians "notoriously overworked" the adjective. As a particular example, he cites *Aer.* 4.25.

<sup>243</sup> Edelstein, L (1945) 85 states that the common modern consensus is to view Eryximachus as a pedant, a view I believe he successfully rejects.

<sup>244</sup> Ἀσθενῆς here is essentially an antonym of ἰσχυρός used by Eryximachus in the *Symposium*.

appear to have been effective against hiccoughs. It is undeniable that Plato adds a distinctively medical flare to Eryximachus' dialogue with Aristophanes and to his discussion of Love.<sup>245</sup> Yet the physician is treated with all the respect owed to his profession. The only apparent parody comes from the mouth of Aristophanes once he has been cured.

After Eryximachus has delivered his speech, Aristophanes says that his hiccoughs have stopped, although it seems he required the strongest remedy to cure them:

οὐ μέντοι πρὶν γε τὸν πταρμὸν προσενεχθῆναι αὐτῇ, ὥστε με θαυμάζειν εἰ τὸ κόσμιον τοῦ σώματος ἐπιθυμεῖ τοιούτων ψόφων καὶ γαργαλισμοῶν, οἷον καὶ ὁ πταρμός ἐστιν· πάνυ γὰρ εὐθὺς ἐπαύσατο, ἐπειδὴ αὐτῷ τὸν πταρμὸν προσένεγκα. (*Smp.* 189a2-6)

(The hiccoughing stopped), but not before a sneeze was applied to it. I wonder then, if 'the order' of the body desires these sorts of noises and 'ticklings' like a sneeze is, for it stopped immediately when I applied a sneeze to it.

To this statement, Eryximachus responds that Aristophanes is poking fun at him (189a8: γελωτοποιεῖς μέλλων λέγειν). This clearly implies that Aristophanes has used some language that mocks the physician's art. He does so by parodying both technical style and vocabulary of physicians and their writings. The appearance of technical vocabulary in Aristophanes' reply to Eryximachus is relatively light in comparison with the style which is rich with technical devices. The only salient technical terms here are τὸ κόσμιον and προσενεχθῆναι. Although these words appear frequently throughout Greek literature, they also have special technical uses in scientific and

<sup>245</sup> Taylor (1960) 217 remarks that Eryximachus' speech is weighted with both medical subject-matter and vocabulary. Taylor reminds us, however, that the occasion of the *Symposium* speech is light-hearted, and that Eryximachus is perhaps doing this intentionally for his own amusement.

speculative writings. Κόσμιον, in particular, has been used four times by Eryximachus in his speech when discussing well-ordered people (187d) and the well-ordered love (188a3,c3). The nominal form of the word, κόσμος, often seen in the writings of the pre-Socratics to mean “the universe,” is also stressed throughout the Hippocratic Corpus to mean the order of man or some part of the body.<sup>246</sup> The verb προσενεχθῆναι, although never used by Eryximachus in his speech, is also found in many Hippocratic works when the author suggests the administration of some cure for an ailment.<sup>247</sup> These are both technically charged words. The bulk of the parody, however, comes from the style of Aristophanes’ statement. The passage contains several examples of periphrasis, a trait common in technical writing. Aristophanes appears to have gone out of his way to produce awkward round-about constructions. To make “sneeze” the subject of the first clause predicated by “was applied” is silly when the simple active verb πτάρνυσθαι would have been much more direct. He next uses the abstract substantive τὸ κόσμιον as the subject for the subordinate clause when he could very well have used the concrete noun σῶμα with the same effect. The appearance of periphrasis is common in most technical writings, and is confirmed by Plato’s heavy use of it in the *Timaeus*. Also indicative of the technical nature of this passage is unnecessary repetition of the subject ὁ πταρμός (189a3,4,5) and its rhetorical ring-construction (τὸν πταρμόν προσενεχθῆναι αὐτῇ...αὐτῷ τὸν πταρμόν προσήνεγκα.).

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<sup>246</sup> E.g. *Vict.* 2; *Cord.* 10. The author of *Regimen* also uses the word in the cosmological sense (*Vict.* 1), and here appears to be interested in man’s relationship to the whole universe (τοῦ ὅλου κόσμου). Cf. Mansfeld (1980) 342 and n.65.

<sup>247</sup> E.g. *VM* 15; *Aff.* 3; *Acut.* 22. Thucydides (2.51) also uses the verb προσφέρειν to

The product of this analysis into Eryximachus' cure is twofold. It appears that Eryximachus is not being pedantic when he offers to help Aristophanes. The cures are set forth systematically and with plain language. The prescribed cures are, with the exception of gargling, attested in a non-medical work. This suggests that Plato is not being critical of the physician's techniques in this instance. We do, however, find clear parody befitting Aristophanes in his response to the treatment. The use of technical jargon and style confirms the belief that Plato was familiar with the scientific and medical language of his time well enough to create an effective (and playful) comedic interlude at the expense of these professions. Echoes of this style, although in a moderate and certainly more serious form, would be seen in Plato's later and more technical writings.<sup>248</sup>

### Summary

Plato mentions all of the major tools of healing, both medical and religious, in his dialogues. The vocabulary that he uses is often seen in the Hippocratic Corpus, a fact which suggests that he had a familiarity with doctors and their craft. There are several instances, however, when Plato's language is more comparable to general usage than medical. This is especially true with his use of φάρμακον, a word he employs to mean both a medical drug and potion. Despite this wider definition, we also see that Plato mentions φάρμακα with the assumption that he means those used by doctors when no agent, such as a γόης or an ἰατρός, is mentioned.

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describe the administration of medical aid. Cf. Page (1953) 104.

<sup>248</sup> Thesleff (1967) 72 remarks that Plato writing was not influenced much by technical scientific writings until his late works.

Our analysis of the remaining treatments including cutting, burning and medical-cupping, suggests that Plato has a good understanding of the medical tradition. This is implied in his discussion regarding the medical tools used by Asklepios. When mentioning the arts of cutting and burning, though, Plato generally does not use the terms to mean individual and distinct techniques, but rather as a single metaphor borrowed from his contemporaries.

The cures that Socrates gives to Charmides and those which Eryximachus prescribes to Aristophanes provide an interesting dichotomy. In the *Charmides*, Socrates is depicted as a man with secret knowledge passing on a magical cure. His cure is closer in comparison to one given by a priest of Asklepios than one prescribed by a scientific medical professional. The long literary history concerning the use of charms in healing is evidence that its use as a cure would have both a historical precedence for its effectiveness and a revered nature.

In comparison, Eryximachus' cures for Aristophanes are examples of remedies that were proved through positive results rather than honoured by tradition. When Plato portrays Eryximachus he shows him administering effective cures in a style that is easy to understand. By doing this, Plato shows Eryximachus in his role as the practicing physician in a positive light; there is the sense that Eryximachus is concerned not with using impressive technical jargon, but he is concerned with assisting a friend. In contrast, Aristophanes' reply is rich with jargon despite its short length. Here, Aristophanes parodies both Eryximachus' vocabulary in his discussion of Love and the technical style of scientific prose in general. This jab appears to be in good fun and should not be

interpreted as suggesting Plato's disdain for the medical art. The technical nature of Aristophanes' reply, however, further suggests not only that Plato was aware of technical writings on medicine, but also that he was probably well-acquainted with them; an effective parody necessitates more than a passing familiarity with the subject matter.

### **Conclusions and Observations**

My purpose in this thesis has been to explore Plato's anatomical and medical vocabulary. The analysis of his discussions on these areas has been divided into four parts: anatomy and physiology, physical conditions and reactions, doctors and medicine, and treatments and cures. Through this study certain generalizations can be made about Plato's language and influences.

Plato's knowledge of human anatomy appears to reflect an understanding of the human body that had been established at least by the time of Homer. As shown with the recurring quotes in his dialogues taken from the *Odyssey* which describes Odysseus' beating heart, Plato reveals that he places much stock in the authority of Homer when he describes human anatomy and physiology. Moreover, only in the *Timaeus* does he use anatomical vocabulary that is not present in either the *Iliad* or the *Odyssey*. This is owing to the greater detail needed in this work of natural science. Many of these specific details that Plato provides seem to necessitate some close observation of internal organs. It is my contention that he derives much of this information from the observation of slaughtered animals. Plato's theories on human physiology are, for the most part, probably not taken from any new research on the subject by natural scientists and physicians. Although some parodies show Plato's familiarity with these subjects, most of the conclusions he reaches do not follow the early natural philosophers, but rather are the results of his attempt to harmonize biology and metaphysics. When he provides information that has no immediate relation to his theories of the soul, such as his belief

that the lungs take in fluids, comparable sentiments can be found in the writings of his literary predecessors.

In the great majority of instances where Plato discusses diseases, the medical profession, and physicians' techniques, he uses the examples in analogies. The terms νόσος and ἀνίατος, for example, are used both in metaphors of the sick and incurable members of society and in metaphors of diseases and corruptions of the soul (these subjects, however, are certainly not mutually exclusive). When the topic turns to doctors, it is often used to illustrate the defining qualities of a profession that exhibits a τέχνη (in contrast to sophistry); a physician who is able to produce results is rightly considered to be skilled and is therefore deserving of the title ἀγαθός ἰατρός. Plato also uses the techniques of these doctors – the administration of drugs, cutting, and burning – as metaphors in his dialogues. Φάρμακον is frequently used to mean the cure for any sickness, literal or otherwise. So too, καῦσις and τομή are frequently used by Plato as treatments performed by doctors. These, however, have a narrower metaphorical use than τὸ φάρμακον. Plato uses “to cut” and “to burn” specifically as metaphors of the submission to the bad (pain) for the greater good (health). It is important to note that all of these instances of metaphorical language are not limited to the dialogues of Plato. Authors such as Heraclitus, Antiphon, Xenophanes, Isocrates, and Demosthenes all use at least one of the above medical metaphors. This common appearance of comparable metaphorical language strongly suggests that none of these was created by Plato. Certain ideas, however, such as the analogy between the treatment of the body and the treatment of the soul, were possibly the creation of the historical Socrates. Regardless of the origin of these analogies, their positive treatment in several Classical writings suggests that the



medical profession was considered to be of great importance to the Athenians and other Greek citizens. If we consider this view of the medical art, we can surmise that the (skilled) physicians, too, were held in high esteem.

The overall impression of the medical profession that Plato gives to us is that he considered doctors and their craft to have performed an important function in society and to be therefore deserving of respect. Nowhere in his works does he have Socrates say anything derogatory about them. In the parody of technical language of kinesiology in the *Phaedo*, Plato does not have fun at the expense of doctors, but rather at the language of natural philosophers. The language of the two fields admittedly does coincide at times. As we see in Eryximachus' cure for Aristophanes, however, Plato portrays the doctor as providing effective cures in a plain style. The language of the practicing physicians must have been at some odds with the speculative language of the medical theorist. The only character in Plato's dialogues to make a direct assault upon the medical profession is the comic Aristophanes. Aristophanes' intention does not seem to be a malicious attack upon the art of medicine, but rather a playful goading of a friend. Implicit in this section of the *Symposium* is that Plato wishes to fulfill expectations of Aristophanes that the reader would have. Plato appears to agree fully with Hippocrates and his method of inquiry when discussing him in the *Phaedrus*. The only anomaly to Plato's positive opinion to the art of medicine is Socrates' statement within the *Charmides* that Greek doctors are ignorant of the whole when treating the body. It must be pointed out in this case that Socrates is reporting the opinion of another doctor, one from the remote (and somewhat strange) region of Thrace. Even if we are to assume that this is an opinion that Plato actually held, it is indicative of the acknowledgment that

some cures are beyond the ability of Greek doctors and that Plato takes exception to certain methods of medical investigation, but clearly not all. It therefore seems a safe conclusion to assert that Plato both respected the medical community at large for its role within society and admired it for its methods of investigation into the workings of the human body and its care.

At the outset of the preceding investigation I had aspirations of finding direct comparisons between the medical ideas expressed in Plato's dialogues and those expressed in specific works within the Hippocratic corpus. Plato spends some time in the *Phaedrus* discussing the method of Hippocrates. It is difficult, however, to draw a clear connection between the ideas expressed by Plato in this work and any one of the Hippocratic writings. This passage in the *Phaedo* is the best insight we have in his corpus into both the practice of the true Hippocrates and potential Hippocratic writings. It soon became apparent to me that my desired outcome would not be possible in a work of this scope (if possible at all). As I have intended to show, Plato appears to be familiar with technical medical writings, yet he relies more heavily upon contemporary ideas and his own insights into the subject than the ideas of Hippocratic physicians. There is no doubt, however, that physicians did have effect on the intellectual community of which Plato was a member in high standing. With further investigation, I believe that it would be possible at the very least to eliminate many Hippocratic writings to which he probably was not exposed. There is a twofold benefit for such an exploration: First, it will allow further insight into the sources for Plato's technical language and theories, and the possible influences that writers from the Hippocratic Corpus had upon Athenian thought. Second, it is possible that such study will help to define further what medical writings

were composed in the fifth and fourth centuries, and to clarify further their places of composition and distribution.

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