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The typology of human constitutions in Hippocrates' De victu 1, 32

Summary – The paper offers an interpretation of a rather intriguing chapter of the Hippocratic treatise De victu. The author argues that the human constitutions described in De victu 1, 32 are to be regarded in the metaphysical and anthropological context of Book I of the treatise, according to which everything can be reduced to two elements (fire and water) and four properties (warm, dry, cold, wet).

The present paper[1] analyzes the six human constitutions described in ch. 1, 32 of the Hippocratic treatise De victu, arguing that they were intended by the author as a s y s t e m a t i c approach to human nature from a medical point of view, as well as emphasizing their importance in the philosophical and medical context of the treatise. Before discussing ch. 1, 32, a thorough discussion of the metaphysical basis of anthropology extracted from ch. 1, 3 and 1, 4 of the treatise will be presented.

In De victu, the author claims that everything, the whole world and the man himself, is made of fire and water (1, 3).[2] The two elements, opposed as they are,

[1] The first part of this paper was presented in August 2009 at the Approaches to Ancient Medicine Conference in Newcastle and benefited from useful comments from the attending scholars, especially from Prof. Philip van der Eijk (Berlin) and Hynek Bartos (Prague). For comments on the final form of the paper I am grateful to Prof. Herbert Bannert (Vienna) and Prof. Wilhelm Schwabe (Vienna). For decisive help in reviewing the paper I am also grateful to Laura Andreias (Cleveland).

[2] The reader of De victu may easily get the impression that fire and water are just the elements of the living world, because this is the author's main concern throughout his work. In 1, 3, for instance, the author introduces his theory of elements with the following words: συνίσταται μὲν οὖν τὰ ζῷα τά τε ἄλλα πάντα καὶ ὁ ἄνθρωπος ἀπὸ δυοῖν ... πυρὸς καὶ ὕδατος "every living being and the man himself are composed of two [elements], fire and water." However, c. 5 clearly states that ἡμέρη καὶ εὐφρόνη ἐπὶ τὸ μήκιστον καὶ ἐλάχιστον· ὡς σελήνη ἐπὶ τὸ μήκιστον καὶ ἐλάχιστον, πυρὸς ἔφοδος καὶ ὕδατος, ⟨οὕτως⟩ ἥλιος ἐπὶ τὸ μακρότατον καὶ βραχύτατον "day and night increase to the highest point and decrease to the lowest point: just like the moon increases and decreases to its highest and its lowest – being a movement of fire and water –, the sun also gets bigger and smaller." According to this passage we may conclude that the author is professing not only a biological dualism, but a general ontological dualism. – The Greek text is that of R. Joly (CMG), the translations are my own.

cooperate in bringing about the multiplicity of individual things, because none of them is sufficient to itself, while together they suffice to one another and to everything else. Every particular thing is a composition of fire and water, i. e. contains some fire and some water – since the two elements are nowhere to be found as such. Therefore, the diversity of the world can only be explained by the infinite proportions in which the two elements can mix together. In other words, because both fire and water have a 'more' and a 'less', the multiplicity of individual things appears only to the common eye as a qualitative multiplicity, the whole world consisting in reality of quantitatively different combinations of the two components.

Each of the two elements of the world has, according to the author of De victu, two specific properties: fire is warm and dry, water is cold and wet.[3] As it can be seen, the four properties are opposed to one another respectively, just like the two elements are opposed to one another. One may even tend to assume that the opposition of the elements is due first and foremost to the opposition of their fundamental properties.[4] However, the four properties – that is to say the two

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3 τούτων δὲ πρόσκειται ἑκατέρῳ τάδε· τῷ μὲν πυρὶ τὸ θερμὸν καὶ τὸ ξηρόν, τῷ δὲ ὕδατι τὸ ψυχρὸν καὶ τὸ ὑγρόν "the two [elements] have the following [properties]: fire is warm and dry, water is cold and wet" (1, 4).

4 The warm, the cold, the wet and the dry are the fundamental properties in the Hippocratic treatise De natura hominis as well. In ch. 7, the four humours (and seasons) are described by these properties: phlegm is regarded as being cold and wet, blood as being wet and warm, yellow bile as being dry and warm, and black bile as being dry and cold. In ch. 3, the author argues that human body is a composite made of elements having specific properties when coming together (ἀνάγκη … ἕκαστον τῶν συμβαλλομένων ἐς τὴν γένεσιν ἔχειν τὴν δύναμιν ἐν τῷ σώματι, οἵην περ συνεβάλετο). As a result, when a man dies, his constituents separate in order to rejoin similar substances: wet returns to wet, dry to dry, warm to warm and cold to cold (ἀνάγκη ἀναχωρεῖν ἐς τὴν ἑωυτοῦ φύσιν ἕκαστον, τελευτῶντος τοῦ σώματος τοῦ ἀνθρώπου, τό τε ὑγρὸν πρὸς τὸ ὑγρὸν καὶ τὸ ξηρὸν πρὸς τὸ ξηρὸν καὶ τὸ θερμὸν πρὸς τὸ θερμὸν καὶ τὸ ψυχρὸν πρὸς τὸ ψυχρόν). G. E. R. Lloyd, who revealed the importance of these four properties in the Greek philosophy of the Classical and Pre-Classical Age (The Hot and the Cold, the Dry and the Wet in Greek Philosophy, Journal of Hellenic Studies 84 [1964], 92 – 106; see also Polarity and analogy. Two types of argumentation in early Greek thought, Cambridge 1964, especially ch. I 'Theories based on opposites in early Greek thought', pp. 15 – 86) argued that in De natura hominis, unlike in other medical or philosophical writings, warm, cold, wet and dry are themselves elements of the world or primary substances rather than properties of the elements. However, in my opinion the passage in ch. 3 cited above, which is referred to by G. E. R. Lloyd as the main evidence, does not support this interpretation. The Hippocratic author considers there the constituents of human body (τὰ συμβαλλόμενα) as having a specific property (δύναμις) or nature (φύσις). Apart from the somewhat misleading substantivized adjectives τὸ ὑγρόν, τὸ ξηρόν, τὸ θερμόν and τὸ ψυχρόν there is no reason to believe that the Hippocratic author regarded warm, cold, wet and dry as συμβαλλόμενα rather than as δυνάμεις (sc. τῶν συμβαλλομένων). Moreover, in ch. 4 the author of De natura hominis

pairs of opposite properties, warm vs. cold and dry vs. wet – explain how the two elements can mix together, because they specify what fire and water, in spite of their opposition, have in common.[5] By specifying what the opposition of the elements consists in, the two pairs of opposite properties point out the common basis that makes the combination of the elements, i. e. the whole world, possible. The two pairs of opposite properties are two variables which might be called, for the sake of convenience, temperature and humidity, and represented using a Cartesian coordinate system as follows:

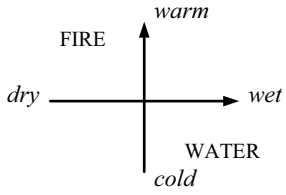

Figure 1

It can easily be seen that two of the four quarters in the above figure, the warm-and-dry and the cold-and-wet, can be ascribed by definition to fire and water. On the contrary, the other two quarters (i. e. the warm-and-wet and the dry-and-cold) seem rather neutral towards the two elements or at least difficult to be ascribed with certainty. However, there are reasons to believe that the Hippocratic author regarded each of these two latter quarters as being unequivocally connected with one of the elements, namely the warm-and-wet with fire and the dry-and-cold with water.

First of all, let us take a look at the second sentence of ch. 1,4, where the author asserts that each element has a property from the other one:

ἔχει δὲ ἀπ᾽ ἀλλήλων τὸ μὲν πῦρ ἀπὸ τοῦ ὕδατος τὸ ὑγρόν· ἔνι γὰρ ἐν πυρὶ ὑγρότης· τὸ δὲ ὕδωρ ἀπὸ τοῦ πυρὸς τὸ ξηρόν· ἔνι γὰρ καὶ ἐν ὕδατι ξηρόν.

"Each [element] has something from the other one: fire has the wet from water, for there is some wetness in fire; and water has the dry from fire, for there is some dryness in water." (1,4)

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introduces the four humours as t h e constituents of human body, and in ch. 7, as we have already mentioned, he describes the humours using the four fundamental properties. However, Lloyd's interpretation leaves unanswered the difficult question of the relationship between the four properties regarded as primary substances and the four humours (see The Hot and the Cold … 93, footnote 1; Polarity and analogy 74).

5 Moreover, the properties of the elements also make clear how the increase and decrease, the 'more' and 'less' of fire and water are to be understood: a warmer and dryer fire is a stronger instance of fire, a colder and wetter water is a stronger instance of water. However, see below note 8.

This passage states that each of the elements can lose one of its fundamental properties (fire – its dryness; and water – its wetness) without becoming something else: fire is still fire even if it isn't dry, and water is still water even if it isn't wet. Therefore, the two properties of each element are not equipollent: one should rather speak of a first-rank and a second-rank property. Fire is essentially warm (a first-rank property) and only accidentally dry (a second-rank property), since it can be both dry and wet; and water is essentially cold (a first-rank property) and only accidentally wet (a second-rank property), since it can be both wet and dry.[6] Consequently, the opposition between fire and water can be regarded mainly as an opposition of their first-rank properties (fire is essentially warm, water is essentially cold), since both elements can be both wet and dry. That is to say, in Figure 1, the *y*-axis (temperature) is much more important than the *x*-axis (humidity), because a positive value of temperature means unequivocally fire, while a negative value can only mean water. This interpretation, according to which the upper half of the figure belongs to fire and the lower half to water, is supported by other hints in the text of De victu.[7]

Secondly, the first sentence of ch. 1, 4 (cited above in footnote 2) introduces the four properties with the following words: "fire is warm and dry, water is cold and wet". Since coldness and dryness are foremost the absence of warmness and wetness respectively, each of the elements has actually a positive and a negative property. For this reason, if fire is warm and dry, one would have expected water to be wet and cold, not cold and wet. By ranking coldness first (a first-rank property, as I called it above), the Hippocratic author suggests that coldness, though a negative property, is as essential to water as warmness is to fire.

Thirdly, if one considers the opposition of fire and water in terms of an opposition between their first-rank properties (i. e. warm and cold – a positive and a negative property), fire will then appear as the properly positive element,

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6 This doesn't affect the fire's being ultimately dry and the water's being ultimately wet. Wet fire and dry water are only atypical varieties of the two elements. The main point is, however, that the expressions wet fire and dry water do occur several times in De victu (ὕδατος ξηροῦ καὶ πυρὸς ὑγροῦ 1, 7, ὑγρότατον τοῦ πυρός 1, 9, ὕδατι ξηρῷ καὶ ὑγρῷ 1, 10, πυρὸς τὸ ὑγρότατον 1, 32 and 1, 35, ὕδατος τοῦ ξηροτάτου 1, 32, ὕδατος τὸ ξηρότατον 1, 35), while the possibility of a cold fire or a warm water (n. b.: the metaphysical, not the common concept) is never alluded to throughout the treatise (see also the index verborum of the CMG edition, s. v. πῦρ and ὕδωρ).

7 We should also note that, according to G. E. R. Lloyd, "while hot and cold have uniformly positive and negative associations respectively, the dry and the wet, on the other hand, appear to have ambivalent associations" (The Hot and the Cold … 101, Polarity and analogy 46). In other words, the opposition between hot and cold, as between a positive and a negative term, appears to have been much stronger in the Greek world than the opposition between wet and dry (G. E. R. Lloyd cites evidence from Homer down to Aristotle).

while water should only be regarded as its counterpart. In other words, the two elements are not equipollent either, the disequilibrium of the (pairs of) properties resulting in a disequilibrium of the elements themselves. This conclusion is also supported by ch. 1, 9/10, where the active element manages to construct the human body and the whole universe all by itself.[8]

Thus, it follows that both fire and water have a primary and a derivative meaning: fire is basically warm and dry, although a (warm and) wet fire is also possible, while water is basically cold and wet, although a (cold and) dry water is also possible. In order to distinguish the primary and the derivative meaning of the elements, I will designate the warm and dry fire as the typical variety of fire, and the warm and wet fire as an atypical variety of fire; similarly, I will designate the cold and wet water as the typical variety of water, and the cold and dry water as an atypical variety of water:

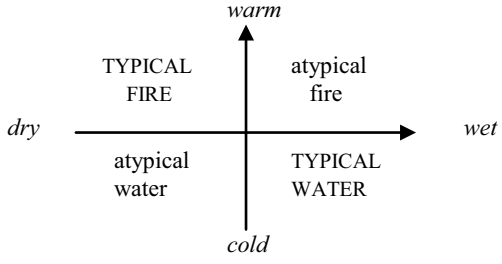

Figure 2

In ch. 1, 32 of De victu, the author describes six human constitutions, without any introductory or conclusive remarks and without any visible connection with the foregoing or the following chapters. However, his main goal is not to catalogue human constitutions, but to make clear what health is and how men should live in order to prevent or cure diseases. This is the main reason why ch. 1, 32 appears more or less isolated in the context of Book I, which deals with the philosophical foundations of medicine, as announced in 1, 2, rather than dietetics properly speaking.[9] Moreover, several concepts used to describe the constitutions in 1, 32, such as πῦρ λεπτόν 'fine fire', πῦρ ἀραιόν 'rare fire', ὕδωρ πυκνόν 'dense water' or ὕδωρ παχύ 'compact water', do not occur anywhere else in the treatise and are not explained by the author at all.[10] The peculiarity and, one

8 In 1, 10 the strongest fire is simply the warmest fire, without any regard to its humidity.

9 The medical prescriptions in 1, 35 concern exclusively the intellectual faculties and the possibility of improving them, not the general state of health.

10 However, the author benefits from a long terminological tradition. According to Plutarch (DK 13 B 1), Anaximenes defined the cold as 'contracted and dense matter' (συστελλόμενον καὶ πυκνούμενον) and the warm as 'rare and dispersed matter' (ἀραιὸν καὶ χαλαρόν).

might say, the obscurity of ch. 1, 32 is even more evident in the secondary literature on Hippocrates, since the commentators have almost entirely avoided it.[11] Thus, the purpose of the present paper is to clarify the typology of human constitutions depicted in ch. 1, 32 and to demonstrate its importance in understanding the medical theory as well as the general Weltanschauung of De victu.

The six human constitutions presented in 1, 32 are characterized by the type of fire and water they contain. The Hippocratic author mentions four varieties of fire and four of water:

πῦρ ἰσχυρόν (intense fire)	ὕδωρ πυκνόν (dense water)
πῦρ ἀραιόν (rare fire)	ὕδωρ λεπτόν (fine water)
πῦρ λεπτόν (fine fire)	ὕδωρ παχύ (compact water)
πῦρ ὑγρόν (wet fire)	ὕδωρ ξηρόν (dry water).[12]

In the description of the six constitutions, two varieties of fire and two of water occur twice, in two different combinations: intense fire in constitution 2 and 5, rare fire in constitution 1 and 6, dense water in constitution 2 and 4, and fine water in constitution 1 and 5. The remaining varieties of fire and water occur only once: fine fire in constitution 3, wet fire in constitution 4, compact water in constitution 3 and dry water in constitution 6. Therefore, I will designate the four varieties which occur twice (the first two positions in the above table) as principal varieties and the other four which occur only once (the last two positions) as secondary varieties.

In order to make clear the typology of constitutions, I will first have a closer look at the description of the first constitution, which is illustrative for the issues that concerned the author and contains some general suggestions regarding his concept of health:

ὕδατος δὲ τὸ λεπτότατον καὶ πυρὸς τὸ ἀραιότατον σύγκρησιν λαβόντα ἐν ἀνθρώπου σώματι ὑγιεινοτάτην ἕξιν ἀποδεικνύει διὰ τάδε, ὅτι ἐν τῇσι μεταβολῇσι τῶν ὀρέων τοῦ ἐνιαυτοῦ τῇσι μεγίστῃσιν οὐκ ἐπιπληροῦται τὸ ἔσχατον οὐδέτερον,

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Parmenides (DK 28 B 7/8) opposed light (τὸ φάος) described as rare (ἀραιόν), warm (θερμόν), soft (μαλθακόν) and light (κοῦφον) to darkness (ζόφος) described as dense (πυκνόν), cold (ψυχρόν), hard (σκληρόν) and heavy (βαρύ). Anaxagoras too (DK 59 B 15) opposed the dense (πυκνόν), wet (διερόν), cold (ψυχρόν) and dark (ζοφερόν) to the rare (ἀραιόν), warm (θερμόν) and dry (ξηρόν).

11 It suffices to note that the only book-size commentary on De victu (R. Joly, Recherches sur le traité pseudo-hippocratique Du régime, Paris 1960) has no more than a few scattered sentences on ch. 1, 32.

12 The author of De victu uses permanently the superlative form of the Greek adjectives (e. g. πυρὸς τὸ ἀραιότατον or πυρὸς τοῦ ἰσχυροτάτου). For the sake of convenience we mention only their positive form and will use it also for the English adjectives.

οὔτε τὸ ὕδωρ ἐς τὸ πυκνότατον ἐν τῇσι τοῦ ὕδατος ἐφόδοισιν, οὔτε τὸ πῦρ ἐν τῇσι τοῦ πυρός, οὔτε τῶν ἡλικιῶν ἐν τῇσι μεταστάσεσιν, οὔτε τῶν σίτων καὶ ποτῶν ἐν τοῖσι διαιτήμασι. δύνανται γὰρ κρῆσίν τε πλείστην δέξασθαι ἀμφότερα καὶ πλησμονήν. χαλκὸς ὁ μαλακώτατος καὶ ἀραιότατος πλείστην κρῆσιν δέχεται καὶ γίνεται κάλλιστος. καὶ ὕδατος τὸ λεπτότατον καὶ πυρὸς τὸ ἀραιότατον σύγκρησιν λαμβάνοντα ὡσαύτως. οἱ μὲν οὖν ταύτην ἔχοντες τὴν φύσιν ὑγιαίνοντες διατελέουσι τὸν πάντα χρόνον, μέχρι τεσσεράκοντα ἐτέων, οἱ δὲ καὶ μέχρι γήρως τοῦ ἐσχάτου· ὅσοι δ' ἂν ληφθέωσιν ὑπό τινος νοσήματος ὑπὲρ τεσσεράκοντα ἔτεα, οὐ μάλα ἀποθνῄσκουσιν.

"The finest water and the rarest fire produce by their combination in a human body the healthiest constitution, for the following reason. None of them increases to its highest point during the great changes brought by the seasons: water doesn't become entirely dense during the affluence of water nor does fire [become extremely intense][13] during the affluence of fire – regardless of the changes caused by age or the food and drink habits. For both [elements] can mix with one another and increase to a very high degree. The more flexible and looser bronze is, the better it blends and the more beautiful it becomes. It is the same with the finest water and the rarest fire when they combine together. People with such a nature are healthy all their life, up to the age of forty, some of them even to an advanced age; and if they are seized by some disease after the age of forty, they don't usually die of it." (1, 32)

As a result of his view on the elementary composition of the human body, the Hippocratic author regards health as the right proportion of fire and water in the body. Consequently, he explains illness by the disturbance of the natural balance due to the excess of either fire or water.[14] Therefore, to maintain proper health

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13 See below.

14 According to the tradition, the first to describe health as an equilibrium of body constituents was Alcmaeon of Croton. He pointed out the balance of power (ἰσονομία τῶν δυνάμεων, DK 24 B 4) between wet and dry, cold and warm, bitter and sweet and asserted that diseases occur when one of these powers prevails over the others (μοναρχία). This opinion was common among the authors of the Corpus Hippocraticum, see e. g. De vetera medicina 14 (ἔνι γὰρ ἐν ἀνθρώπῳ καὶ ἁλμυρὸν καὶ πικρὸν καὶ γλυκὺ καὶ ὀξὺ καὶ στρυφνὸν καὶ πλαδαρὸν καὶ ἄλλα μυρία παντοίας δυναμίας ἔχοντα πλῆθός τε καὶ ἰσχύν· ταῦτα μὲν μεμιγμένα καὶ κεκρημένα ἀλλήλοισιν οὔτε φανερά ἐστιν οὔτε λυπεῖ τὸν ἄνθρωπον, ὅταν δέ τι τούτων ἀποκριθῇ καὶ αὐτὸ ἐφ' ἑωυτοῦ γένηται, τότε καὶ φανερόν ἐστι καὶ λυπεῖ τὸν ἄνθρωπον "in a man there is salty and bitter and sweet and acid and astringent and insipid and innumerable other things that have various powers as to their quantity and strength; when all these are mixed and blended with one another, they are not conspicuous and do not cause a man pain, but when one of them separates and comes to be on its own, it becomes conspicuous and causes pain"), De natura hominis 4 (τὸ δὲ σῶμα τοῦ ἀνθρώπου ἔχει ἐν ἑωυτῷ αἷμα καὶ φλέγμα καὶ χολὴν ξανθὴν καὶ μέλαιναν, καὶ ταῦτά ἐστιν αὐτῷ ἡ φύσις τοῦ σώματος, καὶ διὰ ταῦτα ἀλγεῖ καὶ ὑγιαίνει. ὑγιαίνει μὲν οὖν μάλιστα ὅταν μετρίως ἔχῃ ταῦτα τῆς πρὸς ἄλληλα δυνάμιος καὶ τοῦ πλήθεος, καὶ μάλιστα μεμιγμένα ᾖ· ἀλγεῖ δ' ὅταν τι τούτων ἔλασσον ἢ πλέον χωρισθῇ ἐν τῷ σώματι καὶ μὴ κεκρημένον ᾖ τοῖσι πᾶσιν "The human body contains blood, phlegm, yellow and black bile, and this is what its nature consists of, and because of these it is ill or healthy. A man is most healthy when

and avoid (or cure) illness, it is necessary to have knowledge of the factors affecting the proportion of fire and water in the body[15] – which may cause an undesired disturbance or can help to restore the natural balance of the elements. The author emphasizes three such factors, which act independently of one another: the (seasonal) climate, the age and the regimen. The first two of them, climate and age, cannot be influenced by humans, but the regimen – comprising two aspects, alimentation and physical exercises – is to a considerable extent determined by every individual. Since these factors affect the proportion of fire and water in the body, their nature can be described by the same four properties of the elements (i.e. warmness and coldness, wetness and dryness). For example, there are four seasons and four ages of man corresponding, by virtue of their properties, precisely to the four quarters of Figure 2. In ch. 1, 33, the author claims that the child is wet and warm, the young is warm and dry, the man is dry and cold and the old is cold and wet. In other words, he points out two strong-profile ages associated with the typical varieties of the elements (i. e. youth, representing the fiery age, and old age, representing the watery age), and two low-profile ages associated with the atypical varieties, appearing as transitional stages towards the two main ages (i. e. childhood, which pertains to fire and announces youth, due to its warmness, and manhood, which pertains to water and announces old age, due to its coldness). Similarly, each of the four seasons, corresponding to one of the four ages of man, can be described by two of the four fundamental properties – although the author of De victu never does this explicitely. Anticipating the analysis of the last four constitutions, it may already be noted that the affluence of fire and the affluence of water (ἔφοδοι τοῦ πυρός and ἔφοδοι τοῦ ὕδατος) mentioned in the description of the first constitution represent the two main seasons, summer and winter, respectively.

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they are in the right proportion as to their power and quantity towards each other, and when they are most mixed; on the contrary, a man gets ill when one of them, being too much or too little, separates in the body and is not blended anymore with all others").

15 Since cure means restoring health balance, medical treatment aims to either diminish a too strong constituent of the body or to strengthen a too weak one. This theory of 'curing by opposites' (τὰ ἐναντία τῶν ἐναντίων ἰήματα, De Flatibus 1) is also widespread in the Hippocratic writings, see e. g. De vetere medicina 13 (δεῖ τὸν ὀρθῶς ἰητρεύοντα βοηθεῖν τῷ μὲν θερμῷ ἐπὶ τὸ ψυχρόν, τῷ δὲ ψυχρῷ ἐπὶ τὸ θερμόν, τῷ δὲ ξηρῷ ἐπὶ τὸ ὑγρόν, τῷ δὲ ὑγρῷ ἐπὶ τὸ ξηρόν "he who treats right should use warm against cold and cold against warm, dry against wet and wet against dry"), De natura hominis 9 (ὅσα πλησμονὴ τίκτει νοσήματα, κένωσις ἰᾶται, ὅσα δὲ ἀπὸ κενώσιος γίνεται, πλησμονὴ ἰᾶται, ὅσα δὲ ἀπὸ ταλαιπωρίης γίνεται, ἀνάπαυσις ἰᾶται, ὅσα δὲ ὑπερτέρη ἀργίη νοσήματα τίκτει, ταῦτα ταλαιπωρίη ἰᾶται "diseases caused by repletion are cured by depletion, diseases caused by depletion are cured by repletion, diseases caused by effort are cured by relaxation and diseases caused by too much inactivity are cured by effort").

In the description of the first constitution, the author asserts that (1) dense water is the highest degree of water; (2) the water in the body reaches its highest point during the watery season (i. e. in winter); and (3) the variety of water which enters into the composition of the first constitution (i. e. fine water) doesn't reach the highest possible degree of water (i. e. dense water) even during the watery season (i. e. in winter). From these premises one may infer that the variety of water which enters into the composition of the first constitution opposes the highest degree of water, i. e. that fine water is the lowest degree of water. Therefore, one may conclude that the two principal varieties of water are opposed to one another.

Similarly, one may infer that the variety of fire which enters into the composition of the first constitution represents the lowest degree of fire, because rare fire doesn't reach the highest possible degree of fire even during the fiery season (i. e. in summer). Unfortunately, the text of our mss. did not preserve the denomination of the highest degree of fire in the description of the first constitution, as it mentions dense water in opposition with fine water. However, after the analysis of the second constitution it will become evident that the highest degree of fire is the other principal variety of fire, namely intense fire. Assuming that the two principal varieties of fire are also opposed to one another, the passage

ὅτι ἐν τῇσι μεταβολῇσι τῶν ὀρέων τοῦ ἐνιαυτοῦ τῇσι μεγίστῃσιν οὐκ ἐπιπληροῦται τὸ ἔσχατον οὐδέτερον, οὔτε τὸ ὕδωρ ἐς τὸ πυκνότατον ἐν τῇσι τοῦ ὕδατος ἐφόδοισιν, οὔτε τὸ πῦρ ἐν τῇσι τοῦ πυρός

must be supplemented to

ὅτι ἐν τῇσι μεταβολῇσι τῶν ὀρέων τοῦ ἐνιαυτοῦ τῇσι μεγίστῃσιν οὐκ ἐπιπληροῦται τὸ ἔσχατον οὐδέτερον, οὔτε τὸ ὕδωρ ἐς τὸ πυκνότατον ἐν τῇσι τοῦ ὕδατος ἐφόδοισιν, οὔτε τὸ πῦρ ⟨ἐς τὸ ἰσχυρότατον⟩ ἐν τῇσι τοῦ πυρός

because the attribute πυκνός referring to water doesn't refer to fire as well.

To sum up, the first constitution is the healthiest constitution, because both fire and water are at their lowest level: fine water cannot become entirely dense in winter, and rare fire cannot intensify to its extreme in summer. For this reason, the balance of fire and water is the most stable possible, and people with such a constitution are safe from diseases, regardless of the season and their age. They also have the most freedom to choose their manner of living, since they don't have to fear diseases when eating a particular food or practicing a specific exercise. This is why the first constitution doesn't need any dietetic prescriptions.

The second constitution is composed of intense fire and dense water. The Hippocratic author asserts on the one hand that it is rather healthy and on the other hand that such people have to be careful especially in summer and winter, because they tend to have a predisposition to diseases coming from both fire and

water. As I have already shown, dense water represents the highest degree of water. Since the second constitution is in principle balanced[16] but is vulnerable to the excess both of fire and water, one may safely infer that the variety of fire entering into its composition represents the highest degree of fire. In other words, the two elements are in the second constitution at their highest level, just like they are at their lowest level in the first constitution. This explains both the similarities and the differences between the first two constitutions. Like the first constitution, the second constitution is healthy, i. e. balanced, in contrast to the following four constitutions, which are in principle unbalanced. Unlike the first constitution, the second constitution has an unstable balance of the elements, because of the high level of fire and water in the body, which can easily degenerate into an excess of either one. For this reason, the second constitution, despite its being balanced, is the most vulnerable constitution: such people have to be careful during both main seasons (i. e. half of the year), while the four basically unbalanced constitutions only have one difficult season. For people of the second constitution, the author recommends a way of living contrary to the seasons, namely a watery regimen in summer and a fiery regimen in winter.[17]

In summary, the first two, healthy constitutions are composed of principal varieties of the elements, and the principal varieties of each element are opposed to one another. On the contrary, the following four constitutions have a specific nature, described by the fundamental properties of the elements, and a vulnerability corresponding to one of the four seasons:[18]

constitution 3 is cold and wet, gets ill in winter
constitution 4 is warm and wet, gets ill in spring
constitution 5 is warm and dry, gets ill in summer
constitution 6 is cold and dry, gets ill in autumn.[19]

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16 Ὅσα δὲ τῶν σωμάτων σύγκρησιν λαμβάνει πυρὸς τοῦ ἰσχυροτάτου καὶ ὕδατος τοῦ πυκνοτάτου, ἰσχυρὰ μὲν καὶ ἐρρωμένα [τὰ σώματα] γίνεται.

17 Although there is no mentioning of the two low-profile seasons, viz. spring and autumn, we may suppose that these parts of the year are less dangerous for the health, because they don't contribute directly to the augmentation of either element (on their specific properties below). The Hippocratic author also omitted any reference to the ages: following his argumentation, we may assume that the two main ages, youth and old age, are both dangerous for the second constitution, while childhood and manhood are less dangerous.

18 A detailed survey of the last four constitutions can be found in E. Schöner, Das Vierererschema in der antiken Humoralpathologie, Wiesbaden 1964, pp. 31 – 33.

19 This is the scheme the author undoubtedly had in mind, although he doesn't always respect it. For example, he says that constitution 3 gets ill in winter rather than in summer and in spring rather than in autumn; actually, one would have expected the spring to be healthier than autumn, because it is a fiery season (i. e. it counterbalances the inborn coldness of people having this constitution). Moreover, he claims that the healthiest are

Since an unbalanced constitution is more prone to disease in the season that augments its inborn disequilibrium, the properties of each constitution are also the properties of the corresponding season. In other words, there are two strong-profile seasons, corresponding to the typical varieties of the elements: winter has a watery and summer a fiery nature (see above Figure 2). There are also two low-profile seasons, corresponding to the atypical varieties of the elements: spring pertains to fire (due to its warmness) and announces the summer, while autumn pertains to water (due to its coldness) and announces the winter. Consequently, the seasons and the ages can be represented in the Cartesian coordinate system of the elements as follows:[20]

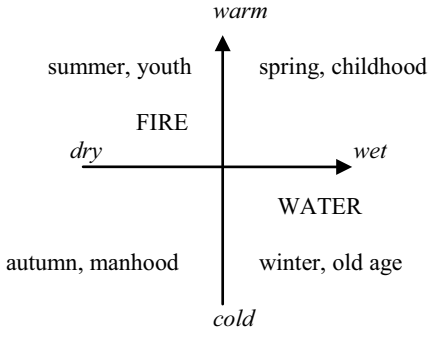

Figure 3

I shall now take a look at the composition of the last four constitutions, bearing in mind that each of them corresponds to one quarter of Figure 3 (beginning with constitution 3, related to winter, and advancing counterclockwise):

constitution 3 is composed of fine fire and compact water
constitution 4 is composed of wet fire and dense water

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the children, followed by the young people, but this contradicts his own opinion about the spring's being an unhealthy season, because childhood corresponds to spring. Actually, one would have expected young people (i. e. the fiery age, which counterbalances the coldness and wetness of the inborn constitution) to be the healthiest, followed by the children (i. e. by the low-profile age pertaining to fire). In addition, in the description of constitution 4 he contrasts spring and autumn as to their humidity, saying that spring is excessively wet, while autumn is only moderately dry. There are no systematic reasons for differentiating between the two low-profile seasons on grounds of their humidity.

20 It is basically the same scheme which the author of De natura hominis had in mind when he described the four humours and seasons by combinations of the four fundamental properties: in ch. 7, blood is said to be wet and warm and to prevail in spring, yellow bile is said to prevail in summer, which is described as a dry and warm season, black bile is said to be opposed to blood and to prevail in autumn, which is described as a dry and cold season, and phlegm is said to prevail in winter and to be opposed to yellow bile.

constitution 5 is composed of intense fire and fine water
constitution 6 is composed of rare fire and dry water.

As I have already shown, the first two constitutions are composed only of principal varieties of the elements; that is to say that the secondary varieties (viz. fine fire, wet fire, compact water and dry water) will only be found in these last four constitutions. Two of these secondary varieties, namely wet fire and dry water, have been already mentioned in the first part of this paper: they are the atypical varieties of the elements depicted in Figure 2. In ch. 1, 32, the author asserts that they enter into the composition of constitution 4 and 6 respectively, i. e. precisely of the constitutions corresponding to the two low-profile seasons and ages in Figure 3: wet fire is a component of the warm and wet constitution, and dry water is a component of the cold and dry constitution. It is important to note that in these two constitutions both atypical varieties combine with principal varieties of the elements: wet fire combines with dense water, and dry water combines with rare fire.

In order to understand the meaning of the remaining two secondary varieties (viz. fine fire and compact water), as well as the difference between the constitutions corresponding to the two main seasons, winter and summer, I represent the six constitutions, consisting of combinations of the four varieties of fire with the four varieties of water, as follows:

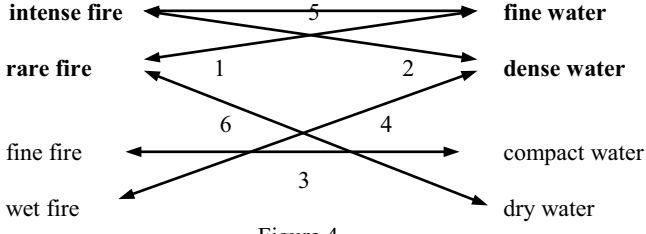

Figure 4

Constitution 3, composed of fine fire and compact water, is a watery constitution, corresponding to winter. Its counterpart is constitution 5, composed of intense fire and fine water, which corresponds to summer. Considering the symmetry of the tetradic system of properties and of seasons, one would have expected a certain similarity as to the composition of these two constitutions corresponding to the strong-profile seasons. However, the Hippocratic author preferred to disappoint his readers at this point: first of all, because constitution 3 is composed of secondary varieties and constitution 5 of principal varieties; secondly, because he did not compose any constitution of rare fire and dense water, the last pair of principal varieties (beside constitution 1, 2 and 5) which would have allowed a combination; and thirdly, because constitution 3 is the

only constitution composed exclusively of secondary varieties, all other constitutions containing at least one principal variety. The question that arises is: Is this asymmetry a lapse that undermines the typology of human constitutions,[21] or is it a deliberate constituent of it? In the last part of this paper, I will try to argue in favour of the latter hypothesis.

The atypical varieties of the elements, wet fire and dry water, though entering into the composition of two symmetric constitutions (i. e. 4 and 6, see above), do not combine symmetrically with principal varieties, because dense water (the other component of constitution 4, beside wet fire) is the highest degree of water, while rare fire (the other component of constitution 6, beside dry water) is the lowest degree of fire. Thus, the atypical varieties combine with principal varieties, but the latter are not analogous, and the author gives no explanation as to why wet fire combines with the highest degree of water and dry water (the counterpart of wet fire) with the lowest degree of fire. In addition, the two principal varieties which combine with atypical varieties are precisely the only two principal varieties which don't combine together. Moreover, as it has already been suggested, the missing combination of rare fire and dense water corresponds to a watery constitution[22] (i. e. to constitution 3), which the Hippocratic author wanted to be composed of fine fire and compact water. It looks as if constitution 3 had been displaced from its natural position in the system of principal varieties in order to become the only constitution composed of secondary varieties. This interpretation is supported also by the denominations of the secondary varieties involved, fine fire (πῦρ λεπτόν) being almost synonymous with the lowest degree of fire (rare fire, πῦρ ἀραιόν), and compact water (ὕδωρ παχύ) being almost synonymous with the highest degree of water (dense water, ὕδωρ πυκνόν).[23] Thus, all secondary varieties (components of constitution 3, 4 and 6) have in

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21 This asymmetry between the watery and the fiery constitution concerns exclusively the six constitutions and their composition, without affecting the coherence of the last four constitutions as represented by the Cartesian coordinate system. To be more specific, it concerns (the meaning of) the eight varieties of the elements, their relations and combinations, but not the tetradic system of fundamental properties, seasons and ages.

22 The combination of the highest degree of fire with the lowest degree of water (constitution 5) is a fiery constitution, because fire prevails over water. Similarly, the missing combination of the highest degree of water with the lowest degree of fire corresponds to a watery constitution, because water prevails over fire.

23 The denominations of all other six varieties are rather intuitive: intense fire (πῦρ ἰσχυρόν) and rare fire (πῦρ ἀραιόν) are the highest and the lowest degree of fire, dense water (ὕδωρ πυκνόν) and fine water (ὕδωρ λεπτόν) the highest and the lowest degree of water (see also footnote 10); wet fire (πῦρ ὑγρόν) and dry water (ὕδωρ ξηρόν) suggest their atypical nature. Only the denominations of the components of constitution 3 are not obvious per se. (However, the attribute λεπτόν 'fine' could be regarded as a hint, because in the case of water it denotes the lowest degree.)

common their depending some way or another on the missing combination of rare fire and dense water.

This conclusion suggests the following explanation for the asymmetrical typology of the six constitutions: the Hippocratic author left unfilled a combination in the group of four principal varieties in order to expand the scheme of basic varieties (the two highs and two lows) by adding four more varieties (the secondary varieties). By this expansion (1) he obtained a more elaborate typology of human constitutions than he could have achieved by using only combinations of the four principal varieties; (2) he introduced the difference between balanced and unbalanced constitutions; and (3) he connected the tetradic system of fundamental properties, seasons and ages with the human constitutions.

Finally, the varieties of fire and water and their combinations can be represented using the Cartesian coordinate system of the four properties:

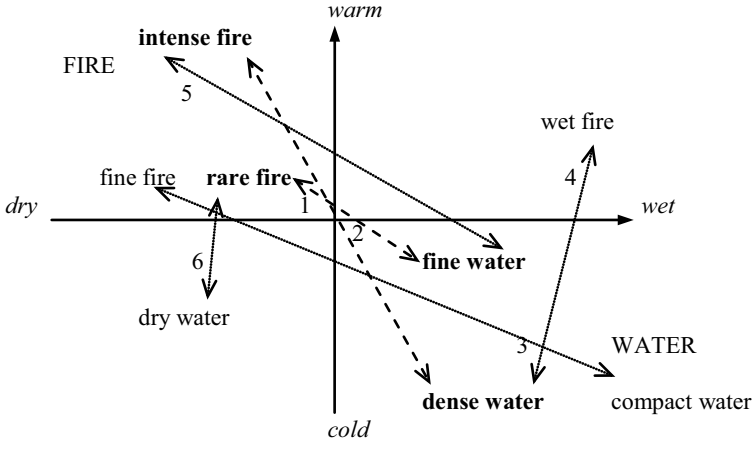

Figure 5

The first two constitutions are both balanced, i. e. they basically don't lean toward either element. As for the last four constitutions, the position of the number in Figure 5 shows their specific nature: e. g. constitution 3 is a watery constitution, therefore the number 3 is placed in the lower-right quarter. It may be noted that a low level of either fire or water (i. e. fine water, rare fire, and also fine fire) is a weak component, because the other element always prevails (see constitution 5, 6 and 3, respectively). However, a high level of fire or water does not necessarily determine the nature of the combination, as one may conclude from the composition of constitution 4, which is a fiery constitution[24] despite the highest degree of water present in it. Rather surprisingly, the strongest components are the atypical variations of elements, wet fire and dry

[24] To be more specific: a low-profile fiery constitution, because it corresponds to spring.

water, which seem to always determine the nature of the combination they form (see constitution 4 and 6).

As it can be seen, the typology of human constitutions in De victu 1,32 is not an end in itself. The Hippocratic author considered necessary to describe the six constitutions in order to explain his view of health and the role played by diet therein. Roughly speaking, health is in De victu the balance of fire and water in the human body. However, in order to give effective prescriptions, a dietitian needs a more thorough understanding of this concept. But a physician is dealing with real patients. What he is confronted with every day is not the disequilibrium of fire and water in the human body, but various diseases of concrete people. How does he apply his theory of elements in the every day practice? Experience taught him that not all men are alike. Some never get ill, while others have periodic illnesses. Some can eat anything, while others have to be careful what, when and how much they eat. This is explained by the author of De victu as different people having different constitutions,[25] therefore he suggests that a physician should consider his patient's inborn nature before treating him.

Actually, what does treatment mean in De victu? How is the physician going to cure a patient and what would be the most important result he can expect from the treatment? The author of De victu depicts the physician as using exclusively dietetic prescriptions. Since, in his view, diseases ultimately do not affect organs or functions, but the body's balance of fire and water, every means to restore this balance can be regarded as a treatment. According to De victu, there is a dietetic answer to every illness. Book II of the treatise contains a complete catalogue of dietetic factors, including some out of human control, such as climate, as well as variables within human control, such as foods and drinks, on the one hand, and various activities consuming the bodily resources, such as baths, sexual intercourse, sleep, intellectual activity or physical effort, on the other hand. A dietetic factor is thus anything that influences the body's balance of fire and water. Regimen properly speaking comprises only dietetic factors within human control.[26] The common denominator of all dietetic factors are the

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25 A similar argument can be found in De vetere medicina 20: τυρὸς γὰρ … οὐ πάντας ἀνθρώπους ὁμοίως λυμαίνεται, ἀλλ᾽ εἰσὶν οἵτινες αὐτοῦ πληρούμενοι οὐδ᾽ ὁτιοῦν βλάπτονται, ἀλλὰ καὶ ἰσχὺν οἷσιν ἂν συμφέρῃ θαυμασίως παρέχεται, εἰσὶ δ᾽ οἳ χαλεπῶς ἀπαλλάσσουσι. διαφέρουσιν οὖν τούτων αἱ φύσιες ... εἰ δὲ πάσῃ τῇ ἀνθρωπίνῃ φύσει ἦν κακόν, πάντας ἂν ἐλυμαίνετο "Cheese does not affect all people alike: some of them can eat their fill of it without being harmed at all – and to those whom it suits it even provides a remarkable strength –, while others bear it with difficulty. It is because the natures of these people differ … If cheese were bad for human nature in general, it would have affected all people."

26 Other dietetic factors out of human control, besides climate, are age and gender, discussed by the author in ch. 1,33 and 1,34 respectively.

four fundamental properties. Everything that influences the body's balance of fire and water must be warm or cold, wet or dry; on the other hand, since the whole universe is made of fire and water, everything the individual comes into contact with will influence the body's balance of fire and water. For instance, as it can be read in Book II, northern regions, winds, barley and drinkable water are wet and cold, while southern regions, dog meat, wine, salt water baths and intellectual activity are hot and dry.

Since the regimen is for the physician only a means of affecting the state of health, there is no healthy (or unhealthy) regimen per se, only regimens suited or not to the individual's nature, i. e. constitution.[27] Every dietetic factor, e. g. an aliment, is benefic for some people, while harming others, depending on its properties and on the needs of the individual using it. The dietitian must be knowledgeable not only about the available means, i. e. about the properties of every dietetic factor, but also about how to use them in a concrete case, i. e. about how to adjust the regimen to a particular constitution. In other words, the dietitian is the master of adjusting a complex of dietetic factors to a particular human constitution, as well as to specific biological data (age, gender) and climatic conditions. Although the author of De victu dedicates the whole Book II to the description of the dietetic factors and only an isolated chapter to the human constitutions, there is no doubt that in his opinion both aspects are equally important for a successful medical treatment.

According to De victu, a physician's aim should be attaining the highest degree of health allowed by an individual's inborn constitution. A good regimen might improve the health, while a bad one might damage it, but the health profile of every person is predetermined at birth. In other words, no regimen can perfectly balance the elements, if the man was born with a specific vulnerability. According to the author, the limits of medical intervention, as well as the foundations of medicine, can only be explored by a philosophical inquiry into man and nature. Aside from the introduction given in ch. 1, 2, no other passage in De victu can give a better image of the author's idea of health, medicine and dietetics than the typology of human constitutions in 1, 32.

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[27] For people of the first constitution the regimen makes actually no difference at all.