

# The Empedoclean *Κόσμος*: Structure, Process and the Question of Cyclicity

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## FOREWORD

Congratulations to Apostolos Pierris for conceiving and organizing a unique symposium on Empedocles that resulted in this state-of-art piece of work.

And many thanks to all the philosophers and classical scholars who traveled to Mykonos, actively participated in the meeting and significantly contributed to our understanding of that major and complex thinker's insights.

Empedocles' conceptualization of cyclicity appears quite modern: a dualism of opposing forces creating and sustaining the pendulum-like stability and dynamic harmony of the world-*Κόσμος*. We seem to be near, at least according to one interpretation of his thought, to the theory of a system in natural, general equilibrium under conditions of inherent periodicity.

We are eagerly awaiting Apostolos' next colloques and other initiatives, and hope that we will meet again in some of them.

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EMPEDOCLES'  
ZOOLOGY AND EMBRYOLOGY

1 Introduction

The earliest mention of Empedocles occurs, not in a philosophical text, but in a medical treatise written at around the end of the 5th or the beginning of the 4th century BCE. The Hippocratic author of the treatise *On Ancient Medicine*, speaking in favour of an empirical medical art, criticises the theoretic approach of some physicians and wise men<sup>1</sup> who assert that whoever doesn't know what a man is will not treat patients properly. According to our physician, such talk tends "towards philosophy"<sup>2</sup>

in the manner of Empedocles or others who have written about the nature [of man]<sup>3</sup>, starting from the beginning: about what man is, how he initially came into being, and from what elements he was fastened together.

The author of *On Ancient Medicine* attacks this position because it is in opposition to an empirical approach to medicine. He calls it a "hypothesis", which, for him, is a general assumption, a postulate that cannot be tested either by the speaker or by the listener. The past, like things in heaven and below the earth, is beyond the reach of human beings. "Man" is actually each individual whom the physician must heal on each occasion, and who requires a specific therapy<sup>4</sup>.

The Hippocratic text is important for two reasons: first it focuses on one aspect of Empedocles that has been rather neglected by later philosophical tradition, i.e. his medical teachings, and on the fact that man, his first appearance and his constituent elements (in short: zoogony and biology) are central themes in his poem. Secondly the physician draws a clear boundary between the medical art as he practises it and what he considers an inadequate and unprofessional form of healing, that of other doctors and “wise men”. Obviously many people in his time think differently and continue to maintain, like the author of *De victu*, that in order to know how to heal one must know what man is in the broadest sense<sup>5</sup>. And they explain how he was shaped in the beginning and of what elements he is composed – like the author of *De Carnibus*, to whom we shall return further on.

At any event the kind of medicine illustrated in *On Ancient Medicine*, where the individual is separated from the species and the past is discarded as something about which we can only form “hypotheses”, shows how distant, at least in the mind of the doctors who practise it, the so-called empirical kind of medicine is not only from a more theoretical vision (for which a global approach to man is fundamental) but also from the kind of medicine practised by healers and purifiers, who see the origin of illness in the individual and collective past. These therapeutic typologies coexist side by side during the whole of antiquity, and at times use common models and terminologies. However, what fundamentally differentiates both empirical and theoretical medicine from the healers’ craft is the global nature of the latter. A healer never sticks to the mere healing of the body, but inserts his therapy into a wider context that includes man’s position in relation to the gods and the cosmos. This is why the purifiers who are attacked in the Hippocratic treatise *De morbo sacro* not only heal epilepsy by individuating the god who causes the fits, and by performing the corresponding purification rites, but also master nature in general<sup>6</sup>.

These preliminary remarks take us directly back to the context of the Empedoclean poems. Empedocles is a purifier, a *iatromantis*, seer-healer, as clearly emerges in fragments DK 31 B 112 and B 111<sup>7</sup>. His ultimate goal – as he himself states – is to teach his student how to overcome the human limitations (DK 31 B 2, 8), how to heal illnesses and old age, keep away and induce winds, rain and drought, and

defeat death (DK 31 B 111). Knowing what man is made of and by which forces he is controlled means discovering *ἀνάγκαι* – not in the sense of theoretical causes, but in the sense of practical constraints that impose given behaviours on physical bodies. This assumption was already considered typical of magic in the collective imagination of the 5<sup>th</sup> century BCE, when the constraining power of the magician is seen in a sinister light. According to Socrates as portrayed in Xenophon’s *Memorabilia*, whoever knows these *ἀνάγκαι* can use them to bend nature to his will<sup>8</sup>. The Hippocratic author of the treatise *On Art*, written towards the end of the 5<sup>th</sup> century BCE, states that physicians are able to constrain nature into giving signs about internal, invisible illnesses through *ἀνάγκαι*: through foodstuffs, beverages and bodily exercises that provoke various kinds of secretions, thus enabling the physician, through observation, to arrive at a diagnosis of the illness<sup>9</sup>. The author is obviously striving to demonstrate that the physician has such power that he can even discover and overcome hidden illnesses within the body. However, the implications of this statement go precisely in a direction feared by Socrates (effective domination of nature), and this is why the physician insists on the harmless (*ἄζημιος*) character of such a constraint and elegantly keeps his distance from any form whatsoever of magic.

This is the pragmatic context into which we must insert Empedocles’ discourse on the origin of cosmos and man. Man’s past history is the key to his present: the secret of the actions performed by divine forces that guide his generation, development and death according to precise mechanisms. These are the same two forces that guide the cosmos at large. Independently of Peter Kingsley who, in his latest publications, underlines the importance of Aphrodite-*Philotes* and of *Neikos* in the field of magic<sup>10</sup>, I had highlighted the same connexion in a series of lectures given at Zurich<sup>11</sup>. What I had missed and Kingsley has rightly pointed out is the implications of this fact for the interpretation of Empedocles’ cosmology and eschatology. *Philia* binds, *Neikos* releases<sup>12</sup>. Cosmic cycles must therefore not be seen as two completely separate phases, but as a history of chaining and liberation on which the present state of living beings depends<sup>13</sup>. History starts from separate god-elements<sup>14</sup> that are “fastened together” by Aphrodite so as to shape mortal beings<sup>15</sup>, continues with their absorption into the *Sphairos*, and with the liberation, first of

corporeal creatures and then, as *Neikos'* power becomes greater, the final liberation of the elements into their full purity and divinity. We shall come back to this point later.

In this global panorama of chaining and liberation, the present can only be understood and controlled in the light of the past. Past and present are thus inextricably interwoven in the Empedoclean poem.

This is the context of the Empedoclean discourse on zoogony and embryology. Knowing from which divine elements and with which "bonds" the craftsman made the bodies of human beings enables one to bind and release at the right moment.

In the light of these remarks and of this relationship between past and present, between zoogony and embryology, and without losing sight of the context and ultimate aim of the Empedoclean poems, I intend to try and define below the issue of the so-called double zoogony, and of the role played by zoogony and embryology in the more general economy of the Empedoclean doctrine of transmigration.

## 2. Zoogony and embryology

The problem of how to interpret Empedocles' zoogony or zoogonies is inseparable from the structure of the poem itself. It has been widely noted that lines 3 to 5 of fr. DK 31 B 17 seem rather clear as to the existence of a double genesis and double "waning" of mortal bodies.<sup>16</sup> Aristotle clearly uses the expression *ἐπὶ τῆς φιλότητος* in a chronological sense to indicate the moment in which we must situate the birth of what we would call, in Aristotelian terms, *homeomerics*, of single parts, of *terata* in the phase of growing *Philia*. The problem arose and still arises because, in the fragments we know, all bodies seem to be a creation of *Philotes* and not of *Neikos*, who, strictly speaking, doesn't have a generating function. Secondly, the so-called Aetius (DK 31 A 72) mentions a sequence of four phases and does not differentiate between two periods of *Philia* and *Neikos*. This has led to the idea that the double generation mentioned in fr. DK 31 B 17, 3-5 should be interpreted as an alternation between two phases of *Philia* and *Neikos* within the creation and destruction of bodies in our world: hence, there would be a single zoogony.<sup>17</sup> And yet although

this alternation does indeed exist in our present world; DK 31 B 17, 1-5 clearly refers to two generations in two different phases: on the one hand, the phase that leads from the Many to the One and on the other hand the phase that leads from the One to the Many. In my opinion the problem only arises if we consider the first and second phases of the *cosmos* as absolutely separate and without any interdependence,<sup>18</sup> but not if we consider them as mutually complementing each other in the history of the *cosmos* and of mankind.

The comparison between zoogony and embryology casts light on the relation between these two phases of the *cosmos*. Against the more general background of the relation between past and present, between Empedoclean zoogony and embryology, I shall therefore seek first of all to clarify two fundamental questions:

- A. The function of zoogony.
- B. The relation between the two zoogonies and the present status of the alleged zoogony of *Neikos*. Here I shall resort to slightly later Hippocratic texts, which however reflect conceptions that were widely held in the fifth century BCE.
- C. In this context I shall focus in particular on fr. DK 31 B 20, which is fundamental for our understanding of the role played by embryology in the broader context of the cycle of rebirth.

All this will then be connected to the pragmatic context in which Empedocles operates, i.e. to his role as magician and purifier.

### 2 A. The function of zoogony

The zoogony certainly has a narrative-historical function:<sup>19</sup> it tells how divine elements were chained together to form mortal bodies (DK 31 B 35, 14-17), in blends from which they never fully freed themselves afterwards. Man's destiny is thus closely connected to that of the gods who constitute him, and to the journey of their liberation. However, the Empedoclean narrative of *Philia's* generation of the *homeomerics*, of the parts and of the *terata*, and of the emergence of living beings from the earth under *Neikos*, did not only have a "narrative-historical" function. For it was crucial for an understanding of the mechanisms regulating the conception and birth of living

beings in our world, too, and it thus had a paradigmatic function. This means that the generation and shaping of the various body parts was established in this narrative once and for all, and was not taken up in other parts of the poem. It also means that Empedocles, according to his customary shifting between levels, could easily slide from past to present and insert hints about embryology in the zoogonic narration. The paradigmatic function of *Philia's* and *Neikos's* zoogony and the dovetailing process it implies comes from Empedocles' own words and from scattered hints in Aristotle.

Cross-references between past and present are in fact a constant of the zoogonic narration (DK 31 B 71, 73, 84) and are often reproduced in doxographic evidence (DK 31 A 42, 66, 74, 75).<sup>20</sup> These cross-references are particularly explicit in lines a(ii) 21-24 of the Strasbourg papyrus where Empedocles announces zoogony. In effect, this part is introduced by a special warning to the disciple. Pausanias must not only "listen" to his teacher's words, but connect them to what is around him.

I will show you to your eyes too, where in a larger body...  
first the coming together and the unfolding of the stock  
and as many as are now still remaining of this generation<sup>21</sup>.

Here, Empedocles alludes to two zoogonic phases<sup>22</sup> rather than to a single one: to the formation of scattered limbs and of bodies that are casually composed by their reuniting under *Philia* (*σύνοδος*; cf. *πάντων σύνοδος* in DK 31 B 17, 4) and to the following development (*διάπτυξις*) during the phase of *Neikos*. It is no coincidence that Empedocles chose such a particular word as *διάπτυξις* because, as we will see below, the so-called zoogony of *Neikos*, rather than being a genuine generation, is actually an unfolding of what is already contained in the *Sphairos*.

But let us come back to *Philia's* zoogony. In a passage of *De generatione animalium* Aristotle undertakes a critical examination of pangenetic theories against the background of Empedocles' embryology. Aristotle alludes to *Philia's* zoogony, denying that single body parts, even if they are large, can maintain themselves and live as happens to the "neckless" temples in the zoogony under *Philia's* reign<sup>23</sup>.

This allusion to the particular size of limbs during *Philia's* time echoes the strange mention of "larger" bodies in the papyrus. By describing the bodies of primordial living beings, Empedocles means to clarify for his disciple the mechanisms of generation. We must remember that in the whole archaic tradition, enormous size is one of the characteristics of primordial beings and of the age of heroes<sup>24</sup>, i.e. of races who belong to the past. Thus, what does Empedocles show his disciple? First the way in which *Philia* works in binding together immortal elements to form the parts and the whole of mortal beings. Second, the way in which *Neikos* release them from the chains of Harmony.

As is well-known *Philia's* zoogony included, first of all, the formation of *homeomerics* (bones, flesh, blood, sinews, etc.<sup>25</sup>) and their unification in single parts that sprout separately from the earth<sup>26</sup>. Afterwards there are the monstrous births, which however are not shaped outside but within the earth, from the uniting of stray limbs, as clearly appears from the use of the verb *ἐξανατέλλειν* in DK 31 B 61, 2. The hypothesis that this genesis also included men and women who were far taller than the present ones, and formed from single parts connected by Aphrodite, is a conjecture that cannot be demonstrated. Actually Simplicius tells us that men and women arose from the earth in the time of increasing *Neikos* (DK 31 B 62). Thus, the description of the first generation of mortal beings by *Philia*-Aphrodite has a function that is both historical and paradigmatic: historical because it tells the story of the imprisonment of divine beings in human bodies and paradigmatic because it describes the structural elements of present beings (established once for ever "at that time"), the relations between the various blends, and the mechanisms of the formation of a single body from scattered limbs.

We do not have texts that parallel these in the so called *Περὶ φύσεως* literature, because we only have indirect evidences; but from these it seems that authors only mentioned man's birth from putrefaction in general (as in Archelaus and in the zoogony reported by Diodorus<sup>27</sup>), and that the formation of parts was dealt with separately in embryology.

However, this combined historical and paradigmatic function of the narrative about the primordial generation of body-parts comes up again in a much more evident manner in a Hippocratic treatise

written at the beginning of the 4<sup>th</sup> century BCE: the *De carnibus*. In fact its author, after declaring his purpose, begins with a brief account of cosmogony and then proceeds with a zoogony. The cosmogony describes a state of initial agitation when three elements become separated: heat, which rises up to form the vault of heaven; earth, which remains below in intense movement and retains a considerable amount of heat; and thick and wet air (*ἡήρ*), which spreads around the earth. While everything spins dizzily, the masses of heat that have remained in the earth produce putrefactions that change into the various *homeomerics*: thus, after a long period of warming, putrefactions containing more fat and less wetness become bones, whereas those containing more gluey stuff and more cold cannot be completely dried up and become sinews and veins, and so on<sup>28</sup>. The author, like Empedocles, actually, moves without any break in continuity from the formation of *homeomerics* to that of *anhomeomerous* items, taking as given a "reunion" of the single parts into a body within the earth<sup>29</sup>. But in all this, the most interesting thing is what follows: at a given point we witness an imperceptible overlapping of levels. For instance, while treating the heart the author begins with a present tense<sup>30</sup> as if he were describing a current state of affairs, shifting immediately afterwards to past tenses and returning to the current description when he broaches the subject of the constitution of the blood-vessels. While describing the formation of teeth the author no longer refers to the first human beings, but to present living beings. Paradigmaticity and overlapping of levels characterize this text and show how authors of technical treatises could deal with the theme of the constitution of living beings by connecting past and present.

Thus *Philotes'* zoogony in Empedocles, as a narration of origins, also offers a paradigm for the present form of sexual generation that reproduces on a smaller scale the mechanisms of "that generation". Aphrodite sucks in the elements and then the parts in the centre, and nails them in bodies that she destroys at the acme of her power, suffocating everything in a deadly embrace in which there are no more distinctions. The *Sphairos* is now the only thing left.

Mortal beings will only re-emerge from the "dense recess of harmony" (DK 31 B 27, 3) when *Neikos* starts his centrifugal

movement again, making "the god's limbs shake one after the other" (DK 31 B 31).

## 2 B. Relationship between the two zoogonies

At this point, the second question arises: what is the relationship between these two zoogonies? Are they conceived of as two completely separate phases? Is *Neikos'* zoogony really a zoogony? In fact, doxographic sources seem to have failed to notice a break in continuity between *Philia's* and *Neikos'* zoogonies. Accusing them of confusion in such a macroscopic case seems to me too simplistic. We can now remember Empedocles' words in the already quoted ensemble a(ii), 24ff. in the Strasbourg-papyrus:

I will show you to your eyes too, where in a larger body...  
first the coming together and the unfolding of the stock  
and as many as are now still remaining of this generation.

The "unfolding of the stock" is not a simple metaphor. It is a very concrete reminder of something that already exists and only needs to be brought back to light. This is what *Neikos* does: by producing a violent shaking in the god's limbs, he only frees little by little those beings that Aphrodite had first created and then suffocated. The blending of the *Sphairos* doesn't actually eliminate its elements, but suffocates them<sup>31</sup>.

If we look beyond the specificity of the case, there is something very familiar in Aphrodite's and *Neikos'* action: a scheme that directs us back to Hesiodic and Orphic theogonies. In Hesiod the suffocating god is Uranus who prevents his children from seeing the light, the swallowing god is Cronos who swallows his offspring. However, Cronos is also a freeing god as he brings to light the creatures suffocated by Uranus; Zeus is the last liberator, who saves his siblings swallowed by Cronos and orders the world into its present state. In Orphic theogonies, on the other hand, Zeus has both functions: in the one commented on in the Derveni papyrus, by swallowing his father's phallus he gathers in his stomach everything that was, is and will be, and he becomes the "Only one"<sup>32</sup>.

Col. XVI 3-6 (12F Bernabé)

of the member of the first-born king; thus everything grew  
together in him:  
the immortals, the blissful gods and goddesses  
and the streams and pleasant springs, and all the other things  
that were then generated: and he himself became the only one.<sup>33</sup>

The author of the pseudo-Aristotelian treatise *De Mundo* (401a25 = *OF* 21a, 8-9 = 31F, 8-9 Bernabé) quotes some lines from an Orphic theogony where Zeus hides everything in order to bring it back to light:

For he hid all living beings away, and has brought them  
again to the lovely light  
from the holiness of his heart, working great marvels<sup>34</sup>.

The scheme of Empedoclean generation is similar: generation-suffocation-re-emerging. But while in the Hesiodic and Orphic theogonies Zeus' order is destined to reign forever, in Empedocles there is a continuous alternation that is at the same time a stability: the four fundamental element-gods last beyond their running into each other. A divine stillness lies behind the apparent movement.

If we observe the two Empedoclean zoogonies from that angle, their relations become clearer. *Neikos* doesn't actually create or generate, but frees little by little those beings who are imprisoned in Aphrodite's dense recesses and who still exist as such even in this blending. Thus *Neikos'* zoogony is only a progressive "unfolding" and at the same time a new settling of this generation by Aphrodite who, little by little, loses her power. This is why the ancient sources speak of four phases without any break in continuity, because the so-called generation by *Neikos* was not perceived as a clear break but as a continuation of *Philia's*. In fact the story of the four gods imprisoned in mortal bodies ends not with the *Sphairos*, but with their liberation at the acme of *Neikos'* power.

In *Neikos'* first phase, Aphrodite still manages to keep the limbs she swallowed tied together: fire brings to light creatures that are all in one piece; sexually differentiated beings come thereafter. And it is through them that Aphrodite acts, not any more by blending elements

but by continuously combining scattered limbs contained in beings of both sexes.

## 2 C. Embryology and zoogony

If we examine the evidence on Empedocles' embryology and the fragments themselves, we discover that the scenario of an apparent double zoogony we just described is repeated at a microcosmic level in the mechanism of the conception and development of the embryo.

In Empedoclean embryology – as in the Hippocratics', actually – two moments must be distinguished: the phase of conception and the phase of articulation of the embryo. This is not a superfluous observation, because confusion between these two moments did at times create deviant interpretations. The first phase is undoubtedly governed by Aphrodite, who pushes the male towards the female, thus creating, through the latter's image, a stimulation of the movement of the seed (*ἐπερδισμὸν τοῦ σπερματικῆς κινήματος*<sup>35</sup>). The second phase, of sexual and bodily differentiation, evolves as a result of the action of heat, exactly as in the birth of men from the earth. This phase thus corresponds to *Neikos*.

Aristotle in a very important passage of *De generatione animalium* criticises pangenetic theories (those defended by the Hippocratics and by Democritus) by comparing them with Empedocles'. He tells us, among other things, that Empedocles said that both sexes are pushed towards each other because the parts of the future offspring are separated in the male and in the female.

*De gen. anim.* 722b 9

for he says that in the male and in the female there is a sort of tally, but [the seed] doesn't come complete from either:  
but the generation of the limbs is separated, part in [the body] of the man [...].<sup>36</sup>

This means that Empedocles, although he was not presenting a pangenetism, was describing the mechanism of conception as a union of limbs conveyed by semen: some of these limbs came from the



female's body, others from the male's. This is the same mechanism also at work in *Philia's* zoogony. Aphrodite draws the semen of each of the two parents from the corresponding parts of their bodies into her centripetal movement, and makes it flow together "to the centre", then mixes it in the woman's womb as she once used to do in the earth. The parts unite, disappearing "into one unique blend", this little *Sphairos* constituted by the embryo<sup>37</sup>.

It is probably this Empedoclean conception, and not the phase of the dismembering of the *Sphairos* as supposed by Diels and others<sup>38</sup>, that Plutarch refers to in the *De Sollertia animalium* when he quotes Empedocles and Heraclitus and maintains that in their opinion nature contains nothing unmixed and pure and that her progress is marked by many unjust inflictions:

*De soll. anim.* 964 E

therefore they [Heraclitus and Empedocles] say that even birth itself springs from injustice, since it is a union of mortal with immortal, and the offspring grow up unnaturally from limbs torn from the parent<sup>39</sup>.

The first statement concerns the union of soul and body; the second one most likely refers to Empedoclean embryology as described by Aristotle.

Let us now read fragment DK 31 B 20 (= P. Strasb. c) which illustrates what Empedocles says about the alternation between *Philia* and *Neikos* with an example taken from the contemporary world:

this is very clear in the mass of mortal limbs:  
at one time they all come together into one through love,  
the limbs which a body has obtained when life flourishes  
at its peak;  
at another time again, torn asunder by evil strifes,  
they wander, each apart, about the breakers of life.  
So it is too for bushes, and for fish that live in the water,  
and for wild animals who have their lairs in the  
mountains, and for the wing-spiced gulls<sup>40</sup>.

This text is about mortal limbs that are composed into a body by *Philia*. Yet what is described is not zoogony (although the similarity is striking, we must not be misled by it), but the union in contemporary bodies whose features can only be clearly made out in the period of their greatest blossoming.

"*Βίου θαλέθοντος ἐν ἀκμῇ*" is not such a strange expression if we compare it with the passage in *De carnibus* where this blossoming period is very precisely indicated:

*Carn.* 13, 4 (196, 26 July = VIII, 602 Littré)

Man grows when [his shape] becomes evident, and it becomes most evident between seven and fourteen years of age.<sup>41</sup>

The idea that the embryo comes from the union of body parts "torn" from his/her parents is not due to a confused Empedoclean vision. On the contrary, it is one of the most widespread "scientific" concepts of the fifth century. Pangenetic theories defended by Democritus and the Hippocratics, and assimilated by Aristotle (in the above - quoted passage from *De generatione animalium*) to those of Empedocles, are based on the same presuppositions: here is a famous fragment on the sexual act by Democritus:

Democr. DK 68 B 32

Sexual intercourse is a mild apoplexy; for man issues from man and is torn away, separated by a sort of blow<sup>42</sup>.

Semen is conceived of as a *homunculus* made of all parts that detach themselves from both parents (Democritus believes that females also produce semen). Anyway, Democritus disappoints our expectations too: this fragment is hardly less puzzling than Empedocles' poetical fragments.

However, we still do also have complete "scientific" (for their time) texts with a detailed presentation of the pangenetic theory: the Hippocratic treatises *On the Seed* and *On the Nature of the Child*.

The author explains in detail the mechanism leading to ejaculation. The semen comes from all the body parts and is the

strongest part of their humidity. Rubbing the sex organ and movement cause heat and provoke the separation of the foamy part of this humidity in each part of the body. Via the seminal veins this foamy part reaches first the spinal marrow, then the kidneys and from there the central part of the testicles and eventually the penis (ἔρχεται διὰ τῶν ὀρχίων μεσάτων ἐς τὸ αἰδοῖον)<sup>43</sup>. Females ejaculate in the same manner because of the rubbing that causes itching and heat in the whole body. Both types of semen blend in the womb<sup>44</sup> and, through the woman's movement, all this gets warmed up and thickens and the first embryonic kernel is shaped<sup>45</sup>. However, the anhomeomerous parts within the sperm are transmitted to the foetus according to their respective strength. This is why a male or a female looks more like his/her father or mother<sup>46</sup>.

The Empedoclean notion of limbs uniting in order to form a body under *Philia's* pressure is thus perfectly comprehensible in the light of theories of conception that were current in the fifth century. There is therefore no need whatsoever to refer the first part of fr. DK 31 B 20 to *Philia's* zoogony, even if the mechanism of this generation is invariably repeated in the innumerable products of our world. Conception in the womb mirrors in a minor key the primordial one of the composition of bodies in the earth.

But let us move on to the phase of the embryo's articulation. Empedocles certainly related this phase to the so-called zoogony of *Neikos*. In fact he made a parallel between the gestation of the first sexually differentiated human beings in the earth and the present-day gestation in the mother's womb, explaining why babies born at seven and ten months survive while those born at eight months do not<sup>47</sup>. For seven and ten months correspond to the duration of one day in the succeeding phases of cosmogony, when the sun keeps increasing its speed. And the first human beings of our world developed within the earth in precisely one day "at the dawn of times", corresponding respectively first to ten and then to seven of our current months.

In zoogony from the earth, subterranean fire plays a fundamental role: both *ὀλοφύεις* and sexually differentiated beings, as well as plants and rocks, are pushed out by the strength of the fire that strives to unite with its celestial counterpart. *Neikos* as such doesn't produce these beings but its unbalancing action "frees" the repressed strength of

fire which causes, as it were, the "germination" of men and women's "nocturnal shoots": the undifferentiated beings.

The *ὀλοφύεις* are beings that are still suffocated in the blending, they are only "shoots". Fire remains inside, it can't get out, but it pushes and this pushing "leavens" further those parts that remained indistinct, thus creating differentiation. The first men and women, with all their differences, come out of the earth at long last<sup>48</sup>.

No account of the differentiation process in the embryo has survived and there are good reasons for doubting that Empedocles himself ever treated the subject at length, but a few indirect hints in the doxographical tradition allow us to suppose that he assigned to internal heat the leading role in the whole process. And besides, this would correspond perfectly to the role of fire in differentiating the first living beings at the beginning of *Neikos'* power. Anyway this presupposition lay at the basis of the assumption that the warmer male embryo articulates quicker than the female one (DK 31 A 83).

The Hippocratic text *On the Nature of the Child* gives instead a detailed account of the embryo's formation and differentiation. Parents' semen, if it remains in the womb, becomes blended into a single mass and condenses under the effect of the heat. A warm "breath" develops within it, fills this small mass and searches for a way out by excavating a channel that will become the umbilical cord: this is the beginning of the differentiating process in the embryo which attracts the mother's cold *pneuma*, heats it up, pushes it out and thus causes a movement within the foetus that leads to the externalizing of the single parts already present in the embryo. The mother's blood which enters through the umbilical cord provides further matter for the growing of the foetus. The author explains precisely how this happens:

[Hippocr.] *Nat. Puer.* 17, 1ff. (59, 9 Joly = VII, 496 Littré)

Flesh, having grown under the pressure of the breath, articulates itself, and in it every element moves towards a similar one: dense towards dense, light towards light, wet towards wet, and everything goes towards its proper place according to a kinship with that from which it was generated, and what was generated from dense parts is dense, and from wet parts is wet, and

everything in growth takes shape according to the same principle.  
And bones become resistant, solidified as they are by the heat,  
and moreover branch off like a tree<sup>49</sup>.

On the basis of this text one must think for instance that what is to become a bone already has the fundamental elements of bone in the semen, and only needs to reach its proper place and its like. This is how Aristotle interpreted this theory too (*De gen. anim.* 723a 21 "saying that a part of the semen is already tendon and bone is too much beyond our understanding")<sup>50</sup>. Thus the parents' parts that became blended in the embryo re-emerge as it were in the same spots where they were in the originating bodies, but they compose themselves naturally into more complex shapes resulting from their similarity to the parents' respective parts. The phase of *διάρθρωσις* isn't actually a proper generation, but the resurgence of parts already present in the semen as a consequence of the movement and of the swelling caused by the "breath".

Thus the Hippocratic text, in its own way, clearly explains the mechanism of the embryo's formation and articulation: the parts detach themselves from both parents as foam under the effect of movement and heating up, and they blend into a single whole but they don't disappear. In fact they re-emerge identically and in the same spots that they originated from at the moment when heat provoked a movement in the foetus as it looked for a way out. Therefore the mechanism of the embryo's conception and formation is described as an immersion and reemergence of parts. The idea of parts remaining unchanged not only in liquid form, but also in an indistinct blend, may seem inconceivable to Aristotle; but it is apparently not inconceivable for the Hippocratic author.

I think that the Hippocratic paradigm is very important if we wish to understand fr. DK 31 B 20 and, more generally, the mechanism of both human beings' and the *cosmos*' genesis according to Empedocles. For this is the founding mechanism of the alternation in *Philia*'s and *Neikos*' zoogony. The phase of conception is different from that of the foetus's articulation just as the phase of *Philia*'s zoogony, based on the composition of elements in the *homeomeriēs*, differs from that of *Neikos*, based on the progressive re-emergence of those forms that were reabsorbed into an indistinct whole by the suffocating god. However, these are not two separate worlds but two

worlds that continue and complete each other, just as the phase of the foetus' differentiation continues a process that started in the phase of conception.

The worlds of *Philia* and *Neikos* describe the progressive imprisonment and the progressive liberation of divine elements. How do present human beings fit into this story? They are still a jail for the gods because *Neikos* has not yet reached the acme of his power, Aphrodite is still active in slowing down the full dissolution of bodies: they don't melt completely.

This is where zoogony and embryology find their place in the broader picture of the rebirth cycle. In fact, these zoogonic and embryological contexts contain at least two hints that complement each other and actually suggest an allusion to transmigration. One is in the Strasburg papyrus, the other in the already quoted fr. DK 31 B 20.

In *ensemble d* of the papyrus, when he evokes the generation of the first men from the earth, Empedocles mentions living beings that can generate, whose *λείψανα* are still seen by the rising sun today<sup>51</sup>.

*Λείψανα* means "remains" and particularly the remains of corpses<sup>52</sup>. Martin and Primavesi reject this meaning because such a reading would be at loggerheads with the reference to the world of the living implied in *δέρεται ἡώς*.<sup>53</sup> But actually, if the term is inserted into the broader context of the cycle of reincarnations, it is perfectly normal that the remains of the first living beings' corpses should still be present in the present living beings, as their limbs have been "recycled" from generation to generation. In DK 31 B 8, where birth and death are denied every form of existence, birth is defined as

mixture followed by rearrangement of the things that have been  
mixed:  
"birth" is just the name applied to those events by humans.<sup>54</sup>

This idea of the survival of the first living beings' "remains" in the present world illuminates in turn an enigmatic phrase in DK 31 B 20: the limbs that are "torn asunder by evil Strifes" wander separated from each other "about the breakers of life". This strange expression doesn't appear in any other author, and not even elsewhere in Empedocles. And when Empedocles uses a strange and enigmatic language he

doesn't do it out of love for metaphor or form, but because he is alluding to something that his disciple must catch immediately. In this case the wandering limbs on the shores of life vividly recall the image of the dead who, in Homer, wander on the banks of the infernal rivers before going through the gates of Hades (*Ilias* 23,72-74; *Od.* 10,508ss). But while the Homeric dead cross these rivers and go through these gates once they are cremated and buried, Empedoclean limbs always remain on the threshold, waiting for a new reshaping into a "alien garment of flesh" (DK 31 B 126). I think that this is the point where, for us who are used to clear distinctions, the borders between what we define as myth and what we define as science become indistinguishable, creating an impenetrable enigma. How can an embryological theory that sees conception as a re-uniting of limbs divided in both parents be integrated with a mythical vision of wandering parts on the banks of infernal rivers as they wait to be reshaped in a new body?

In an interesting study on the Homeric image of body and soul, Michael Clarke underlined how – precisely in relation to the representation of death and of the descent to Hades of *psyche* – the level of myth and the level of reality are perfectly interchangeable in the poems. The passage from one level to the other is therefore abrupt and natural. Patroclus' ghost says to Achilles: (*Il.* 23, 71)

bury me as soon as you can, and I'll go through the gates  
of Hades  
until then the souls and ghosts of the dead keep me away,  
they do not let me join them beyond the river  
but I wander thus along the walls of wide-gated Hades.<sup>55</sup>

As Clarke observes<sup>56</sup>

He has not been properly committed to the earth in his bodily form, so he cannot integrate among the shades of the dead: in other words, his plight on the plane of the mythological underworld is the reflex of what has happened, or failed to happen, in the world visible to the living.

I believe that this approach is also validly applicable to Empedocles' poem, as well as to all representations connected to the theme of

reincarnation and of ecstatic journeys in archaic Greek culture. What we perceive as a dichotomy simply isn't one: myth is reality. The limbs of the living wander on the threshold of life waiting to be re-united "in Aphrodite's divided meadows (DK 31 B 66)" (another extremely ambiguous image that evokes both the shape of the female genitalia and the meadows of the underworld<sup>57</sup>) into another living being.

If the picture I have drawn here of Empedocles' zoogony and embryology is valid, we are watching a great fresco depicting the destiny of element-gods and living beings in the *cosmos*, where zoogonic and embryologic discourses integrate and illuminate each other. The wandering limbs on the shores of life are the same ones that were already wandering "in the beginnings", the limbs in which the divine elements are imprisoned and which were melded into bodies, blended in the *Sphairos*, which re-emerged in the bodies of the first men at the beginning of *Neikos*' reign and were then ceaselessly recycled through the sexual act by Aphrodite; the limbs which, at a concrete level, are waiting for a "reshaping" to flow into a seminal blend and which will only be completely dissolved at the end of *Neikos*' reign.

In the light of these observations we may recall a detail reported only by Hippolytus, and not attested anywhere else, to wit Empedocles' aversion towards sexuality<sup>58</sup>. Hippolytus explains it by the fact that *Neikos* destroys and tears apart *Philia*'s products, although in Empedocles it is *Philia* who pushes people towards sexual union. Actually, this prohibition is connected to the theme of scattered limbs waiting to enter a new body. As a matter of fact, through the sexual act those limbs that "wander on the shores of life" are sent again into circulation and reshaped in a new body. Reproduction thus represents the physiological actualising of reincarnation.

But nutrition also represents another means of reinforcing Aphrodite's blends and of perpetuating the cycle of reincarnation as Hippolytus points out in the same passage. Through eating, the limbs of living beings are recycled into a new body insofar as they contribute to the growth of the corresponding parts in it. When we eat the parts of animals not only are we possibly eating our own parents and sons, as explained in fr. DK 31 B 137, but we are contributing to keeping the wandering limbs imprisoned and to preventing their complete dissolution. It is worth remembering that Empedocles explained

digestion as a kind of putrefaction<sup>59</sup>. Now a body decays when the bonds which keep its parts together are loosened. And yet, as far as digestion is concerned, the problem is that in the stomach the dismembered limbs don't dissolve completely but only to a certain degree because, although they loosen their previous connections, they go to their like in the new body<sup>60</sup>. Digestion is also a means of reconstituting limbs and their parts in a new body. It is worth noticing that this view happens to be perfectly paralleled at a cosmogonical level by the account of the cosmogony of Zeus in different versions of the Orphic theogonies. Zeus swallows the previous world to reconstitute another world order in his stomach. Swallowing up is a rearrangement in a new order of what already existed<sup>61</sup>.

By eating the flesh of another living being or by eating plants, which can contain a reincarnated living being, we contribute to reinforcing the blends of Aphrodite and to preventing wandering limbs from going through the gates of Hades, i.e. from dissolving into their elemental components. Reproduction and nutrition are thus two different aspects of a process which aims at keeping the element-gods bound to mortal bodies. This is the religious background against which cosmological, biological and eschatological doctrines blend together. This harmonisation of different levels fits perfectly into the picture of Empedocles as healer and *μάγος* to which I pointed at the beginning. Such people receive their power of healing and their power over the *cosmos* in general when they become aware of their divinity and realize their basic identity with the gods and the *cosmos* as a whole. Only then do they have the power to "build" the world at will<sup>62</sup>. This is the goal of Empedocles' esoteric teaching. This is also the background to those healers and magicians through the whole of antiquity who claim to have a special relationship with the gods and to be gods themselves<sup>63</sup>.

So, after having shown his student what is true reality beyond the appearances and beyond what humans call life and death, Empedocles also teaches him how to live in this deceptive world ruled by Aphrodite and *Neikos* without allowing either to dominate him. On the contrary, he teaches how to exploit them to one's own advantage and in order to alleviate men's sufferings. The goal of a physician-healer is also and mainly a practical goal, i.e. to intervene on nature

and to heal. Fertility, the ascertainment of sex, the problems of twin births and of *terata*, the balancing of the body's elements in order to preserve health, have a relevant social influence as ancient texts teach us. The healer who knows the divine elements and the powers that rule them, who "knows the gods" and the way they work, and who knows above all that he himself is a god, can also channel them each time to his advantage. He can bind and release. And this, in the end, is what Pausanias must learn.

## NOTES

- \* Special thanks to David Sedley for correcting my English in the first version of this paper, and to Peter Kingsley for helping with the final version.
- [Hippocr.] VM 20, 1 (145, 18 Jouanna = I, 620 Littré) *Λέγουσι δέ τινες καὶ ἰητροὶ καὶ σοφισταὶ ὡς οὐκ εἶη δυνατὸν ἰητρικὴν εἶδέναι ὅστις μὴ οἶδεν ὃ τι ἐστὶν ἄνθρωπος, ἀλλὰ τοῦτο δεῖ καταμαθεῖν τὸν μέλλοντα ὀρθῶς θεραπεύσειν τοὺς ἀνθρώπους. Τέλει τε αὐτοῖσιν ὁ λόγος ἐς φιλοσοφίην καθάπερ Ἐμπεδοκλέης ἢ ἄλλοι οἱ περὶ φύσιος γεγράφασιν ἐξ ἀρχῆς ὃ τι ἐστὶν ἄνθρωπος καὶ ὅπως ἐγένετο πρῶτον καὶ ὅθεν συνεπάγη. Sophistes doesn't have the negative connotation here which it has in Plato, but a positive one as is usual in pre-Platonic authors. In Herodotus the term is applied to figures of magical-religious significance like Pythagoras (4, 95, 2) and to experts in the Dionysiac rites who were followers of the *mantis* Melampus (2, 49, 1). Protagoras in the platonic dialogue of the same name (316d) mentions as *sophistai* similar "wise men", such as Orpheus and Musaeus. Cf. Jouanna 1990, 206 n. 1; Vegeti 1998, 348, n. 6.*
  - Here "philosophy" has the negative sense of a "search for knowledge" which ends in *polytathia* and useless speculation. For this meaning of *φιλόσοφος*, *φιλοσοφία* and *φιλοσοφεῖν* in both its positive and negative senses cf. Heraclit. DK 22 B 35; Hdt. 1, 30, 2 and the discussion in Gemelli Marciano (forthcoming), Introduction. For the question of the Pythagorean origin of the word *φιλοσοφία* cf. Burkert 1960; Riedweg 2002, 120 ff. and 2004.
  - Usually *περὶ φύσιος* refers to nature in general, but what follows (which sounds like a specification of the kind of *περὶ φύσιος* the author means) and the context of the whole chapter point more specifically to the nature of man. The expression is repeated in many passages in this same chapter and

- from some of them it is quite clear that the physician has the last meaning in mind (cf. e.g. the passage below at n. 4). Cf. Jouanna 1990, ad loc., 208 n.5.
4. [Hippocr.] *VM med.* 20, 1 (146, 15 Jouanna = I, 622 Littré) Ἐπεὶ τοῦτό γέ μοι δοκεῖ ἀναγκαῖον εἶναι ἰητρῶν περὶ φύσιος εἶδέναι καὶ πάνυ σπουδάσαι ὡς εἴσεται, εἴπερ τι μέλλει τῶν δεόντων ποιήσῃν, ὃ τι τὴν ἄνθρωπος πρὸς τὰ ἐσθιόμενά τε καὶ πινόμενα καὶ ὃ τι πρὸς τὰ ἄλλα ἐπιτηδεύματα καὶ ὃ τι ἀφ' ἐκάστου ἐκάστων συμβήσεται.
  5. [Hippocr.] *Vict.* I, 2 (122, 22 Joly<sup>2</sup> = VI, 468 Littré) Φημὶ δὲ δεῖν τὸν μέλλοντα ὀρθῶς συγγράφειν περὶ διαίτης ἀνθρωπίνης πρῶτον μὲν παντὸς φύσιν ἀνθρώπου γινώσκειν καὶ διαγινώσκειν καὶ ἀπὸ τίνων συνέστηκεν ἐξ ἀρχῆς, διαγινώσκειν δὲ ὑπὸ τίνων μερῶν κεκράτηται· εἴτε γὰρ τὴν ἐξ ἀρχῆς, διαγινώσκειται τὸ ἐπικρατέον ἐν τῷ σώματι, οὐκ ἰκανὸς ἔσται τὰ συμφέροντα προσεγγεῖν τῷ ἀνθρώπῳ.
  6. Cf. [Hippocr.] *Morb. sacr.* 1, 9 (7, 3 Jouanna = VI, 358 Littré) Εἰ γὰρ σελήνην τε καθαρεῖν καὶ ἥλιον ἀφανίζειν καὶ χεμῶνά τε καὶ εὐδίην ποιεῖν καὶ ὄμβρους καὶ αἰχμοὺς καὶ θάλασσαν ἀφορον καὶ γῆν καὶ τᾶλλα τὰ τοιοῦτότροπα πάντα ὑποδέχονται ἐπίστασθαι — εἴτε καὶ ἐκ τελετέων εἴτε καὶ ἐξ ἄλλης τινὸς γνώμης ἢ μελέτης φασὶν ταῦτα ὁλον τ' εἶναι γενέσθαι — οἱ ταῦτ' ἐπιτηδεύοντες δυσσεβεῖν ἔμοιγε δοκέουσι, καὶ θεοὺς αὐτ' εἶναι νομίζειν οὔτε ἰσχύειν αὐδέν, αὐτ' εἰργεσθαι ἂν οὐδενὸς τῶν ἐσχάτων ποιέοντες, ὡς οὐ δεινοὶ αὐτοῖσιν εἰσιν. On this subject cf. now Jouanna 2003, especially 22 ff. with bibliography.
  7. The hypothesis often advanced about the merely “literary” character of these claims conceals the old Dielsian preoccupation with preserving the reputation of Empedocles as a “natural philosopher”. For a critical review of these attitudes cf. Kingsley 1995, chap. 15. The thesis recently presented by Laks 2003 that the fragments are only a “référence” “au sein d'un dispositif de démagification de la magie consistant à rapporter le discours de la magie à un savoir défini (la physique d'Empédocle)” (p. 29) leaves aside the whole question of the esoteric character of the physical poem, of Empedocles' intentional ambiguities, and last but not least the fact that the “nature” Empedocles is dealing with is not simply “natural phenomena” but the gods and divine powers who lie behind appearances as he himself repeatedly points out (DK 31 B 6; B 23; B 17, 19ff.; B 35, 14 ff.). The whole apparatus of repetitions and warnings strives to make the disciple conscious of and acquainted with these divine presences (cf. Kingsley 2003 pass.). The power of the magician is based precisely on the knowledge of gods and of the way to deal with them (cf. *Morb. sacr.* 1, 4 (4, 18 Jouanna = VI, 354 Littré); I, 8ff. (6, 15 Jouanna = VI, 358 Littré), not on knowledge of nature in our sense. The claim to have a privileged relationship with the gods, and to

- know more about them than others, is typical of *magoi* until late antiquity. Furthermore, the presupposition that Empedocles' self-representation could conform so perfectly as to reach identification with the healers he wanted to “démagifier” is quite anachronistic in the context of the relationships between healers, doctors and natural philosophers in the 5<sup>th</sup> century BCE. Doctors and natural philosophers are either highly polemical against healers (as the author of *De morbo sacro* is) or adopt only some superficial attitudes from them. They can claim to “constrain” nature to give signs (like the doctor of *De arte* below) or can demonstrate the ability to foresee the weather (like Anaxagoras and Democritus: cf. Sider 2002), but are very careful to avoid any identification with the *magoi* themselves (see below the attitude of the Hippocratic author of *De arte* and the “defence” of the natural philosopher in Eur. Fr. 910 Nauck). Cf. Gemelli Marciano (forthcoming), Introduction.
8. 1, 1, 15.
  9. [Hippocr.] *De arte* 12, 3 (240, 10 Jouanna = VI, 24 Littré) Ὅταν δὲ ταῦτα τὰ μηνύοντα μηδ' αὐτῇ ἡ φύσις ἐκοῦσα ἀφίηται, ἀνάγκας εὕρηκεν [scil. ἡ τέχνη] ἡμῖν ἡ φύσις ἀζήμιος βιασθεῖσα μεθήσῃ· ἀνεθείσα δὲ δηλοῖ τοῖσι τὰ τῆς τέχνης εἰδῶσιν ἢ ποιητέα.
  10. Kingsley 2002, 358, 399; cf. 2003, 389ff.
  11. Wintersemester 2000/2001. Like Kingsley I interpreted DK 31 B 17, 20 ff. as portraying Aphrodite as the goddess of sexual attraction who acts in the same way, as cosmic force, both on the “limbs” of living beings and on the divine elements by pushing them to mix together. On the role of Aphrodite in erotic magic cf. Faraone 1999, especially 97ff.
  12. Kingsley 2002, 358 with n. 56; 2003, 394f. Trépanier 2003, 37 points out the ambiguity of the effects of the two forces in order to emphasize the creative function of *Neikos*.
  13. As Kingsley (2002, especially section 3) rightly emphasizes with interesting parallels from Gnostic tradition and Manicheism, at the centre of Empedocles' poetry lies the human being rather than the universe.
  14. This starting point was already assumed by La Croce 1980, 120 with further reference to Arist. *De gen. et corr.* 333b 21 (τὰ φύσει πρότερον τοῦ θεοῦ); Wright 1981, 48; Graham 1998; Inwood 2001, 46f.
  15. Kingsley 2002, 386; 2003, 347ff. About mortality and immortality cf. also Inwood 2001, 32.
  16. Cf. now the discussion of the lines and of the different interpretations of them in Trépanier 2003, 22ff.
  17. So Bollack 1965, 194ff.

18. I myself had interpreted the zoogony in this way (Gemelli Marciano 2000, 394) because like most scholars I was misled by the assumption that Aphrodite has an exclusively positive role in the eyes of Empedocles and that her world comes after the phase of *Neikos*. The interpretation of Kingsley 2002 (see now also 2003) opened a new perspective to me.
19. Trépanier 2003, 46 seems to deny the narrative character of the zoogony of love and to confine it to a "potential" dimension, because he starts from the presupposition that the world of Aphrodite comes after that of *Neikos* and that Empedocles is a speculative philosopher concerned only with theoretical problems and addressing to a rather vague "public". So he fails to see the continuity between the two worlds in the wider context of the esoteric poem and of the tradition Empedocles is following.
20. On this subject cf. Gemelli Marciano 2001, 205-215.
21. P. Strasb. a(ii) 23  
 [δεί]ξω σοι καὶ ἀν' ὄσσοι(ε) ἵνα μείζονι σώμ[ατι...]  
 [π]ρώτον μὲν ξύνοδόν τε διάπτυσιν τ[ε] γενέθλης  
 ὄσσοι(ε) τε νῦν ἔτι λοιπὰ πέλει τούτοιο τ[όκοιο]
22. Cf. Trépanier 2003, 24ff. I developed this interpretation independently from Trépanier with whose article I became acquainted only after I had written this paper. Cf. also Sedley in this volume.
23. Arist. *De gen. anim.* 722b 17 "Ὡςπερ γὰρ καὶ μεγάλα ὄντ' ἀδύνατον διεσπασμένα σώζεσθαι καὶ ἔμφηχα εἶναι, καθάπερ Ἐμπεδοκλῆς γενναῖ ἐπὶ τῆς Φιλότητος λέγων· "ἦι πολλὰ μὲν κόρσαι ἀναύχενες ἐβλάστησαν", εἰθ' οὕτως συμφύεσθαι φησιν. Τοῦτο δὲ φανερόν ὅτι ἀδύνατον· οὔτε γὰρ μὴ ψυχὴν ἔχοντα οὔτε μὴ ζωὴν τινα δύναται ἂν σώζεσθαι, οὔτε ὡςπερ ζῶια ὄντα πλείω συμφύεσθαι ὥστ' εἶναι πάλιν ἕν. Ἀλλὰ μὴν τοῦτον τὸν τρόπον συμβαίνει λέγειν τοῖς ἀπὸ παντὸς ἀπιέναι φάσκουσιν, ὡςπερ τότ' ἐν τῇ γῆ ἐπὶ τῆς Φιλότητος, οὕτω τούτοις ἐν τῷ σώματι. Ἀδύνατον γὰρ συνεχῆ τὰ μόρια γίνεσθαι καὶ ἀπιέναι εἰς ἓνα τόπον συνιόντα.
24. In Hesiod's *Theogony* the primordial beings born from Earth and Sky like the Hundred-hands and the Giants are large (148 τρεῖς παῖδες μεγάλοι cf. 619-20; of the Giants 185). In the Pythagorean tradition living beings larger than those on earth are supposed to dwell on the moon, which in the Pythagorean ἀκόσμητα happens to represent along with the sun, the "isles of the blest", i.e. the seat of the heroes. Cf. Philolaus DK 44 A 20 (Aet. 2, 30, 1 Τῶν Πυθαγορείων τινὲς μὲν, ἃν ἔστι Φιλόλαος, γεώδη φαίνεσθαι τὴν σελήνην διὰ τὸ περιουκείσθαι αὐτὴν καθάπερ τὴν παρ' ἡμῶν γῆν ζῶια καὶ φυτοῖς μείζονι καὶ καλλίωσιν· εἶναι γὰρ πεντεκαίδεκαπλάσια τὰ ἐπ' αὐτῆς ζῶια τῇ δυνάμει μὴδὲν περιττωματικὸν ἀποκρίνοντα, καὶ τὴν ἡμέραν τοσαύτην τῷ μήκει). Cf. on the subject Burkert 1972, 346. For the larger body of heroes like Orestes cf. Hdt. 1, 68, 3 (Ὀρίσσων ἐπέτυχον

- σορῶι ἐπταπήχει· ὑπὸ δὲ ἀπιστίης μὴ μὲν γενέσθαι μηδαμὰ μέζονα ἀνθρώπους τῶν νῦν ἀνοῖξα αὐτὴν καὶ εἶδον τὸν νεκρὸν μήκει ἴσον ἔοντα τῇ σορῶι).
25. DK 31 B 96; B 98; A 78.
26. DK 31 B 57,1 \*Ἡ πολλὰ μὲν κόρσαι ἀναύχενες ἐβλάστησαν. This part of the poem also included – as can be seen in line 7 ὡς δὲ τότε – the description of the formation of the eye (DK 31 B 84), which is preserved out of context by Aristotle.
27. For Archelaus DK 60 A 4; for the zoogony reported by Diodorus DK 68 B 5. The attribution of this zoogony with the corresponding *Kulturentstehungstheorie* to Democritus, due to K. Reinhardt 1912, has repeatedly been challenged (cf. especially Spoerri 1959) and the passage is now considered a kind of "vulgata" containing motifs going back to the 5<sup>th</sup> century BCE. Cf. the discussion of the question especially in relation to the *Kulturentstehungstheorie*, by Uzinger 2003, 155ff.
28. [Hippocr.] *Cam.* 2 ff. (188, 12 Joly = VIII, 584 Littré). For the zoogony cf. especially 3,1ff. (188, 22 Joly = VIII, 584 Littré) Κυκλομένων δὲ τούτων, ὅτε συνεταράχθη, ἀπελείφθη τοῦ θερμοῦ πολὺ ἐν τῇ γῆ ἄλλοθι καὶ ἄλλοθι, τὰ μὲν μεγάλα, τὰ δὲ ἐλάσσω, τὰ δὲ καὶ πάνυ μικρὰ πλήθος πολλὰ. Καὶ τῷ χρόνῳ ὑπὸ τοῦ θερμοῦ ξηρανομένης τῆς γῆς, ταῦτα (τὰ) καταλειφθέντα περὶ αὐτὰ σηπεδῶνας ποιεῖ οἶον περ χιτῶνας. Καὶ πολλῶι χρόνῳ θερμαινόμενον, ὅσον μὲν ἐτύγχανεν ἐκ τῆς γῆς σηπεδῶνος λιπαρὸν τε ἔδν καὶ ὀλίγιστον τοῦ ὑγροῦ ἔχον, τάχιστα ἐξεκαίθη καὶ ἐγένετο ὄστέα. Ὅποσα δὲ ἐτύγχανε κολλωδέστερα ἔοντα καὶ τοῦ ψυχροῦ μετέχοντα, ταῦτα δὲ θερμαινόμενα οὐκ ἐδύνατο ἐκκαυθῆναι, οὐδὲ ξηρὰ γενέσθαι· οὐ γὰρ ἦν τοῦ λιπαροῦ ὡς ἐκκαυθῆναι, οὐδὲ μὴν τοῦ ὑγροῦ ὡς ἐκκαυθῆναι ξηρὸν γενέσθαι. Διὰ τοῦτο ιδέην ἀλλοιότερην ἔλαβε τῶν ἄλλων καὶ ἐγένετο νεῦρα καὶ φλέβες.
29. This is the case e.g. in the description of the spinal marrow, whose origin is put in the brain, *Cam.* 4, 1 (190, 20 Joly = VIII, 588 Littré). Cf. also the description of the heart and the blood-vessels, below.
30. [Hippocr.] *Cam.* 5, 1 (191, 14 Joly = VIII, 590 Littré) Ἡ δὲ καρδίη πολὺ τοῦ κολλώδους καὶ τοῦ ψυχροῦ ἔχει· καὶ ὑπὸ τοῦ θερμοῦ θερμαινόμενον, κρέας ἐγένετο σκληρὸν καὶ γλίσχρον, καὶ μὴνυξ περὶ αὐτὴν, καὶ ἐκοιλώθη οὐχ ὡςπερ καὶ φλέβες, καὶ ἔστιν ἐπὶ τῆς κεφαλῆς τῆς φλέβος τῆς κοιλοτάτης. Δύο γὰρ εἰσι κοίλαι φλέβες ἀπὸ τῆς καρδίας... Joly 1978, ad loc. strives to harmonize the two levels by correcting ἔχει to εἶχε but this is not necessary because in 5, 2ff. the author goes on to explain the present constitution of the blood-system. Past and present are here completely intermixed.

31. This is the image evoked in DK 31 B 27, cf. Kingsley 2002, 398 n. 159. As matter of fact we are not told that the world masses are not there, but only that they are not distinguishable (B 27, 1) and that the *Sphairos* has no boundaries in himself, i.e. that individual things are not discernable. Regarding the apparent incongruity of this assumption with the concept of "mixture", cf. the same point in the embryological theories from the 5<sup>th</sup> century BCE below. This depends on the modern assumption that the Empedoclean mixture is a blending of fine particles. But this is an interpretation by Aristotle and the doxographical tradition, which has no real counterpart in Empedocles' fragments, cf. Gemelli Marciano 1991.
32. The similarity between the Derveni's "Only-one" and the *Sphairos* of Empedocles was already noticed by West 1983, 108, who nevertheless does not press the comparison any further. On the Derveni-theogony cf. now also Burkert 2003, 96ff.
33. Πρωτογόνου βασιλέως αἰδοίου, τῷ δ' ἄρα πάντες ἀθάνατοι προσέφυν μάκαρες θεοὶ ἠδὲ θέαναι καὶ ποταμοὶ καὶ κρήναι ἐπήρατοι ἄλλα τε πάντα ὄσα τότε ἦν γεγαῶτ(α): αὐτὸς δ' ἄρα μῶνος ἔγεντο.
34. πάντας γὰρ κρήνας αἰθῆς φάος ἐς πολυγηθῆς ἐξ ἱερῆς κραδίης ἀνεύκατο, μέμμερα ῥέζων.
35. Aet. 5, 19, 5 [Ps.-Plut.] (DK 31 A 72). The testimony refers to the first generation of sexed living beings at the beginning of our world.
36. Φησὶ γὰρ ἐν τῶν ἄρρενι καὶ τῶν θήλει ὄλον σύμβολον ἐνεῖναι, ὅλον δ' ἀπ' οὐδετέρου ἀπιέναι, ἀλλὰ διέσπασται μελέων φύσις, ἣ μὲν ἐν ἀνδρὸς Cf. Gal. *De sem.* IV, 616 Kühn.
37. For the analogy between the Empedoclean *Sphairos* and the embryo cf. Wilford 1968, 113.
38. Diels 1901, 121 ad B 31; cf. Burkert 1975, 139f.; Mansfeld 1992, 289. They explain the passage as a typical Plutarchean conflation of the doctrine of the *Katharmoi* and of the physical poem, but the genesis which Plutarch hints, is individual birth not the genesis of the cosmos as is clear from the mention of the "parent" (who cannot even in the fantasy of Plutarch be the *Sphairos*). Cf. also the parallel citation of Heraclitus and Empedocles on the same subject by Clem. *Strom.* 3, 14, 1ff.
39. Ὅπου καὶ τὴν γένεσιν αὐτὴν ἐξ ἀδικίας συντυγχάνειν λέγουσι, τῷ θνητῷ συνερχομένου τοῦ ἀθανάτου, καὶ τρέφεσθαι τὸ γεννώμενον παρὰ φύσιν μέλεσι τοῦ γεννήσαντος ἀποσπασμένοις.
40. Τοῦτο μὲν ἀν βροτέων μελέων ἀριδείκετον ὄγκον ἄλλοτε μὲν Φιλόττη συνερχόμεν' εἰς ἐν ἅπαντα γυῖα, τὰ σῶμα λέλογχε βίου θαλέθοντος ἐν ἀκμή.

ἄλλοτε δ' αὐτε κακῆσι διατμηθέντ' Ἐρίδεσσι  
πλάζεται ἀνδρῶν ἕκαστα περὶ ῥήγγινι βίον  
ὡς δ' αὐτῶς θάμνοισι καὶ ἰχθύσιν ὑδρομελάθροισι  
θηροῖ τ' ὀρειλεχέεσσιν ἰδὲ πτεροβάμοσι κύμβαις

- I give here the version quoted by Simplicius. The Papyrus reports a few puzzling words in addition (c 1: *ἵακτορα μητρί*), which are not relevant to my concern here. The variant reading at v. 2 (= c 3), with the first-person plural *συνερχόμεθ'* instead of the participle *συνερχόμεν'* (which was nevertheless restored by the 2<sup>nd</sup> hand) in the papyrus, is probably due to an adaptation of the scribe who strives to underline the relevance of the Empedoclean text for one's personal life, cf. Kingsley 2002, 337 n. 6. For other views on the general problem of the puzzling first-person plural in the papyrus cf. also Osborne 2000, 344ff.; Laks 2002. In any case this choice is of no importance as far as the interpretation given here is concerned.
41. Αὐξάνεται δὲ ἐπὶ γέννηται ἐπίδηλος· ἐπίδηλος δὲ μάλιστα γίνεται ἀπὸ ἑπταετίας μέχρι τεσσαρεσκαίδεκαετίας. The context concerns the growth of teeth.
42. Ξυνοῦσι ἀποπληξίη συμκρή· ἐξέσσονται γὰρ ἄνθρωπος ἐξ ἀνθρώπου καὶ ἀποσπᾶται πληγῆτι τινι μερίζομενος.
43. [Hippocr.] *Genit.* 1 (44, 1-45, 10 Joly = VII, 470-72 Littré).
44. [Hippocr.] *Genit.* 5, 1 (48, 7 Joly = VII, 476 Littré) Καὶ μίσγεται ὁμοῦ τότε ἀπὸ τοῦ ἀνδρὸς ἔλθον καὶ τὸ ἀπὸ τῆς γυναικός.
45. [Hippocr.] *Nat. puer.* 12,1 (53,1 Joly = VII, 486 Littré) Ἦν ἡ γονὴ μείνη ἀπ' ἀμφοῖν ἐν τῆσι μήτρησι τῆς γυναικός, πρῶτον μὲν μίσγεται ὁμοῦ, αὐτε τῆς γυναικός οὐκ ἀτρεμεούσης, καὶ ἀβροῖζεται καὶ παχύνεται θερμανομένη.
46. [Hippocr.] *Genit.* 8 (49, 20-50, 14 Joly = VII, 480 Littré).
47. Aet. 5, 18, 1 [Ps.-Plut.] (DK 31 A 75) Ἐμπεδοκλῆς, ὅτε ἐγενᾶτο τὸ τῶν ἀνθρώπων γένος ἐκ τῆς γῆς, τοσαύτην γενέσθαι τῷ μήκει τοῦ χρόνου διὰ τὸ βραδυπορεῖν τὸν ἥλιον τὴν ἡμέραν, ὅποση νῦν ἐστὶν ἡ δεκάμηνος· προῖόντος δὲ τοῦ χρόνου τοσαύτην γενέσθαι τὴν ἡμέραν, ὅποση νῦν ἐστὶν ἡ ἐπτάμηνος· διὰ τοῦτο καὶ τὰ δεκάμηνα γόνυμα καὶ τὰ ἐπτάμηνα, τῆς φύσεως τοῦ κόσμου οὕτω μεμελετηκυίας, αὔξασθαι ἐν μιᾷ ἡμέρᾳ ἢ ἡμίτιβεται νυκτὶ ἢ τὸ βρέφος.
48. For the the birth of the first human beings from earth cf. DK 31 A 75 (above n. 47); B 67; P.Strasb. d 12.
49. Ἡ δὲ σὰρξ αὐξομένη ὑπὸ τοῦ πνεύματος ἀρθροῦται, καὶ ἔρχεται ἐν αὐτῇ ἕκαστον τὸ ὁμοιον ὡς τὸ ὁμοιον, τὸ πυκνὸν ὡς τὸ πυκνὸν, τὸ ἀραιὸν ὡς τὸ ἀραιὸν, τὸ ὑγρὸν ὡς τὸ ὑγρὸν· καὶ ἕκαστον ἔρχεται ἐς χώρην ἰδίην κατὰ τὸ συγγενές, ἀφ' οὗ καὶ ἐγένετο, καὶ ἄσσα ἀπὸ πυκνῶν ἐγένετο πικρὰ ἐστὶ, καὶ ἄσσα ἀπὸ ὑγρῶν ὑγρά· καὶ ἄλλα κατὰ τὸν αὐτὸν λόγον



γίνεται ἐν τῆσιν αὔξησι. Καὶ τὰ ὀστέα σκληρύνεται ὑπὸ τῆς θερμῆς πτηνύμενα· καὶ δὴ καὶ διοξοῦται ὡς δένδρον. Cf. also a similar, but more complicated and obscure, theory at [Hippocr.] *Vict.* I, 8 (132, 1 Joly<sup>2</sup> = VI, 482 Littré).

50. This is the interpretation of τὸ πυκνόν, τὸ ἀραιόν, τὸ ὑγρόν also of Müller 1965, 115. The claim of Lonie 1981, 183 that the author could be giving merely "some example of differently constituted substances to illustrate the principle of like to like" doesn't take account of the fact that the text refers to the similar parts in the body of the parents that they came from (κατὰ τὸ συγγενές, ἀφ' οὗ καὶ ἐγένετο) or of the abrupt mention of bones immediately afterwards as if they were one of the natural subjects of the previous lines.
51. P.Strasb. d 11  
 [ ὀππότ]ε δὴ συνετύγχανε φ[λογ]μὸς ἀτειφίς  
 [ ]ως ἀνάγων π[ο]λυτήμον]α κρᾶσιν  
 [ ζωί]α φυτόμα τεκνώθ[η]σαν  
 [ ]ν]ῆν ἔτι λείψανα δέρεται ἡώς.
52. Soph. *El.* 1113; Eur. *Andr.* 773; Pl. *Phaed.* 86c.
53. Martin-Primavesi 1999, 314: "nous ne croyons pas qu'il faille reconnaître dans le pluriel du papyrus les "restes" des corps morts; une telle lecture serait même en contradiction avec la référence au monde vivant que nous croyons déceler dans la tournure δέρεται ἡώς".
54. Cf. Kingsley 2003, 420. Usually διάλλαξις is translated as "separation" (= death). This unusual word is found only in [Hippocr.] *Vict.* I, 10, 3 (134, 19 Joly<sup>2</sup> = VI, 486 Littré) and has the same meaning as διαλλαγῆ, "exchange" (Joly translates "déplacement"). Empedocles describes here what men call "birth" as a continuous mixing and reshaping of what has been mixed.
55. Θάπτέ με ὅτι τάχιστα πύλας Ἄλδαο περήσω.  
 τῆλέ με εἶργουσι ψυχὰ εἶδωλα καμόντων,  
 οὐδέ μέ πω μίσγεσθαι ὑπὲρ ποταμοῖο εἴωσιν,  
 ἀλλ' αὐτως ἀλάλημαι ἀν' εὐρυπυλῆς Ἄιδος δῶ.
56. Clarke 1999, 212.
57. Cf. DK 31 B 121: the meadows of Ἄττη, where the *daímon* first fell to be dressed in an "alien garment of flesh". Cf. Kingsley 2003, 361-363.
58. Hippol. *Ref.* 7, 9, 22 Διὰ τὴν τοιαύτην οὖν τοῦ ὀλεθρίου νείκους διακόσμησιν τοῦδε τοῦ μεμερισμένου κόσμου πάντων (τῶν) ἐμφύχων ὁ Ἐμπεδοκλῆς τοὺς ἑαυτο(ῦ) μαθητὰς ἀπέχεσθαι παρακαλεῖ· εἶναι γὰρ φησι τὰ σώματα τῶν ζώων τὰ ἐσθιόμενα ψυχῶν κεκολασμένων οἰκητήρια. καὶ ἐγκρατεῖς (δ') εἶναι τοὺς τῶν τοιούτων λόγων ἀκρωμένους τῆς πρὸς γυναῖκα ὁμλίας διδάσκει, ἵνα μὴ συνεργάζωνται καὶ συνεπιλαμβά-

- ωνται τῶν ἔργων ἂν δημιουργεῖ τὸ νεῖκος, τὸ τῆς φιλίας ἔργον λῦον αἶε καὶ διασπῶν.
59. Ps.-Gal. *Def. med.* 99 (XIX,372 K.) (DK 31 A 77); cf. Plut. *Quaest. conv.* 912C (DK 31 B 81).
60. Aet. 5,27,1 [Ps.-Plut.] (DK 31 A 77) Ἐμπεδοκλῆς τρέφεσθαι μὲν τὰ ζῶα διὰ τὴν ὑπόστασιν τοῦ οἰκείου. Cf. Plut. *Quaest. conv.* 663A; Macr. *Sat.* 7, 5, 17 (DK 31 B 90). It is worth remembering that for Empedocles parts of human bodies and of animals' and plants' are fully interchangeable with each other, cf. DK 31 B 82 (Arist. *Meteor.* 387b 1ff.); DK 31 A 86; B 99 (Theophr. *De sens.* 9).
61. Cf. OF 167a = 241 F Bernabé (Procl. In Tim. I, 324, 29 and 313, 10 Diehl)  
 ὡς τότε πρωτογόνου χαδῶν μένος Ἑρικεπαίου  
 τῶν πάντων δέμας εἶχεν ἐπὶ ἐνὶ γαστέρι κοίτη,  
 μείξε δ' εἰς μελέεσσι θεοῦ δυνάμιν τε καὶ ἀλκὴν,  
 τούνεκα σὺν τῶν πάντα Διὸς πάλιν ἐντὸς ἐτύχθη,  
 αἰθέρος εὐρείης ἧδ' οὐρανοῦ ἀγλαῶν ἕψος,  
 πόντου τ' ἀτρυγέτου γαίης τ' ἐρικυδέος ἔδρη,  
 Ἰσκαεῖος τε μέγας καὶ νεῖατα τάρταρα γαίης  
 καὶ ποταμοὶ καὶ πόντος ἀπείριτος, ἄλλα τε πάντα  
 πάντες τ' ἀθάνατοι μάκαρες θεοὶ ἧδὲ θέαινα,  
 ὅσσα τ' ἔην γεγαῶτα καὶ ὕστερον ὀππόσ' ἐμελλεν,  
 ἐν γένετο, Ζητὸς δ' ἐνὶ γαστέρι σύρρα πεφύκει.
62. Cf. the coherent picture of this method articulated in Kingsley 2003.
63. The most striking example is the Sicilian physician Menecrates (4<sup>th</sup> c. BCE). Like the healers attacked by the Hippocratic author of *De morbo sacro*, he was a specialist in healing epilepsy and identified himself with Zeus. His followers were for the most part important people who were healed by him and had consented to be his "servants". They considered themselves divine as well, each assuming the name of a different god. Menecrates and his companions of course became an object of mockery for the few ancient authors who mention them (especially Athen. 7, 289C; cf. Ael. *Var. hist.* 12, 51; Plut. *Ages.* 21; *Aprophth. Lac.* 213A). Yet another quite different picture emerges from the Anonymus Londinensis (19, 18), a medical doxographical text. Here he is presented as a doctor in the full sense of the word who held a four-element theory and wrote a work bearing the title of Ἰατρική. If only this report had survived, we would have no doubt that apart from the strange name Menecrates-Zeus he was a physician like many others. This should warn us against representations of people like Empedocles as "scientists" or "philosophers" in the ancient sources. Many years ago O. Weinreich, in the only modern monograph written on Menecrates (*Menekrates Zeus und Salmooneus. Religionsgeschichtliche Studien zur*

*Psychopathologie des Gottmenschtums in Antike und Neuzeit*, Stuttgart 1933 = Id., *Religionsgeschichtliche Studien*, Darmstadt 1968, 299-434), treated him as a clinical case despite the complex picture that emerges from the ancient sources that he accurately reports.

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## APPENDIX

# RECONSTRUCTION OF EMPEDOCLES' POEM

Apostolos Pierris