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THE BIRTH OF HARMONY OUT OF THE SPIRIT OF *TEKHE*

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ABSTRACT: Mycenaean Greek exerted a considerable influence on the formation of the very meaningful word *harmonia*. Even early Greek philosophers, who viewed *harmonia* as an organizing, joining and fastening principle, could not help hearing ancient repercussions of this word, and probably unconsciously chose an appropriate, technical, context. As P. Ilievski has convincingly shown, the ancient Greek noun *harmonia* and the verb *harmodzo* are traced back to the Mycenaean word *(h)armo* (meaning a “wheel” in the form of a fellow having an inner connection by means of spokes). Heraclitus explains the *harmonia* by means of lyre and bow, making us understand that this presupposes something more than visible connection, – certain hidden and secret nature, – and he chooses lyre and bow because they symbolize the same innate connection which makes the wheel lighter and stronger. Empedocles connects *harmonia* with Aphrodite – one of the creative powers. It was important for him to represent the multifaceted character of *harmonia* by means of different crafts. In his philosophical views we can clearly see the process of development of the term of *harmonia* from its technical to abstract meaning.

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The following analysis of the concept of “harmony”¹ in Heraclitus and Empedocles has been inspired by Petar Ilievski’s article «The Origin and Semantic Development of the Term Harmony»,² in which, on the basis of some Linear B inscriptions, he convincingly proves that the origins of the word *harmonia* are found in the Mycenaean Greek. Taking his results into consideration I would like to re-examine those contexts in Heraclitus and Empedocles where one can hear a distant echo of the most ancient meaning of the word *harmonia*. Scholars tend to believe that the first traces of the words with the root “harm-” belong to Homeric Greek, where the word ἄρμα used to mean *chariot*. The importance of Ilievski’s work consists in tracing this history further back. He believes that Homer borrowed ἄρμα from Mycenaean Greek, where this word meant *wheel*, having applied it, as it were, *pars pro toto*. In

¹ The work is supported by the German Academic Exchange Service (DAAD).

² Ilievski 1993.

Mycenaean Greek the word ἰππία was used for *chariot*, while *(h)armota* meant *wheel*. Indeed, it is difficult to imagine a chariot without wheels, therefore this extension of the meaning of *(h)armota* appears to be quite natural and is preserved in some modern languages (cf. the Russian *koleso* – *kolesnitsa*).

The Mycenaean chariot wheel, the *(h)armota*, was not just a solid disc put on an axle, but a felloe, connected with the axle by means of spokes, which made the whole construction lighter and stronger (see Illustrations, Fig. 22). And at that time this was a relatively recent technical advance. In other words, *(h)armota* is a strong connection of parts, or the arrangement where the parts are joined into the one, this one being the most important detail of the construction of the chariot as a whole, the wheel. “Together with the technological process of this invention the technical term *(h)armo* was created in the Mycenaean society, and it continued to be used in the derivatives ἀρμόζω and ἀρμονία. Second, the dialectal basis both of the noun *(h)armo* and the verb ἀρμόζω can be explained only by Mycenaean phonetic rules, according to which the inherited IE vocalic nasal -μη- developed a reflex -mo-. The verb ἀρμόζω is, in fact, a technical term too, and there is no doubt that the noun ἀρμονία is derived from this verb” (Ilievski 1993, 23).

This important observation inspired my attempt to look again at the development of early Greek philosophic terminology, which, in its nascence, as it appears, still retains numerous ancient connotations. Having appropriated the words used in different *tekhnai*, philosophers, *volens nolens*, employ metaphors referring back to the work of carpenters, pot makers, melters and other *tekhnitai*, and the fragments of Heraclitus and Empedocles demonstrate this very well. Now I will turn to a number of instances where the word *harmonia* occurs in Heraclitus and Empedocles in order to show that they have chosen the metaphor not by accident but because this word was still closely related with the most ancient meaning of the noun *(h)armo*.

Let us start with a well known Heraclitus' saying (fr. 9 Marcovich / 54 DK):

ἀρμονίῃ ἀφανὴς φανερῆς κρείττων.

Two different English translations help to understand the meaning better. Ch. Kahn³ translates it as follows: “The hidden attunement is better than the obvious one”. M. Marcovich⁴ renders it thus: “Invisible connection is stronger than visible”. The very fact that they *translate* the word «harmony» into the modern language is significant.⁵ The previous fragment and fr. 8 M. (123 DK) belong closely together:

φύσις κρύπτεσθαι φιλεῖ.

The word φύσις here is not the nature as environment but a true character of a thing, its inner constitution, and special features. The point is that these inner features are

³ Kahn 1979.

⁴ Marcovich 2001.

⁵ Edward Hussey in *The Presocratics* (London, 1995) gives a still different translation “Latent structure is master of obvious structure” (p. 35).

often not manifested, that is, the true being is hidden from the multitude's view. We also can observe this phenomenon in personal interrelations: persons often display their nature in extreme situations, which make socially determined behavior contrary to personal nature no longer possible, or when somebody trusts his/her secrets and wishes only to the closest friends. To be sure this psychological interpretation is fully appropriate in the context of Heraclitus' philosophy: just recollect the evidence given by Diogenes Laertius (fr. 93 (52 DK), where he tells us about Heraclitus' playing dice with children and his rejecting to enter into the world of political games.

The fragments 9 (54 DK) and 8 (123 DK) are often interpreted together because they contain the words κρύπτεσθαι and ἀφανής. The hidden connection or joining (*harmonia*) (which is better than the obvious one) and φύσις (understood as the inner constitution) stay in a close relation to each other. What is at issue here is the inner fitting together. Once we return to the ancient notion of the "wheel having an inner joint" and the philosopher's thought receives a new twist. The fellow without spokes is much more fragile and vulnerable to destruction than the one with spokes, as is the nature without *harmonia*. «The phrase '*harmonie aphanes*', – according to Kahn,⁶ – might thus be taken as a general title for Heraclitus' philosophical thought. No work of art achieves a unity and fitting-together as strong as the natural *kosmos* which most men fail to see».

Our next fragment 27 (51 DK) has given rise to long scholarly debates:

παλίντροπος⁷ ἁρμονίῃ ὁκωσπερ τόξου καὶ λύρης.

Leaving the subtleties of the well known discussion on two different readings of παλίντροπος versus παλίντονος in Hippolytus and Plutarch to the experts,⁸ I will instead try to grasp why Heraclitus had chosen this metaphor in order to convey his ideas. This question would be redundant, should we be able to clearly visualize the construction of an ancient lyre. But in the absence of preserved exemplars, we have to rely on a very general poetic tradition and hopelessly frontal depictions on the vases. A story about the invention of lyre is told in the Homeric hymn to Hermes:

47 πῆξε δ' ἄρ' ἐν μέτροισι ταμὼν δόνακας καλάμοιο
πειρήνας διὰ νῶτα διὰ ῥινοῖο χελώνης.
ἀμφὶ δὲ δέρμα τάνυσσε βοὸς πραπίδεσσιν ἔησι
50 καὶ πῆχεις ἐνέθηκ', ἐπὶ δὲ ζυγὸν ἥραρεν ἀμφοῖν,

⁶ Kahn 1979, 203.

⁷ The Russian translator has misleadingly chosen a literal rendering "reverse *harmonia*", instead of more understandable "an attunement (or 'fitting together') turning back <on it-self>" (Kahn 195).

⁸ Kahn believes that Plutarch made a mistake, being confused by a well known Homer's usage: παλίντονα τόξα. One can observe the same situation in Proclus, who, according to Kahn's opinion, has made the mistake either under Plutarch's influence or sited this well known formula just from memory. For details of this very interesting scholarly discussion cf. Marcovich 2001, 124-129, Kahn 1979, 195-200.

ἐπτα δὲ θηλυτέρων οἶων ἐτανύσσατο χορδάς.⁹

J. Landels, a well known researcher of the ancient musical instruments, has carefully examined the content of the Homeric hymn to Hermes and has tried to explain the structure described: «The most natural way to interpret the poet's phrase 'inserted the arms' would be to suppose that the two curved lengths of wood passed through the recesses in the rim of the shell where the animal's hind legs had been (the shell was probably used upside-down, with the 'head' end at the bottom), and extended to the rim at the base, where they were probably jointed together. This would ensure that they, and not the tortoiseshell, bore the stress caused by the tension in the strings».¹⁰ As we have only frontal depictions of the lyres (an instance see at Figs. 13, 14 и 18), it is difficult to say whether the arms were also curved in the direction to the viewers or not. The two-dimensional pictures do not capture this feature, but, quite unexpectedly, it is Heraclitus, as J. Landels believes, who can help us. Comparison of a lyre with a bow could indicate that the former was, in the manner of the latter, somehow bent forward to allow some space for the strings. Thus the harmony for Heraclitus is still a string or attunement, the fastener joining the opposites together, and this refers back to the technical and physical aspects of the term under consideration.

This fragment reflects one of the most important features of Heraclitus' ontological views, to wit, the idea that enmity lies behind every action. Two parts of the whole stand in counteraction, they are turning in different directions and are stretched together in order to lead to a certain effect – to produce sound or to shoot an arrow. I think that Plutarch's παλίντονος was not a mistake: this word would convey the idea of the fragment perfectly well.

A somewhat different picture emerges in Empedocles. Instead of keeping the original meaning of harmony, he places it in the technical context out of which this word has initially arisen.

In his introduction to Empedocles' fragments M. Wright notes the particular role of fire and even its dominance in comparison with other three elements.¹¹ He gives a number of examples where fire influences the changes in other elements. It hardens air to the state of a crystal body (Aetius 2.11.2). Fr. 454 Bollack (B 73 DK) is of special interest in this connection:

καὶ μετ' ὀλίγα·
ὥς δὲ τότε χθόνα Κύπρις, ἐπεὶ τ' ἐδίηεν ἐν ὄμβρῳ,

⁹ [47] He cut stalks of reed to measure and fixed them, fastening their ends across the back and through the shell of the tortoise, and then stretched ox hide all over it by his skill. [50] Also he put in the horns and fitted a cross-piece upon the two of them, and stretched seven strings of sheep-gut (ET by Hugh G. Evelyn-White, *Hesiod. Homeric Hymns, Epic Cycle, Homerica*. Harvard Univ. Press, 1995, p. 57).

¹⁰ Landels 1999, 63.

¹¹ Wright 1981.

εἶδεα ποιπνύουσα θοῶι πυρὶ δῶκε κρατῦναι ...¹²

What is described is the process of pottery work. Water makes the clay soft and capable of receiving appropriate form, while fire hardens it in the kiln. In her skilled work Aphrodite as a craftsman uses various devices, as Fr. 411 (B 87) clearly shows:

γόμοις ἀσκήσασα καταστόργοις Ἀφροδίτη.

Note his usage of the word γόμος, *nail*, a form of a *fastener* not unlike ἁρμονία, – the feature which did not escape the attention of Homer: τέτρηνεν δ' ἄρα πάντα καὶ ἤρμοσεν ἀλλήλοισι, γόμοισιν δ' ἄρα τήν γε καὶ ἁρμονίησιν ἄρασσεν (5, 247–248). *Harmonia* is used as an instrument in the hands of Aphrodite, or Love. The same theme is present in Fr. 450 (B 71), where Empedocles depicts how Aphrodite fits together (συναρμοσθέντ' Ἀφροδίτῃ) a mixture of the roots (the elements) in order to create the mortals. Simplicius correctly observes at this place that it is *Harmonia* that is employed by Empedocles as an epithet for one of his moving powers, Love. The two next fragments show this clearly. The fragment 92 (27 DK) says:

οὕτως Ἀρμονίης πυκινῶι κρύφωι ἐστήρικται Σφαῖρος κυκλοτερὴς¹³ μονίῃ περιηγεί γαίωv.

Nothing individual can be discerned within the Sphere. Harmony has made her work perfectly – she has joined the elements with the strong bonds of love. Admittedly the Sphere is a three-dimensional body, but what is previously observed in the case of a wheel is still valid: what is important are the inner joints, which constitute the nature of the Sphere and allows it at the end of Love's period to find peace, stability and steadiness.

A further confirmation of the idea is found in the fragment 462 (96 DK). Describing the proportion, according to which the nature of Sphere is set up, Empedocles says that the elements are connected by the divine glue of Harmony – Ἀρμονίης κόλλησιv ἀρηρότα θεσπεσίηθεν. Reinforcing Ἀρμονίη by ἀραρίσκω (*fitting together, fastening*), he wanted to emphasize the importance and power of the inner joint. The word *glue* refers to a certain craft as, for example, the fitting-together of two parts of a bronze statue by means of cold welding, or tanning work. M. Wright notes that under glue Empedocles could mean the joining power of water, as confirmed by the fragment 454 (B 73) cited above.

The allegory of earth as a cauldron occurs later in the same Fr. 462 (96 DK):

ἢ δὲ χθῶν ἐπίηρος ἐν εὐστέροισι χοάνοισι
τῷ δύο τῶν ὀκτῶ μερέων λάχε Νήστιδος αἴγλης,

¹² «And as, at that time, when Kypris was busily producing forms, she moistened earth in water and gave it to swift fire to harden» (Wright 1981, 222).

¹³ This phrase can literary mean «by round straitened Sphere», or *surrounded* in the sense of *bounded*. One can read it also as «the limited Sphere», i. e. not widening, but kept in the same limits, always having one size.

τέσσαρα δ' Ἡφαίστοιο· τὰ δ' ὅστέα λευκὰ γέγοντο
Ἄρμονις κόλλησιν ἀρηρότα θεσπεσίηθεν.

One notes that bronze molding technique, invented at the beginning of the seventh century BCE, has reached by the fifth century a considerable degree of sophistication. We can remember the famous statue of Poseidon (or Zeus) from the Artemision cape. This is a rare example preserved until our days (see Fig. 21), although in Antiquity many statues were made from bronze and subsequently became models for marble copies.

The next couple of fragments have the casting craft at their background. Fr. 201(35 DK):

τῶν δέ τε μισγομένων χειρ' ἔθνεα μυρία θνητῶν,
παντοίαις ιδέησιν ἀρηρότα, θαῦμα ιδέσθαι.

Indeed the verb χέω means here “bronze molding, melting” (Liddell-Scott-Jones: *smelt* metal, *cast*, of bronze statues).

In Fr. 231 (22 DK) we read:

ἐχθρὰ <δ' ᾗ> πλείστον ἀπ' ἀλλήλων διέχουσι μάλιστα
γέννηι τε κρήσει τε καὶ εἶδεσιν ἐκμάκτοισι.

The word ἐκμακτος (from ἐκμάσσω) also clearly points towards bronze casting technique. Probably Empedocles used this word intentionally and his listeners understood the reference. Creating the mortals in the period of its predominance, Love who, as we remarked, is “Harmony”, *itself* joins all those parts that wander about, and her tools are again glue, pegs, and different casting forms. If we now recollect that, as Ilievski has shown, in the Mycenaean period the word *a-to-mo/arthmos*/ meant the guild of craftsmen (blacksmiths),¹⁴ it will be quite natural to assume that these numerous technical metaphors go all the way back to that period.

And last but not least, Fr. 64 (23 DK):

ὥς δ' ὅποταν γραφές ἀναθήματα ποικίλλωσιν
ἀνέρες ἀμφὶ τέχνης ὑπὸ μήτιος εὖ δεδαῶτε,
οἷτ' ἐπεὶ οὖν μάρψωσι πολύχροα φάρμακα χερσίν,
ἄρμονίῃ μείζαντε τὰ μὲν πλέω, ἄλλα δ' ἐλάσσω,
ἐκ τῶν εἶδεα πᾶσιν ἀλίγκια πορσύνουσι.

Here *harmonia* means “proportion”. It is possible that this is the first case of such a usage. Proportion is mentioned also in the fragment 462 (96 DK) where “the kindly earth received into its broad hollows of the eight parts two of the brightness of Nestis and four of Hephaestos”. Since only three elements are mentioned: earth, water¹⁵ and fire, the ancient commentators of Aristotle, John Philoponus and Simplicius postulated here a Pythagorean influence and tried to substitute the missing

¹⁴ Ilievski 1993, p. 24.

¹⁵ The LSJ gives for Nestis a single meaning: ὕδωρ (c.v).

element, air, without which the structure of proportion is not complete, with αἴγλη (the brightness). One wonders however whether all four elements were so important for Empedocles? M. Wright writes: “Empedocle's achievement is in the understanding of the principle of proportion of elements in the formation of organisms, rather than in any sophistication in principle's development”,¹⁶ and he is right, since Empedocles does not mention all the elements simultaneously and, even if he does, their role in the process of creation may be unequal, as in the fragment 461 (98 DK).

One last note: explaining the way how such an incredible a variety of living beings can come into existence from only four elements, Empedocles emphasizes the importance of the right mixture (not all living beings deserve to live and could survive),¹⁷ and the process described refers to the skill of color mixing (fr. 64 (23 DK): ἀρμονίη μείζαντε). Luckily for Empedocles, this fully corresponded with contemporary practice, since the painters of his day used only four color pigments – white, black, red and yellow. This was already observed by W. Kranz, who in his article “Die ältesten Farbenlehren der Griechen”¹⁸ suggested that “so wie der Maler durch Mischung seiner vier Farben die bunte Welt der Bilder hervorzaubert, so hat Göttin Harmonie aus den vier Elementen die Welt um uns entstehen lassen”.¹⁹ One step further one can assume that the medical theory of four bodily liquids could also be rooted in this idea.²⁰

Mycenaean Greek exerted a considerable influence on the formation of the concept of *harmonia*. Even early Greek philosophers, who viewed *harmonia* as an organizing, joining and fastening principle, could not help hearing ancient repercussions of this word, and probably unconsciously chose an appropriate, technical, context. As P. Ilievski has convincingly shown, the ancient Greek noun ἀρμονία and the verb ἀρμόζω derive from the Mycenaean word (*h*)armo (meaning a “wheel” in the form of a fellow having an inner connection by means of spokes). Heraclitus explains the *harmonia* by means of lyre and bow, making us understand that this presupposes something more than visible connection, – a certain hidden and secret nature, – and he chooses lyre and bow because they symbolize the same innate connection which makes the wheel lighter and stronger. Empedocles connects *harmonia* with Aphrodite – one of the creative powers. It was important for him to represent the multifaceted character of *harmonia* by means of different crafts. In his philosophical views we can clearly see the process of development of the term of *harmonia* from its technical to abstract meaning.

¹⁶ Wright 1981, 210.

¹⁷ The idea to be sure is widespread in the later tradition. Cf., for instance, Theophrastus' saying: “A particular skill is due to the μέση κρᾶσις in organ – the orator, who has a good mixture in his tongue, and the craftsman, who has one in his hands” (*Sens.* 10–11).

¹⁸ Kranz 1912.

¹⁹ Ibid, p. 128.

²⁰ N. Koch has recently noted: “Tatsächlich liegt aber beiden Konzepten (i.e. Vierfarbtechnik und Vierheit von Körpersäften) nur dieselbe Wurzel zugrunde, nämlich die naturphilosophische Lehre von den vier Elementen” (2000, 206).

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