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Attempts to shed light on the issue as to whether Pythagorean arithmology was itself a vestige of a remote mythical and magical past, or an original conceptual creation, specifically in regard to the correlation established by the Pythagoreans between geometrical figures and the gods: the dodecagon is related to Zeus, the square to Hestia and Aphrodite, etc. Concludes that such correlations "are related to a mixture of theological beliefs and mathematical-astronomical knowledge, imbodyed (*sic*) into the Orphico-dionysiac cult" (p. 316). Ref. 100.

MARIA PAPATHANASSIOU

GEOMETRICAL FIGURES AND DIVINITIES IN EARLY PYTHAGOREANS

One of the most important characteristics of the Pythagorean philosophy is the identification or similarity of all things to numbers¹, as well as the correlation between some deities and geometrical figures and their angles. We know that in many primitive cultures, which developed some arithmetical systems, the numbers were endowed with magical qualities². We can ask therefore, in what extent the Pythagorean arithmology sounds as an echo of a remote past and in what extent it is an original creation.

The information provided by the Philolaos' Frag. A 14 can be reviewed in the following: According to Proclus³, Philolaos dedicated the angle of the equilateral triangle to the gods Cronus, Hades, Dionysus and Ares, while he dedicated the angle of the square to the goddesses Rhea, Demeter and Hestia. According to Eudoxus⁴, the correspondence was as follows: Hades, Dionysos and Ares to the angle of the triangle, and Rhea, Aphrodite, Demeter, Hestia and Hera to the angle of the square. Moreover Damascius⁵ reports that Philolaos did dedicate the triangle to Athena, the square to Hermes and the semicircle to Dioscuri. Plutarch and Proclus add also the correspondence of the angle of the dodecagon to Zeus.

Some scholars tried to explain astrologically⁶ these correspondences; i.e. that such a correspondence of the angle of the triangle to four gods and of that of the square to three goddesses, could be referred to the division of the zodiac in groups of signs at the vertices of a triangle or a square inscribed into the circle of the zodiac⁷. In that case we can ask how the correspondence is made, since Hades and Dionysos are not planets so that they may be related to the signs. Something which seems rational is the correspondence of Zeus to the angle of the dodecagon, which can be considered as a schematic image of the zodiac with

the 12 constellations. Naturally, for such an interpretation we need first a correlation of Zeus with the zodiac and with each one of the twelve signs.

I think that we can be helped by the Orphic theogony. Let us begin with the information provided by Damascius, that Philolaos dedicated the triangle to Athena and the square to Hermes. This seems to oppose to the common notion that odd numbers correspond to male beings, while even numbers correspond to female beings.

We can first remark that in the Orphic hymn in praise of Athena, she is considered as bisexual and they call her '*Metis*'⁸ just like the bisexual god Phanes-Metis⁹ whom Zeus swallowed before he began the creation of the world¹⁰; in the Hesiodic theogony Zeus swallows his first wife, Metis, before she gives birth to Athena¹¹. In this manner the wisdom of Phanes is manifested by Zeus in the form of Athena, who is characterized also as '*avoiding marriage*'¹². We can explain all this, if we consider that Athena symbolizes a basic quality (wisdom) of the divine, and this is the reason she cannot be related with marriage to anyone; i.e. she is a self-sufficient creative principle as far as her power and manifestation are concerned—notions symbolized by her bisexuality. According to the Orphic Frag. 313¹³, among rumours there is also the praising of the non-womanish quality of the number seven, as well as the fact that images of the Athena are the monad, the triad, and the number seven. This agrees with the monthly festival honouring Athena's birthday, held in Athens on the third day of the month¹⁴.

In relation with the attribution of the square to Hermes, we are informed that the fourth day of the attic month was dedicated to three deities, as their birthday: i.e. to Heracles, Aphrodite, and Hermes (and possibly Eros)¹⁵. Consequently, it is possible that the attribution of the triangle to Athena and that of the square to Hermes be related with the day (age of the moon) of celebration of an ancient festival found in the attic sacred calendar.

Let us begin with the similarities between gods honoured on the first ten days of the attic month and those to whom certain numbers belonged according to the Orphic or Pythagorean tradition¹⁶. We can see that the festival days fall in the beginning of the month, when moon is waxing. Hesiod considered as sacred the first, the fourth and the seventh day of the month; especially the seventh, because of Apollo's birthday¹⁷. According to the Orphic Frag. 276¹⁸, the Pythagoreans attribute the seventh day to the leader of the whole, i.e. to the one, and Orpheus bears witness saying '*seventh (day), beloved by Lord Apollo*'. I think that when Philolaos says '*mind... light in the number seven*'¹⁹, he means Apollo and Athena²⁰. By comparing the numbers attributed to gods by the Pythagoreans²¹ with the days of the attic month sacred to gods, we get only one relation, that of the eighth day and of the number eight with Poseidon.

It is noteworthy that one of the names the Pythagoreans give to the decade is also '*Phanes*'²², who, although he is a great god of the Orphic cult, he does not appear generally into the Pythagorean philosophy. Instead, in the Orphic hymn in praise of the number, the number four brings forth the mother of all, the decade²³ ($1+2+3+4=10$). Proclus commenting it says that '*the Dionysiac divinity is*

the number four, as the Orphic theology praises the god ten thousand times as four-eyed and four-corned²⁴. According to the Orphic Frag. 76²⁵, 'Phanes is the number four, as Orpheus says, with four eyes seeing this side and the other'; and further, that 'the number ten is all and the theology calls it four-eyed and four faced'. On the base of the astronomical characteristics of Phanes we have shown²⁶ that he is identified with Helios-Sun and he is considered as a personification of the time measured by the calendar, according to the motions of the sun and the moon in the zodiac. So, if we accept an influence of the Orphic theogony upon the Pythagoreans, we can explain why they called Phanes and Helios the decade.

There is also the attribution of the angle of the dodecagon to Zeus. I do not think the hypothesis alone that Zeus is the lord of the heaven is sufficient to explain it; the zodiac is a definite narrow belt of the heaven and the seven planets (sun and moon included) run through it, while Zeus is related astrologically (at least in later times) with only two signs, that of the Sagittarius and that of the Pisces²⁷. It seems more probable that the angle of the dodecagon, which is a schematic image of the zodiac, is sacred to Zeus because he is identified with Helios-Sun. In the Orphic hymn in praise of Helios, he is called: 'father of time, immortal Zeus'²⁸. Moreover, by his annual motion Helios-Sun runs through all the twelve zodiacal signs, which are called astrologically 'houses of the sun'. Consequently Helios is the real lord of the zodiac, while (the planet) Zeus is the lord of only two signs. The correlation of Zeus to Helios is well understood, as both are givers of life, but it is made through the identification of Phanes with Zeus and with Helios-Sun.

Let us now see the correspondences of the angles of the triangle and the square to male and female deities respectively. This case is more complicated, as there is not only one tradition, but we have one according to Eudoxus and one according to Proclus. The latter agrees with the model: four gods (signs) by three angles equals twelve (zodiac). The former does not agree with it, as Plutarch reports five goddesses. We can now make the following remarks:

1. The angles of the triangle are sacred to gods, while the angles of the square to goddesses. In this way the correspondence of the number three to male beings and that of four to female beings is maintained.

2. In both cases the gods reported do not coincide with the planets known in the antiquity, except Ares and Aphrodite in Eudoxus' tradition and Cronus and Ares in Proclus' tradition.

3. Common elements in both traditions are Hades, Dionysos, Ares, Rhea, Demeter and Hestia. In Eudoxus' tradition Cronus is missing, while in that of Proclus Aphrodite and Hera are missing.

Let us look into the case of the gods related to the angle of the triangle. According to Heraclitus²⁹, Hades and Dionysos is the same person to whom people celebrate Bacchanal rites and they are mad of Bacchic frenzy. The relation of Dionysos with the underworld becomes evident by the adjective 'chthonic' attributed to him: 'I call Bacchus, chthonic Dionysos'³⁰. We can find also

some similar qualities between Ares and Dionysos. In the hymn in praise of Dionysos Bassareus celebrated every three years, it is said: 'you, who rejoices at swords and blood.../...being sorrowful to all gods/and mortal men who inhabit earth'³¹. For Ares it is said: 'delighting in arms...man-slaying...defiled always by murders/rejoicing at man-slaying blood.../you who desires unmusical battle of swords and spears'³². If the thought about such a correlation of Ares with Dionysos is true, then the three gods are aspects of one and the same male deity, who is strongly chthonic and related to the Orphicodionysiac mysteries. This is related also to the equality of the angles of the equilateral triangle, which therefore are considered as only one³³.

The last one left to be examined is Cronus reported in Proclus' tradition. Cronus is time personified³⁴, and Chronus (=time)—who is an important god of the Orphic theogony—is represented with features similar to those of Phanes³⁵. According to Proclus 'Dionysos is continuously called Phanes'³⁶, while 'the sun saves the similarity to Phanes'³⁷. As time is measured by the movement of the sun in the zodiac, Helios (=sun) is called 'father of time'. Then, although Cronus seems somehow unconnected with the other three gods, he can be related to them by the astronomical interpretation of his meaning.

Let us now look into the female deities related to the angle of the square. In the hymn in praise of Hestia it is said: 'you who possesses the central house of the everlasting fire.../house of blessed gods, strong support for the mortals'³⁸. So Hestia is identified with Ge (earth), as it is clearly said by Euripides: 'Gaea mother, the wise men call you Hestia released in the ether'³⁹. Demeter also is the earth (Gaea); 'because it is an old custom to call the earth mother exactly as Orpheus bears witness saying: Ge mother of all, Demeter giver of riches'⁴⁰. Demeter is also identified with Rhea. According to Proclus, 'Orpheus, by saying that Demeter is the same as Rhea, he says that when she is not emanating, being up with Cronus, she is called Rhea, but emitting and generating Zeus she is called Demeter; because he (Orpheus) says: being Rhea before, after she became Zeus' mother, she became Demeter'⁴¹. There is also an identification of Ge with Hera. Empedocles called 'the earth (Ge) Hera giver of life'⁴².

As far as Aphrodite is concerned, we are informed by Pausanias that there was in Sparta a sanctuary of Hera Hypercheiria (=she whose hand is above), and 'can old wooden image they call that of Aphrodite Hera'⁴³. We have also an information from Plotinus, who says that 'we place in a certain order the gods according to the mind, and the goddesses according to their souls, and that Zeus' soul is Aphrodite, as priests and theologians bear witness, who identify Hera with Aphrodite and they say that Aphrodite's star in the heaven belongs to Hera'⁴⁴.

Having identified Hera and Aphrodite, we arrive at a final correlation between all goddesses to whom the angle of the square is attributed. Just as in the case of the correspondence of some gods to the angle of the triangle, we can suppose that the five goddesses are aspects of the one and same female chthonic deity, related to the mysteries.

I do not think it is by chance that the square is attributed to Hermes, who is born on the fourth day of the month and who has also characteristics of a chthonic deity as 'guide of souls'. The same is also true about the other deities celebrated with him. The Orphic god Phanes, being 'four-eyed' and 'four-faced', is related to the number four. But Phanes was called also Eros⁴⁵. It is the case of Phanes-Eros into whom Zeus has been transformed⁴⁶ (or who has been swallowed by Zeus)⁴⁷, when he wished to create the world.

There is also Herakles. According to the Orphic theogony, Chronus (time) is called also Herakles⁴⁸. On the base of the common astronomical characteristics between Chronus-Herakles and Phanes-Helios, we have shown⁴⁹, that they are identified as a personification of the time measured by the calendar.

After all we have said about the relations between the deities dedicated to each geometrical figure, I do not think we can favour the astrological interpretation (aspects of the signs). I think it is more possible that the birthdays of the gods (with their official celebration) and the correspondences of the gods (and goddesses) to numbers, geometrical figures and angles, are related to a mixture of theological beliefs and mathematical-astronomical knowledge, imbedded into the Orphicodionysiac cult.

Maybe, this is the explanation given by Proclus and Damascius about how the Pythagoreans in general, and especially Philolaos, correlated geometrical figures, angles, deities: 'Because in the Pythagoreans we find other angles sacred to other gods just like Philolaos did, having consecrated the angle of the triangle to the ones and the angle of the square to the others, and other (angles) to other (gods) and the same angle to many gods and many angles to the same god, according to the different powers he sends forth'⁵⁰. 'Philolaos attributing many times to the same god other and other (figure or angle?) according to another quality... and (attributing) the rectilinear (figures), one's own for each one (god), other (figures) to other (gods), according to the qualities of the numbers, of the angles and of the sides'⁵¹.

NOTES

1. Syrian. in Aristot. *Metaphys.* M6 p. 1080b16 (122,29 Kr.) = Orphic Frag. 317, in: O. Kern, *Orphicorum Fragmenta*, Weidmann, Berlin 1922.
2. W. Burkert, *Lore and science in ancient Pythagoreanism*, Harvard U.Pr. 1972, 468.
3. Proclus, in *Eucl.* p.166,25 = Philol. Frag. A 14, in: H. Diels-W. Kranz, *Die Fragmente der Vorsokratiker*, Weidmann, Berlin 1952/¹⁰1961.
4. Plut. *De Isi. et Osi.* 30, p.363A = Philol. Frag. A 14, in DK (as in n.3).
5. Damasc. II 127,7 Ruelle = Philol. Frag. A 14, in DK (as in n.3).
6. W. Burkert (as in n.2), 349f.
7. Ptolemy, *Tetrabiblos*, Loeb 1964, I 11, 18.
8. Orphic Hymn 32, v.10, in: G. Quandt, *Orphei Hymni*, Weidmann, Berlin 1955.

9. Apion. ap. Clem. Rom. *Homil.* VI 5-12 = Orphic Frag. 56; Proclus, in *Plat. Tim.* 31a = Orphic Frag. 85, in: O. Kern (as in n.1).
10. Proclus, in *Plat. Tim.* 28c = Orphic Frag. 167, in: O. Kern (as in n.1).
11. Hesiod, *Theogony*, Papyrus, Athens 1938, v.886-890.
12. Orphic Hymn 32, v.8, in: G. Quandt (as in n.8).
13. Proclus, in *Plat. Tim.* 24a = Orphic Frag. 313, in: O. Kern (as in n.1).
14. J.D. Mikalson, *The sacred and civil calendar of the Athenian year*, Princeton U.Pr. 1975, 16.
15. J.D. Mikalson, (as in n.14), 16-18.
16. The monthly festival days of the attic sacred calendar are ascertained by epigraphic, literary, scholiastic and lexicographic evidence. J.D. Mikalson, (as in n.14), p.IX.
17. Hesiod, *Works and days*, Papyrus, Athens 1951, v.770-771.
18. Ioan.Lyd. *De mens.* II 12 p.33,8 W. = Orphic Frag. 276, in: O. Kern (as in n.1).
19. Nicom. *Theol. arith.* p.74,10 = Philol. Frag. A 12, in: DK (as in n.3).
20. Throughout the Greek world the first, the sixth (Artemis' birthday), and the seventh (Apollo's birthday), were considered as sacred. Maybe it is not by chance that Hesiod considers the sixth (and the 16th) as unfavourable for the birth or the marriage of young girls, as the 6th was sacred to the virgin Artemis. Hesiod, (as in n.17), v.782-784.
21. Plut. ap. Stob. *anthol.* II 10 = Orphic Frag. 309, in: O. Kern (as in n.1).
22. <Iambl.> *Theol. arith.* IX 60, p.59 = Orphic Frag. 315, in: O. Kern (as in n.1).
23. Syrian. in Aristot. *Metaphys.* M4 1078b12 = Orphic Frag. 315, in: O. Kern (as in n.1).
24. Proclus, in *Plat. Remp.* II 169,20 Kr. = Orphic Frag. 315, in: O. Kern (as in n.1).
25. Hermias, in *Plat. Phaedr.* 246e p.138,11 C. = Orphic Frag. 76, in: O. Kern (as in n.1).
26. M. Papathanassiou, *Cosmological and cosmogonical ideas in Greece during the 2nd millennium B.C.*, thesis, Athens 1978 (in greek), 103-4.
27. Ptolemy, (as in n.7), I 17.
28. Orphic Hymn 8, v. 13, in: G. Quandt (as in n.8).
29. Clem. *Protrept.* 34, p.26 = Heraclitus Frag. B 15, in: DK (as in n.3).
30. Orphic Hymn 53, v. 1, in: G. Quandt (as in n.8).
31. Orphic Hymn 45, v. 3, 5, 6, in: G. Quandt (as in n.8).
32. Orphic Hymn 65, v. 2-5, in: G. Quandt (as in n.8).
33. Philol. Frag. A 14, in: DK (as in n.3).
34. M. Papathanassiou, (as in n.26), 62.
35. Damasc. *De princ.* 123b = Orphic Frag. 54; Athenag. *Pro christ.* 18 = Orphic Frag. 57; Proclus, in *Plat. Tim.* 30c.d = Orphic Frag. 79, 81, in: O. Kern (as in n. 1). M. Papathanassiou, (as in n.26), 102-3.
36. Proclus, in *Plat. Tim.* 29a.b = Orphic Frag. 85 Kern (as in n.1).
37. Proclus, in *Plat. Tim.* E prooem. III 169 = Orphic Frag. 104, in: O. Kern (as in n.1).
38. Orphic Hymn 84, v. 2, 5, in: G. Quandt (as in n.8).
39. *Theol. Arithm.* p. 6,18 de Falco = Anaxagor. Frag. A 20b, in: DK (as in n.3).
40. Diodor. I 12,4 = Orphic Frag. 302, in: O. Kern (as in n.1).
41. Proclus, in *Plat. Kratyl.* 403e, cf. *Theol. Plat.* V 11 = Orphic Frag. 145, in: O. Kern (as in n.1).
42. *Alleg. homer.* ap. Stob. *Ecl.* I 10,11b p.121 W.; '(He called) Hera giver of life the air', Aët. I 7,28 = Emped. Frag. A 33; Parmenides also identified her with the air: Menand. *Rhet.* I 2,2 = Parmen. Frag. A 20, in: DK (as in n.3). According to the Orphic Hymn in praise of her: 'air-formed', Orphic Hymn 16, v.1, in: G. Quandt (as in n.8).
43. Pausanias, *Description of Greece*, Vol.II, Loeb 1977, Book III (Lacon.), XIII, 9.
44. Plotinus, *Ennead.* III 5,8 = Orphic Frag. 351, in: O. Kern (as in n.1).
45. Proclus, in *Plat. Tim.* 31a = Orphic Frag. 74, in: O. Kern (as in n.1).
46. Proclus, in *Plat. Tim.* 32c = Pherec.Frag. B 3, in: DK (as in n.3).
47. Proclus, in *Plat. Tim.* 28c = Orphic Frag. 167, in: O. Kern (as in n.1).
48. Athenag. *Pro christ.* 18 = Orphic Frag. 57, in: O. Kern (as in n.1).
49. M. Papathanassiou, (as in n.26), 102-104.

50. Proclus, in *Eucl.* p.130,8 = Philol. Frag. A 14, in: DK (as in n.3).
 51. See n.5.

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AHP ANAXIMENES UND CORPUS HIPPOCRATICUM

Sehr treffend bemerkte der grosse Altphilologe U.v. Wilamowitz—Moellendorff, dass der sich mit dem altgriechischen Schrifttum und der altgriechischen Kultur Befassende als ungerecht bezeichnet würde, liesse er den antiken griechischen Arzt beiseite und führte ihn neben dem Gelehrten und dem Philosophen auf.

Die ionische Philosophie und die altgriechische Medizin sind zwei interessante Gattungen des griechischen Schrifttums und haben ein gemeinsames Merkmal, nämlich den ionischen Dialekt. So wie die ionischen Philosophen ihre Werke in ionischer Sprache geschrieben haben, haben es die altgriechischen Ärzte auch getan, obwohl sie ihrer Herkunft nach Dorier waren.

Wie bereits bekannt, gab es im Altertum zwei namhafte Schulen der Heilkunde im Raum des Ägaischen Meeres: die Schule von Knidos und die Schule von Kos: eine jede hatte unterschiedliche Prinzipien und Studienrichtungen.

Diesen Schulen entstammen die meisten Werke der Hippokratischen Sammlung (*Corpus Hippocraticum*), die den Namen des vornehmsten Arztes der Antike und Vaters der Medizin, Hippokrates trägt, der aus der Insel Kos gebürtig ist.

Das *C(orpus) H(ippocraticum)* umfasst neunundfünfzig (59) Werke, die in zweiundsiebzig (72) Büchern angeführt sind. Sie sind von mehreren Verfassern geschrieben, die in der Zeitperiode zwischen dem 5. Jahrhundert v. Chr. und dem 2. Jahrhundert n. Chr. lebten, wie es aus den Unterschieden, die der Inhalt und der sprachliche Stil aufweisen, ersichtlich wird.¹

In Süd-Italiens Kroton gab es ebenfalls eine Schule der Heilkunde noch vor der Zeit Hippokrates', aus der zwei berühmte Ärzte jener Zeit hervorgegangen sind: a) *Demokedes*, der bekanntlich zuerst den verrenkten Fuss des persischen Königs Dareios heilte, nach den vergeblichen Bemühungen der Ärzte aus Ägyp-