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## Median Modes in the Light of the Greek Manuscript No. 9 from the National Archives in Drobeta Turnu Severin

### Abstract

The Greek manuscript no. 9 from 1751 – a unique manuscript in Romania tells us more about the musical tradition of the Eastern Church, tradition which provided the unmodified safekeeping until today of the music and repertory that is an integral part of the cult of the Orthodox Church. Taking into account the importance of this manuscript for the musicological research of the ecclesiastical chant before the hrisantic reform, this study deals with different aspects from the old theory of Byzantine music, as: metrophony, solfeggio, median modes and trohos system.



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## Keywords

Greek manuscript, Byzantine chant, old notation, median modes, trohos system, Saint Ioannes Koukouzeles, Ioannes Plousiadinou

## 1 Median Modes

A particularly important element presented in the Greek manuscript no. 9 at the National Archives in Drobeta Turnu - Severin<sup>1</sup>, is the median modes about which, until now, we have few accounts.

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<sup>1</sup> The Greek manuscript no. 9 at the National Archives in Drobeta Turnu-Severin, includes excerpts from the theoretical work of Saint Ioannes Koukouzeles, hermeneia of St. Ioan Damaschin, hermeneia of Manuel Chrysaphes about requirements of psaltic music and about phtorals, of the monk Pahomie and hermeneia about trills, together with musical- theological explanation written by Nikolaos Malaxos. The manuscript was copied in 1751 by Theodore of Wallachia at the request and with the financial support of musician Mihail. The translation from Greek of the manuscript was made by Ms. Natalia Trandafirescu, main researcher at the National Archives in Bucharest. Pr. Buzera Alexie is the first of the researchers who reported this manuscript ("Un manuscris grecesc cu teoria notației cucuzeliene", *Acta Musicae Byzantinae*, vol. III, April 2001, p. 99–102; Nicolae Gheorghiță, „Byzantine Music Treatises in Romania with an Analysis of MS Gr. 9 from the National Archives in Drobeta Turnu-Severin”, *Tradition and Innovation in Late- and Postbyzantine Liturgical Chant. Proceedings of the Congress held at Hernen Castle, the Netherlands, 30th October – 3rd November 2008*, A. A. Bredius Foundation, Peeters, Leuven-Paris-Walpole MA, 2013, p. 59–96; *id.*, in *Byzantine Chant Between Constantinople and Danubian Principalities. Studies in Byzantine Musicology*, published by Editura Sophia, Bucharest, 2010, p. 135–162; Delia Ștefania Barbu, „Rolul și importanța tereremurilor în cântarea bisericească”, *Acta Musicae Byzantinae*, vol. IV, April 2002, p.

In Byzantine music we distinguish several forming systems of voices or variants of voices called by the old ones the "medians".<sup>2</sup> We find, therefore, according to the manuscript "overtone/diphonic, triphonic and tetraphonic medians"<sup>3</sup>.

These systems of ancient script led to the formation of variants of echos existing in the current practice of Byzantine music called diphonics, triphonics and tetraphonics, variants which we will record in the table.

## 2 The System of Diphonia

Diphonia designates two intervals (from here - diphonia) and three sounds called trichord.

In the manuscript, the medium echos are called para-authentic (*παρακυρίων*) or medians (*μέσως*) as echos derived from the authentic ones. They are at the third downward to the final of authentic echos.

The old considered the median echos a necessity: *„It is necessary that each of these < authentic echos> to have a second echo, median one, which terminates ( ends ) in this < to the genuine one >, as someone would say <on the median one > ceasing to it < to the genuine one > actually, borrowing the echo of the melody started before”*<sup>4</sup>.

On fol. 10<sup>v</sup> of this manuscript, Ioan Plousiadinos speaks about upward and downward diphonies ( tierce ) of authentic echos. So upward diphonia (tierce) creates authentic paramedians and downward diphonia (tierce) creates medians (meso) as follows:











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202–208; Adrian Mazilița, *Cultura muzicală religioasă din Mehedinți în secolele XIX–XX* (doctoral dissertation).

<sup>2</sup> I. D. Petrescu, „Aspecte și probleme ale muzicii bizantine medievale”, in *MS*, vol. I, Bucharest, Published House: Muzicală, 1965, p. 109; *Études de paléographie musicale byzantine*, Bucharest, Editions musicales de l'union des compositeurs, 1967, p. 167 and the following.

<sup>3</sup> Ms. gr. 9, fol. 11.

<sup>4</sup> Ms. gr.9, fol. 2<sup>v</sup>.







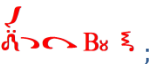

No.	ECHO	DIPHONIA/ TIERCE	PARAMEDIAN AND MEDIAN	NAME OF THE ECHO IN THE NEW GRAPHICS
1.		3-ce↑	paramedian 	<b>Chromatic soft diphonic voice I from</b> 
		3-ce↓	median 	<b>Simple Diatonic Varis Echo (median voice I - Protovaris)</b> 
2.		3-ce↑	paramedian 	
		3-ce↓	median  this is  called the second median <sup>7</sup>	<b>Meso chromatic second echo (medium one)</b> 

<sup>5</sup> Georgios N. Konstantinou, *Teoria și Practica Muzicii Bisericești*, vol.1, Published House: Asociația Culturală Byzantion, Iași, 2010, p.271.



<sup>6</sup> Ibidem, p.195.

<sup>7</sup> Ms. gr.9, fol. 10v.: „this is neanes so , which is also called the second median .

<sup>8</sup> Georgios N. Konstantinou, *op. cit.*, p.235.


3.		3-ce↑	paramedian 	
4.		3-ce↑	paramedian 	
		3-ce↓	median  this is Leghetos 	1. <b>Leghetos Echo(diatonic plagal Echo II)</b>  ; 2. <b>Soft chromatic Leghetos Echo or soft chromatic median voice 4 (meso)</b> 

In practice, the formation of median diphonic echos is not based on series of tierces, as shown in *Notation and echos of Byzantine music* <sup>10</sup>, but the formation of diphonic echos is based on the relation between them and the structure of the echo from where they come. At some of the diphonic echos, the gamut is made up only of tetrachords (*median Voice I - Protovaris or plagal diatonic echo II*) and at the others of tierces and tetrachords, as is the case of *soft chromatic median Voice IV (meso)*.

<sup>9</sup> Ms. gr.9, fol. 10<sup>v</sup>.: „the plagal of the second  and it is the so-called leghetos ”.

<sup>10</sup> Grigore Panțiru, *Teoria și Practica Muzicii Bisericești*, published by Editura Muzicală a Uniunii Compozitorilor, Bucharest, 1971, p. 208.

At medians of the 4th echo, of Di (Sol), the connection with it is seen of apihima and key of the voice. Descending two steps from Di, median voice of the authentic one – Leghetos voice is

formed  B<sub>8</sub> ξ<sup>11</sup>. Also at soft chromatic Leghetos voice or soft chromatic median fourth voice (meso) we can see its


real connection with the 4<sup>th</sup> echo from Di  B<sub>8</sub> -ο.<sup>12</sup>

We learn further on fol. 11 that: "also, the plagals have diphonic and triphonic and tetraphonic medians". Analyzing them, it appears that plagal voices have the same diphones as their authentic ones, the same rule, being also for triphonic medians.

### 3 Triphonia System

By triphonia we understand three adjacent intervals of second or four sounds forming a tetrachord<sup>13</sup>. As an interval structure, the tetrachord is the crucial element in the formation of all gamuts of voices.

In this way, the relations between voices, after the triphonia system, appear in the Greek manuscript no. 9:

N O .	ECHO	TRIPHONIA/ TETRACHORD	TRIPHONIC MEDIAN	NAME OF THE ECHO IN THE NEW GRAPHICS
1.	λ ð	4-rd↓		Plagal of Triphonic voice I λ ð Πα ϣ <sup>14</sup>

<sup>11</sup> Georgios N. Konstantinou, *op. cit.*, p.145.









<sup>12</sup> Ibidem, p. 247.

<sup>13</sup> Grigore Panțiru, *op.cit.*, p. 208.

<sup>14</sup> Ibidem, p. 123.



I showed some of the variants of echos which were formed over centuries based on these ancient rules.

**The first rule:** „knowing especially the main rule: knowing the four authentic echos, meaning // the first , the second , the third  and the fourth , you can deduce them <by analogy> the plagal of the first , the plagal of the second , the plagal of the third, also named varys , and the plagal of the fourth <echo>  " <sup>17</sup>.

### The second rule:

The main rule of triphonic echos is that „any triphonia goes to the same echo”<sup>18</sup>.

However this rule of triphonia didn't always generate , in practice, variants of echos: „among these, comes true that old rule, which says that any triphonia produces the same echo, not only to elevation but also to falling; Likewise but not in all respects, but at the melody and “paralaghie” (solfeggio) , and in a way or another, at only the melody , or at only the “paralaghie”<sup>19</sup>.

### The third rule:

Plagal voices have the same diphonies as their authentic ones, the same rule also being for triphonic medians.

<sup>17</sup> Ms. gr.9, fol. 9<sup>v</sup>-10.

<sup>18</sup> Ms. gr.9, fol. 7<sup>v</sup> and 12.

<sup>19</sup> Ms. gr.9, fol. 8.



#### 4      Tetrachonia System or Trohos System

According to tradition, the one who was responsible for fixing the "great circle of musical wheel" is Ioannes Koukouzeles. The manuscript tradition bore throughout the ages in theoretical treatises, various forms and guises of diagrams of eight sounds. The one who fathomed this issue in Romania is musicologist Sebastian Barbu – Bucur who, after the research of more than 250 ancient manuscripts in Byzantine notation, in the Romanian space, discovered and analyzed 58 "propaideias" (the first elements of study) or musical grammars written or brought in Romania<sup>20</sup>. After the research of 21 manuscripts from the Library of the Romanian Academy, musicologist discovered a total of 23 circular wheel type images, which has grouped into six categories, as follows:

- I.        Very simple wheels, having only the testimonies of echos;
- II.       Wheels that have only testimonies accompanied by mnemonic syllables : anane, neanes etc.;
- III.      Wheels that have – besides testimonies and mnemotechnical syllables- an ascending interval (oligon) at authentic echos and a descending one at (epistrophe) at the plagal ones;

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<sup>20</sup> Sebastian Barbu-Bucur, *Cultura muzicală de tradiție bizantină pe teritoriul României în sec. XVIII și începutul sec. XIX și aportul original al culturii autohtone*, published by Editura Muzicală, Bucharest 1989, pp. 64 – 65; *Propedii ale muzicii psaltice în notație cucuzeliană*, vol. I, in: SCIA, TMC, Tom 21, no. 1, 1974, pp. 27 – 29 and ibidem, vol. II, in: SCIA, TMC, Tom 22, 1975, pp. 59 – 70; „Manuscrise psaltice în notație neobizantină care conțin propedii, aflate în Biblioteca Academiei Române”, in: *Glasul Bisericii*, 33, 1974, no. 9 – 10, pp. 896 – 911; „Învățământul psaltic până la Reforma lui Hrisant”, in: *BOR (Biserica Ortodoxă Română)*, 98, 1980, no. 3 – 4, pp. 481 –509.

- IV. Wheels that have above the testimonies short intonational formulas accompanied by mnemo-technical syllables;
- V. Wheels made up of a spiral or six simple circles, accompanied by testimonies and phtorals corresponding to the eight echos;
- VI. Complex wheels, with many elements sent from Ioannes Koukouzeles himself<sup>21</sup>;

The complex Wheel is part of this last category (Sinthethos Trohos) of ms. gr. 9 from fol. 4<sup>v</sup>.

This complex Wheel consists of five concentric wheels, each with 15 characters. The five concentric circles are surrounded by four smaller circles, arranged in the four corners of the page. Using testimonies together with mnemonic syllables show sound interdependence.

Along with his first theoretical work about musical signs called "Mega Ison", the second work of Ioannes Koukouzeles is the diagram, which refers to interval relations and "change" of voices – the so called TROHOS - and that, in fact, has Wise (scientist) paralaghie (solfeggio) - *Η σοφωτάτη παραλλαγή*, known as the Wheel of Koukouzeles - *Ο τροχός του Κουκουζέλη* - or the Tree of paralaghia (solfeggio) - *Δέντρον της παραλλαγής*.

This extremely difficult problem had, over the centuries, a stable place for the beginners' training in music, that Hrysantos, the main theoretician of the new method, studied it and devoted a chapter in his Megateoreticon entitled: *Περι του Τροχου*<sup>22</sup>.

We further present paralaghia (solfeggio) of "Wheel" of Ioannes Koukouzeles in double notation made by musicologist

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<sup>21</sup> Ibidem, p.80.

<sup>22</sup> Χρυσανθου Αρχιεπισκοπου Διρραχίου του εκ Μαδιτών, *ΤΕΩΡΗΤΙΚΟΝ ΜΕΓΑ ΤΗΣ ΜΟΥΣΙΚΗΣ*, ΕΝ Τεργεστη, 1832, pp. 28-34.

Sebastian Barbu-Bucur, after the manuscript of Filotei son of Agăi Jipei<sup>23</sup>:



"Wheel" actually meant a system, a teaching method by which ranges /intervals of a tetrachord was sung (paralaghiá) upward and downward, using polysyllabic appointments from the diatonic structures: *ananes, neanes, nana, aghia*.

Although tradition attributes fixing "Great musical wheel circle" of Ioannes Koukouzelis it is well to note that neither Plousiadinos nor Koukouzelis use at all the name "wheel", but both refer to their diagrams „Parlaghii”<sup>24</sup>. Although E. Vamvoudakis shows that the use of "Wheel" in "Hermeneia of Koukouzelis's paralaghis" seems to be a posterior addition which resulted in the synonymy with Diplophonia (Diapason), he was still the one who brings into question the fact that Gavriil Ieromonahul is the only one where he met the fact that "Wheel" was "Diapason" or "Diapason" was "Wheel”<sup>25</sup>.

<sup>23</sup> Sebastian Barbu-Bucur, *Filotei sîn Agăi Jipei, Psaltichie Rumânească (II) Anastasimatarul...*, p.119.

<sup>24</sup> Emm. Γ. BAMBOYΔAKH, *op.cit*, p. 59.

<sup>25</sup> Ibidem, p. 30 and 58.

Knowing the complexity of this matter and having no claim to elucidate it, we have to bear in mind that these diagrams were used for an easy retrieval of sounds that alternated, each passing either the acute or serious, paralaghie (solfeccio) which was quite difficult, if we consider that for rising (upward) polysyllabic names of main echos were used, and downward the plagal echos. On the other hand, the diagram provided the possibility of practicing plastically – optical - accoustic – of intervals and the relation between echos. For these reasons, it is necessary to consider an analytical description of "complex Wheel"<sup>26</sup> (Sinthethos Trohos) of Koukouzelis by playing first, the content of the four outer circles and then the contents of the five concentric circles.

The Wheel of the first echo – Dorios - located in the upper left of the page eight rays are noted. The first and fourth one have the first echo - dorios and its derivative the first plagal echo - hipodorios, and in the spaces between rays the other signs are noted. Circle contains 14 signs (simadophones).

At the analysis of the various "complex Wheels" present in manuscripts, we can see in this diagram the use of the ancient names of voices. For this reason, we shall use these names to be found in the interpretation of Pseudo - Damaskinos of *Anonymous C* [502-716] only rows 502-508 (f. 35<sup>v</sup>) and 522-555 (ff. 35<sup>v</sup>-37) more specifically: ff. 36-36<sup>v</sup>:

*"You have to know that the first echo is called the first , because it precedes the others , meaning that it is at the forefront of other echos . Its name is doric , that comes from the Dorians ; The Dorians are called residents of Monemvasia and therefore it is called "dorios", and from this kind of parent came hypodoricul, the son of the first < echo >, meaning the plagal"*<sup>27</sup>.

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<sup>26</sup> Ms. gr.9, fol.14<sup>v</sup>.

<sup>27</sup> Ms. gr.9, fol. 36-36<sup>v</sup>.

At this circle of first echo wheel, the copyist noted wrongly the first three groups of testimonies. We present the Wheel of the first echo, in right writing:



### The wheel of the first echo – Dorios<sup>28</sup>



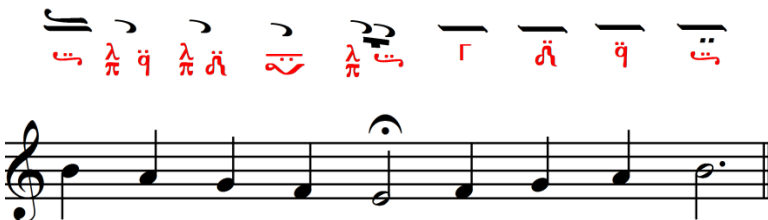
<sup>28</sup> I used the theoretical basis of forming each echo for the transcription in linear notation.

### Wheel of the second echo – Lidios

„From Lydia comes „lydios”, meaning the second; since Lydia is the area near Neocastroi; as the plain of Lydia is called until today; from this hypolidios <derives>, menaing its plagal”<sup>29</sup>.



### Wheel of the second echo – Lidios



### Wheel of the third echo – Frygios

„From Frygia comes „frygios”, meaning the third, since frigia is an area in Laodiceea and that’s why it is called frigan, being

<sup>29</sup> Ms. gr.9, fol. 36<sup>v</sup>.

from Frygia, and from it plagal < comes> too, called hyofrigios, namely the plagal of the third , that is varies”<sup>30</sup>.



### Wheel of the third echo – Frygios



### Wheel of the fourth echo – Milesios

„From Milet there is milesios (milesian), namely the fourth < echo> and from it, the plagal of the third <was formed >, because the melodies of echos came of this kind of places, because they named dorians the melodies of the first echo, lydians for those of the Lydian , phrygians < for those of > the Phrygian and milesians for those of the Milesian < echo >. The king Ptolemaios , who attended music, collecting other < names > , as well , added them to < the existent ones >, the

<sup>30</sup> Ibidem.

names of the echos being in accordance with the respective regions"<sup>31</sup>.

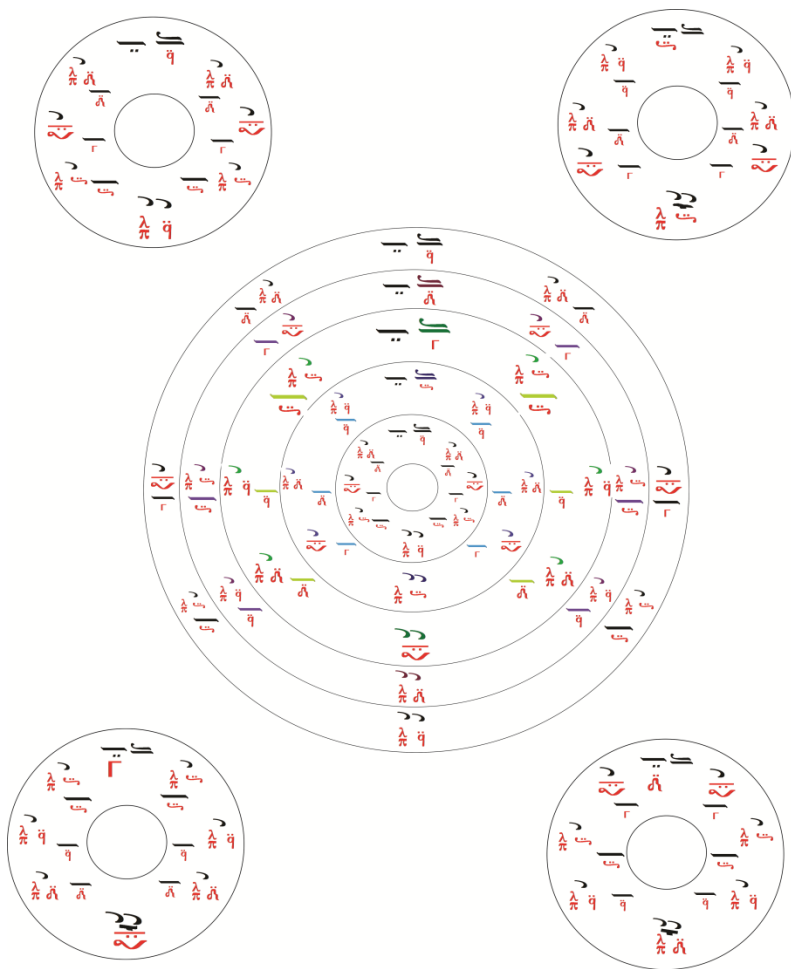


### Wheel of the fourth echo - Milesios

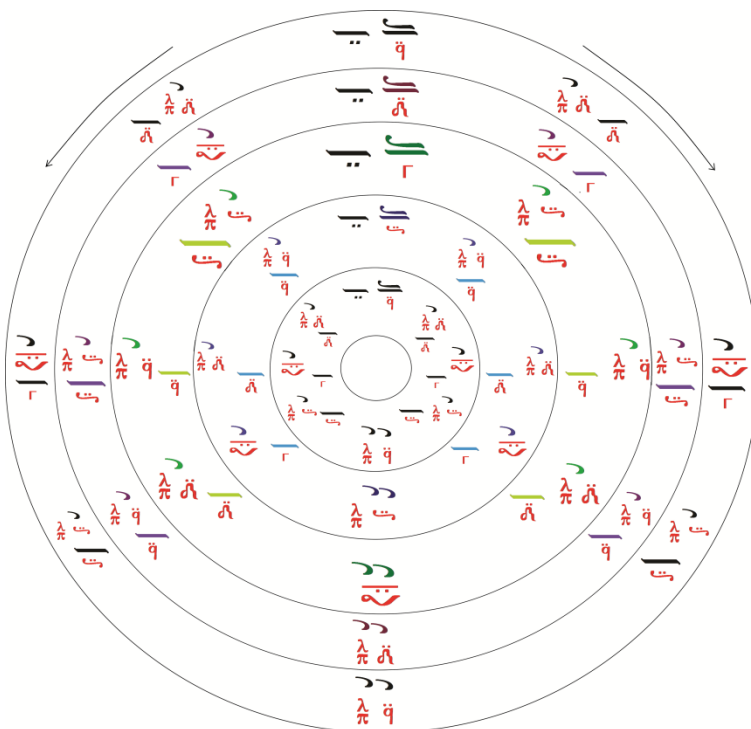


<sup>31</sup> Ibidem.





*Fol. 14<sup>v</sup> – Ms. gr. 9*



### The central wheel of the four echos<sup>32</sup>

Starting from interior to exterior, the wheels of the four echos are noted on the five circles of the central wheel, and in the last circle the wheel of the first voice – dorios is repeated.

In the old system of church music the Wheel of Koukouzelis had, therefore, two functions:

<sup>32</sup> I noted each echo with different colours and shades, for an easier reading of each sign.

- a. Method of paralaghie (solfeccio) upward and downward of intervals of a pentachord with chanting of the eight polysyllabic names of the echos;
- b. Training system (construction) of the eight church voices, and based on the relations among them, of the various variants called by the old „medians”.

Based on the system of pentachord, the Greek manuscript no. 9 reveals *tetraphonic medians* of the plagal echos:

From plagal you say :  $\lambda \quad \eta \quad \alpha \quad \lambda \epsilon \quad \alpha \quad \lambda \epsilon \quad \epsilon \varsigma \quad \eta$








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From plagal two:  $\lambda \quad \eta \quad \lambda \epsilon \quad \epsilon \quad \alpha \quad \lambda \epsilon \quad \epsilon \quad \epsilon \quad \epsilon \varsigma \quad \eta$ ,

From varys:  $\alpha \quad \alpha \quad \lambda \epsilon \quad \epsilon \quad \epsilon \varsigma \quad \eta$

<sup>33</sup> I used the theoretical basis of forming authentic and plagal echos for the transcription on linear notation, starting from the first authentic echo from Ke/ La the second echo of Zo'/Si, the third echo from Ni'/Do and the fourth echo from Pa'/Re.

From plagal four:  34.

NO	ECHO	TETRAPHONIA/ QUINT	TETRAPHONIC MEDIAN	NAME OF ECHO IN THE NEW GRAPHICS
1.		5-nt↑		<b>Tetraphonic Voice I (Ke)</b>  From this tetraphonia relation <b>Plagal of Tetraphonic voice I</b> appeared as well from Ke 
2.		5-nt↑		<b>Diatonic second Voice from Zo</b> was transferred in the new graphics based on <b>Di</b> 

34 Ms. gr.9, fol. 12<sup>v</sup>.

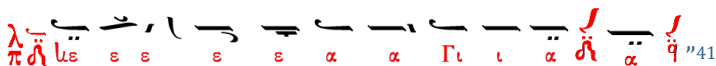
35 Georgios N. Konstantinou, *op. cit.*, p. 115.

36 Ibidem, p. 123.

37 Ibidem, p. 136.



And plagal four – on the first one, in this way:



The same relation is shown by Ioannes Plousiadinos<sup>42</sup> in the paralaghia scheme entitled: “most wise paralaghie (solfeggio)”<sup>43</sup> (*η σοφωτατη παραλλαγη1*). The paralaghia scheme has 52 little circles with keys of the authentic and plagal echos, highlighting the relations between them. Precisely this relation of para-authentic medians, for each voice is noted inside the four diamonds formed of little circles:

Echo I:



<sup>41</sup> Ms. gr. 9, fol. 13.

<sup>42</sup> Ioannes Plousiadinos (†1500) – Representative personality of psaltic musical art in the 15th century. Biographical data: Παπαδόπουλου Γεωργίου, *Ιστορική Επισκόπησις της Βυζαντινής Εκκλησιαστικής Μουσικής*, Γεωργίου Παπαδόπουλου, Αθήνα, 1904, p. 64; Nicolae Gheorghiiță, *Between east and latin west. Prolegomenon at the study of Byzantine poliphony*, in Music Institute for Doctoral Advanced Studies –MIDAS, Synthesis studies 2011-2012, vol. 2, Glissando – published by Editura Universității Naționale de Muzică, Bucharest, 2012, pp.44-114.

<sup>43</sup> Ms. gr. 9, fol. 15.

Echo II:

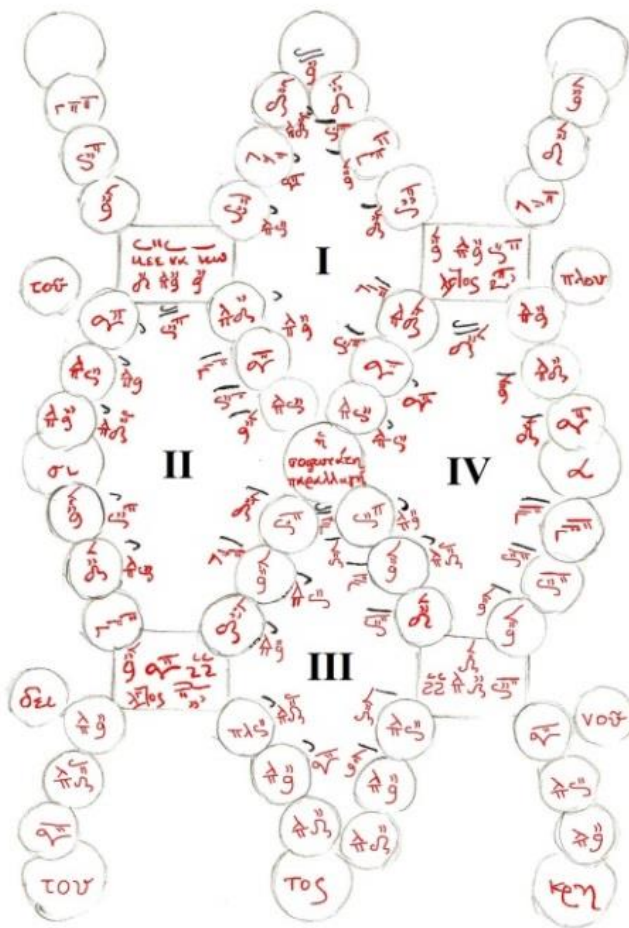


Echo III:



Echo IV:





Fol. 15 - Ms. gr. 9 – „Most wise paralaghe of Ioan Plousiadinos”

We note that , unlike diphonia and triphonia systems, that have median echos, and both for plagals and authentic ones, the tetraphonia system has medians only for plagal echos:



*„One might wonder how the plagals of echos that are more insignificant than the authentic ones have tetrachordia, and the main ones never have; <this is > because, being plagal by their nature, they have as authentic <echos> the so-called tetrachordias, and the authentic ones, being authentic by their nature tetrachordia <comes> from an authentic echo, namely exceeding (coming from plagals, n.n.) becomes dominant and ascends four intervals, indeed that <authentic echo> is formed and it was named regent (main), and this one that you let down and you ascend four intervals is not found as authentic (regent), but as plagal, for which you dropped four intervals; in this way the plagals have <as> tetrachordias, authentic echos (regent) of theirs (corresponding, n.n.), because they will never be authentic, but <only> plagal; the authentic ones being main (regent) literally, couldn't dominate the authentic ones and could never be called plagal, since they are main (authentic)”<sup>44</sup>.*

We also point out that, despite the ambiguity of expression with specific terms, hardly detectable due to the age of these treaties, however we understand the relations based on formation of authentic and plagal voices, but especially on these medium ways, existent, today, in practice of church music, ways generated by these diphonic, triphonic and tetrachordic relations of old.

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<sup>44</sup> Ms. gr.9, fol. 13-13<sup>v</sup>.

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