

## Pseudo-Psellus' *Synopsis of Music* *New Sources for Its Circulation and Interpretation*

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### Abstract

This paper focuses on some quotations of Pseudo-Psellus' treatise on music. Three quotations are provided and discussed: the well-known one by Manuel Bryennius, and two others by Joannes Zonaras and Michael Italicus. The Byzantine tendency to preserve pagan contents within Christian categories, together with the unique presence of this text in the overview of the ancient theoretical tradition, may be the main reasons for its wide circulation in the Byzantine world.

### Keywords

ancient Greek music – ancient Greek science – Byzantine reception – scholastic texts – quadrivium

The *Quadrivium*<sup>1</sup> traditionally attributed to Psellus has suffered, in modern ages, from its apparently unoriginal content and, most of all, its debated and uncertain authorial history. Yet in Byzantine times this work was considered significant, and this gives it a historical value that we should not neglect. We will concentrate on the latter, leaving aside the authorial issue, and try to shed light on the context of its circulation, and the reasons for its survival.

We will specifically take into account the musical section of the *Quadrivium* (τῆς μουσικῆς σύνοψις ἡκριβωμένη = *Synopsis*), and analyse some sources which later exploited the text almost *verbatim*, namely Joannes Zonaras, Michael Italicus and Manuel Bryennius.

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<sup>1</sup> The most recent edition is the one by Heiberg (1929, 50-122).

## 1 The Text and Its Shape

Scholars tend to agree that the text, which appears for the first time in the Heidelbergensis manuscript *Pal. gr. 281*, dated to 1040 AD, with the complete *Quadrivium* and a treatise on Logic, had probably been written some decades before, as Rose<sup>2</sup> claimed for the first time; this detail would evidently deny any possibility of Psellus' authorship.<sup>3</sup> Richter<sup>4</sup> followed Rose in asserting the inauthenticity, as did Katsiampoura<sup>5</sup> few years ago, again establishing 1008 as the year in which the *Quadrivium* was written. This hypothesis was nevertheless rejected by Mathiesen,<sup>6</sup> who firmly believed the text to be by Psellus.

The text is considered an introductory manual to the liberal disciplines of the *Quadrivium*, which were part of the educational program for those who aspired to public office. In its contents, the *Quadrivium* turns out to be an epitome of ancient sources concerned with science. When it comes specifically to the section on harmonics, the main sources are Theon of Smyrna's *De utilitate mathematicae* and Nicomachus Gerasenus' *Harmonicum Enchiridion*.

The scholastic purpose of the *Synopsis* is suggested by the text itself.<sup>7</sup> Its structure is evidently that of a scholastic manual.<sup>8</sup> All the main topics on harmonic theory, which had always concerned ancient scholars, are juxtaposed with an elementary argumentative passage. The brief argument follows the outline of the topic, and, in many cases, this is followed by some arithmetical examples to better clarify the complex subject. Let us take as a representative

2 See Rose 1867, 465-7. Rose was the first to notice that, at the end of the astronomical treatise (8.108.14 Heiberg), there was an indication that the text should be dated to the world year 6516, i.e. AD 1008.

3 The real impossibility of attributing the text to Psellus should also be investigated through its content: there are too many naïve remarks, sometimes real mistakes, which cannot be attributed to a man who had a deep knowledge of ancient scientific sources. See Richter 1971, 124-6, for some specific issues concerning the text, even though the study is not exhaustive. See also note 8.

4 Richter 1998, 161.

5 Katsiampoura 2010, 409ff.

6 Mathiesen 1999, 645.

7 Cacouros (2006, 24-6) clearly distinguishes the texts that circulated inside the schools, i.e. manuals written by teachers, from the treatises on philosophy and sciences produced in an erudite context. The two categories, says Cacouros, were in an osmotic relationship during the Palaiologan Age. Regarding the *Synopsis*, scholastic features are still emphasized.

8 Zeegers-Vander Vorst (1963, 129-61) arrives at the same conclusion about the arithmetic treatise from the same *Quadrivium* after analysing some passages which reveal its elementary essence, together with some theoretical ingenuities, which seem explicable only if we think of a scholastic purpose for this text. See also Katsiampoura 2010, 412ff. for an overview of the structure.

example the eighth paragraph about the numerical ratios which subtend the intervals (*Syn.* 8.69.16-25):

λόγος δὲ τοῦ μὲν διὰ τεσσάρων ἐπίτριτος, τοῦ δὲ διὰ πέντε ἡμιόλιος, τοῦ δὲ διὰ πασῶν διπλάσιος, τοῦ διὰ πασῶν καὶ δις διὰ τεσσάρων διπλασιεπιμερῆς, τοῦ διὰ πασῶν καὶ δις διὰ πέντε τριπλάσιος, τοῦ δις διὰ πασῶν τετραπλάσιος· οἷον ὡς ἐπὶ ὑποδείγματος κείσθω πρῶτος ἐν ἀριθμοῖς ὅρος ὁ ἕκτος ἡμῖν ἀριθμός, πρὸς ὃν πάντως ἐπίτριτος ὁ ὄγδοος, ἡμιόλιος ὁ ἑνατος, διπλάσιος ὁ δωδέκατος, διπλασιεπιμερῆς ὁ ἐξκαιδέκατος τὸν ἕκτον δις ἔχων καὶ δύο μέρη αὐτοῦ, τριπλάσιος ὁ ὀκτωκαιδέκατος, τετραπλάσιος ὁ εἰκοστὸς τέταρτος.<sup>9</sup>

The intervals are named with their corresponding ratios, which are in turn briefly explained with arithmetical examples. The argumentation is deepened a little in the following paragraph, where the compiler relates the ratios to the values of tension rather than to the numerical quantities of the notes: εἰδέναι μέντοι χρή, ὡς οὐ πρὸς τὸν ἀριθμὸν τῶν φθόγγων ἢ τῶν χορδῶν οἱ λόγοι τῶν διαστάσεων κρίνονται, ἀλλὰ πρὸς τὴν ἐπίτασιν τῆς ἡχῆς τῆς ἀπὸ τοῦ βαρέος πρὸς τὸ ὀξύτερον (*Syn.* 9.69.26-70.2). This second argument is again followed by some examples showing that the ratios cannot in fact be determined by the quantity of notes contained in an interval. Here the compiler exhausts the highly complex topic of musical ratios.

The same could be said for all the topics discussed in this seven-page treatise: notes, small intervals, the concords, simple and compound intervals, paraphony and antiphony, arithmetical ratios and *genē* (diatonic, chromatic and enharmonic).

Despite its elementary, synthetic and apparently unoriginal essence, this musical treatise has been incredibly fortunate, both in its material transmission, since many copies were produced through centuries,<sup>10</sup> and in the textual influence it had. More on the latter below.

9 'The ratio of the fourth is epitritus, that of the fifth is hemiolic, that of the octave is double, that of the eleventh is double-epimeric, that of the twelfth is triple, that of the double octave is quadruple. Let us consider, by way of example, the number six as the first arithmetic term: in relation to this number, the number eight is in epitritus ratio, the number nine in hemiolic ratio, the number twelve in double ratio, the number sixteen in double-epimeric ratio (it is two times six plus two parts of it), the eighteen in triple ratio, the twenty-four in quadruple ratio'.

10 See Moore 2005, 334-9.

## 2 Quotations of the *Synopsis*

Until now only Bryennius' debt to the *Synopsis* has been recognized. The occurrence is found in the only surviving work by Bryennius, the *Harmonica*, and it is a direct, word-for-word quotation.

Concerning Bryennius, what little we know is uncertain. In his *Στοιχείωσις ἀστρονομική*,<sup>11</sup> Theodorus Metochites declares that he had a certain Manuel Bryennius as private astronomy tutor, whom he recognizes as the most learned man in Constantinople when it comes to mathematics and astronomy.<sup>12</sup>

Not only was he private tutor to Metochites, a politician and worthy humanist who no doubt had a multifaceted personality,<sup>13</sup> but Bryennius apparently also had the merit of vivifying the study of science in Constantinople, as his *scholia* on Ptolemy's *Almagest* bear witness.<sup>14</sup>

In his *Harmonica*, Bryennius reworks Pachymeres' *Quadrivium* and other treatises by authors like Aristides Quintilianus, Nicomachus, Ptolemy and Cleonides.<sup>15</sup> Among his sources, the *Synopsis* has a certain importance, as is attested by the word-for-word quotation in *Harm.* 1, 5, where Bryennius deals with antiphonic and paraphonic intervals.<sup>16</sup> As Jonker had already noted, the text is perfectly identical.<sup>17</sup>

11 Bydén 2003, 417-74.

12 Metoch. *Stoich.* 1.26.445ff. ἦν δὲ τις τῶν περὶ λόγους ἐχόντων ἐν τῇ βασιλίδι τῇδε καθ' ἡμᾶς πόλει, Μανουὴλ ὄνομα Βρυέννιος, ἀνὴρ, ὡς ἔδειξε πειραθείσι, περὶ πᾶσαν μαθηματικὴν ἔξιν ἀστρονομικὴν τε μάλιστα ἐπιστημονικώτατος, εἰ δὴ ποτέ τις καὶ ἄλλος.

13 See Beck 1952, 3-25; Verpeaux 1960, 195-8. For more on Metochites as a humanist see Bazzani 2006, 32-52C; Förstel 2011, 241-66.

14 See Heiberg 1896, 83ff.

15 See Mathiesen 1999, 658.

16 The passage itself deals with an issue which is specifically concerned very few sources, and not before the 1st century AD. Pseudo-Psellus' treatise is one of them (see also Gaud. *Eisag.* 8.337-5-338.5; Ptol. *Harm.* 1.7). The matter of the antiphonic and paraphonic intervals, as it is treated here, implies that, in a kind of 'scale of consonance', the octave is an antiphonic interval since the percussion units of the two notes are equal, in a ratio of 2:1, whereas the fourth and fifth are paraphonic intervals, with the percussion units in unequal ratios of respectively 4:3 and 3:2. It means that these last intervals are lower in the scale of consonance. This specific subdivision is only found in Thrasyllus *apud* Theon (*De util. math.* 48, 16 ff.), which is no doubt Pseudo-Psellus' source for the entire section. In fact, immediately before the passage from the *Harmonica* we quoted (*Harm.* 1.5.100.4-7), Bryennius copies Thrasyllus' hierarchy. Probably Bryennius had already noted the *Synopsis*' debt to the Theonian text, and he synthesized them: Thrasyllus' peculiar subdivision completed with Pseudo-Psellus' definition.

17 Jonker identifies other *loci paralleli*, even if the others are not word-for-word quotations. See Jonker 1970, 408.

Bryenn. *Harm.* 1.5.100.7-14:

διαφέρει δ' ἀλλήλων τό τε ἀντίφωνον  
καί παράφωνον τῷ τὸ μὲν παράφωνον  
ἀνισοχρόνως συμφωνεῖν, ἥπιως τε καὶ  
εὐρύθμως διαδεχομένων ἀλλήλους  
τῶν φθόγγων ἀναλογίαις τε καὶ λόγοις  
καθ'ὁμαλότητα, τὸ δὲ ἀντίφωνον ἰσο-  
χρόνως, τοῦ ὀξέος τῷ βαρεῖ κατὰ ταὐτὸ  
συμφωνούντος οἶον τοῦ ὀγδόου τῷ  
πρώτῳ, τοῦ ἐννάτου τῷ δευτέρῳ, τοῦ  
δωδεκάτου τῷ πέμπτῳ καὶ τοῦ πεντε-  
καιδεκάτου τῷ ὀγδῳ, συνανιόντων ἢ  
συγκατιόντων ἐν ταῖς τάσεσιν ἢ ἀνέσεσιν  
τῶν βαρέων τοῖς ὀξέσιν ἢ τῶν ὀξέων τοῖς  
βαρέσιν ἀνὰ λόγον.<sup>18</sup>

*Syn.* 6.68.22-69.8:

διαφέρει δ' ἀλλήλων τό τε παράφωνον  
καὶ ἀντίφωνον τῷ τὸ μὲν παράφωνον  
ἀνισοχρόνως συμφωνεῖν ἥπιως πως καὶ  
εὐρύθμως διαδεχομένων ἀλλήλοις τῶν  
φθόγγων ἀναλογίαις καὶ λόγοις καθ'ὁμα-  
λότητα, τὸ δὲ ἀντίφωνον ἰσοχρόνως τοῦ  
ὀξέως τῷ βαρεῖ κατὰ ταὐτὸν συμφω-  
νούντος, οἶον τοῦ ὀγδόου τῷ πρώτῳ, τοῦ  
ἐνδεκάτου τῷ τετάρτῳ, τοῦ δωδεκάτου  
τῷ πέμπτῳ καὶ τοῦ πεντεκαιδεκάτου  
τῷ ὀγδῳ συνανιόντων ἢ συγκατιόντων  
ἐν ταῖς τάσεσιν ἢ ἀνέσεσι τῶν βαρέων  
τοῖς ὀξέσιν ἢ τῶν ὀξέων τοῖς βαρέσι κατὰ  
ἀνάλογον.

There are nevertheless two other echoes of the *Synopsis*, which precede Bryennius' activity by at least a century, and which can lead to further considerations.

The first is by Joannes Zonaras. He was historian and imperial secretary in 12th century Constantinople, and is known mainly for his *Epitome historiarum* in eighteen volumes.

Regarding Zonaras, we know he held political offices, but he stood out for intellectual activities too. Many headings of manuscripts of his work report the titles of πρωτοασκηρῆτις, the Emperor's personal secretary, and δρουγγάριος τῆς βίγλης, the Commander of the Palace Watch;<sup>19</sup> at the same time he was working on canonical exegesis, hagiographical material, homilies and, after retreating from public life—probably in the monastery of St. Glyceria—he completed the *Epitome*.

18 'Antiphonic and paraphonic intervals differ from each other in that (the notes of) a paraphonic interval produce a consonance based upon unequal units, the sounds succeeding each other gently and gracefully in an equable manner according to the correspondence of their ratios, whereas (the notes of) an antiphonic interval produce a consonance based upon equal units, because the units of the high and the low sound coincide, as for instance the eighth note with the first and the ninth with the second, and the twelfth with the fifth, and the fifteenth with the eighth, provided that the low notes rise or fall in proportion to the high notes, and conversely, when their tension is increased or reduced' (transl. Jonker 1970).

19 See Banchich and Lane 2009, 2ff.

Besides this huge work and other theological works, he is the author of a *Hypomnema in S. Cyrillum Alexandrinum*.<sup>20</sup> The first part of this work is devoted to celebrating Cyril's liberal education. In sections 7 to 10 Zonaras briefly goes through the liberal disciplines of the Quadrivium, and section 8 is specifically dedicated to music. Even from a first reading, the debt to the *Synopsis* is immediately evident, as we can see in its first paragraph, which celebrates music as the perfect *symmetria*:

Zon. *Hypomn. in S. Cyr. Alex.* 8.1-9:

Μουσικὴν δέ, ἥ παντὸς τοῖς σοφοῖς ἡξί-  
ωται θαύματος, ὡς αὐτοσυμμετρία τίς  
καὶ τοῦ παντὸς ἄρμονία τυγχάνουσα, οὐ  
τὴν ἐν αὐλοῖς καὶ ῥυθμοῖς καὶ ἐν κρού-  
μασι, τὴν ἐν μιᾷ τῶν αἰσθήσεων, τῇ ἀκοῇ  
λέγω, θεωρουμένην μόνην μεμύητο,  
ἀλλὰ καὶ τὴν ἐν ἁρμονίαις καὶ λόγοις.  
ὡς εἰδέναι, τί μὲν ἐστὶ φθόγγος· τί δὲ  
φθόγγων διάστημα· τί δὲ σύστημα, τί  
δ' ἁρμονία ἐστὶ, καὶ ὅσαι προσηγορίαι·  
καὶ τίνες τῶν φθόγγων εἰσὶ· καὶ ὅπως  
τὴν πάντα κοσμοῦσαν τὴν καὶ συνέχου-  
σαν, καὶ ἁρμονίας μὲν τῇ φύσει, τῷ δὲ  
νῷ γινομένην αἰτίαν μακαριότητος· τῶν  
γενητῶν γὰρ οὐδὲν μὴ μετὰ συμμετρίας  
καὶ ἀναλογίας γινόμενον, προσηκόντως  
ἂν σχοίη καὶ γένοιτο εὖ.

*Syn.* 1.65.9ff.:

ἡ δὲ μουσικὴ αὐτοσυμμετρία τίς ἐστὶ καὶ  
ἀναλογία τὸ πᾶν, οἷα τοῦ παντὸς ἁρμο-  
νία τυγχάνουσα [...].  
τοσούτου τὴν μουσικὴν ἡξίωσαν θαύ-  
ματος· ἥς ἐν ἅπασιν οὕτω θεωρουμένης  
καὶ πάντα διεπούσης καὶ κοσμούσης καὶ  
ἡδονὴν μὲν τῇ αἰσθήσει, ἁρμονίαν δὲ τῇ  
φύσει, μακαριότητα δὲ τῇ νοήσει χαρι-  
ζομένης, περὶ τῆς ἐν αἰσθήσει μουσικῆς,  
μᾶλλον δὲ τῆς ἐν μιᾷ τῶν αἰσθήσεων  
τῇ ἀκοῇ θεωρουμένης ἐν ἐπιτόμῳ  
διαληψόμεθα.<sup>21</sup>

The vocabulary perfectly evokes the *Synopsis* introduction and its cosmology, built on the 'Platonic-Pythagorean' concepts of *analogia*, *symmetria* and *autosymmetria*.<sup>22</sup> The last in particular, with the prefix αὐτο-, which simply

20 Kaltsogianni 2013, 572-84.

21 'But music is, in a way, some sort of ideal symmetry and perfect proportion: it is harmony of the whole. [...] They considered music worthy of admiration in such a way; since you can contemplate it to such an extent in every single thing, and since music governs and gives order to everything, and since it gives pleasure to sense perception, harmony to nature, and bliss to thought, we will concisely deal with music in the senses—or better, with music contemplated by only one of the senses: hearing'.

22 See Diels/Kranz 1960; Zhmud 2012, 285-92, 337-46, 394-414. For Plato's cosmological doctrines see specifically Plat. *Tim.* 31b-40d: here Plato describes the creation of the Universal soul, which was cut in proportional and symmetrical pieces, with reference to the musical ratios (see Barker 1989, 58-61).

indicates the absolute completion of the idea of *symmetria*, is conclusive evidence of Zonaras' debt to Pseudo-Psellus' treatise: it is a *hapax* of the *Synopsis*. Moreover, the specific distinction we find in the *Synopsis* between music perceived by hearing, and music as a conceptual activity, which could be reduced to the dichotomy *mousikē-harmonia*, appears in Zonaras' passage as a distinction between instrumental music and music concerned with scales and ratios.

Zonaras' reading of the treatise did not stop at the introductory section but probably went beyond it, since the order in which he proposes the elements of the discipline is exactly the same as we find in *Syn.* 2.65.25ff.,<sup>23</sup> namely: note, interval, *systema*, scale and notes nomenclature.

The other, almost contemporary source in which we find a small but significant reminder of the *Synopsis* is Michael Italicus.

Concerning Italicus, much information can be inferred from his *Letters* and *Orations*. As *didaskalos* of the Gospels in 1142, in the speech he performed probably in St. Sophia for the new office, he refers to his previous charges as *didaskalos*, namely of the Old Testament and of St. Paul's letters.<sup>24</sup> He was a widely cultured man, who had experience in profane studies, possibly as a teacher of rhetoric and philosophy:<sup>25</sup> in the letter addressed to Theophanes (*Ep.* 18) he invites his cousin to join the 'intellectual banquet' which he shares with *all the others* (μετὰ τῶν ἄλλων πάντων παρ' ἐμέ),<sup>26</sup> be they private students or a class school pupils. The objects of his lessons cover all the branches of philosophy and science, as he himself says: Pythagoras, Plato, mathematics and its dependent subjects, and so on.<sup>27</sup>

In the second of his *Orationes* (Λόγος εἰς τὸν πατριάρχην κύρ Μιχαὴλ τὸν πρῶην ἡγούμενον τῆς Ὁξείας) he deals with the difference between corporeal and spiritual marriage. To describe the first, he associates it with the image of a 'material'

23 φθόγγος ἐστὶ φωνῆς ἀδιαστάτου ἐναρμόνιος τάσις, διάστημα δὲ φθόγγων ἢ πρὸς ἀλλήλους ποιὰ σχέσις, σύστημα δὲ ποια διαστημάτων περιοχὴ, ἁρμονία δὲ συστημάτων σύνταξις [...]. προσηγορίαι δὲ φθόγγων διάφοροι τῇ ἀπὸ τοῦ βαρέος ἐπὶ τὸ ὀξὺ προόδῳ καὶ τάξει τὰς προσηγορίας λαμβάνοντες. 'A note is the extension of an indivisible musical voice, an interval is a certain relation between the notes, a *systema* is a certain extent of intervals, and, lastly, a scale is a composition of *systema* [...]. The denominations of the notes differ in the progression from the low pitch to the high pitch, and get their name in order.'

24 Mich. Ital. Or. 10.124.8-15 μετὰ τῆς κιθάρας Δαυὶδ ἠχῆσαμεν, τὰς χορδὰς ἐκείνου πολλάκις μουσικώτατα περιψήλαντες καὶ ὑπατὴν καὶ νήτην καὶ τοὺς μέσους φθόγγους ἐπισκοπούμενοι καὶ τί τὸ διάτονον γένος καὶ τί τὸ χρώμα καὶ πῶς καὶ ἐν τίσι τοῖς διαστήμασι τὸ ἐναρμόνιον ἄσαιμεν· ἔστι δ' οὐ καὶ τὸ διεzeugμένον, ἔστι δ' οὐ καὶ τὸ συνημμένον πολλάκις ἐψάλλομεν. ἔπειτα διεδέξατο ἡμὰς ἢ πυρίνη γλῶττα τοῦ Παύλου καὶ συνεῖχε καὶ πρὸς θειοτέρας φωνὰς συνεχύμναζε.

25 See Gautier 1971, 16-19.

26 *Ep.* 18.159.9.

27 See *Ep.* 18.157.3-158.23.



music, we might say, which is concerned with the arithmetical ratios and technical aspects, such as the notes “of the *hexadecachord* in the *pentedecachord*”:

Mich. Ital. *Or.* 2.68.6-10:

ὁ δέ γε πνευματικὸς μουσικὴν ἄλλην  
τινὰ θαυμαστὴν καὶ ἄλλην ἁρμονίαν ἐπι-  
ζητεῖ, οὐ κενοῖς φθόγγοις ἁρμοζομένην  
κατὰ τινας λόγους ἡμιολίους καὶ ἐπιτρί-  
τους ἢ διπλασίους, οὐδ' ἐν ὀργάνῳ τινί,  
ἐν πεντεκαίδεκαχόρδῳ τὸ ἐκκαίδεκά-  
χορδον διατείνουσιν.

*Syn.* 2.66.11-16:

διὰ τούτων ἀπαρτίζεται τὸ ἐν πεντε-  
καίδεκαχόρδῳ ἐκκαίδεκάχορδον τοῦ  
πέρατος τοῦ ὀκταχόρδου εἰς ἀρχὴν  
τοῖς μετέπειτα λαμβανομένου κατὰ  
συνέχειαν.<sup>28</sup>

The formulation τὸ ἐν πεντεκαίδεκαχόρδῳ ἐκκαίδεκάχορδον is a peculiar anomaly of the *Synopsis*. It raises a conceptual problem difficult to resolve. The compiler is dealing here with the double octave system, which is properly composed of fifteen notes, with one note in common for the two octaves. It should not be a surprise then if the whole expression, and specifically τὸ ἐκκαίδεκάχορδον, is a *hapax* among the whole of musical literature: the system is in fact ‘pentadecachordal’. The ‘hexadecachord’ seems inexplicable. We can however guess that the incongruity was generated by the idea of *doubling* the octave: doubling eight we obtain sixteen.

What interests us is Italicus’ quotation: he could only have the *Synopsis* in mind.

### 3 The Context

These occurrences clearly show that the text was read by prominent intellectuals of the 12th and 13th centuries at Constantinople. If Zonaras and Italicus read it in the mid-12th century, it means that the text had already circulated in Constantinople at that time.

The earliest manuscript we have, Heidelberg. Pal. Gr. 281, was assembled in 1040 by the copyist Nikolaos Kalligraphos, from the works owned by Romanus, the imperial secretary of Seleucia: ἐγράφη ἡ βίβλος αὕτη διὰ χειρὸς Νικολάου καλλιγράφου μηνὶ ἰαννουαρίῳ ἰδ' ἰνδικτιώνος ὀγδὸς ἔτους, ζψμη ἐκ πολλῶν πονημάτων Ῥωμανοῦ ἀσηκρήτης καὶ κριτοῦ τοῦ Σελευκείας συλλεγεῖσα τοῦ καὶ αὐθέντου

28 “Through these notes the hexadecachord in the pentadecachord is completed by taking the extreme of the octachord as the beginning for the successive notes continuously’.



μου. οἱ ἀναγινώσκοντες αὐτὴν εὐχέσθε ὑπὲρ αὐτοῦ (f. 181r).<sup>29</sup> However, it is not clear if the manuscript was copied in Seleucia or if it had already been copied in Constantinople. If it was not copied in Constantinople it arrived there quite soon, as Zonaras' and Italicus' interest testifies.

Not only was the text evidently in circulation, but the status that the *Synopsis* had is also materially witnessed by its appearing alone, without the rest of the *Quadrivium*, in an important Constantinople manuscript, the *Vat. gr. 192*.<sup>30</sup> It dates to the 13th century, and was probably read by Bryennius, at least with regards to Pseudo-Psellus' treatise. It is an important manuscript when it comes to the transmission of ancient musical texts.<sup>31</sup> Part of it derives from the *Heid. Pal. gr. 281*, since we find in it, among other texts, the complete *Synopsis* (ff. 1r-2r), Theon's *De utilitate mathematicae* for the exact section contained in the *Heidelbergensis*, and the *Anecdoton Bacchii* (*Heid. Pal. 281 f. 180r-181r*). It is therefore highly likely that the text of the *Synopsis* contained in the *Vat. Gr. 192* directly derives from the *Heid. Pal. gr. 281*. This means that, at some point, the *Synopsis* was included in the 'musical corpus', thanks to which all the most renowned ancient musical treatises have been transmitted.

Then Bryennius' interest in this text testifies to its wide circulation, which started soon after it was written. From Bryennius' time onwards it had an even more fortunate destiny, given the number of copies produced from the 14th to the 17th century, and the Latin translations after it reached the West.

Why then did these intellectuals read this text and have it in mind while compiling their works?

The most obvious reason is probably that the *Synopsis* was the only surviving work concerning harmonic theory specifically between the latest treatises of the Imperial Age<sup>32</sup> and the Palaiologan Renaissance, the latter of which saw the greater works on music by Pachymeres and Bryennius.

29 See Mathiesen 1988, 30-3 for a complete description of the manuscript.

30 Heiberg does not mention this manuscript. See its description in Mathiesen 1988, 549-54. Mathiesen (1985, 41-3) identifies five manuscripts from the 13th century or earlier which were available in the capital for Bryennius to use, i.e. *Vat. gr. 191, 192, 2338, Ven. Marc. gr. app. cl. VI/3 and VI/10*. All these manuscripts can be placed in the network of the *Heid. Pal. gr. 281*, and they include different combinations of the same treatises. *Vat. gr. 192* is precisely an apograph of *Vat. gr. 191*: see Acerbi 2016, 158 n. 41.

31 See Mathiesen 1999, 653f.

32 The renowned treatises from the Imperial Age are Nicomachus' *Harmonicum Enchiridion*, Ptolemy's *Harmonica*, Aristides Quintilianus' *De musica*, Boethius' *De institutione musica*, the music section of Cassiodorus's *Institutiones* and Martianus Capella's *De nuptiis Philologiae et Mercurii*.

The *Synopsis* (and, of course, the *Quadrivium*) bears witness to the continuance of scholastic activity,<sup>33</sup> on the wave of the humanism which had encouraged the study of ancient science, although with a more compiling and encyclopaedic approach than that of Pachymeres and Bryennius.<sup>34</sup> Even though it does not exhibit the wide-ranging nature of these treatises, or of the last treatises extant from the Imperial Age, it is nonetheless a fundamental turning point in the history of harmonic science, a fact that made it useful for the 12th century intellectuals who needed to discuss music, even in a non-technical context.

Furthermore, even if we have said above that the text was 'fortunate' "despite its elementary, synthetical and apparently unoriginal essence" (p. 340 above), this is truer for modern scholars than for ancient ones. In fact, its synthetic shape could be easily exploited, most of all by intellectuals who were not directly and deeply concerned with music, such as Zonaras and Italicus.

But at least one more reason can be conjectured as to why this text satisfied the intellectuals' interest, as we will see below.

#### 4 Christian-Pagan Ambiguity<sup>35</sup>

An extremely interesting point when reading the text is the subtle ambiguity, which governs the argumentation, between ancient, pagan theory, and the possible reinterpretation of the same theory from a Christian perspective. We have immediate evidence of it in the introductory paragraph, where the compiler identifies music with the principle of *harmonia*, defined in terms of *symmetria* and *analogia*.<sup>36</sup> In such a scenario, which comes from the most

33 It is probably a surviving symbol of what Lemerle calls 'premier humanisme byzantin', which had started a couple of centuries before, with its symptomatic figure of Leo The Mathematician. See Lemerle 1971, 148ff.

34 Katsiampoura (2010, 421), in her comparison between this *Quadrivium* and the one by Pachymeres, notes that, if Pseudo-Psellus' *Quadrivium* is a simple epitome of ancient sources, the second *Quadrivium* will be still an epitome but with a more original and dynamic discussion based on the pre-existing knowledge.

35 The topic would require a specific paper and further investigations. Nevertheless, we mention it for the purposes of our argument, analyzing a few passages from the *Synopsis* where the topic becomes noteworthy.

36 *Syn.* 1.65.9-15: μουσικὴν οἱ παλαιοὶ συνέχειν εἶπον τὸ πᾶν· οὐδὲν γὰρ τῶν ὄντων συμμετρίας ἄτερ καὶ ἀναλογίας ἐστίν· ἀλλ' οὐδέ τι τῶν γινομένων μὴ μετὰ συμμετρίας τῆς προσηκούσης καὶ ἀναλογίας γινόμενον καλῶς ἂν ποτε γένοιτο, κἂν τεχνητὸν εἴη κἂν φυσικόν, κἂν αἰσθήσει ληπτὸν κἂν περὶ μόνην νόησιν θεωρούμενον, ἥ δὲ μουσικὴ αὐτοσυμμετρία τίς ἐστι καὶ ἀναλογία τὸ πᾶν, οἷα τοῦ παντός ἀρμονία τυγχάνουσα, 'the ancients said that music embraced the whole. In fact,

ancient 'Pythagorean-Platonic' horizon of studies on the harmonic phenomenon, the author evokes *to theion* and makes it coincide with the principle of *harmonia* (1. 65.15-18):

τάχα δ' ἂν τις καὶ τὸ θεῖον αὐτὸ οὐκ ἀπεικόντως ἁρμονία ἑαυτοῦ τε καὶ τοῦ  
παντὸς ὀνομάσῃ, ἐν ᾧ τὸ πᾶν συναρμολογούμενον καὶ συμβιβάζόμενον εὖ τε  
καὶ ὥς ἄριστα διαφαίνεται ἔχον.<sup>37</sup>

And, specifically, the compiler explains the concept with the Pauline pairing *συναρμολογούμενον*–*συμβιβάζόμενον*,<sup>38</sup> which had a great influence throughout the centuries, and which becomes for this reason full of meaning.

This operation recalls the one implied by Clemens of Alexandria in his *Protrepticus*,<sup>39</sup> again in the introductory section: there Clemens produces an extended metaphor, based on harmonic elements and vocabulary, to explain the effects of Christ's *Logos*, namely the *ᾠσμα καινόν*, the 'new song'. The effects could be synthesized as follows: καὶ δὴ τὸ ᾠσμα τὸ ἀκήρατον, ἔρεισμα τῶν ὅλων καὶ ἁρμονία τῶν πάντων, ἀπὸ τῶν μέσων ἐπὶ τὰ πέρατα καὶ ἀπὸ τῶν ἄκρων ἐπὶ τὰ μέσα διαταθέν, ἡρμόσατο τόδε τὸ πᾶν (1.5.2.8-11). Starting with Clemens and Origen's 'allegorical method' of exegesis, the musical metaphor, and most of all the one connected to the harmony of creation, became part of the Christian 'vocabulary'.<sup>40</sup> The *Synopsis* is a telling example.

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none of the existing things exists without measure and proportion, nor could anything ever be beautiful when not constituted by the right measure and proportion, be it either an artificial or natural thing, perceptible by the senses or contemplated by thought alone. Music, instead, is some sort of ideal symmetry and perfect proportion: it is harmony of the whole.'

37 'And maybe someone, not without reason, could call the deity too *harmonia* between itself and the whole: there the whole, combined in the right chord, reveals itself to the fullest'. The choice to use the neuter *to theion* together with the principle of *harmonia* increases the ambiguity: it is not immediately evident whether the compiler means a real Deity, or rather wants to assert that the *harmonia* is a kind of divine principle, in an aesthetic sense. The latter is convincing in light of what we find in Ptol. *Harm.* 3.3: the three existing principles are material, movement and shape, the *harmonia* being a principle of movement, as cause specifically related to the *logos*, which stays among the gods (τοῖς μὲν θεοῖς ἀεὶ συνὼν ὥς ἂν ἀεὶ τοῖς αὐτοῖς οὖσι) and has a *more divine* part, namely the intellect (ἐπεὶ δὲ τοῦ κατὰ τὸν λόγον αἰτίου τὸ μὲν ἐστὶν ὥς νοῦς καὶ παρὰ τὸ θεϊότερον εἶδος, 3.3.32f.).

38 See *Ep. ad Eph.* 4.15f. In the Saint Paul's *Epistula* the pairing is used to identify the different components of the Church, the composition and *harmonization* of which realize the Church itself and contribute to its growing.

39 See specifically *Protr.* 1.5.1f. The topic is thoroughly investigated by Raffa 2017, 47-57.

40 See McKinnon 1987, and specifically 28-41.

When it comes specifically to the theory, the tendency is more difficult to find; nevertheless it is present. A close reading reveals that the interval of the octave, through the whole text, shows a kind of finalistic tension, expressed by vocabulary and 'images'. Consider, for example, the fifth paragraph, where the compiler is dealing with the concords—the fourth, the fifth and the octave—and explains the reason for their denominations, namely διὰ τεσσάρων the fourth, διὰ πέντε the fifth and διὰ πασών the octave:

τῇ δὲ τῶν διὰ μέσου φθόγγων κατατεταγμένη ποσότητι τὰς τοιάσδε προσηγορίας ἐδέξαντο, τὸ διὰ τεσσάρων ὡς διὰ τεσσάρων φθόγγων εἴτ' οὖν χορδῶν διοδεύον καὶ περαινόμενον, καὶ τὸ διὰ πέντε ὡς διὰ πέντε τελούμενον καὶ τὸ διὰ πασῶν ὡς δι' ὀκτῶ τελειούμενον· διὰ πασῶν δὲ τὸ δι' ὀκτῶ λέγεται ὡς ἐν τῷ ὀκταχόρδῳ τῶν ὅλων διαστάσεων συμπληρουμένων ἀκχείθεν αὐθις ἐπαναδιπλουμένων, ὡς καὶ ἀπ' αὐτῆς δηλοῦται τῆς φερωνυμίας τῶν κλήσεων.<sup>41</sup> (5.68.9-17)

The fourth is called διὰ τεσσάρων by virtue of its completion (τελέω) through four notes, the fifth through five notes, whereas the octave is completed through eight notes, this time with the epic form τελείω;<sup>42</sup> and its name, διὰ πασῶν, is due to the fact that it *includes all the intervals*. The double version τελούμενον–τελειούμενον definitely underlines the qualitative difference between the octave and the rest of the intervals.

The wording τὸ ὅλον συμπληρώω too is full of meaning: after its Aristotelian usage,<sup>43</sup> it was widely exploited by the Christian tradition, on concepts such as the harmony of creation and the harmonic equilibrium of the universe. Gregory of Nyssa was an exponent, as we see in *De an. et resurr.* 25, where Macrina supports the idea that the divine power manifests Himself in the harmony of the universe and completes the Whole with its parts (τὸ ὅλον συμπληροῖ ἐν τοῖς μέρεσι).<sup>44</sup> And the whole tradition is not by chance in debt to

41 '[These intervals] get their denominations from the ordered quantity of the notes in the middle: the fourth, since it is completed by four notes or strings, the fifth, by five notes, the octave, by eight notes. Nevertheless, the interval that goes through eight notes is called *dia pasōn*, since on the octachord the totality of the intervals is fulfilled, and from there those intervals repeat again, as it is clear from the denomination itself'.

42 See e.g. *Od.* 3.262 and 6.234 for the use of both τελέω and τελείω.

43 See Arist. *De gen. et corr.* 336b31 for the generation process through which God *completes the Universe* (συνεπλήρωσε τὸ ὅλον ὁ θεός, ἐνδελεχῇ ποιήσας τὴν γένεσιν). It returns with insistence also in Alex. Aphr. *In Arist. Metaph. comm.* 715.17ff. while commenting on Arist. *Metaph.* 1075a on the nature of the Universe, in which the generated entities participate to the common end (τὰ συνετεταγμένα πρὸς τὴν τοῦ ὅλου συμπλήρωσιν).

44 See Ramelli 2007, 43 for a list of *loci paralleli* in Gregory's work.

the Platonic cosmogony of the *Timaeus*: συμπληρώ is the verb of the God who fills the Universe with harmonic intervals while building its soul.<sup>45</sup>

We might therefore say that in his work the compiler essentially embodies Byzantine eclecticism. He preserves the ancient pagan content within Christian categories—a behavior chiefly symbolized by Michael Psellus.<sup>46</sup> For this reason, besides the chronological alignment, he must have seemed the perfect candidate as author of the *Synopsis*.

The aspect we have just highlighted may give more details as to why an intellectual such as John Zonaras, while describing the musical education of St. Cyril, chose to copy the *Synopsis*' introduction. It is evident that Bryennius also read it, used it, and probably appreciated it: in his *Harmonica* he deals with all the technical aspects of harmonic theory, but he specifies from the beginning that to fulfill his undertaking he needs the help of the One who has created the world and made each soul harmonious.<sup>47</sup>

The author's attitude towards music reveals in a nutshell a tendency which would characterize successive musical treatises and will be fulfilled in those treatises; this tendency could easily gain the appreciation of the Byzantine intellectual environment.

If it was really a handbook, the scope of which was purely scholastic, we might even assert that its good fortune went beyond its formal limits and original aim.

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- 45 Plat. *Tim.* 36a μετά δὰ ταῦτα συνεπληροῦτο τὰ τε διπλάσια καὶ τριπλάσια διαστήματα, μοίρας ἔτι ἐκείθεν ἀποτέμνων καὶ τιθεὶς εἰς τὸ μεταξὺ τούτων, ὥστε ἐν ἐκάστῳ διαστήματι δύο εἶναι μεσότηας. The cosmological function of the verb is again well represented at the very end of the *Timaeus* (92c5): θνητὰ γὰρ καὶ ἀθάνατα ζῶα λαβὼν καὶ συμπληρωθεὶς ὅδε ὁ κόσμος οὕτω, ζῶον ὁρατὸν τὰ ὁρατὰ περιέχον, εἰκὼν τοῦ νοητοῦ θεὸς αἰσθητός, μέγιστος καὶ ἄριστος κάλλιστός τε καὶ τελεώτατος γέγονεν εἰς οὐρανὸς ὅδε μονογενὴς ὢν.
- 46 Regarding this specific issue see Criscuolo 1981, 7-23.
- 47 Bryenn. *Harm.* 1.50.5-9: ἔδοξεν ἡμῖν καίπερ ὀλιγομαθέσι τυγχάνουσιν ἔνδοξον εἶναι μεθ' ὑπομνηματικῶν ὅπλων, ὡς ἐφικτόν, εἰς ἐπικουρίαν αὐτῆς χωρῆσαι, συλλήπτορα ἐπικαλεσαμένους εἰκότως εἰς τοῦτο τὸν ἅπαν μὲν τότε τὸ ὁρώμενον ἀοράτοις τέχναις ἀρμολύμενον, πᾶσαν δὲ ψυχὴν ἀρμονίας λόγοις τελεώτατα τεχνησάμενον.

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