Byzantine Chant Notation –
Written Documents in an Aural Tradition

In memory of Kenneth Levy (* New York 1927 — † Princeton 2013)

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Abstract

This paper has its focus on the character of Byzantine musical notation, its development, varieties, and specialisation for various chant genres of the monastic and cathedral rites. Special attention is given to the complementarity of memory, notated chant books, and liturgical books without notation (including text-only hymnals and liturgical orders, the so-called typiká). Further, mechanics of oral-aural transmission of Byzantine chant are discussed. Finally, the impact of location and architectural space on the aural side of the chant transmission is addressed.

1 Introductory remarks

Byzantine chant might be defined as the music used for the celebration of the Byzantine Rite, and at the same time having historical links to musical traditions of the Byzantine Empire. Such a definition is neither exclusive with regard to language, nor to geographical area and ecclesiastical affiliation, and it focuses on the functional nature of ritual music. In addition, a close relation between music and text is stressed.

I shall in these pages try to focus on themes regarding the creation and transmission of chanted melodies that pertain some of the various periods, regions and areas in which Byzantine chant has been cultivated. This approach may match the state of the source material, in which we – geographically and chronologically – must accept the existence of great ‘lacunae’. Thus we are forced to realise how much – and in many instances how little – can be known about the medieval traditions of Byzantine chant.
2 Memory, writing and the relationship between literacy and aurality/orality in the transmission of Byzantine chant

During his 1996 visit to Copenhagen, the late Princeton music professor, Kenneth Levy (1928-2013), gave a lecture on the transmission of Byzantine chant, in which he insisted that speaking of oral tradition as the opposite of written tradition was of less interest in the case of the study of Byzantine chant transmission, if not the role of ‘memory’ was considered simultaneously. At that time, the term ‘aural’ had not yet gained the same prominence as it has today; then it was still ‘oral’ that was used as the key word when dealing with traditional musical cultures. ‘Orality’ as a concept in its own right was probably first studied in connection with literature, specifically in the understanding and new appreciation of the Homeric epics which was established due to the folkloristic studies by Milman Parry and Albert B. Lord on Serbo-Croatian epic poetry. The terminology became, however, widespread in ethnomusicology, being claimed as an independent discipline during the first half of the 20th c., developed from the slightly earlier ‘comparative musicology’.

Levy continued the studies in Byzantine chant to which he had been introduced by his teacher Oliver Stunk, professor of musicology at Princeton, later director of the *Monumenta Musicae Byzantinae* in Copenhagen and at the Basilean monastery in Grottaferrata (20 km south of Rome). Struk was, perhaps, the first scholar to present – though in the very brief and condensed style he used to apply in his publications – a coherent theory on the nature of the “hidden interplay between oral and written tradition” in the transmission of Byzantine music (Strunk 1967). Though he nourished interests in any Byzantine chant document from any period and location, he soon realised that the study of the Palaeobyzantine sources was of key importance for the study of this ‘interplay’. These were the earliest ones from which rules of the ‘game’ might be deduced. Such a deduction is indeed necessary, since only very little explicit music theory from that period can be associated with the chant tradition. Successively, more and more parts of the liturgical chant repertory were included in notational tradition. First came parts of the hymnography of the daily offices, later a selection of elaborate settings for the cathedral rite, and in late Byzantium, we find for the first time written documentation for the music of many of the daily, common chants. Many admittedly very ancient Byzantine chants, at least what regards the textual side, e.g. the age-old evening hymn Φῶς ἱλαρόν (‘O gladsome light’, documented in its text-only from c. AD 300 and quickly became a set element in Byzantine Vespers, Hesperinos) is first found with musical notation as late as in sources from long after the Fall of Constantinople, in musical manuscripts from around the end of the seventeenth century.

*Full references will be supplied in the edited version of the paper.*
2.1 Models of chant transmission

How are musical traditions created, developed and maintained? Each type of music, genre, period and geographical region may have and probably has its own specific characteristic blend of elements in its transmission cycles. It means that the mix of these elements may look differently even within such a roomy concept as ‘the Byzantine chant tradition’. The concept ‘aural tradition’ (or ‘aural transmission’) emphasises the acoustic element and the recipient’s listening act. The concept ‘oral tradition’ (or ‘oral transmission’) emphasises the performance element in music and the active role of the singer(s)/musician(s). But either side of the musical activity presupposes in effect the other one.

According to such ideas, the following model of oral-aural transmission can be established (Fig. 1):

![Figure 1: Oral-aural transmission: Model 1.](image)

At an early age, Byzantine children were exposed to musical experiences: their mothers most probably mixed lullabies with elements derived from popular, ‘para-liturgical’, or liturgical chanting. I consider this an important part of establishing basic musical identity, and such a ‘back-grounding’ could reasonably be counted with. A little older, the kids may have observed the chanting of a by-passing ecclesiastical procession or attended different types of services in a local church or, occasionally, in a major cathedral. Such ‘aural’ musical activities define in first hand the acceptability of a musical performance to members of the group to which such a music is said to be ‘traditional’.

On the other side, someone needs to perform the music that is heard by new members of the community, the active persons ranging from lay people, members of the various orders of the clergy or monks, and professional singers. They have all experienced the local blend of Byzantine chant from their childhood, and through memory and imitation acceptable (in the linguistic sense ‘grammatical’ = ‘acceptable’, as hinted at in the paragraph
above) performances of music are brought about. Their knowledge of the chant enables them to participate passively or actively (by listening for liturgical moments, participating in congregational singing of whole hymns or just responding to soloists/choirs).

The last-mentioned groups (clergy and singers) have in addition received specialised training in chant performance, since it was a obligatory part of their professional activities. Training might on the one hand contribute to stabilise memory, on the other hand the knowledge and mastering of musical texts – and not at least of the rules that govern them – may inspire innovation and creativity. Also this last assumption has its analogy in the slow, yet steady development of language systems. The memory works not as exact reproduction, as a human ‘hard-disc’, but it relies on interpretation of rules, systems, recurrent formulas etc., which again is used for ‘recreation’ or ‘recollection’ of the music. Taking these elements into consideration, the model of oral-aural transmission can be refined in the following way:

Figure 2: Oral-aural transmission: Model 2.

Now, these decoding-encoding-rules that are active in human memory may be partially supported by A) non-written music theory — e.g. grouping of melodies in specific genres, with specific contents, function, tempo, or complexity (e.g. placement continuum syllabic < – > melismatic chant), considered to belong to a specific melody-type or modal category) — or by B) written music theory (verbalised documentation of the above) plus musical notation. Further, the actual aural perception is dressed in the specific vocal qualities of individuals and choirs, affected by the number of performers and the architectural/topographic staging of the performance. Thus we may claim the following model:
2.2 Oral-aural vs. written chant administration

Orality and literacy have often been presented as the opposites of each other, belonging to two different worlds. Orality has been associated with the collective, with the focus on the group, while literacy has been associated with the person, with focus on the individual. These two different ‘worlds’ have been characterised by the following dichotomies (Pym 2007 after Oleksa 1994):

<table>
<thead>
<tr>
<th>ORAL</th>
<th>LITERATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intuitive</td>
<td>Objective</td>
</tr>
<tr>
<td>Integrated</td>
<td>Fragmented</td>
</tr>
<tr>
<td>Multicompetent</td>
<td>Specialized</td>
</tr>
<tr>
<td>Human being</td>
<td>Competent citizen</td>
</tr>
<tr>
<td>Wisdom</td>
<td>Knowledge</td>
</tr>
<tr>
<td>Kairos</td>
<td>Chronos</td>
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<tr>
<td>Repetition of archetypes</td>
<td>Innovation</td>
</tr>
<tr>
<td>Traditional local</td>
<td>Literate global</td>
</tr>
<tr>
<td>Spiritual</td>
<td>Secular</td>
</tr>
</tbody>
</table>

Figure 4: Pairs of oppositions supposed to be characteristic of oral and literate cultures, respectively. These oppositions are inspired by the research tradition initiated by Walther Ong, though here given in a more popularised form - an derived from a discipline different from chant research (viz. sociology of literature).

However, in a medieval context such oppositions have to be understood in a specific context, namely that of literacy in the era of manuscripts. In his book *Orality and Literacy: The Technologizing of the Word* (1982), Walter Ong introduced a clear distinction between chirographic and typographic literacy. The conscious study manuscript cultures has since...
then yielded more subtle descriptions of specific the ways which oral and written procedures interacted in various areas of activities in medieval culture. Also the role of memory and medieval concepts of memory have been studied, though mostly with regard to the Western Middle ages. Mary Carruthers’ The Book of Memory (1990) marked a beginning of a series of studies with such an approach. Manuscripts are here seen as just one side aids in the organising of very complex memory-based system of conceiving and retrieving knowledge.

Also musical literacy might be looked at from this angle; the written documents do not in first hand replace an oral tradition, but should rather be looked at as memory aid or memory ‘technology’. Hence the study of the particular context of documents associated with chant reproduction becomes very important; in which institutions did they serve which purposes and by whom were they used? By trying to produce plausible answers to such questions one might be as lucky as to shed some light on the supposed cooperation of mouth, ear, memory, eyes and pen. And we must be ready to accept that the Byzantine chant documents in many respects deviate radically from ‘musical literacy’ as practised today, i.e. composing, reproducing and performing music from scores.

In the following sections I shall try to present and interpret number of different patterns of interaction between chant documents and the actual chant culture around them.

3 Chant manuscripts without notation?

Some would say that written musical notations may go back to what has paradoxically been termed ‘oral’ notation, which can be defined as formalized systems of signalling melodic or other musical qualities between musicians. It may also refer to systems of memorizing and teaching music with spoken syllables, words or phrases. Even gestures, which in the case of Byzantine notations might apply in the sense that close connections exist between notation and so-called cheironomic movements of the hands by the singers and/or ‘conductors’. But even without claiming that cheironomy would predate manuscripts with musical notation, we might consider the relation between music and written elements in the oldest preserved text-only hymnals.

Let us begin by looking at a very ancient example of a written rendition of piece of Byzantine chant (Fig. 5). This is one folio of a papyrus codex, Papyrus Vienna G. 19.934, published by Treu & Diethart in 1993. It consists of seven fragmentary folios written on both sides with an inclining majuscule script, which according to palaeographers is typical of the sixth century. The contents of the codex and its importance for the study of the early Octoechos system is dealt with in Troelsgård 2008.

The page presents the text of a troparion for a confessor bishop, beginning Ὡς φωστὴρ ἐν κόσμῳ / ‘Like a star in this world’ (placed around the middle of the fragmented papyrus sheet). To judge from the contents, textual form, and extent it seems very similar to what later became described as a sticheron. As for the rest of the troparia in this early chant
Figure 5: Papyrus Vienna G. 19.934, fol. 2r
collection, none of the texts are found in later sources, although the typology of the text and most of its textual elements is clearly recognizable later Byzantine chants.

If the dating of the palaeographers is correct, that is in the century before John of Damascus, this troparion definitely belongs to the formative period of Byzantine chant. The provenance is unknown, but it probably surfaced in Egypt, and chances are that it was used in the province of Alexandria.

If we now leave the exciting details of the text and its implications, I shall turn to a discussion of the premises for discussing the music, which definitely was intended to accompany this 'sticheron'.

Traditionally, we have said Byzantine chant was orally transmitted until the earliest examples of the Byzantine melodic chant notation. This calls of course for a discussion of the of ‘oral’ according to the premises suggested above.

It is indeed not likely that the singer, or singers if destined for choir, were left to improvise freely in their chanting; however close to the origins of an Alexandrian branch of early Byzantine chant, we must presume that a tradition, creating a framework for the singing had already been established for generations and that certain ‘rules’ for singing were supposed to respected in the performance.

Even if the document is far earlier than the earliest examples of preserved chant notation (though the famous Papyrus Oxyrhynchus 1786 with a Doxology, furnished with the from the Byzantine notations totally alien ancient Greek letter notation, does not lie more than a couple of centuries ahead), I shall point to two features of ‘written’ indications about ‘musical’ features of the piece.

The first concerns the ascription to a specific mode, in this case an abbreviation of second plagal [mode] in the left margin, i.e. πλβ, same modal key as is more clearly visible at the bottom left corner (in the margin).

This modal indication would offer the singer a means to handle the performance, as if it was stated that “In our tradition we have divided the repertory of chants into eight classes” (in fact it seems from the sequence of modal indications in the seven fragmentary folios that this is one of the earliest documents of an octoechos system – we shall leave that here), and that “this chant belongs to the group of chants we call second plagal, as it shares some features with the other melodies of this same class”.

We do, however, not know exactly what ‘second plagal’ meant to that psaltes of that distant past and that particular area, the person who looked at this papyrus sheet. The point is that merely the use of lists of incipits and classes of songs that resemble each shows that a concept of ‘pure oral tradition’ might be less than true for early Byzantine chant. If we were to recompose the music of this troparion-sticheron, we should hypothetically use the musical formulas from the sticheric genre and an interpretation of the modal category as found in later, but more explicit written sources (known from c. 1170 onwards, the earliest middle Byzantine sources which with some certainty can be ’reconstructed’). With our knowledge of the slow, yet steady shifts in many details in the Byzantine chant documents.
over the centuries, we can be sure that we did not recreate ‘the original piece’, but we are 'recompose' it according to the melodic formulas derived from the middle Byzantine sources and a modal system of which we do not know the exact age.

The status of the document is important too; was this an official hymn or an expression of private devotion? Or to put it in a different way, was it a widespread hymn/tradition or something of restricted distribution? From church and monastery inventory lists (5th-7th c.) we have indications of institutional possession of manuscripts:

Βιβλία διάφορα μεμβράϊνα καὶ χάρτινα ε΄ ('various parchment and papyrus books: five’) P. Prag. Wess. II 178.5-6

Βιβλία δερμάτινα καὶ ἰματίως χαρτία γ΄ ('parchment books: 21; and likewise of papyrus: 3’) P. Grenf. II 111.27-28

On the other hand, a lot of the early scriptural papyrus fragments, and a number of hymnographic documents from the same area, did belong to individuals, i.e. anagnostai (lectors), psaltai (cantors), or teachers (Gamble 1995). The manuscripts are, in my view, often best interpreted as professional tools. The Vienna papyrus above is not a part of a hymnal organised according to any known liturgical system (calendar, genre, ??), the only unifying feature being application of an the 8-mode cycle. The constellation would, however, in my opinion, fit a situation where a psaltes-teacher would like to teach his apprentice a variety of chants in all modes. We may suspect that certain variation in both text and music would arise when the chant repertories were administered partly by private entrepreneurs and not controlled by any specific authority. At least a decree from the council of Laodicea (4th c.) forbids 'private chanting' and would suggest that such unofficial and perhaps innovative undertakings were seen:

ιε’ Περὶ τοῦ μὴ δεῖν πλὴν τῶν κανονικῶν ψαλτῶν, τῶν ἐπὶ τὸν ἄμβωνα ἀναβαίνοντων καὶ ἀπὸ διφθέρας ψαλλόντων, ἑτέρους τινὰς ψάλειν ἐν ἐκκλησίᾳ. [15. Apart from canonical cantors, who ascend the ambo and chant from parchments, no others are permitted to sing in the church.]

νθ’ Ὄτι οὐ δεῖ ἰδιωτικῶς ψαλμοὺς λέγεσθαι ἐν τῇ ἐκκλησίᾳ, σοδὲ ἀκανόνιστα βιβλία, ἀλλὰ μόνα τὰ κανονικὰ τῆς καινῆς καὶ παλαιὰς διαθήκης. [59. Let no private psalms nor any uncanonical books be read in church, but only the canonical ones of the New and Old Testament.]

Far over 60.000 Greek troparia are counted in the preserved standard repertories - according to Enrica Follieri’s ‘Initia hymnorum Ecclesiae Graecae’ (Follieri 1960-1969) - and
with the addition of thousands of *apókrypha* (i.e. without match in the later Byzantine standard repertory, like the text I show here), such a mass of text calls for organisation by means of writing in a religious tradition which definitely can be described as a ‘script based’ in many other respects.

The development of such a piece of music theory as modal category that is transmitted to some degree independent of specific chants, seems to be the second step to stabilise tradition.

In practice, the singer would probably have recalled typical features of one or two well-known pieces of a specific group in his memory, his singing could take its departure from that recalling of how to intone, how to keep a phrase going, how to make a medial or final stop. Nevertheless, the ascription to classes is administered in writing.

Another written ‘musical’ feature of the chant collections without musical notation is punctuation. The singer understood the structure of the chanted text, and the punctuation signs strengthen in most cases natural syntactical divisions. This is the case here, where *ano teleia* and *comma* is used.

However, in other cases, a ‘musical punctuation’ that goes against the ‘natural syntax’ can be seen in early chant manuscripts in passages where musical elaboration is recommended. We might encounter such cases a recommendation for melismatic elaboration, if we compare the actual passages with specific ‘theta’-places in the sticherá and heirmoi (for example regarding elaboration of the word διό); see below, section ‘Partial notation’, ‘Theta-notation’.

### 3.1 Text accent and formulae

In addition to these features comes knowledge of the natural accentuation of the language. Stressed syllables may require a special treatment, and this feature seems to be inherited in many chant types from the simple psalmody, where text and music come together in simple, yet efficient way of performance.

Thus we know from Byzantine psalmody as documented back to the beginning of the 9th century through the amazing chain of evidence presented by Strunk (1960) that the initial phrase and recitation was governed by accent (pitch accent or sustained accent), while the cadence was mechanically adapted to the last four syllables of the stichos, the verse.

The application of such simple rules result in a variety of possible and different, yet similar musical realisations of the same psalm text.

I think that one must imagine the same variation in performance within a certain set of rules, which were supposed to be well known by the experienced singer. According to this model, it is the memory of the singer and his internalisation of the rules – in combination with the memory of specific musical features of earlier performances of the same text - that are evoked in the performance situation, which from this point of view acquires the status of composition, or rather ‘re-composition’. In historical studies of oral-aural traditions it
is, however, – in contrast to ethnomusicological field studies – impossible to confirm our imagination by recordings of actual performances and interviews with active and passive members of the chant community.

The study of the formulaic structures in medieval and post-medieval Byzantine chant has now engaged scholars for quite a long period. All known repertories have been recognised as being predominantly formulaic, as each mode in each genre are furnished their own specific selection of formulas, initial, transitional, medial and cadential. The palaeo-as well as the middle Byzantine musical notations operate with formulas as constituent parts of the notation since the so-called ‘groups signs’ or the megálaí hypostásseis (‘big entities’) are identified as formulas. Their names derive probably from chant teaching in monasteries and at cathedral schools, and they again testify to the close collaboration between writing and the human memory. However, not all of the formulas were given names (for mnemonic reasons); for example in the didactic chants ascribed to Ioannes Glykys and Ioannes Kouk-ouzeles and illustrating the notational signs, one of the stereotypical final cadence is given only with the description “télos tu deftéru échu” - ‘ending in the second mode’). I shall return to this material briefly below (section 6.3), but I can already here disclose that I see these written documents containing a mixture of didactic material and musical settings (dating from the later centuries of the Byzantine era) as primarily linked to chant teaching rather than to actual performance situations.

3.2 The ‘ordinary’ and the ‘proper’

Specifically regarding the medieval Byzantine tradition both the collections of chant texts without notation, and later those books with notation, seem to have been concerned only with the chants being sung very seldom, for example once a year in connection with celebration of a saint’s day (the ‘Proper’ of the saint). Chants that were sung more often or daily entered only very late into the sphere of so-called ‘written tradition’, as these were known by heart by the clerics and the congregations and belonged to the ‘Ordinary’.

4 The uses of chant manuscripts

Musical manuscripts seem to have had another status in the middle ages than a score or transcription of today; not every member of a choir would have a copy; nothing of this kind can be documented for the medieval tradition. The manuscripts are generally too small to be read by more than one person, and they contain material that is supposed to be divided for performance by two separate choirs, alternating in psalm verse and intercalated troparia; yet no quasi-identical pairs of chant manuscripts have until now been found.

Neither was it customary that every member of a choir had a copy even of the text; much of the daily office and Divine liturgy was of course known by heart, but to support the
memory of the singers during performance of less-known chants, the so-called kanonarches-
institution was a help. It is described from documents as early as the eleventh-century, how
the kanonarches in the Monastery of the Theotokos Evergetis in Constantinople, recited
each text phrase immediately before the singing (using a chant manuscript with musical
punctuation?), as a help for the singers in the performance of the stichera idiomela and the
great number of other chants for the daily services.

The notated manuscripts for choral music were probably regarded more as reference
tools and teaching materials in the hands of the protopsáltai, presenting acceptable, even
beautiful solutions for recomposing the melodic line of a given melody in a given mode of a
given genre. The hymnals were used by the experienced singers to show specific details to
novices. Also the ecclesiarch, ‘liturgy master’, whose task it was (according to the Evergetis
Typikon), to plan the specific schedule of each service, did take many decisions regarding
the music, e.g. how many stanzas, oíkoi of the Kontakion time would allow.

4.1 Variation, change and development

In practice, more than one performance version could be accepted as an appropriate perfor-
mance and the normal situation was most likely that chant would differ slightly from day
to day, from performance to performance. The situation of a plethora of versions living
up to the ‘acceptability’ criterion is reflected in the manuscripts by the presence of variant
notation between the lines. In this way two, sometimes three, melodic versions are written
in the same codex and considered well-composed.

Thus these ‘scholia’ (in practice often variants written in red ink) indicate that multiple
variants were taken into account. We must imagine that more than one performance could
be accepted by congregation and psaltai as well, – although I am sure that many singers
would proudly contend that exactly their own version was THE ONLY right one!

In a study of the formulaic structure in Ethiopian chant, Peter Jeffery, Kenneth Levy’s
successor at Princeton, used the word ‘substitutability’ in order to express the possibility
of substituting one formula with another under certain circumstances. Thus, the analysis of
chant traditions with a strong elements of ‘oral-aural’ qualities can lead to recognition of for-
mulas with similar musical functions. In this way, the flexibility and variability connected
to the very nature of transmission and constant acts of re-composition of the traditional
Byzantine repertories have in many cases led to slow and organic development of chant
forms over years, decennia, and centuries.

Such phenomena can be observed in many parts of the Byzantine repertories, for example
in the Heirmológia, a type of manuscript that is far from as widespread as the Sticher-
arion. Despite the faithful copying of the notated manuscripts, the sung tradition seems to
have come out of keep with the actual chant culture as time went by.

In the ‘real’ life, the heirmoi were used regularly qua their status as model-melodies,
and they thus were subject to the previously described judgement of common approval or
rejection at each new performance. This situation seems to lead - as I said - to slow and organic development. At a certain time (around the 13th-14th century) new Heirmológia were notated in revised and homogeneous versions, predominantly in a style slightly simpler than the the written versions of the earlier period.

This apparent shift in the written tradition does not necessarily mean that the tradition of heirmologic singing was broken in one and the same instance. A growing tension between the actually accepted versions and the written ones was ‘levelled out’.

On the other hand, redaction of whole repertories by single persons would also take place now and then; if sufficient institutional backing was present, sudden changes of a tradition must also be considered a possibility.

It seems that reforms of the chant singing can have been connected with the introduction of new notational standards. From this perspective, the use of a certain innovative notation seems to have been used as a one of the means to create and keep uniformity within a certain ecclesiastical province.

4.2 Automela – Proshomoia; model melodies – *contrafacta*

As with the heirmoi, also some sets of automela or ‘model melodies’ were notated at a quite late period. These melodies belong to what Oliver Strunk named a ‘marginal repertory’. The terminology ‘marginal’ is here seen from the side of the modern student of the written tradition, to whom the massive and stable tradition of the sticheraria and to a lesser degree that of the early heirmológion found in the musical manuscripts was the point of departure.

In reality, the ‘automela’ had a much wider usage than the proper hymns, being applied as model melodies to the proper texts of the daily service. In fact they form a very central repertory, based on a quite limited set of model melodies in a limited number of instances.

The concept of writing new chants to pre-existing and well-known melodic patterns, in stanzas with a specific number of lines and syllables, and a specific distribution of the main accents (the principles of *isoyllabía* and *isotonía*), is another principle of organising a vast chant repertory, which in some ways compete with the principle of modal ascription.

Also this principle of organisation is very old. It is present the kontakion repertory and documented in papyrus fragments, e.g. Pap. Khirbet Mird P.A.M. 1 (8th-9th c.). The persistent formula indicating the model melody is Πρὸς τό ...[ i.e. *<sung>* to ... followed by the incipit of the model melody]. It presents again a combination of oral and written elements - as the indication of the model melody in the text manuscript is the main issue, the indication of mode just of secondary importance - and the automelon-proshomoion-principle has permeated into almost all the offshoots of the medieval Byzantine tradition.
5 Chant manuscripts with partial notation

Some notations are designed to give a broad range of information about pitch, rhythm, tempo, dynamics etc.; others give only a small part of what would be needed by the non-initiated musician or singer. In the latter type, the ‘missing’ information is withheld either because it is a part of the common knowledge of a given musical culture and therefore considered unnecessary, or because there is a desire to keep it secret, perhaps for professional or religious reasons.

No musical notation, however, can be identical or synonymous with the music itself. A ‘complete’ notational system might be theoretically possible, but it would eventually become so complex that it would have no value as a tool to signal musical characteristics within the framework of human perception, neither to insiders nor outsiders of a given musical culture. Remembering that any musical notation is not identical with the music it is associated with (i.e. de- or prescribes), the so-called Oxeia, Diplé, or Thêta-notations have been termed ‘partial musical notations’. The manuscripts furnished with notational elements of this type embrace all the written parameters mentioned above, but in addition certain words or syllables are distinguished by notation. The phenomenon is briefly described in Troelsgård 2011 p. 27 and illustrated in Example 10.

In the same book, pp. 27-28, the older stages of the Palaeobyzantine notations are described, i.e. the so-called ‘archaic’ Byzantine notations (according to Strunk’s terminology) or stages 1-3 (according to Floros’). These varieties of partial notations leaves a number of blank syllables to be filled out by the singer according to his knowledge of the tradition. Only the syllables considered the more important, more difficult or more ambiguous did receive musical signs to guide the singer in his re-composition.

Recently, partial notation has been pointed out in a Strasbourg papyrus fragment from around AD 800 (Husson 2001 and Troelsgård 2013). It seems derived from an archaic stage of the Palaeobyzantine notations, though slightly different in appearance. It is perhaps a ‘cross-over’ between the theta-notation (since it gives signs for a complex, multi-syllable melisma, as it can be judged from later notated versions of the same piece in palaeo- and middle Byzantine notation on parchment).

6 From Palaeobyzantine to Middle Byzantine notations

In the later and most developed stages of the Palaeobyzantine neumations, all syllables are furnished with at least one sign, and in other respects too, the notation tends towards being more and more explicit - for example by adding signs to indicate ‘high’ or ‘low’ positions to melodic elements and to the modal signatures, the intonations. Further they began to use the ison and oligon signs for repetition and counting one step upwards respectively. The branch of the Palaeobyzantine notations called ‘Chartres notation’ was the first one to
combine consistently one neume with indication of relative of pitch, namely in the ‘straight’ ison.

The transition from the Palaeobyzantine notations to the Middle Byzantine notation, which probably took place around the middle of the 12th century, consists in a precise indication of the number of steps, so-called phonai, to perform within a given mode. The actual interval relations within this mode are not indicated, however, and must be supplied through the mechanisms of the ‘oral-aural transmission’. Nevertheless, the application of a quite elaborate system of modal signatures in the musical manuscripts might give some important hints and often almost conclusive evidence, as studies by Christian Thodberg and Jørgen Raasted have indicated. The precise intonation of single notes and other niceties in the performance of the melody are however not revealed even in the most developed type of medieval Byzantine notation and must be supplied from elsewhere to obtain a plausible acoustic reconstruction on the basis of the data in the musical manuscript.

Through the 12th- and 13th-century transcriptions from Palaeobyzantine notations into the Middle Byzantine Notation the ‘melodic skeleton’ can in many cases be traced back to the earliest and archaic phases of the so-called Chartres variety of the Palaobyzantine neumes, and some contours of the melodies, such as the division of the text into phrases and melodic positions considered apt for melodic elaboration, even back to the Théta-notations.

Transcription of pieces documented in the oldest Byzantine chant sources, if we want certainty for the succession of melodic steps, can, consequently, be done only when a parallel in the middle Byzantine notation is preserved for ‘backwards comparison’.

Further topics related to the transcription from and properties of the Middle Byzantine notation are presented in Troelsgaard 2011. In the following I shall, as a continuation of the above discussions of oral-aural procedures in Byzantine chant transmission, present a case study with focus on formulae, music-text-relationship and roles of performing in the cathedral rite chant of Constantinople.

6.1 Working out the cathedral chant - from the Psaltikon and Asmatikon manuscripts

The chants of the Byzantine Cathedral are primarily known from two complementary chant collections, Asmatikon, the choir book, and Psaltikon, the book of the precentor (also called ‘Kontakarion’). These collections represent most likely the usage of the church of Hagia Sophia at Constantinople between the 11th and 13th centuries – i.e. the period up to the Latin conquest.

Written documents of the cathedral repertories with musical notation certainly existed in the tenth and eleventh centuries, i.e. written in Palaeobyzantine notation. This can be ascertained from the Slavic reception of the kontakarian repertories; parts of the Psaltikon and Asmatikon are combined into one collection, in Church Slavonic and furnished with
a specific variety of the Old Russian notations appropriated from Byzantine models, the *Kondakarian* notation. In Byzantine chant manuscripts there are but few and fragmentary remnants of the Palaeobyzantine tradition of the Cathedral rite chant notation. Fig. 6 shows such a fragment, a partially notated version of the Good Friday kontakion Τὸν δι' ἡμᾶς σταυρωθέντα / 'The one crucified for us'. It is preceded by a Sticheron in a very different and less complex notation, a moderately developed version of the Palaeobyzantine Coislin-notation.

![Figure 6: The kontakion Τὸν δι' ἡμᾶς σταυρωθέντα for Good Friday in fourth plagal mode.](image)

From Ms. Sinai gr. 1214 (early 12th c.), fol. 186v. It is unclear why the scribe did bother to fill in neumes for the first part of the Kontakion, but suddenly gave it up for the rest of the *Prooimion* and the first *Oikos*, the two stanzas found with notation in the Psaltika manuscripts from a slightly later period.

Relatively few complete or almost complete copies of the psaltikon and even less asmatika have been preserved to our days - all furnished with Middle Byzantine notation. From the Eastern part of the Empire, only five remain: four psaltika (viz. Patmos 221 (psaltikon AD 1162 < 1179); Sinai gr. 1280 (psaltikon 13th-14th); Sinai gr. 1314 (psaltikon 14th c.); Ochrid 59 (psaltikon 13th-14th c.)) and two asmatika (viz. Kastoria 8 (asmatikon 14th c.), Athos, Laura Γ 3 (asmatikon 15th c.)). The remaining MSS, about four times this figure, are of Italo-Greek origin, and they probably testify to the adoption of the parts of the Constantinopolitan Cathedral repertoire in the newly founded and reformed Byzantine monasteries of Southern Italy under the protection of the Norman Kings in the 12th century.

The psaltikon is the soloist’s book containing chants for the *prokeimenon* of the Divine Liturgy and the Offices, the verses of the so-called great *troparia*, the *alléloúia* verses for the Divine Liturgy, the great responsories (*hypakoai*), the kontakia for the whole year, and, in a rare case, the full *Akathistos Hymn*. In Fig. 7 is shown the middle Byzantine counterpart for the Good Friday kontakion rendered in Palaeobyzantine notation above.

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The asmatikon is the designation of books deriving in various ways from the corresponding book for the trained choir of the psaltai at Hagia Sophia. The functional division between the two collections is so strictly observed that in the case of responsorial chants such as the prokeimena, which are performed in part by the soloist (psaltēs), in part by the choir (psaltai), the solo sections appear in the psaltikon, the choral sections in the asmatikon; both books are required to reconstruct the cathedral chants.

That division extends to style too. The psaltikon has its own characteristic, melismatic formulae that differ in some respects from those seen in the melodies of the asmatikon. For example, chants such as the hypakoai and kontakia may occur in both books, but also in this case music depends upon the main style of the collection in which they are found.

In the following, I shall use a responsorial chant type, the so-called Prokeimenon sung before Apostle readings, to demonstrate that even in the Psaltikon cathedral rite repertories, formulae governed by text accent may be discerned. The prokeimena are possibly derived ultimately from archetypes of early Christian psalmody, where the congregation responded with refrains to the verses of Psalms sung by a soloist (cantor). In the development of the early rites, the psalmody seems to have been modified in various ways. A successive reduction in the number of verses to be sung might correspond to the institutionalisation of the liturgies in the ancient Christian metropoles. We see in the earliest sources prescribing - in prose (in sources without notation) - a kind of ‘modified’ responsorial psalmody. The selection of particular Psalm-verses for particular liturgical occasions soon became a set tradition in Jerusalem, Rome, Alexandria - and also in the Byzantine cathedral rite.

The melismatic character of these psalmodic chants is clearly a sign of musical approach
in which formulaic melodies might accompany the texts in a way that had not only a ‘beauti-
ifying’ character, but probably carried a message together with the words themselves.

In the administrations of sacraments – to mention a clear example – ‘correctness’ of the
words had a much higher priority than in the responsorial psalmody. These verses were
selected from the OT-Psalter to announce also the prophetic justification of the actual litur-
gical feast. Given the institutional back-ground of the trained soloists and choir in Hagia
Sophia, the chants should not only be seen as particular artistic form, but the music partic-
ipates in the totality of liturgical action as performed by priests, congregation and chanters
together.

6.1.1 The Prokeimena settings

At first sight, the most striking feature of the cathedral rite prokeimena is the use of the so-
called double-gamma-endings. The two gammas represent a sung syllable, as an extension
of the final syllable. The double gammas are known also from the asmatikon and they seem
to have a connection with the performance practice so different from our art-music of to-
day, where the giving of intonation tones to the choirs and tuning of instruments - although
these features might have clear musical qualities in themselves - are not considered a part
of the performance. In quite the opposite way, the intonations and double-gammas could be
seen as a practical means to administer chant practice. The ‘regular’ and modally defined
final tone is the one sung on the vowel immediately before the first group of gammas -
the gammas probably representing a nasal melodic extension of the word, reaffirming the
modality by its characteristic leaps and steps, leading on to what is to be sung next. The
presence of the double gammas in the musical manuscripts is in this interpretation linked
to the practices of professional soloists/choirs at Hagia Sophia. Eventually this feature
became a standard idiom of the cathedral chanting, wherever the chant manuscripts were
copied (e.g. Italy).

In the prokeimena, the the melody generally matches text syntax and accentuation and
is structured by the placement of the melismas, marked in Fig. 8 with bold type-face:

The text accents are expressed musically by sustain - prolonged tones as diple or kratema
(marked here by ‘s’), but in addition often supplemented by a tonic accent in the opening
or the middle of the phrase, most often neumed as an oxeía or petasthé.

In opposition to simple psalmody, this principle of musical accentuation is extended
also to the final cadences, embodied in an extended and (for the prokeimenon-repertoire)
standard melisma.

This melismatic setting seems to have been accomplished at the expense of complete-
ness of the Biblical chant text, which appears only in a truncated form. Some have inter-
preted this abbreviation as a ‘degeneration’ of the original, Proto-Christian tradition of
responsorial psalmody. Yet we see the skeleton of the age old psalmody in the refrain

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selected for the celebration of the Anastasis (verse twenty-four) and that the subsequent selected verses at least appear in numeric order.

Other interpretations - namely that either the choir should complete the verses, or the laós, the congregation, find little support in the manuscripts and liturgical orders. For some of the prokeimena, the refrain is taken up and brought to ‘scriptural completion’ end by the so-called Dochai, found in the Asmatikon-collection, for others not. The original parallelisms inherent in the poetic composition of the Psalter makes it in many instances possible to leave the second member out without loosing much of the meaning (the ‘missing’ words from Septuaginta (LXX) are supplied in the right column with grey shaded letters). If the stichoi were performed only in their truncated form, the theological message was cut down to an absolute minimum textually seen, but in their musical form they might nevertheless have actualised a plurality of meanings to those participating in the liturgical acts.

6.2 The ownership of the Psaltika-Asamatika and other chant manuscripts

In South-Italy, the monasteries were principal centres of Byzantine culture and cult; major cathedrals of the Byzantine rite did not exist. It is, therefore, no surprise that the monasteries initially ordered the production of Byzantine manuscripts for the cathedral chants to be able to imitate a Constantinopolitan tradition that already from the period of their foundation was cultivated in many monastic houses elsewhere in the Byzantine cultural sphere, along
with the offices according to the Stoudite-Sabbaite rite. The monastery of the Evergetis monastery in Constantinople had included these elements in their Typikon, the order of services that is the most detailed of the known liturgical Typika. Another text, similar to the Evergetis Typikon, was employed as a model for the new Typikon for the monastery of the Santissimo Salvatore at Messina, Sicily (founded AD 1131). The liturgical rubrics in the Typikon deals, differently from the Evergetis order, with “ὁ λαός” (‘the people’), mentions the choirs and church officials as if in a secular rite. Psaltika and asmatika associated with the Messina monastery are preserved in the Messina University Library (Bucca 2012).

From St. John’s Monastery in Patmos, we have preserved a list of the holdings of books from c. 1200. It mentions a number of chant manuscripts, among these also a Psaltikon manuscript that may very well be the one we know as Patmos 221 (see above). Along with that manuscript the library list mentions a few Stichera and a Heirmologion. One of the Sticheraria is described as ‘palaiótonos’, i.e. furnished with the old (viz. Palaeobyzantine) notation. After the invention and early dissemination of the Middle Byzantine notation, Palaobyzantine musical manuscripts continued to be used in many places, and even new manuscripts in Palaeobyzantine notation were produced. This smooth transition from one notational syntax to another attests to the autonomy of the chant tradition in its entirety.

6.3 The Papadikai and Akolouthiai-manuscripts (c. 1300–)

While many chant manuscripts of the eleventh-14th centuries were copied for and held by institutions for the maintenance of their local coinage of the Byzantine rite, it seems that the manuscripts generally changed in character during the last centuries of the Byzantine era. In the Akolouthiai-manuscripts, a manuscript type often associated with one of its early composers/editors Ioannes Koukouzeles, the contents differ from one manuscript to another to a greater extent than in the traditional chant manuscript types mentioned above. Around some traditional blocks of simple ordinary chants and few remnants of the Psaltikon and Asmatikon, each scribe has gathered a more individually selected body of kalophonic settings in these manuscripts. The designation ‘by my teacher’ is occasionally seen in the rubrics, and pieces composed or edited by the very scribe (and declared as such in the rubrics!) are not rare.

Moreover, the Akolouthiai-manuscripts are regularly prefaced by a brief collection of materials for teaching the basics of the middle Byzantine notation and exercises to improve the reading skills. The adjective papadikós in the title of the earliest versions of these collections of didactic material is derived from the word ‘papas’ (on the root *papad-), presumably not in the sense of ‘priest’, but rather as an equivalent to psaltēs (the soloist or precentor). Finally, the manuscripts are often so small that the designation ‘pocket-book’ is well deserved.

It is reasonable to conclude that these types of chant manuscripts were the personal tools used by chant teachers, who earned money from accepting chant pupils from outside.
the monastery. Markouris (2009) has found and published a number of contracts of chant apprenticeships in Crete from the fourteenth and fifteenth centuries. That chant teaching were increasingly privatised in the later period may also be deduced from the following ironic? chant text, found in a number of Papadikai, set to an extremely challenging melody modulating through all eight modes:

\[ \text{Ο θέλων μουσικὴν μαθεῖν καὶ θέλων πενέσθαι} \\
\text{θέλει πολλὰς ύπομονάς, θέλει πολλὰς ήμέρας} \\
\text{θέλει καλὸν σωφρονισμὸν καὶ φόβον τοῦ Κυρίου} \\
\text{τιμὴν πρὸς τὸν διδάσκαλον, δουκάτα εἰς τὰς χείρας} \\
\text{tóte νά μάθει ο μαθητής καὶ τέλειος νά γίνη.} \]

Who want to learn the music, must be willing to be poor, willing to suffer many hardships, to work day after day, to exercise self-control, modesty and fear the Lord, pay honour to the teacher (pass silver coins in his hands!), then the disciple will learn, and reach perfection!

Which consequences might such a development have for the stability of chant traditions and the whole concept ‘chant transmission”? It is difficult to answer this question now, but it can be assumed that such wide ranging changes in the milieu around the chant culture did probably also change the premises of the oral-aural transmission mechanisms as seen in earlier Byzantium. The individualisation and privatisation may have lead to faster development and innovation, in contrast to earlier conservatism in the reproduction of the traditional repertories and chant book types, controlled by institutions.

7 Chant, location and architectural space

Seldom do Byzantine chant manuscripts themselves contain instructions as to the exact location where a chant is to be sung or the placement of the singers. The chant collections were copied into books that could – in principle – be used anywhere in the Empire. Relatively few singers had competence in musical writing and the ones having these skills did often travel from one place to another, bringing with them manuscripts for copying or instruction. The Typiká, however, qua their local character do give many useful insights into the topography and staging of the liturgical acts described, including chanting. In addition, literary sources, travellers’ and pilgrims’ accounts, deliver further pieces of information about the topographical contexts of chant performance.

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We must assume that the physical surroundings did influence the maintenance and the development of the chant traditions and genres used in specific locations, although the same chants (i.e. the same text and sequence of melody) occasionally were performed in different places, depending on the liturgical demands of the specific services. Thus the feed-back effect between the performers and the sound-scape, resulting in specific behaviours and practices are hard to discern directly in the written sources, given the way these documents work according to the line of thoughts presented above. But since performing of specific services and chants recurrently took place in the same spatial contexts, the ‘physics’ did most likely leave its imprint on the specific chant genres and traditions, over time.

7.1 Singing in streets, squares and courtyards

The stational liturgy of Constantinople has since the publication of Baldovin’s *The Urban Character of Christian Worship: The Origins, Development and Meaning of Stational Liturgy* (1987) been increasingly incorporated in studies of the history of Byzantine liturgy. Many chants have been identifies as processional hymns, such as the *Trishagion*, litanies and groups of processional troparia.

It is, technically seen, a difficult task to produce vocal performances out-doors; the constantly varying – and often very brief – reverberation times, disturbing wind, rain etc. interfere necessarily with the performance. Nevertheless, the very act of walking together in procession while singing carries a lot of meanings in itself, meanings that perhaps reduce somewhat the demand for uniform performances or high artistic standards. It is the participation, active or passive, that is the important matter.

Also in monastic contexts, processional singing is documented, like in the Evergetis Typikon. On a number of greater Saints feasts, the celebrant’s entrance-procession at Hesperinos is adorned by the singing of Φῶς ἱλαρόν, and this was also the custom during the whole Triodion period (Lent). At the feast of the Transfiguration, 6 Aug., a procession is circling around the monastery visiting all cells while singing the troparia Σῶσον, Κύριε, τὸν ἱλαρόν, a processional piece also sung by the brethren carrying the Cross at the Adoration on the fourth Friday in Lent, and by the priest, the deacon, and the ecclesiarch (‘liturgist’) while they prepare the Cross for the ceremonies on 14 Sep., the Exaltation of the Holy Cross. Also the melody of this processional hymn is first documented at a later period, in the Akolouthiai-manuscripts from the fourteenth cent. Finally, on Palm Sunday a more extensive singing of different Troparia took place during the procession with palm branches, leaving the main church for the church or chapel of Our Saviour after Orthros. At the regular λιταί (‘processions’) at the Vespers office, litanies seem to have been performed without processional *Stichera* or other *Troparia*, resulting in a very simple musical form.

I guess that out-door singing may lead to some simplicity in melodies and responses, allowing for participation by many and with some security for not being disturbed by incidents en route. The traditions of processional chanting may in have been created mostly
by experience and maintained without the use of writing until the late or post-Byzantine period. During the earlier period, many processional chants may, generally, be said to belong to the category termed by Strunk the ‘marginal repertory’, though processional chant formed an essential part of the totality of Byzantine chant. Today, when we have changed the focus from seeing musical notation as the primary vehicle of the tradition to being one of the technologies integrated in the oral-aural transmission, another term should probably be used, but it is difficult to find another equally brief one to describe the occasionally and heterogeneously notated ‘ordinary’ chants.

7.2 Singing in churches

In 2009-2010 I worked with an auralisation experiment on three Constantinopolitan churches in collaboration with prof. Jens Holger Rindel from the Technical University of Denmark (http://www.odeon.dk/byzantine-hymns-churches-constantinople). The churches studied are the following:

- The church of Sts Sergius and Bacchhus [Volume = 15000 m³, RT(1kHz)= 3 seconds (empty church)]
- Hagia Irene [Volume = 39000m³, RT(1kHz)= 4.3 seconds (empty church)]
- Hagia Sophia [Volume = 255000m³, RT(1kHz)= 10 (empty church)]

Acoustic 3D-models had already been produced in connection with the European-Turkish project CAHRISMA. With departure in anechoic recordings of a chant reconstructed from the Psaltikon-repertory, we produced auralizations with different positions and number of singers, various placement of the artificial listener, and simulation of various numbers of people present as virtual congregation in the churches. The impact of the surroundings is, definitely, much more predictable in confined rooms (or in semi-confined rooms as the ancient theatres) than out-doors, and the experience of difference and nuance in the soundscapes of the three different sized churches was very enlightening.

For the sake of comparison of different types of input, we confronted the reconstructed melody with auralisations in the same surroundings made from anechoic recordings with Leonidas Asteris, the then protopsaltes of the Great Chruch, representing the contemporary chant tradition of the Ecumenical Patriarchate. In this chant style, many fine ornaments were clearly audible in the Church of Sts Sergius & Bacchus, while they were blurred or almost disappeared in the greater churches with more resonance. The reconstruction of the psaltikon in a style without such ornamentation, on the other hand, seemed to create a specific and more clearly discernible sound picture in the greater churches. Tempo means of course a lot, and further experiments with real-time live-feed-back of the the auralisation to the one doing the performer would be an important addition to such experiments.
The concert program of Byzantine music which I prepared in collaboration with Lykourgos Angelopoulos for the congress of Byzantine chant at the 1996 International Congress of Byzantine Studies in Copenhagen (and described in some detail at the end of Lingas’ paper “Performance Practice and the Politics of Transcribing Byzantine Chant”) lasted almost one third longer than planned, due to the feed-back from the resonant acoustics in Our Lady’s Cathedral.

Especially the ison-singing (the use of drone), which was a part of the experiment, was interesting; the constant repetition of the same frequency in the churches with longer resonance times creates the feeling with the singers and listeners that it was almost ‘running by itself’. It is clear that the historical information of rather small sizes of the choirs in Hagia Sophia would not prevent them from creating impressive performances in the huge cathedral. Even if this drone practice is not described in sources from before c. 1500, the experiment might nevertheless hint at the plausibility and characteristics of using this practice in cathedral context.

Another musical feature – one which is in fact present in the musical manuscripts, the so-called double-gamma endings mentioned above – did give a specific tonal effect, creating at cadence positions a tonal area of more tones sounding together in the larger church. I shall not claim that the mystery of the function and meaning of this musical feature is now solved, but it has at least been illuminated from a new angle. The double-gamma-endings belonged exclusively to the cathedral genres. They are occasionally seen also in the later documents, in the akolouthiai-manuscripts, where these include a few selections from the Asmatika and Psaltika, but in the post-Byzantine chant traditions this feature again disappeared. If I should point to a specific element in which the cathedral soundscape became traceable in the neumated manuscripts, it would be these endings – together with the related phenomenon the ’asmatic’ syllables.

8 Conclusion

I hope that it has been made clear that this is a plea for giving up idea of categorising chant traditions in a one-dimensional continuum from ‘oral’ to ‘written’. Instead I point to the mechanics of oral-aural chant transmission and the many different roles the written sources may play in connection the ‘chant administration’ as seen in its sociological, ritual, and physical contexts.

It is in this view basically the human mind that administers a traditional musical culture according to what is received, how it is perceived, in which surroundings it is heard, by which means it is recognised, how it is remembered and its meaning deduced, how it is recreated, and, finally, how it is passed on the next generations through practice and performance.