Byzantine Ecclesiastical Music

Tradition of Eastern Chant

Sydney
2007
Cover by Basilios Psilacos:
THE WHEEL - AN ANCIENT SYSTEM FOR LEARNING THE MODES

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FOR

MY FATHER AND MOTHER
WHO THROUGH THEIR LOVE
I CAME TO BE!

MY TEACHERS
WHO THROUGH THEIR TEACHINGS
I AM ABLE TO SEE!

MUSIC AND HER TRADITIONS
WHO THROUGH THEIR EXPRESSIONS
HAVE SET ME FREE!
ABSTRACT

Basilios Psilacos was born in 1972 in Adelaide (Australia). He completed his Bachelor of Theology at St. Andrews Greek Orthodox Theological College in Sydney, and his Masters of Theology (Hons) at the Aristotelian University of Thessaloniki (Greece). Along with his progress of studies he pursued the study of Byzantine music.

His musical interest began at the age of 8 when he started learning the violin. At the age of 15 he took up the art of Byzantine music. His first Byzantine music teacher was the Archon Protopsaltis Mr. Ilias Fraggoulis (Adelaide), his following teacher was the late Archon Protopsaltis Mr. Antonios Aristodemou (+2000, Sydney). In Thessaloniki, his teacher was the late Archon Music-teacher and Protopsaltis of the Ecumenical Patriarchate Mr. Demetrios Sourlantzis (+2006). There he received his Diploma, and Graduate Diploma of Byzantine music. During his studies in Thessaloniki he took part in various Byzantine music choirs, and chanted for the liturgical services at the Holy Monastery of Vlatathon with the Professor of Byzantine music Mr. Antonios Alygizakis. After completing his studies he began teaching Byzantine music in 2001.
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### Glossary

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"Tradition is a way of life, bringing people together, not only in place, but also in time."

Every living creature great or small expresses its unique beingness. It is a mystery when one expresses himself/herself. It relieves one from depression and brings him/her in communion with another being. Even greater a mystery it is, when many express in unison.

Music is a powerful tool for expressing oneself, and transforms into majestic beauty when used in expressing oneself to his/her Creator. Byzantine music is just that, a tool used in bringing people together in order for them to express themselves to their Creator. When people chant with Byzantine music, they are connecting not only with those around them, but also with those of previous generations who partook in the handing down of this tradition.

Byzantine music is a centuries old tradition with many developmental experiences. When comparing sources of different periods, one sees how time may change the meaning of the same object. A particular sign, for instance, some centuries ago may have meant something different from what it means today. This book does not intend to show these differences. The purpose of this book is to present simply and concisely as possible, an icon of what this art and tradition has developed into, and what it involves today.
The text is set out to aid the English speaking student of Byzantine music, and is divided into five chapters. The first chapter is set out in a guiding way with practical exercises, for a student’s first steps towards learning to read Byzantine notation. The following chapters differ in that they are more theoretically based. The second chapter discusses what I call the elements of contemporary Byzantine music. The third chapter focuses on how these elements work together in forming an icon of Byzantine musical art. I have dedicated the fourth chapter to rhythm. Both rhythm and melody are not complete without each other. In fact, the ancient Greeks regarded rhythm as masculine and melody as feminine. Although various technicalities discussed in this chapter may seem irrelevant for learning to read Byzantine notation, they aid the understanding of rhythm as a whole. As a close, in the final chapter I touch upon various themes that Byzantine music involves.

I hope this book inspires the reader in seeing the many avenues of exploring the art of Byzantine music. Like any subject, no one book completely holds the abyss of knowledge. Every book acts as a stepping stone towards a greater understanding, and a greater expression of divine unity.

ACKNOWLEDGEMENTS

I express my deep gratitude to the late Archon Mr. Demetrios Sourlantzis for providing the major part of the bibliography and advice for this book. Also, I warmly thank the Very Rev. Angelo Alifierakis, Dr. Kenneth R. Doolan, Nick Sissopoulos, Anna Sen, Sophie Chapley, and ......................... for their assistance.

Basilios Psilacos
Getting Started with Practical Exercises

In the beginning, when we first learnt how to read, we were taught the alphabet along with the pronunciation of each letter.

Learning Byzantine music is like learning a language. The first lesson is to learn the musical alphabet, i.e. the musical notes. Once we learn by heart the names of every note, we proceed in pronouncing them with the addition of melodic sound or pitch. It may seem difficult at first, but like any exercise, the more we practise, the easier it gets.¹
The names for Byzantine music notes originate from the first seven letters of the Greek alphabet. They combine with other letters of the alphabet to make complete syllables.

- The first letter α (alpha), becomes Πα (Pa), which is pronounced as Pah.
- The second letter β (beta), becomes Βου (Vou). The vowel has the sound of u in put.
- The third letter γ (gamma), becomes Γα (Ga). Here the soft guttural sound of γ is best learnt by listening to a Greek. It has an equivalent consonant sound of y in yellow.
- The fourth letter δ (delta), becomes Δι (Thi). The sound of δ is always pronounced as th in they, so Thi sounds like this without the s.
- The fifth letter ε (epsilon), becomes Κε (Ke), which is pronounced as ke in kettle.
- The sixth letter ζ (zita), becomes Ζω (Zo), which is pronounced as zo in zombi.
- The seventh letter η (ita), becomes Νη (Ni), which is pronounced as ni in nickle.

The next step is to add the musical pitch to the names of the notes already learnt. With the aid of a piano or a tuning instrument, we can find the corresponding pitch for these notes. On an instrument, the Western European musical note C (also known as Doh), corresponds to the Byzantine musical note Ni. So, all we need to do now is to find the pitch for note C, and sing the name Ni on that same pitch of C.
The same stands for the other following notes:
- The note D (or Re) corresponds to the note Pa.
- The note E (or Mi) corresponds to the note Vou.
- The note F (or Fah) corresponds to the note Ga.
- The note G (or Soh) corresponds to the note Thi.
- The note A (or Lah) corresponds to the note Ke.
- The note B (or Si) corresponds to the note Zo.

The presence of a teacher for feedback is of much importance in this step. This step is the foundation for all exercises that will follow. We need to learn how to control our voice i.e. our instrument, for without control progress is limited.

**Exercise 1.2**

Learn to match the pitch of your voice to the pitch of the melodic notes given by your teacher, in both ascending and descending order. Once you master this, you will have learnt the basic musical scale from which many various scales originate.

(Low) Ni, Pa, Vou, Ga, Thi, Ke, Zo, (High) Ni.

Another very important ingredient for learning Byzantine music, or any music for that matter, is rhythm. My teacher explained it nicely about those who have no rhythm. ‘A singer with a beautiful voice and without rhythm, is like a person who is well dressed with the most expensive clothes, but walks like a drunk’.

The basic rhythm that we need to know at this point, before we progress any further, is the simple two beat rhythm. Let us consider the second-hand of a clock for explanatory purposes. Each second, shall represent the time spent for each beat of the two beat rhythm, one, two, one, two, e.t.c. A helpful aid to keeping in time, or in rhythm, is to tap your hand on the table or on your knee, at every first beat of the two beat rhythm, i.e. one-tap, two, one-tap, two, e.t.c. On every second beat of the two beat rhythm, your
hand should not be tapping, but waiting in the air for the next tap. We shall call the first beat the *down beat*, and the second beat the *up beat*.

**EXERCISE 1.3**

Practice the scale in the two beat rhythm.
- In ascending order:
- In descending order:
  - *(High)* *Ni* on the down beat, *Zo* on the up beat, e.t.c.

**1.2 THE BASIC QUANTITATIVE CHARACTERS.**

Quantitative characters tell us what to do with our voice whilst chanting in rhythm. They either tell us to ascend the musical scale, decend the musical scale, or keep the same note or pitch. The performance of a character therefore, depends on its previous or precedent character. Once the previous exercises are performed with ease, we are ready to be introduced to the following basic characters.

**THE ISON,**

 tells us that we shall repeat the the pitch of the precedent character’s pitch, e.g. if the performance of its previous character is on *Ni*, then the ison will be performed as a *Ni* for one whole beat.

**THE OLGON,**

 tells us that we shall ascend to the above note from the pitch of its precedent character, e.g. if the performance of its previous character is on note *Ni*, then the performance of the Oligon will
be on note *Pa*, for one whole beat. If the precedent character is performed on *Vou*, then the Oligon will be performed on *Ga*, e.t.c.

**THE APOSTROFOS,**

 tells us that we shall descend to the below note from the pitch of its precedent character, e.g. if the performance of its previous character is on note *Thi*, then the performance of the Apostrofos will be on note *Ga*. If the precedent character is performed on *Vou*, then the Apostrofos will be performed on *Pa*.

**FOR READING BYZANTINE NOTATION,**

consider the following points:

- Reading progresses from left to right.
- Before the first character there will be a key indicating from where the first character will progress.
- Syllables are found under each musical character. These are to be pronounced during the corresponding musical characters are performed. This method of chanting is called *melos*. We will not be concerned with *melos* until further on in our exercises. At this point we shall proceed with the other method called *paralagi* (the equivalent to *solfège* in Western European music). During *paralagi*, the names of the notes performed are chanted, e.g. if a musical character corresponds to the pitch of *Ke*, *Ke* will be chanted.
- Throughout the Byzantine notation, vertical lines called bars appear. They aid in measuring the rhythm of the melody, e.g. when a melody is in two beat rhythm, there will be groups of two characters of one beat each, embraced by a bar on either side. Also, always remember that the beat following a bar line will always be a down beat.
- At the start and at various points throughout melodies, keys will appear. The key at the start of a melody indicates from where the first character will proceed from. The keys that are
found at various points within the melody, are simpler and indicate where the melody stands at that point on the melodic scale being used. (For more theory see section 2.3 p.77)

For all the exercises that follow, the key \( \overset{\lambda}{\nabla} \) Ni, or simply \( \overset{\lambda}{\nabla} \), indicates that the first character of the melody will proceed from the note Ni, and that the melody will be using that scale already learnt in previous exercises. Also, as an introductory guide, only the first few exercises will include the names of the first few notes, underneath the corresponding characters performed.

Let us begin coordinating our eyes with reading the music characters, our voice with chanting note names, and our hands with tapping the rhythm, all in synchronicity.

**Exercise 2.1**

\[
\begin{align*}
\overset{\lambda}{\nabla} & \quad 1 & 2 & | & 1 & 2 & | & 1 & 2 & | \overset{\lambda}{\nabla} \\
\text{Ni} & \quad \text{Ni} & \quad \text{Pa} & \quad \text{Pa} & \quad \text{Vou} & \quad \text{Vou} & \quad \text{Ga} & \quad \text{Ga} & \quad \text{Thi} & \quad \text{Thi} \\
\text{Ke} & \quad \text{Ke} & \quad \text{Zo} & \quad \text{Zo} & \quad \text{Ni} & \quad \text{Ni} & \quad \text{Ni} & \quad \text{Ni} & \quad \text{Zo} & \quad \text{Zo} \\
\text{Ke} & \quad \ldots
\end{align*}
\]

**Exercise 2.2**

\[
\begin{align*}
\overset{\lambda}{\nabla} & \quad \ldots \\
\text{Ni} & \quad \text{Pa} & \quad \text{Vou} & \quad \text{Ga} \ldots \\
\overset{\lambda}{\nabla} & \quad \ldots
\end{align*}
\]
EXERCISE 2.3

For the Cross in Ex. 2.5, see p.58.

MORE PRACTICE
The hyphen, 

joins two characters of the same pitch whilst extending the same syllable.

**Exercise 2.7**

Ni Ni Ni... i Pa Pa Pa... a Vou Vou Vou... ou

Ω
The Petasti,        

like the Oligon, tells us that we shall ascend to the above note from the pitch of its precedent character, e.g. if the performance of its previous character is on note Pa, then the performance of the Petasti will be on note Vou, for one whole beat. If the precedent character is performed on Ga, then the Petasti will be performed on Thi, e.t.c.

The Petasti is also considered a qualitative character because it affects the expression of the performer’s voice. This is best learnt from a teacher who knows the various number of expressions. At this point of our exercises, we shall consider only its quantitative value.

The Kentimata,        

like the Oligon and Petasti, tell us that we shall ascend to the above note from the pitch of its precedent character, e.g. if the performance of its previous character is on note Ni, then the performance of the Kentimata will be on note Pa, for one whole
beat. If the precedent character is performed on *Vou*, then the Kentimata will be performed on *Ga*, e.t.c.

**Exercise 2.9**

\[ \begin{array}{c}
\text{Exercise 2.10} \\
\hline
\end{array} \]

**Exercise 2.10**

\[ \begin{array}{c}
\text{More Practice} \\
2.11
\end{array} \]

**More Practice**

2.11
In this section we shall cover how characters are extended for more than one beat. When a character is to be extended from one to two or more beats, it will be in combination with one of the following characters.

**The Klasma,**

 tells us to extend the duration of a character by one beat. In combination, it is found either usually above, or below the other character. Its performance is best explained with that of the above mentioned Hyphen.

\[
\text{Ni} = \overbrace{\text{Ni... i}}
\]
At times, the Klasma will also have an effect on musical expression. This is best learnt, in the course of time, from a teacher or performer who knows how and when the expression is appropriate. For our exercises at this point, we shall consider only its quality of time.

**Exercise 3.1**

```
\[ \text{Exercise 3.1} \]
```

The Hapli, \( \hat{H} \), like the Klasma, tells us to extend the duration of a character by one beat. In combination, it is found below the other character.

**Exercise 3.2**

```
\[ \text{Exercise 3.2} \]
```
At this point in our course of exercises, before we proceed in introducing more characters, it is appropriate to cover other two types of rhythm, i.e. the three beat and four beat rhythms.

The three beat rhythm consists of three beats for every measure between bars. For keeping in rhythm with our hand, our hand’s gesture consists of a down beat, and two separate up beats of which the first is a direction across to the right, followed by an upwards direction towards our hand’s original position, ready for the following three beat measure.

The four beat rhythm consists of four beats for every measure between bars. Our hand’s gesture begins with a down beat, followed by a movement towards the left and then another towards
the right, and finally with un upwards movement for the fourth and last beat of the measured rhythm (for more theory see section 4.9 p.172). Consider the following seven exercises for practising the three beat and four beat rhythms, with correct hand gesture.

**THREE BEAT RHYTHM EXERCISES**

3.5

\[ \begin{array}{c|c|c|c|c} 1 & 2 & 3 & \backslash & \n \end{array} \]

3.6

\[ \begin{array}{c|c|c|c} 1+2 & 3 & \backslash & \n \end{array} \]

3.7

\[ \begin{array}{c|c|c|c} 1 & 2+3 & \backslash & \n \end{array} \]

**FOUR BEAT RHYTHM EXERCISES**

3.8

\[ \begin{array}{c|c|c|c|c} 1 & 2 & 3 & 4 & \backslash & \n \end{array} \]
The Dipli,

![Musical notation diagram]

tells us to extend the duration of a character by two beats. In combination, it is found below the other character.

**Exercise 3.12**  
*In three beat rhythm.*

![Musical notation diagram]
**Exercise 3.13**  In three beat rhythm.

In three beat rhythm.

![Three beat rhythm notation](image)

**The Tripli,**

The Tripli, **...** tells us to extend the duration of a character by three beats. In combination, it is found below the other character.

**Exercise 3.14**  In four beat rhythm.

In four beat rhythm.

![Four beat rhythm notation](image)

**Exercise 3.15**  In four beat rhythm.

In four beat rhythm.

![Four beat rhythm notation](image)
It is possible to extend the duration of characters to more than four beats, but this is rarely the case in liturgical music. This is done by just adding an extra Hapli for every extra beat desired.

**EMPTY BEATS,**

also known as resting beats, tell us to perform a certain number of beats in silence. The Hapli is used here in combination with the Vareia. The number of Haples that follow the Vareia correspond to the number of beats that are performed in silence.

**Exercise 3.16**

```
\[ \text{\textcopyright} \]
```

**Exercise 3.17**

```
\[ \text{\textcopyright} \]
```

**Exercise 3.18  In four beat rhythm.**

```
\[ \text{\textcopyright} \]
```
An interval is the distance or step between two consecutive notes within a scale. The number of intervals between two notes vary depending on which two notes are involved. For example, the distance between notes $Ni$ and the $Pa$ just above it, is one interval, and the distance between notes $Ni$ and the above $Vou$, is two intervals, and so forth.

So far we have covered characters that tell us to either ascend or descend the scale in only one step at a time, i.e. one interval at a time. In this section, we will cover characters that will tell us to ascend or descend in more than one interval at a time, e.g. from note $Ni$ we may ascend to $Vou$ or $Thi$ whilst by-passing the notes in-between i.e. disjunctively.

Some of these characters will stand on their own, while others will be in combination with other characters making compound characters. Let us progress to our next challenge.

### 1.4.1 Ascending and Descending Two Intervals.

The following compound characters:

**Oligon with Kentima,**

with the the Kentima either on the right or below the Oligon, and
Oligon with Petasti,

with the Oligon above the Petasti, all tell us to ascend two intervals from the pitch of its precedent character disjunctively.

The Elafron,

on its own, tells us to descend two intervals from the pitch of its precedent character disjunctively, e.g. if the performance of its previous character is on note Thi, then the performance of the Elafron will be on note Vou.
1.4.2 Ascending and Descending Three Intervals.

The following compound characters:

**Oligon with Kentima,**

with the Kentima above the Oligon, and

**Petasti with Kentima,**

also with the Kentima above the Petasti, tell us to ascend three intervals from the pitch of its precedent character disjunctively.

**The Elafron and Apostrofos,**

with the Apostrofos below the Elafron, tells us to descend three
intervals from the pitch of its precedent character disjunctively, e.g. if we are to descend three intervals from note Thi, we will find ourselves on note Pa.

**Exercise 4.7**

```
\[ \text{\textcopyright} \]

**Exercise 4.8**

```
\[ \text{\textcopyright} \]

**More Practice**  
Ex. 4.9 in four beat rhythm.

```
\[ \text{\textcopyright} \]
1.4.3 Ascending and Descending Four Intervals.

The following compound characters:

Oligon with Hypsili,

with the Hypsili above and to the right of the Oligon, and

Try Ex. 6.27 on p.66
PETASTI WITH HYPSILI,

also with the Hypsili above and to the right of the Petasti, tell us to ascend four intervals from the pitch of its precedent character disjunctively.

THE HAMILI,

tells us to descend four intervals from the pitch of its precedent character disjunctively.

Exercise 4.11

More Practice  In four beat rhythm.

4.12
1.4.4 ASCENDING AND DESCENDING FIVE INTERVALS.

The following compound characters:

**OLIGON WITH HYPSILI,**

with the Hypsili above and to the left of the Oligon, and

**PETASTI WITH HYPSILI,**

also with the Hypsili above and to the left of the Petasti, tell us to ascend five intervals from the pitch of its precedent character disjunctively.

**THE HAMILI WITH APOSTROFOS,**

with the Apostrofos below the Hamili, tells us to descend five intervals from the pitch of its precedent character disjunctively.

---

**EXERCISE 4.14**

\[ \begin{array}{c}
\text{Exercise Image} \\
\end{array} \]
1.4.5 Ascending and Descending Six Intervals.

The following compound characters:

Oligon with Kentima and Hypsili,

with the Hypsili above and to the right of the Oligon, and the Kentima above the Oligon, and

Petasti with Kentima and Hypsili,
also with the Hypsili above and to the right of the Petasti, and the Kentima above the Petasti, tell us to ascend six intervals from the pitch of its precedent character disjunctively, e.g. if we are to ascend six intervals from note $Ni$, we will find ourselves on note $Zo$.

**THE HAMILI WITH ELAFRON,**

with the Elafron below the Hamili, tells us to descend six intervals from the pitch of its precedent character disjunctively.

---

**EXERCISE 4.16**

\[
\begin{align*}
\text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \\
\text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \\
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\text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \\
\end{align*}
\]

---

**MORE PRACTICE**

**4.17**

\[
\begin{align*}
\text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \\
\text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \quad \text{\textcopyright} \\
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\end{align*}
\]
1.4.6 Ascending and Descending Seven Intervals.

The following compound characters:

**Oligon with Kentima and Hypsili,**

with the Kentima above the Oligon, and the Hypsili centred above the Kentima, and

**Petasti with Kentima and Hypsili,**

also with the Kentima above the Petasti, and the Hypsili centred above the Kentima, tell us to ascend seven intervals, or an octave, from the pitch of its precedent character disjunctively.

**The Hamili with Elafron and Apostrofos,**

with the Elafron below the Hamili, and the Apostrofos below the Elafron, tells us to descend seven intervals, or an octave, from the pitch of its precedent character disjunctively.
More Practice  In four beat rhythm.

4.19

\[
\begin{align*}
\frac{\gamma}{\sigma} & \quad \frac{\eta}{\nu} \\
\frac{\zeta}{\omicron} & \quad \frac{\pi}{\varphi} \\
\frac{\alpha}{\shyn} & \quad \frac{\mu}{\nu} \\
\frac{\nu}{\tau} & \quad \frac{\sigma}{\varsigma} \\
\frac{\xi}{\chi} & \quad \frac{\rho}{\varrho} \\
\frac{\lambda}{\lambda} & \quad \frac{\eta}{\nu} \\
\frac{\gamma}{\sigma} & \quad \frac{\eta}{\nu} \\
\frac{\zeta}{\omicron} & \quad \frac{\pi}{\varphi} \\
\frac{\alpha}{\shyn} & \quad \frac{\mu}{\nu} \\
\frac{\nu}{\tau} & \quad \frac{\sigma}{\varsigma} \\
\frac{\xi}{\chi} & \quad \frac{\rho}{\varrho} \\
\frac{\lambda}{\lambda} & \quad \frac{\eta}{\nu} \\
\end{align*}
\]

4.20

\[
\begin{align*}
\frac{\gamma}{\sigma} & \quad \frac{\eta}{\nu} \\
\frac{\zeta}{\omicron} & \quad \frac{\pi}{\varphi} \\
\frac{\alpha}{\shyn} & \quad \frac{\mu}{\nu} \\
\frac{\nu}{\tau} & \quad \frac{\sigma}{\varsigma} \\
\frac{\xi}{\chi} & \quad \frac{\rho}{\varrho} \\
\frac{\lambda}{\lambda} & \quad \frac{\eta}{\nu} \\
\frac{\gamma}{\sigma} & \quad \frac{\eta}{\nu} \\
\frac{\zeta}{\omicron} & \quad \frac{\pi}{\varphi} \\
\frac{\alpha}{\shyn} & \quad \frac{\mu}{\nu} \\
\frac{\nu}{\tau} & \quad \frac{\sigma}{\varsigma} \\
\frac{\xi}{\chi} & \quad \frac{\rho}{\varrho} \\
\frac{\lambda}{\lambda} & \quad \frac{\eta}{\nu} \\
\end{align*}
\]
1.4.7 Characters in Combination.

There are some combination characters that have a duration of two beats, i.e. more than one of the characters in the combination are performed separately. Also, the order in which the characters in combination are performed, depends on their specific position within the combination character.

**The Oligon with Kentimata,**

with the Kentimata above the Oligon, tell us to first perform the Oligon on the down beat, followed by the Kentimata on the up beat. This combination is analysed like so:

```
\[ \text{\text{Oligon}} = - - \]
```

**Exercise 4.21**

\[ \begin{align*}
\text{\text{Oligon}} & \quad \text{\text{Kentimata}} \\
\text{\text{Oligon}} & \quad \text{\text{Kentimata}} \\
\text{\text{Oligon}} & \quad \text{\text{Kentimata}} \\
\text{\text{Oligon}} & \quad \text{\text{Kentimata}} \\
\text{\text{Oligon}} & \quad \text{\text{Kentimata}} \\
\end{align*} \]

**The Kentimata with Oligon,**

with the Oligon above the Kentimata, tell us to first perform the Kentimata, followed by the Oligon. This combination is analysed like so:

```
\[ \text{\text{Kentimata}} = - - \]
```

**Exercise 4.22** *In four beat rhythm.*

\[ \begin{align*}
\text{\text{Kentimata}} & \quad \text{\text{Oligon}} \\
\text{\text{Kentimata}} & \quad \text{\text{Oligon}} \\
\text{\text{Kentimata}} & \quad \text{\text{Oligon}} \\
\text{\text{Kentimata}} & \quad \text{\text{Oligon}} \\
\text{\text{Kentimata}} & \quad \text{\text{Oligon}} \\
\end{align*} \]
The Ison and Kentimata, with Oligon,

tell us to only perform the Ison first, followed by the Kentimata. The Oligon is not performed, and the combination is analysed like so:

\[=\]

The Apostrofos and Kentimata, with Oligon,

tell us to only perform the Apostrofos first, followed by the Kentimata. The Oligon here also is not performed, and the combination is analysed like so:

\[=\]

Exercise 4.23  
In four beat rhythm.
The Hyporoe, stands on its own and is performed as two consecutive Apostrofoi. It is analysed like so:

\[ = \cdot \]
The Hyporoe with an Hapli, have a duration of three beats. This combination is analysed like so:

\[ \text{Hyporoe with Hapli} \]
So far we have covered characters which have a timespan of whole-number beats. In this section, we will cover how two or more characters are performed in the timespan of one beat, i.e. working with half, third and quarter beats.

Extra attention is needed for keeping in rhythm in this section. We must remember to always have our hand gestures in constant and regular movements in all exercises. This will make our performance pleasing to the ear. *It is pleasant to walk along with someone who has a regular pace.*
1.5.1 Characters for Decreasing time.

The Gorgon,

when placed on a character, will affect that character and its precedent character. It tells us to perform those two characters in the time of one beat. So both of the effected characters will last for one half a beat each, and together they last for one whole beat, e.g. when a Gorgon is placed on the second of two Isons, their duration is analysed like so:

\[
\frac{1}{2} \quad \frac{1}{2} = \frac{1}{1}
\]

Exercise 5.1

Combination characters with a duration of two or more beats, can also accept the Gorgon, changing their duration. A variety of examples follow.

\[
\frac{\pi}{\nu} = \frac{\pi}{\nu}
\]

Exercise 5.2
Exercise 5.3

\[\begin{align*}
\gamma' & \quad \gamma' \\
\gamma' & \quad \gamma' \\
\gamma' & \quad \gamma' \\
\gamma' & \quad \gamma' \\
\gamma' & \quad \gamma' \\
\gamma' & \quad \gamma' \\
\end{align*}\]

\[\begin{align*}
\frac{\gamma}{\delta} & = \frac{\gamma}{\delta}
\end{align*}\]

Exercise 5.4

\[\begin{align*}
\gamma' & \quad \gamma' \\
\gamma' & \quad \gamma' \\
\gamma' & \quad \gamma' \\
\gamma' & \quad \gamma' \\
\gamma' & \quad \gamma' \\
\gamma' & \quad \gamma' \\
\end{align*}\]

\[\begin{align*}
\frac{\gamma}{\delta} & = \frac{\gamma}{\delta}
\end{align*}\]
More Practice  Ex. 5.9 & 5.10 in four beat rhythm.

5.5
\[
\begin{align*}
\text{Øý} & \quad \text{·} \quad \text{Û} \quad \text{e} \\
\text{·} & \quad \text{·} \quad \text{·} \\
\text{·} & \quad \text{·} \\
\end{align*}
\]

5.6
\[
\begin{align*}
\text{Øý} & \quad \text{·} \quad \text{·} \quad \text{·} \quad \text{·} \\
\text{·} & \quad \text{·} \quad \text{·} \\
\text{·} & \quad \text{·} \\
\end{align*}
\]

5.7
\[
\begin{align*}
\text{Øý} & \quad \text{·} \quad \text{·} \\
\text{·} & \quad \text{·} \quad \text{·} \\
\text{·} & \quad \text{·} \\
\end{align*}
\]

5.8
\[
\begin{align*}
\text{Øý} & \quad \text{·} \quad \text{·} \\
\text{·} & \quad \text{·} \\
\end{align*}
\]
Try Ex. 6.30 on p.67
The Gorgon on a character may also affect the extended time of the precedent character, like the following examples.

\[ \text{Exercise 5.12} \]

\[ \text{Exercise 5.13} \quad \text{In three beat rhythm.} \]

\[ \text{Exercise 5.14} \quad \text{In four beat rhythm.} \]
**Exercise 5.15**

\[
\begin{array}{c}
\frac{5}{2} = \frac{5}{2} \\
\end{array}
\]

**Exercise 5.16**  
_In four beat rhythm._

\[
\begin{array}{c}
\frac{5}{2} = \frac{5}{2} \\
\end{array}
\]
MORE PRACTICE  Ex. 5.19 in four beat rhythm.

5.17
\[ \begin{align*}
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\end{align*} \]

5.18
\[ \begin{align*}
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\end{align*} \]

5.19
\[ \begin{align*}
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\end{align*} \]

5.20
\[ \begin{align*}
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\text{\textbf{\large \textbf{X}}} & \quad \text{\textbf{\large \textbf{X}}} \\
\end{align*} \]
After mastering the performance of the Gorgon, we can progress to a new compound character called the *Running Elafron*.

**The Running Elafron**, is a combination of an Apostrofos with an Elafron. When the Apostrofos and Elafron are found separately, with their separate performance, they are not considered a Running Elafron. Only when they are found joint together, as shown above, the compound character is considered a Running Elafron.

We already know that the Elafron descends disjunctively two intervals from its precedent character’s pitch. In the case of a Running Elafron, this is not so. The melody will descend two intervals from its precedent character, but not disjunctively. The melody will descend in two steps, i.e. one interval at a time, and with the first interval sharing the time of one beat with that of the precedent character. The Running Elafron is analysed like so:

\[
\text{Running Elafron} = \begin{array}{c}
\text{Ison} \\
\text{Elafron}
\end{array}
\]

An example with a preceding Ison is analysed like so:

\[
\text{Ison} = \begin{array}{c}
\text{Elafron} \\
\text{Running Elafron}
\end{array}
\]

It is also possible for the Running Elafron to accept a Klasma, which is analysed like so:

\[
\text{Klasma} = \begin{array}{c}
\text{Elafron} \\
\text{Running Elafron}
\end{array}
\]

Although its analysis is the same for the Hyporoe with Gorgon, like that in exercise 5.4, they differ in their relationship with the chanted syllables. (For more detail see pp.115-16).
Exercise 5.21

More Practice  In four beat rhythm.

5.22
The Digorgon, when placed on a character, will affect three characters, i.e. the one for which it is placed on, the preceding and following characters. It tells us to perform these three characters in the time of one beat. So all three of the effected characters will last for one third of a beat each, and together they last for one whole beat, e.g. when a Digorgon is placed on the second of three Isons, their duration is analysed like so:

\[
\frac{1}{3} \cdot \frac{1}{3} \cdot \frac{1}{3} = 1
\]

**Exercise 5.23**

\[
\begin{align*}
\text{\textregistered} & \quad \text{\textregistered} \quad \text{\textregistered} \quad \text{\textregistered} \\
\text{\textregistered} & \quad \text{\textregistered} \quad \text{\textregistered} \quad \text{\textregistered} \\
\text{\textregistered} & \quad \text{\textregistered} \quad \text{\textregistered} \quad \text{\textregistered} \\
\text{\textregistered} & \quad \text{\textregistered} \quad \text{\textregistered} \quad \text{\textregistered} \\
\text{\textregistered} & \quad \text{\textregistered} \quad \text{\textregistered} \\
\end{align*}
\]

**More Practice**

5.24

\[
\begin{align*}
\text{\textregistered} & \quad \text{\textregistered} \quad \text{\textregistered} \quad \text{\textregistered} \\
\text{\textregistered} & \quad \text{\textregistered} \quad \text{\textregistered} \quad \text{\textregistered} \\
\end{align*}
\]
The Trigorgon, when placed on a character, will affect four characters, i.e. the one for which it is placed on, the preceding character and the following two characters. It tells us to perform these four characters in the time of one beat. So all four of the affected characters will last for one quarter of a beat each, and together they last for one whole beat, e.g. when a Trigorgon is placed on the second of four Isons, their duration is analysed like so:

\[
\begin{array}{cccc}
\text{v} \\
\text{v} \\
\text{v} \\
\text{v} \\
\end{array}
= \text{v}
\]

\[
\begin{array}{cccc}
\frac{1}{4} & \frac{1}{4} & \frac{1}{4} & \frac{1}{4} \\
1 & \\
\end{array}
\]

Exercise 5.28
MORE PRACTISE

5.29

5.30
1.5.2 Characters for Decreasing & Increasing Time.

The Argon,

when placed on a combination character, will have two effects, i.e. that of the Gorgon, and that of the Klasma. The first part of the combination character accepts the Gorgon and the second part accepts the Klasma. It is found on a particular combination character, and is analysed as follows:

\[
\begin{align*}
\text{Exercise 5.32 } & \text{ In four beat rhythm.} \\
\end{align*}
\]
**The Hemiolion,**

when placed on a combination character, will have two effects, i.e. that of the Gorgon, and that of the Dipli. The first part of the combination character accepts the Gorgon and the second part accepts the Dipli. Like the Argon, it is found on a particular combination character, and is analysed as follows:

```
\[ \frac{\text{G}}{\text{D}} = \frac{\text{G}}{\text{D}} \]
```

---

**Exercise 5.33**  
*In four beat rhythm.*

```
\[ \frac{\text{G}}{\text{D}} \mid \frac{\text{G}}{\text{D}} \mid \frac{\text{G}}{\text{D}} \mid \frac{\text{G}}{\text{D}} \]
```

---

**The Diargon,**

when placed on a combination character, will have two effects, i.e. that of the Gorgon, and that of the Tripli. The first part of the combination character accepts the Gorgon and the second part accepts the Tripli. Like the Argon, it is found on a particular combination character, and is analysed as follows:

```
\[ \frac{\text{G}}{\text{D}} = \frac{\text{G}}{\text{D}} \]
```

---

**Exercise 5.34**  
*In four beat rhythm.*

```
\[ \frac{\text{G}}{\text{D}} \mid \frac{\text{G}}{\text{D}} \mid \frac{\text{G}}{\text{D}} \]
```
More Practice  In four beat rhythm, 5.35 in three beat rhythm.

5.35

5.36

5.37
At this point of our progress, we are ready to learn the fine tuning of our voice with the use of qualitative characters and influential signs, and the Byzantine modes with their melodic phrases. It goes without saying that this is best learnt in the presence of a good teacher, and with patience and perseverance.

1.6 THE CHALLENGE.

At this point of our progress, we are ready to learn the fine tuning of our voice with the use of qualitative characters and influential signs, and the Byzantine modes with their melodic phrases. It goes without saying that this is best learnt in the presence of a good teacher, and with patience and perseverance.

1.6.1 QUALITATIVE CHARACTERS CONCERNING EXPRESSION OF VOICE.

THE VAREIA,

when placed before a character, it tells us to perform it with a kind of weight in the voice. (See also pp. 89, 125)
The Homalon, is placed below a character, or two characters of the same pitch. It tells us to perform the last beat, or part of, with an undulation of the voice. (See also p.89)
The Antikenoma,

when written under an Oligon, tells us to perform a throw in our voice. When written with an Hapli under a character, for which it will always have an Apostrofos with Gorgon following, our voice is to be suspended and inseparable. (See also pp.89-90)

Exercise 6.4

In four beat rhythm.

Exercise 6.5
**THE PSIFISTON,**

is written under a character for which it is to be performed with volume and vivacity. Descending characters will always follow. (See also pp.90, 124-5.)

---

**EXERCISE 6.6** *In three beat rhythm.*

---

**EXERCISE 6.7** *In four beat rhythm.*
THE SYNDEMOS OR HETERON,

is placed underneath, connecting characters which are to be performed with smoothness and softness. When connecting two characters, its effect begins from the last beat of the first character. (See also pp.90, 126.)

**Exercise 6.8**

```
\frac{\gamma}{\eta} \ \boxed{\text{\ \boxed{\ \boxed{}}}} \ \boxed{\text{\ \boxed{\ \boxed{}}}} \ \boxed{\text{\ \boxed{\ \boxed{}}}} \ \boxed{\text{\ \boxed{\ \boxed{}}}}
```

**Exercise 6.9**  
*In four beat rhythm.*

```
\frac{\gamma}{\eta} \ \boxed{\text{\ \boxed{\ \boxed{}}}} \ \boxed{\text{\ \boxed{\ \boxed{}}}} \ \boxed{\text{\ \boxed{\ \boxed{}}}} \ \boxed{\text{\ \boxed{\ \boxed{}}}}
```

**Exercise 6.10**  
*In four beat rhythm.*

```
\frac{\gamma}{\eta} \ \boxed{\text{\ \boxed{\ \boxed{}}}} \ \boxed{\text{\ \boxed{\ \boxed{}}}} \ \boxed{\text{\ \boxed{\ \boxed{}}}} \ \boxed{\text{\ \boxed{\ \boxed{}}}}
```
The Cross, 

The Cross, +

tells us to perform a short pause or break in our voice. It is placed before a character in order to perform it with a new breath. (See also p.90)

The Endofonon, 

The Endofonon, 

is placed below a character which is to be performed with a nasal voice, and lasts for all of the character’s duration. It is used for performing syllables ending in em and en, as in the Kratimata hymns.

Exercise 6.11

Exercise 6.12 In four beat rhythm.

Exercise 6.12 In four beat rhythm.
1.6.2 SHARPS AND FLATS

A sharp is placed below a specific melodic character whose pitch is to be augmented, and a flat is placed above a melodic character whose pitch is to be diminished. Performing them with ease, makes a mode easy to learn. At this point we shall not be concerned with theoretical details (as in section 2.8), but only with the basic performing ability of these two influential signs.

Exercise 6.13  With flat on note Zo.

1.6.3 Exercises on other Base notes.

Another stepping stone towards learning Byzantine musical modes, is working with melodic phrases on base notes other than Ni. A base note is one of the dominating notes for every mode. (See also p.129)

We shall progress with melodic exercises, all using the same scale we are using so far, but having a base note other than Ni. These exercises that follow are measured in two beat rhythm, with an occasional three or four beat measure within the exercise. The occasional measures or bars are indicated with the corresponding number within that bar.
EXERCISES

With base note Pa.

6.17

\[
\begin{array}{l}
\frac{\pi}{q} \\
\frac{3}{\pi} \\
\frac{\pi}{q} \\
\frac{\pi}{q}
\end{array}
\]

6.18

\[
\begin{array}{l}
\frac{\pi}{q} \\
\frac{\pi}{q} \\
\frac{\pi}{q} \\
\frac{\pi}{q}
\end{array}
\]
Exercises

With base note Ke.

6.19

6.20
Exercises

With base note Ga.

6.21

6.22
Exercises

With base note Vou.

6.23

6.24
1.6.4 MELODIES

The melodies that follow in this section are set as an aid for the students’ progress towards learning to chant in melos. At various points in this chapter, there are references indicating which of these exercises are to be practiced.

EXERCISE 6.25

Fa- ther___ Son and Ho- ly___ Spi- rit Tri- ni- ty of one___ es- sence and in- se- p’ra- ble
Exercise 6.26

A mercy of peace a sacrifice of praise

Exercise 6.27

We praise you we bless you we give thanks to you O Lord and we entreat you our God

Exercise 6.28

Glory to the Father and the Son and the Holy Spirit Both now and ever and to the ages of ages Amen
EXERCISE 6.29

I will love you, Lord, my strength the Lord is my foundation and my refuge and my deliverer.

EXERCISE 6.30

One is Holy, one is Lord Jesus Christ to the glory of God the Father Amen.
Note

Once this chapter has been thoroughly covered, the student is ready to progress with melodies of the modes found in the *Anastasimatarion*. With the teacher’s guidance, an appropriate order for the modes to be learnt is, first the Diatonic modes (i.e. Plagal Fourth mode, First mode, Plagal First mode, and Fourth mode), then the Enharmonic modes (i.e. Third mode and Varis mode), and finally the Chromatic modes (i.e. Second mode, and Plagal Second mode). The Diatonic Varis mode along with Hagia mode need extra attention, and are suggested to be learnt last.
In this chapter, we shall discuss the various elements or building blocks from which Byzantine music is formed, starting with the theory of intervals. We will begin by stating two basic propositions which may at first seem abstract, but will be understood in the analysis that follows.

2.1 Theory of Intervals.¹

What we call interval is the difference of pitch between two musical notes. This interval measure is relative to the lengths of cords or strings of uniform cross section and composition that are stretched under the same tensile force and when made to vibrate by plucking or bowing produce these two musical notes.

When a homogeneous string of uniform cross section is vibrating the number of vibrations that it undergoes per second is called the vibrational frequency. The vibrational frequency of the stretched string is equal to the frequency or pitch of the musical note emitted from the string to the surrounding air. The relative pitch between two musical notes produced by two uniform stretched strings (or cords) is the ratio of the higher vibrational frequency (i.e.
higher pitch) to the lower vibrational frequency (i.e. lower pitch), providing the strings have the same composition and are under the same tension. For example, if the vibrational frequency of the higher pitch is 900 vibrations per unit time and the lower pitch is 800 per unit time, then we have a ratio or quotient of frequencies given by 900/800 = 9/8.

Pythagoras is regarded as the first to discover and introduce the above theory. He also determined the quotients of the vibrational frequencies of basic steps or notes in the musical scale relative to the vibrational frequency of the lowest step when the lowest vibrational frequency is regarded as one unit.

In the following analysis, the names for the basic steps (or notes) used are: Ni, Pa, Vou, Ga, Thi, Ke, and Zo. These names correspond to the western musical names of: Doh, Re, Mi, Fah, Soh, Lah, and Si, (or, C, D, E, F, G, A, and B). The lowest note produced by a vibrating stretched string will be regarded as Thi, or Soh, or G.

**ANALYSIS AND ORIGIN OF THE TONES, FROM LOW THI.**

A stretched cord or string of one unit length is divided into two halves.

![Figure 1.1](image)

The plucking of the whole stretched string causes it to vibrate and produce a note which we will name lower Thi, or lower G. The plucking of half of the string by holding it in the middle produces a note with twice the vibrational frequency of lower G. This note we will name middle G (see figure 1.2). Consequently, as the cord’s
length is decreased, if the tension remains constant the vibrational frequency of the vibrating section increases.

The measure or tonal distance between the lower and middle G is what is called the interval of the eighth, or octave. The interval of the eighth has a cord’s length ratio 1:1/2 and a frequency ratio of 2.

When the stretched string is divided into lengths of one third and two thirds and the length of two thirds is plucked, the sound of Pa (or D) is heard which is the interval of the fifth from low Thi (or low G). (see figure 1.3) The interval of the fifth (also known as perfect fifth) has the string’s length ratio 1 : 2/3 and a vibrational frequency of 3/2.

When the cord is divided into four equal parts and a length equal to three parts is plucked, the sound of Ni (or C) is heard which is the interval of the fourth from low Thi (or low G). (see figure 1.4) The interval of the fourth (also known as perfect fourth) has the cord’s length ratio 1 : 3/4 and a vibrational frequency of 4/3.
When the cord is divided into five equal parts and a length equal to four parts is plucked, the sound of Zo (or B) is heard which is the interval of the third from low Thi (or low G). (see figure.1.5) The interval of the third has the cord’s length ratio 1 : 4/5 and a vibrational frequency of 5/4.

![Figure 1.5](image)

low Thi  Zo

When the cord is divided into nine equal parts and a length equal to eight parts is plucked, the sound of Ke (or A) is heard which is the interval of the second from low Thi (or low G). (see figure.1.6) The interval of the second has the cord’s length ratio 1 : 8/9 and a frequency ratio of 9/8.

![Figure 1.6](image)

low Thi  Ke

From all the above singular intervals or tones (i.e. Thi-Ke, Ke-Zo, Zo-Ni, etc.) there are three additional modified intervals. The names for the three modified tones in Byzantine music are, the Major tone, the Minor tone, and the Minute tone. Each of the modified tone distances are presented in table 1.1.

Further divisions of differences of vibrational frequencies of tones are; the Komma, the Remainder of the Minor tone, the Semitone of the Minor tone, and the Limma. These divisions are presented in table 1.2.
**Table 1.1  Derivation of the modified tones**

<table>
<thead>
<tr>
<th>Modified tones</th>
<th>Stretched string ratio derivative</th>
<th>Stretched Cord’s length</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAJOR TONE</strong></td>
<td>Results from the stretched string length ratios required to produce the intervals of the fifth and of the fourth, i.e. $\frac{5th}{4th} = \frac{2}{3}/\frac{3}{4} = \frac{8}{9}$</td>
<td><strong>8/9</strong> i.e. <strong>Ni-Pa = Thi-Ke</strong></td>
</tr>
<tr>
<td><strong>MINOR TONE</strong></td>
<td>Results from the ratio between the stretched string ratios of the third and the Major tone, i.e. $\frac{3rd}{Major\ tone} = \frac{4/5}{8/9}$ $= \frac{4}{5} \times \frac{9}{8} = \frac{36}{40} = \frac{9}{10}$</td>
<td><strong>9/10</strong> i.e. <strong>Ke-Zo</strong></td>
</tr>
<tr>
<td><strong>MINUTE TONE</strong></td>
<td>Results from the ratio of the stretched string ratios of the intervals of the fourth and of the third, i.e. $\frac{4th}{3rd} = \frac{3/4}{4/5} = \frac{15}{16}$</td>
<td><strong>15/16</strong> i.e. <strong>Zo-Ni</strong></td>
</tr>
</tbody>
</table>

**Table 1.2  Further divisions of vibrational frequencies of tones.**

<table>
<thead>
<tr>
<th>Name of division</th>
<th>Definition</th>
<th>Ratio derivative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>KOMMA</strong></td>
<td>This is the ratio of the Major tone and the Minor tone.</td>
<td>$\frac{Major}{Minor} = \frac{9/8}{10/9}$ $= \frac{81}{80}$</td>
</tr>
<tr>
<td><strong>REMAINDER OF THE MINOR TONE</strong></td>
<td>This is the ratio of the Major tone and the Minute tone.</td>
<td>$\frac{Major}{Minute} = \frac{9/8}{16/15}$ $= \frac{9/8 \times 15}{16} = \frac{135}{128}$</td>
</tr>
<tr>
<td><strong>SEMITONE OF THE MINOR TONE</strong></td>
<td>This is the ratio of the Minor tone and the Minute tone.</td>
<td>$\frac{Minor}{Minute} = \frac{10/9}{16/15}$ $= \frac{10/9 \times 15/16}{15} = \frac{25}{24}$</td>
</tr>
<tr>
<td><strong>LIMMA</strong></td>
<td>This is the ratio of the Minor tone and the Remainder of the Minor tone.</td>
<td>$\frac{Minor}{Remainder} = \frac{10/9}{135/128}$ $= \frac{10/9 \times 128}{135} = \frac{256}{243}$</td>
</tr>
</tbody>
</table>
2.2 SCALE.

The Natural Major Diatonic scale from Ni (or C) is derived from the previously mentioned Theory of Intervals. The name Major comes from the first interval of the scale which is a Major tone. The ratio measures of each note interval will be defined in the following table before presenting the whole scale.

<table>
<thead>
<tr>
<th>Interval</th>
<th>Position ratio</th>
<th>Frequency ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ni - Pa (C - D)</td>
<td>1 : 8/9</td>
<td>9/8</td>
</tr>
<tr>
<td>Pa - Vou (D - E)</td>
<td>8/9 : 4/5</td>
<td>40/36 = 10/9</td>
</tr>
<tr>
<td>Vou - Ga (E - F)</td>
<td>4/5 : 3/4</td>
<td>16/15</td>
</tr>
<tr>
<td>Ga - Thi (F - G)</td>
<td>3/4 : 2/3</td>
<td>9/8</td>
</tr>
<tr>
<td>Thi - Ke (G - A)</td>
<td>2/3 : 16/27</td>
<td>54/48 = 9/8</td>
</tr>
<tr>
<td>Ke - Zo (A - B)</td>
<td>16/27 : 8/15</td>
<td>240/216 = 30/27</td>
</tr>
<tr>
<td>Zo - Ni (B - C)</td>
<td>8/15 : 1/2</td>
<td>16/15</td>
</tr>
</tbody>
</table>

Analytically the interval distances (i.e. the higher vibrations over the lower vibrations) are shown in figure 2.1.

**Figure 2.1** Interval vibrational frequencies

Ni -------------------------- 2/1 -------------------------- Ni´
Ni ---------------- 3/2 ---------- Thi ---------- 4/3 ------- Ni´
Ni ------ 5/4 ------ Vou ---- 6/5 ------ Thi
Ni - 9/8 - Pa - 10/9 - Vou
The Diagram of the Natural Major Diatonic Scale from Ni (C).

This scale is called Diatonic (also Natural) because it consists of only Major, Minor and Minute tones. To distinguish the octave Ni from the lower Ni an accent (´) is marked and 2 accents for the octave above that (e.g. Ni´, Ni´´). The following table compares the intervals of the Natural Major Diatonic scale from Ni in three ways, i.e.

1. in vibrational frequency to adjacent notes,
2. in length of string for each interval, and
3. vibrational frequency relative to the lowest note Ni.

<table>
<thead>
<tr>
<th></th>
<th>Ni-Pa</th>
<th>Pa-Vou</th>
<th>Vou-Ga</th>
<th>Ga-Thi</th>
<th>Thi-Ke</th>
<th>Ke-Zo</th>
<th>Zo-Ni´</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vibrational frequency</strong></td>
<td>9/8</td>
<td>10/9</td>
<td>16/15</td>
<td>9/8</td>
<td>9/8</td>
<td>10/9</td>
<td>16/15</td>
</tr>
<tr>
<td><strong>String length</strong></td>
<td>8/9</td>
<td>9/10</td>
<td>15/16</td>
<td>8/9</td>
<td>8/9</td>
<td>9/10</td>
<td>15/16</td>
</tr>
<tr>
<td><strong>Vibrational frequency</strong></td>
<td>5/4</td>
<td>4/3</td>
<td>3/2</td>
<td>27/16</td>
<td>15/8</td>
<td>2/1</td>
<td></td>
</tr>
</tbody>
</table>

This scale is presented in the form of a ladder, where each step corresponds to a note of the musical scale, and stretched string distances appear in-between the notes, as in figure 2.2.

The Diatonic scale has two same tetrachords (i.e. a set of three intervals), Ni-Ga and Thi-Ni´ attached to a Major tone Ga-Thi (also known as the Separating tone).
For practical reasons the length of the cord (from \(Ni - Ni'\)) has been modified to 72 units. This therefore simplifies the scale to be presented in its final form with whole numbers in place of ratios or fractions, as in figure 2.3.

The scale in use is not limited to its eight notes (or seven tones). When music wants to ascend or descend beyond these eight notes, the scale extends with its repetition on either side, eg.

\[...thi, ke, Zo, Ni, Pa, Vou, Ga, Thi, Ke, Zo', Ni', Pa', Vou', Ga', etc.\]

From the Diatonic tetrachord and pentachord derive other scales with different size intervals within them. The intervals within them are augmented or diminished changing the pitch of those notes.
For example, other than the Diatonic tetrachord their are two kinds of Chromatic tetrachords. Both have the same perfect fourth interval but their intervals of the second and of the third within the perfect fourth are augmented or diminished to form the two Chromatic tetrachords specified in figure 2.4.

![Figure 2.4: The intervals for the two kinds of Chromatic tetrachords](image)

The basic understanding for constructing a scale is the attaching of tetrachords, which are not always the same, with a Major tone which is also known as the Separating tone when placed in between the tetrachords.

### 2.3 Mode Key

A Mode key testifies either the mode or melody and is not performed. Mode keys are found in three places; at the start of a melody, at various points within a melody, and sometimes at the end of a melody.

The Mode key at the start of a melody (or Initial Mode key), determines the mode and starting note (or the base note of the mode) of the melody. This differs from the Mode keys within and at the end of the melody.

Each of the modes has its own starting Mode key. These mode keys for the eight modes are presented in table 3.1.
### Table 3.1  Mode keys for the eight modes

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Mode</strong></td>
<td>This key appoints $Pa$ to be the base note of First mode.</td>
</tr>
<tr>
<td>$\frac{L}{\hat{q}}$ $Pa$</td>
<td>This key appoints $Pa$ to be the base note of First mode.</td>
</tr>
<tr>
<td>$\frac{L}{\hat{q}}$ $Pa$ $\hat{\hat{\ddagger}}$</td>
<td>Either of these two keys appoint $Ke$ to be the base note of First mode.</td>
</tr>
<tr>
<td>$\frac{L}{\hat{q}}$ $Ke$</td>
<td>This key appoints $Ke$ to be the base note of First mode.</td>
</tr>
<tr>
<td><strong>Second Mode</strong></td>
<td>This key appoints $Thi$ to be the base note of Second mode.</td>
</tr>
<tr>
<td>$\frac{\hat{\hat{\ddagger}}}{\hat{\hat{\hat{\ddagger}}}}$ $Thi$</td>
<td>This key appoints $Thi$ to be the base note of Second mode.</td>
</tr>
<tr>
<td>$\frac{\hat{\hat{\hat{\ddagger}}}}{\hat{\hat{\hat{\ddagger}}}}$ $Vou$</td>
<td>This key appoints $Vou$ to be the base note of Second mode.</td>
</tr>
<tr>
<td>$\frac{\hat{\hat{\hat{\ddagger}}}}{\hat{\hat{\hat{\ddagger}}}}$ $Pa$</td>
<td>This key appoints $Pa$ to be the base note of Second mode.</td>
</tr>
<tr>
<td><strong>Third Mode</strong></td>
<td>This is an old script starting Mode key which shows an ascent of three tones from $Ni$, making $Ga$ the base note of Third mode.</td>
</tr>
<tr>
<td>$\frac{\hat{\hat{\hat{\ddagger}}}}{\hat{\hat{\hat{\ddagger}}}}$</td>
<td>This is an old script starting Mode key which shows an ascent of three tones from $Ni$, making $Ga$ the base note of Third mode.</td>
</tr>
<tr>
<td>$\hat{\hat{\hat{\ddagger}}} Ga$</td>
<td>This is a brief script appointing $Ga$ to be the base note of Third mode.</td>
</tr>
<tr>
<td>$\hat{\hat{\hat{\ddagger}}} Ga \hat{\hat{\ddagger}}$</td>
<td>These keys appoint $Pa$ to be the starting base of Third mode.</td>
</tr>
<tr>
<td>$\hat{\hat{\hat{\ddagger}}} Pa$</td>
<td>These keys appoint $Pa$ to be the starting base of Third mode.</td>
</tr>
</tbody>
</table>
### Table 3.1 (cont.) Mode keys for the eight modes

<table>
<thead>
<tr>
<th><strong>Fourth Mode</strong></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Key" /> Thi</td>
<td>This key appoints Thi to be the base note of Fourth mode. (This mode with base note Thi is also known as Hagia)</td>
</tr>
<tr>
<td><img src="image" alt="Key" /> Pa</td>
<td>This key appoints Pa to be the base note of Fourth mode.</td>
</tr>
<tr>
<td><img src="image" alt="Key" /> Vou</td>
<td>This key appoints Vou to be the base note of Fourth mode. (This mode with base note Vou is also known as Legetos)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Plagal First Mode</strong></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Key" /> Pa</td>
<td>This key appoints Pa to be the base note of Plagal First mode.</td>
</tr>
<tr>
<td><img src="image" alt="Key" /> Pa <img src="image" alt="Key" /> Ke</td>
<td>This key appoints Ke to be the base note of Plagal First mode.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Plagal Second Mode</strong></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Key" /> Pa</td>
<td>This key appoints Pa to be the base note of Plagal Second mode.</td>
</tr>
<tr>
<td><img src="image" alt="Key" /> Pa Thi</td>
<td>These keys appoint Thi to be the base note of Plagal Second mode. (This mode with base note Thi is also known as Nenano or Palatinon melody)</td>
</tr>
<tr>
<td><img src="image" alt="Key" /> Pa Vou</td>
<td>This key appoints Vou to be the base note of Plagal Second mode.</td>
</tr>
</tbody>
</table>
The Mode keys that are found within and at the end of a melody are simpler in their script. For distinguishing these Mode keys from the starting or initial Mode keys, we will call these Tone keys. The starting Mode keys are defined as Mode keys. Tone keys are designated by the first letter of one of the seven note names (from the Greek i.e. Νη, Πα, Βου, Γα, etc.), and a root sign signifying the mode genre of the scale that is being used. The mode genres are three, i.e. the Diatonic genre, the Chromatic genre, and the Enharmonic genre.

<table>
<thead>
<tr>
<th><strong>VARIS MODE</strong></th>
<th>This key appoints Ga to be the base note of Varis mode.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ღ</td>
<td>Ga</td>
</tr>
<tr>
<td>ღ</td>
<td>Zo</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>PLAGAL FOURTH MODE</strong></th>
<th>This key appoints Ni to be the base note of Plagal Fourth mode.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ \overset{\lambda}{\pi} \overset{\ddot{\alpha}}{\cdot} Ni ]</td>
<td>This key appoints Ni to be the base note of Plagal Fourth mode.</td>
</tr>
<tr>
<td>[ \overset{\lambda}{\pi} \overset{\ddot{\alpha}}{\cdot} Ni \overset{\overline{\circ}}{Ga} ] &amp; Both of these keys appoint Ga to be the base note of Plagal Fourth mode.</td>
<td></td>
</tr>
<tr>
<td>[ \overset{\lambda}{\pi} \overset{\ddot{\alpha}}{\cdot} Ni \overset{\overline{\circ}}{Ga} ] &amp; This key appoints Vou to be the base note for Plagal Fourth mode.</td>
<td></td>
</tr>
</tbody>
</table>

The Mode keys that are found within and at the end of a melody are simpler in their script. For distinguishing these Mode keys from the starting or initial Mode keys, we will call these Tone keys. The starting Mode keys are defined as Mode keys. Tone keys are designated by the first letter of one of the seven note names (from the Greek i.e. Νη, Πα, Βου, Γα, etc.), and a root sign signifying the mode genre of the scale that is being used. The mode genres are three, i.e. the Diatonic genre, the Chromatic genre, and the Enharmonic genre.
The root signs used in the Diatonic scale are seven, one for each note, as listed in figure 3.1.

**Figure 3.1  Root signs**

These root signs testify the tone distances of the Diatonic scale. Combining the first letters of the notes of the scale with the above Diatonic root signs we have the following **Tone keys** shown in figure 3.2.

**Figure 3.2  Diatonic Tone keys**

As an example, the **Tone key**, ₆₇, testifies two things. The **root sign**, ₇, testifies an ascent of a **Minor tone** and a descent of a **Minute tone**. The letter, ₆, (the first letter from the Greek Βου = Vou), testifies the position of the note on the scale, i.e. in between Pa and Ga.

Each Diatonic note of the three octave range used in Byzantine music has its own **Tone key**. The lower octave **Tone keys** are distinguished with their inversion (i.e. the letter under the sign) and the higher octave **Tone keys** are distinguished with an accent on the letter. Examples of **Tone keys** for the notes used in the Diatonic genre are found in figure 3.3.

The root signs used in the Chromatic genre are four. The two signs, ₇ and ₆, are used alternately for the Soft Chromatic scale, and the two signs, ₄ and ₆, are used alternately for the Hard Chromatic scale. These **Tone keys** are distinguished in
a likewise manner to the Tone keys of the Diatonic genre when considering their range within the three octaves.

Examples of Tone keys for the notes used in the Soft Chromatic scale are in figure 3.4.

Examples of Tone keys for the notes used in the Hard Chromatic scale are in figure 3.5.

The root signs for the Tone keys used in the Enharmonic genre are those of the Diatonic genre. There are differences between the Tone keys of the two genres (as explained for the Enharmonic fthora at the end of section 2.7).
If the mode of a melody has already been introduced by a previous melody, a simple *Tone key* (testifying the starting note or base note) would be sufficient at the beginning of the melody instead of the *Mode key*.

### 2.4 Quantitative Characters

Quantitative characters are those that tell the performer how many intervals he/she is to ascend or descend with his/her voice when performing a melody.

All the various quantitative characters may be divided into three types; the ascending characters, the descending characters, and the neutral characters. Some characters are derived by combining various characters (i.e. compound characters) and all quantitative characters are derived from the following ten basic characters.

**Neutral Character**

- **ISON**

**Ascending Characters**

- **OLOGON**
- **PETASTI**
- **KENTIMATA**
- **KENTIMA**
- **HYPSILI**
The performance of a character depends on its previous character. An ascending character of one interval for example will ascend one interval from its previous character’s note or pitch. A character therefore can not be performed without a precedent character or Mode key.

**ANALYSIS OF THE TEN CHARACTERS.**

The Ison neither ascends or descends, but repeats the same note or pitch of its precedent character.

Each of the three characters, Oligon, Petasti, and Kentimata, ascend one interval from their precedent character.

The Kentima ascends two intervals from its precedent character disjunctively (i.e. as a leap).

The Hypsili ascends four intervals from its precedent character disjunctively.

The Apostrofos descends one interval from its precedent character.
The **Hyporoe** descends two intervals from its precedent character, one at a time conjunctively.

The **Elafron** descends two intervals from its precedent character disjunctively.

The **Hamili** descends four intervals from its precedent character disjunctively.

Of these ten characters, the Ison, the Oligon, the Petasti, the Apostrofos, the Elafron and the Hamili, are called *Somata* (or *Bodies*), in distinction to the Kentima and the Hypsili, which are called *Neumes*. Neumes in a melody do not stand on their own, but in combination with a *Body* character. The Kentimata and the Hyporoe are neither *Bodies* nor *Neumes*.

For the various combinations of characters (or compound characters), for ascents and descents, both conjunct and disjunct, see section 2.6 on Compound Characters.

### 2.5 Qualitative Characters

There are two kinds of qualitative characters, those concerning time and those concerning the expression or ornamentation of the voice.

#### 2.5.1 Qualitative Characters Concerning Time.

So far we have discussed ten characters of which each lasts for one beat in time (except for the Hyporoe which has a duration of two beats). If a character is to increase or decrease its duration, then the characters are written in combination with the following characters.
CHARACTERS FOR INCREASING TIME.

KLASMA

HAPLI

DIPLI

TRIPLI

These signs do not represent a musical note or pitch, but in combination with a musical character, increases the duration of the musical character by one beat or more.

The Klasma increases the character’s duration by one beat.

The Hapli increases the character’s duration by one beat.

The Dipli (or two Haples - plural for Hapli) increases the character’s duration by two beats.

The Tripli (or three Haples) increases the character’s duration by three beats.

Although these are the most commonly used, it is possible to increase a character’s duration even further with the desired number of Haples corresponding to the character’s extra beats (i.e. a Tetrapli or four Haples, is used for increasing a character’s duration by four beats, a Pentapli for five beats, etc.).

When the Hapli is combined with a Vareia, \(\text{\textbackslash{}c}\), it is performed as one empty or silent beat (also known as one beat rest). Two Haples with the Vareia, \(\text{\textbackslash{}cc}\), are performed as two beats rest, and so forth for three Haples, four Haples, etc.
CHARACTERS FOR DECREASING TIME.

GORGON

DIGORGON

TRIGORGON

These signs also do not represent a musical note or pitch, but are used for performing two, or three, or four musical characters in the time of one beat.

These signs are always placed on the second character of those which are to be performed in one beat.

The Gorgon affects two musical characters making them last for one half of a beat each.

The Digorgon affects three musical characters making them last for one third of a beat each.

The Trigorgon affects four musical characters making them last for one quarter of a beat each.

There are also variations in their divisions within the beat. A dot on the left of the gorgon (\( \text{\textbullet}\)), makes the first character last for two-thirds of the beat. A dot on the right of the gorgon (\( \text{\textbullet} \)), makes the second character last for the two-thirds of the beat. A dot on the left of the digorgon (\( \text{\textbullet} \)), makes the first character last for a half beat, and the other two a quarter of a beat each. A dot on the middle of the digorgon (\( \text{\textbullet} \)), makes the second character last for a half beat, and the other two a quarter of a beat each. A dot on the right of the digorgon (\( \text{\textbullet} \)), makes the third character last for a half beat, and the other two a quarter of a beat each.
CHARACTERS FOR BOTH DECREASING AND INCREASING TIME.

ARGON

HEMIOLION OR TRIEMIARGON

DIARGON

These signs also do not represent a musical note or pitch, but are used for performing two musical characters in one beat, and increasing the duration of their following musical character.

These signs are placed on the second musical character of the three which are affected in the above mentioned manner.

The Argon affects three musical characters making the first two last for one half of a beat each, and the third increase its duration by one beat.

The Triemiargon affects three musical characters making the first two last for one half of a beat each, and the third increase its duration by two beats.

The Diargon affects three musical characters making the first two last for one half of a beat each, and the third increase its duration by three beats.
2.5.2 **Qualitative Characters concerning Expression of Voice.**

The characters that concern the expression of the voice make chanting enchanting. These characters are seven.

VAREIA

HOMALON

ANTIKENOMA

PSIFISTON

HETERON OR SYNDESMOS

CROSS

ENDOFONON

Wherever these signs are placed (with musical characters), the expressions of the musical characters are affected.

The musical character that is preceded by a Vareia is to be expressed with a kind of weight in the voice, so that its vivacity can be distinguished from the preceding and following characters. The Vareia precedes all characters except for the Kentimata.

The Homalon calls for an undulation of the voice from the larynx with a sharpness of the musical character under which it is written. The Homalon may be placed under all musical characters except for the Kentimata, Petasti, and the Hyporoe.

The Antikenoma calls for a throw in the voice (i.e. from the larynx
towards the palate) when written under the Oligon, followed by a descending character. When the Antikenoma is written with an Hapli (or Dipli, or Tripli) followed by a descending character, the voice so to speak is suspended and inseparable. The Antikenoma can be placed under all musical characters except for the Kentimata, before all descending characters except for the Hyporoe.

The Psifiston calls for volume and vivacity of the character that it is written under. It is placed under the Ison and ascending characters except for the Kentimata. The Psifiston is always followed by a descending character.

The Heteron connects ascending characters with descending characters, Ison with Ison, Oligon with Ison, or an Apostrofos, Elafron, and Hamili with Ison. The characters connected are expressed with smoothness and softness.

The Cross calls for a short pause or break in the voice before the next musical character is sung. The Cross is placed before a musical character to indicate that the character is to be performed with a new breath. An apostrophe (’) may be used for the same purpose.

The Endofonon calls for the character that it is placed under to be performed with a nasal voice. This expression lasts for the duration of the character.

The Petasti, apart from its quantitative value, also has a qualitative value which plays a large role in the performance of a melody. Its expression varies (eg. a throw, an undulation, a turn of the voice), depending on the type of melody and its synthesis with other characters.

There are two other signs from Byzantine music that are also used in Western European music, i.e. the Crown or Pause (˘), which
when written above a character, the character is to be performed with a wait or pause of indefinite time; and the Hyphen or Slur ( ) which joins two characters of the same pitch (and with the same syllable), making them sound as one long note, i.e. \( \cdot \bar{\text{C}} \cdot = \cdot \bar{\text{C}} \cdot \).

2.6 Compound Characters.\(^7\)

As combinations of letters form a variety of syllables, likewise, combinations of the ten quantitative characters form a variety of melodic intervals. These compound characters are used in a melody for the performance of conjunct and disjunct intervals.

Of the ten basic quantitative characters, some have the ability to stand alone, others need to stand in combination with others and some have the ability to do both.

The Ison, the Oligon, the Petasti, the Apostrofos, the Elafron and the Hamili, have the ability to stand alone and to stand in combination with other characters.

These combinations vary the character’s quantity or interval value. The positioning of the combination also plays a difference in the character’s quantity or interval value (i.e. whether one character is on the left, middle, right, above or below another character).

The Oligon and Petasti are subordinate to other characters when in a specific combination, except with the Kentimata. When a character is subordinate to another it loses its quantity or interval value.

The Elafron dominates the Apostrofos when they are in a specific link position, \( \text{Running Elafron} \). This is called the Running Elafron and is performed as two descending conjunct single intervals with the
first descending interval having a Gorgon, $\text{Γ}_1$, and therefore losing its disjunct value.

The Oligon and the Petasti are subordinate to the Kentima and the Hypsili when in the following positions specified in figure 6.1.

**Figure 6.1** *Subordinate Oligon and Petaste*

![Diagram of Subordinate Oligon and Petaste](image)

The Oligon and the Petasti are also subordinate to the Ison and the descending characters when in the following combinations specified in figure 6.2.

**Figure 6.2** *Oligon and Petaste subordinate to Ison & desc. char.*

![Diagram of Oligon and Petaste subordinate to Ison & desc. char.](image)

**Diagram of Interval Characters.**

In the following diagrams, the numbers under the characters represent the characters’ quantity or interval value. Some combinations result in performing two separate intervals consecutively, which is why the two numbers appear below the combination character.

**Figure 6.3** *Neutral interval characters*

![Diagram of Neutral interval characters](image)
Descending and Ascending Interval Characters.

The following combination characters firstly consist of a descending interval and secondly of an ascending interval, which is why they appear with negative and positive numbers below them.

All the above compound characters with one number under them have a duration of one beat, those with two numbers have a duration of two beats, and that with three has a duration of three beats, except for the compound characters which include the Running Elafron, , for the reason mentioned earlier.

2.7 Fthora.

It is possible within a melody for a change in mode or a change in modal genre. An influential sign which is used for this change or variation, is called a fthora. These variations usually last for a melodic section or phrase. At the end of the melodic phrase, another fthora is used to undo the variation so that the melody finishes in its original mode.

There are also melodies which belong and begin in one mode or genre that have a variation in mode or genre from the first or second melodic character, and their variations follow through to
the ends of the melodies without being undone. These melodies are called *intruded melodies*.

A *fthora* is a sign which indicates a variation in mode or genre. When a *fthora* is placed on a musical character (or *Tone key*) it influences the scale of the following melody to be performed.

Each note of a scale has its own *fthora* and they vary according to genre. The *fthora* of a specific note may be placed on an alien or different note, shifting the position of the scale. For example, if the *fthora* of the Diatonic Ni (C), ′, is placed on the note Pa (D) of the same scale, then the scale of Diatonic Ni, with Ni being the anchor, will shift and be fixed on the pitch of note Pa. This change not only affects the intervals, but also affects the *Tone keys*, as in figure 7.1.

![Figure 7.1](image)

The above scale of the two, in figure 7.1, is the Natural Diatonic scale, and the below scale is the influenced scale from placing the *fthora* of Diatonic Ni on the note Pa (not its natural position which is Ni). The *fthora* affects the intervals to shift their position, and the *Tone keys* (changing only their root signs and not their letters which are always fixed).
The same technique is used to change the mode or genre of a melody.

A change from mode to mode in a melody is called *variation in mode*.

A change from genre to genre in a melody is called *variation in genre*.

A change in shifting the intervals or tones to an un-natural position, where the mode and genre are the same, as in the above example, is called *variation in tone*.

The placing of a *fthora* on a note other than its own is called a *parachord*.

The note that a *fthora* is placed on becomes fixed from which all the other notes of the influenced scale work around.

A *fthora* may also be used to change from one system to another system (see section 2.10 on System), and this change is called *variation in system*.

All the *fthoras* may be grouped into the three genres, (i.e. Diatonic, Chromatic and Enharmonic).

**THE DIATONIC FTHORAS.**

\[
\begin{array}{cccccccc}
Ni & Pa & Vou & Ga & Thi & Ke & Zo & Ni' \\
\end{array}
\]

Each of the above *fthoras* belong to the note written under them.
The Chromatic Fthoras.

The above first and second chromatic fthoras (from left to right) belong to the Hard Chromatic scale.

The third and fourth chromatic fthoras belong to the Soft Chromatic scale.

The fifth fthora called zygos, has a unique function belonging to the category for the chroa. Refer to the section 2.9 on Chroa.

The Enharmonic Fthoras.

The above first fthora affects only the tetrachord beneath the note that it is placed on, whether it be Ga, Zo, or Vou. When placed on the note Ga, it changes the intervals of the tetrachord Ni-Pa-Vou-Ga and root signs of the Tone keys, making two Major tones and one Semitone in the following manner shown in figure 7.2.

**Figure 7.2** The Enharmonic tetrachord as a result from placing the Enharmonic fthora on the note Ga

![Figure 7.2](image-url)
When this Enharmonic fthora is placed on the Zoʿ, the same effects apply as indicated in figure 7.3.

![Figure 7.3: The Enharmonic tetrachord as a result from placing the Enharmonic fthora on the note Zoʿ](image)

The same applies for the fthora’s placing on Vou.

Although the Enharmonic Tone keys are not the same as those of the Diatonic Tone keys, they have borrowed their root signs from the Diatonic genre.

The second Enharmonic fthora called Spathi and the third Enharmonic fthora called Kliton, have their unique function also belonging to the category for chroa. Refer to section 2.9 on Chroa.

### 2.8 Sharps and Flats

Sharps and flats are influential signs that affect the size of a specific tone (whether it be Major, Minor, Minute, Semitone, etc.).

If we consider decreasing the Major Tone interval Ni-Pa (a size of 12 units) to a size of 10, 8, 6, or 4 units, we can either move the note of Pa closer to Ni, by placing a flat sign on Pa, or, we can move the note Ni closer to Pa by placing a sharp sign on Ni.

Therefore, sharpening a note is when we raise its frequency and bring it closer to the note above it. Flattening a note is when we lower its frequency and bring it closer to the note below it. The
effect lasts momentarily and only for that note on which the sign is placed.

In distinguishing the amount of sharpness or flatness desired, various signs are used representing the number of units required. These signs are as follows.

**FLATS.**

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>10</td>
</tr>
</tbody>
</table>

**SHARPS.**

As an example, we will consider placing a 4 unit flat on the note Ke of the Natural Diatonic scale of Ni, see figure 8.1.

![Figure 8.1](image)

In the above diagram, the above scale is the Natural Diatonic scale of Ni, and the below scale shows the influence on the notes’ intervals when placing a 4 unit flat on the note Ke.

There are also two more signs called *general flat* and *general sharp*. Their influence is not momentarily like the other sharps and flats,
but calls for a constant sharp or flat of a particular note for a melodic phrase, until another sign or Tone key undoes their influence.

**GENERAL SHARP.** \(\dagger\)  \textbf{GENERAL FLAT.} \(\varphi\)

The *general sharp* is placed on the note *Ga*, and calls for the note below it, *Vou*, to be sharpened making the interval *Vou-Ga* = 4 units.

The *general flat* is placed on the note *Ke*, and calls for the note above it, *Zo’*, to be flattened making the interval *Ke-Zo’* = 4 units.

The *general sharp* and *general flat* are found in melodies of Third Mode.

2.9 **CHROA.**

In ancient Greek music, a specific division of a genre is called a *chroa*.

In Byzantine music, three *chroes* are useful, and are indicated with three *fthoras*. These *fthoras* are the *Zygos*, the *Kliton* and the *Spathi* - and are called *chroas* (because of their different effects from the other *fthoras*).

**THE ZYGOS** \(\varphi\)

The *Zygos* is placed on the note *Thi* (G), making it its base note, and calls for a sharpened *Ga* and a sharpened *Pa*. The result in theory is in figure 9.1.
From the above diagram we can see how the Zygos changes only the positions of the two notes Pa and Ga, therefore changing the structure of the lower pentachord from Thi and the Tone keys.

**The Kliton**

The Kliton also is placed on the note Thi, making it its base note, and calls for a sharpened Ga and a sharpened Vou. The result in theory is in figure 9.2.
From the above diagram we can see how the Kliton changes only the positions of the two notes Vou and Ga, therefore changing the structure of the lower tetrachord from Thi and the Tone keys.

**THE SPATHI**

The Spathi is placed on the note Ke, making it its base note, and calls for a sharpened Thi and a flattened Zo’. The result in theory is in figure 9.3.

From the above diagram we can see how the Spathi changes only the positions of the two notes Thi and Zo’, therefore changing the structure of the pentachord Ga-Ni’ and the Tone keys.
Various melodies use various ranges of the musical scale. At times only a part of the octave scale is used, and at other times a greater range of the octave scale is used. The scale repeats its range to suffice the melody’s path, either ascending or descending.

A system is a part of a scale (of a minimum two intervals), which is repeated in an ascending or descending path. Any part of the scale has two ends, the base (or beginning) and the peak (or end).

In ascending, the whole part of the scale shifts or is repeated so that the peak of the part becomes the base of the repeated part. In descending, the whole part of the scale is repeated so that the base of the part becomes the peak of the repeated part.

The system is achieved with placing a *fthora* on the note where one part of the scale meets its repeated part. This common note between the two part scales is called the *link*.

There are three systems used in Byzantine music; the Octachord system, the Pentachord system or the Wheel, and the Tetrachord system.

**The Octachord or Octave System**

The whole scale (i.e. the seven intervals) is used in this system. The order of intervals and sizes between $Ni$ and $Ni’$ will be the same as those between $Ni’$ and $Ni’’$, and those below $Ni$ between $ni$ and $Ni$. 

---

2.10 **System**

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THE PENTACHORD SYSTEM OR WHEEL

A pentachord (i.e. four intervals) is used in this system. The order of intervals and sizes between Pa and Ke, will be the same with those between Ke and Vou’, Vou’ and Zo’’, and so forth. The same applies for those notes below Pa, i.e. between thi and Pa and so forth.

THE TETRACHORD SYSTEM

A tetrachord (i.e. three intervals) is used in this system. The order of intervals and sizes between Ni and Ga, will be the same with those between Ga and Zo’, Zo’ and Vou’ and so forth. The same applies for those notes below Ni.

Unlike in Western European music where mainly the Octachord system is in use, Byzantine music uses these three systems which were also used in ancient Greek music.
BEFORE discussing the composition of the eight modes, I find it appropriate to discuss the two ways of reading Byzantine music, the Orthography and Synthesis for writing Byzantine music, and the formation for the three genres.

3.1 READING THE MUSIC.¹

There are two ways for reading Byzantine music. One way is to chant in *melos*, which involves reading the syllables of the hymn written under the melodic characters in the pitch of the melodic characters. The other way is to chant in *paralagi*, which involves reading the names of the notes (i.e. *Ni*, *Pa*, *Vou*, *Ga*, *Thi*, etc.) in their pitch, corresponding to each of the melodic characters. *Paralagi* is equivalent to what is known as *solfège* in Western European music.

One needs to learn to chant fluently in *solfège* or *paralagi*, before he/she learns to chant in *melos*. We shall consider the following example 3.1 for reading in *paralagi*. In this example, the short melody has been measured with a meter of two beats. This indicates a simple rhythm of two beats, i.e. one *thesis* (i.e. *down beat*) followed by one *arsis* (i.e. *up beat*), for each meter.
The first melodic character is an Ison. This character repeats the note or pitch of its previous character, which in this case the Ison, being the first character, will repeat the Mode key’s indication. The Mode key in this example indicates Plagal Fourth mode with the base note Ni. In performing the first Ison (in paralagi), therefore, would be pronouncing the syllable Ni on the pitch or note of Ni and on the thesis.

The second melodic character is an Oligon. This calls for an ascent of one interval from its previous character, which in this case is an Ison on note Ni. In performing this Oligon, therefore, would be pronouncing the syllable Pa on the pitch of Pa, and on the arsis (the second beat of the first meter).

The third melodic character is an Oligon also. This calls for another ascent of one interval from its previous character which is an Oligon on note Pa. The performing of this Oligon would be the pronouncing of the syllable Vou on the pitch of Vou, and on the thesis (the third beat of the melody, or the first beat of the second meter).

The fourth, fifth characters are each an Oligon, and the sixth character is an Ison. They correspond to the notes Ga on the arsis, Thi on the thesis, and again Thi on the arsis.
The *Tone key* after the sixth character, indicates where the melody stands at that particular point, which is on the note *Thi* of the Diatonic scale.

The reading in *paralagi* continues with the same method through to the end of the melody.

The performer needs to be familiar with the names of the scale’s notes, as to be able to chant in *paralagi* without the aid of note names underneath the characters found in example 3.1.

Chanting in *melos* (i.e. chanting proper), has the same method as in *paralagi* when considering the melody, but the performer pronounces the syllables of the hymn which are written under the melodic characters (and not the names of the notes as in *paralagi*). Consider example 3.2, the first Antiphon from the Hymns of Degrees in Greek, and the Alleluia verse in English from the *Anoixantaria* (by Th. Fokaeus), both in the Plagal Fourth mode as an exercise for reading *melos*.²

---

**Example 3.2**

\[ \lambda \ddot{i} \ \Ni \]

\[ \text{Ex} \ \nu \ \varepsilon \ \o \ \tau \eta \ \tau o\varsigma \ \mu o\varsigma \ \o \ \varepsilon \ \xi \theta o\circ \varsigma \ \mu e \]

\[ \pi e \ \iota \ \zeta \epsilon \ \tau a i\varsigma \ \eta \ \delta o \ \nu a i\varsigma \ \phi l e \ \gamma e i \ \mu e \ \epsilon \ \gamma o \]

\[ \delta e \ \pi e \ \pi o i \ \theta o\varsigma \ \epsilon n \ \sigma o i \ \K u \ \omicron \ \epsilon \ \tau o \ \pi o u \]

\[ \mu a i \ \tau o u \ \tau o n \]

---
There is also a basic difference that occurs between the two languages for Byzantine music. For the Greek language, there is a syllable under each musical character. When the vowel of a syllable is to be extended for more than one musical character, the vowel of the syllable is repeated in print. As for the English language, this does not occur. The syllable is not repeated, but a hyphen is in its place. For the final syllable of a word, which is to be extended, the underscore is used.

3.2 ORTHOGRAPHY AND SYNTHESIS.

3.2.1 ORTHOGRAPHY

There are specific rules for the writing of the various quantitative characters.

For compound characters, the Kentima and the Hypsili are never written alone, but are in combination with the Oligon and the Petasti.

The Kentimata and the Hyporoe are never in a quantitative compound character, but are written alone and read separately when in synthesis or combination.
The Kentimata and Hyporoe do not accept a separate syllable, but the same syllable as its previous character.

The Hyporoe as an exception accepts chronic (i.e. qualitative characters concerning time) and expressional characters (i.e. qualitative characters concerning expression). The Kentimata accept only the chronic characters of Gorgon.

Since the Kentimata are written alone and always on the *aris*, the compound characters for the disjunct ascent of nine intervals, ⫡ or ⫢, would be incorrect. The combination preferred for the compound character of this disjunct interval would be, ⫣ or ⫤.

Of the quantitative characters, the Oligon and Petasti may also be used as qualitative characters, appearing as subordinate to other characters. In this circumstance the quantitative value is lost (or ignored) and a slight accentual quality remains. In general, they are subordinate to the Ison, the Apostrofos, the Elafron, the Running Elafron, the Hyporoe and the Hamili.

The Kentimata are neither combined with, nor subordinate to other characters.

**THE ISON.**

The orthography and synthesis rules for the Ison, when concerning its composition with quantitative and qualitative characters, are as follows.

- The Ison subordinates the Oligon and the Petasti. These subordinate characters lose their quantitative value and keep their qualitative emphasis.

- If the Ison subordinates the Oligon, then after the Ison there
must follow the Kentimata (or an Ison), and so under the Oligon is placed a Psifiston, and after the Kentimata must follow at least two descending characters.

- If the Ison subordinates the Petasti, then there must follow one descending character with a particular syllable, but if there happens to follow two or three descending characters (i.e. more than one Apostrofos), then the subordinate Petasti accepts a Klasma, \( \text{KL} \), and the Klasma is pronounced with the qualitative value of the Petasti.

- When the Oligon is subordinate to the Ison only, then there will follow another Ison.

- The Ison accepts all the qualitative characters.

- The Vareia is placed before the Ison, and the other expression characters are placed underneath the Ison. The Vareia is placed before the Ison when the Ison is followed by an Apostrofos, without a particular syllable with or without a gorgon like so, \( \text{VAREIA} \) or \( \text{VAREIA} \) with an Hyporoe like so, \( \text{VAREIA} \) where the Ison has a Klasma, or like so, \( \text{VAREIA} \).

- The Ison accepts the Psifiston underneath when there follows two Apostrofoi or an Hyporoe or a Running Elafron, eg. \( \text{PSIFISTON} \) or \( \text{PSIFISTON} \) or \( \text{PSIFISTON} \).

- The Ison accepts the Omalon in the following forms, \( \text{OMALON} \).
• The Antikenoma is placed under the Ison and always with an Hapli from which will follow an Apostrofos with the Gorgon.

• The Heteron is placed when joining two Isons, or an Ison with an Apostrofos like so,

The Oligon.

• The Oligon accepts all the chronic and expression characters, except for the Endofonon. It accepts the Vareia before it, when the Oligon is followed by an Apostrofos with Gorgon, with the same syllable, or by an Ison with Gorgon and an Homalon underneath.

• The Psifiston is placed underneath the Oligon when there follows two or three Apostrofoi of equal time, or an Hyporoe with Gorgon, or a Running Elafron, like so, or

• When the Oligon accepts a Klasma and Psifiston, then it is necessary for descending characters to accept Klasmata: or or

• The Homalon is placed underneath like so, or like so, when the Oligon accepts a Klasma (like the Apostrofos), giving it its qualitative value (i.e. a wavering of the voice).

• The Heteron is placed underneath and joins, like so, or or or .
The Antikenoma is placed underneath, when there follows the Oligon with Hapli, an Apostrofos with Gorgon,  \( \frac{5}{2} \), or \( \frac{5}{3} \), or \( \frac{5}{4} \), and \( \frac{6}{5} \) and \( \frac{6}{6} \), or \( \frac{6}{7} \), and \( \frac{6}{8} \).

**THE KENTIMATA.**

- The Kentimata do not accept any particular syllable, but extend the syllable of its preceding character’s syllable, and always placed on the *arsis*. An exception where the Kentimata accept their own particular syllable is in the hymns of *nenanism* and *tererism*.

- The Kentimata accept the chronic characters, Gorgon, Digorgon, Trigorgon, and also the Argon, Hemiargon, and Diargon like so, \( \frac{7}{5} \), \( \frac{7}{6} \), and \( \frac{7}{7} \).

- It does not accept chronic characters for increasing its time, nor the expression characters. Exceptional forms are, \( \frac{8}{7} \) and \( \frac{8}{8} \), for which the Psifiston and Antikenoma stand for the Oligon and not the Kentimata.

**THE PETASTI.**

- Apart from the Petasti’s quantitative value, it also has a qualitative value. When the Petasti accepts a Klasma, its qualitative value is made clear where it is pronounced on the Klasma, and even if the Petasti is subordinate. Without the Klasma, the qualitative value of the Petasti is an emphasis (a kind of *lygisma* - bend) and not a support.

- Of the expression characters, the Petasti accepts the Heteron when it is subordinate, the Antikenoma with Hapli (which is
rare), and the Psifiston in the following characteristic phrase.

- The Petasti does not accept any of the chronic characters, except for the Klasma and the Hapli with Antikenoma: \( \text{\textit{\textbf{5}}} \). The Klasma and the Hapli are always placed underneath the Petasti.

- When two or three Apostrofoi follow a line of consecutive ascending characters, and the last ascending character has a Klasma, then this last ascent will be a Petasti. Regardless the consecutive ascent, when the last ascent (even when subordinate) has a Klasma and there follow descending characters, this ascent will be a Petasti. This ascent again will be a Petasti when after it follows a descent of equal time. A noteworthy characteristic phrase in all the modes is the following.

- The Petasti is subordinate to all descending characters as well as the Ison, keeping only its qualitative value. When after an ascent follows a descending character (of one tone or interval) with Klasma, this ascent will be a Petasti. When the ascent is on \textit{thesis}, and an Apostrofos without Klasma is on \textit{arsis}, then the \textit{thesis} will be a Petasti. When an ascent with Klasma is followed by an Hyporoe with Gorgon and Hapli, then again this ascent will be a Petasti, but if the Hyporoe does not have an Hapli, then it will be an Oligon, eg. \( \text{\textit{\textbf{5}}} \) and in the form where a second Apostrofos has a Gorgon \( \text{\textit{\textbf{5}}} \).
THE HYPSIILI.

The Hypsili is always in combination with the Oligon and/or the Petasti. Depending on the type of combination, an ascent of four or five or more intervals may be derived. It also accepts the qualitative characters belonging to the Oligon.

THE KENTIMA.

Those rules applying to the Hypsili also apply to the Kentima (see section 3.22 on Synthesis for more).

THE APOSTROFOS.

- The Apostrofos may be written alone, and may subordinate the Oligon or Petasti. At times it accepts a particular syllable, and other times it does not. When it subordinates the Petasti, it is necessary for it to have a Klasma under the Petasti, and be followed by descending characters, i.e. ր, or ր.

- The Apostrofos accepts the Vareia before it, when it proceeds in pairs like so, ta- ta-.

- The Apostrofos accepts the Psifiston only when it subordinates the Oligon.

- The Apostrofos accepts the Antikenoma with Hapli underneath when it is followed by an Apostrofos with Gorgon. The Apostrofos does not accept a simple Homalon, or the Antikenoma without the Hapli.

- Of the chronic characters, it accepts the Klasma, the Gorgon, or the Digorgon above it. The Argon and Diargon are not
accepted. When the Apostrofos has a Gorgon and needs to extend its time to complete a *thesis* or *arsis*, the supplement will be the Hapli.

**The Hyporoe.**

- The Hyporoe stands for two descending single intervals. It does not accept a particular syllable, neither is combined.

- Of the expression characters, it accepts the Antikenoma with Hapli and is followed by an Apostrofos with Gorgon, \( \frac{5}{5} \), and also accepts the Heteron, \( \frac{5}{5} \).

- Of the chronic characters, the Hyporoe accepts the Gorgon, Digorgon, and Trigorgon, the Hapli, Dipli, and Tripli, but not the Klasma. In the final cadences it accepts the Gorgon like so, \( \frac{5}{5} \).

**The Elafron.**

- The Elafron accepts a particular syllable and no otherwise.

- It accepts the Antikenoma with Hapli underneath followed by an Apostrofos with Gorgon, \( \frac{5}{5} \). The Homalon and Heteron are placed underneath when joining it with an Ison, i.e. \( \frac{5}{5} \).

- The Elafron accepts the Gorgon and Digorgon, but not the Argon and Hemiargoron. It accepts the Klasma, and the Dipli or Tripli with Heteron. It subordinates the Oligon and Petasti as does the Apostrofos, therefore making the same subordinate rules for the Apostrofos also valid. The Petasti is subordinate like so, \( \frac{5}{5} \).
• If the Apostrophos of the Running Elafron accepts a particular syllable like so,

\[
\text{où πρα α ξις ou λο o γος τε λει ei tai}
\]

then it is not a Running Elafron.

**The Hamili.**

The same rules for the Elafron take effect.

**Figure 3.1**  Summary of Orthography Examples

*Ison:*

![Figure 3.1 Ison](image)

*Oligon:*

*(particular syllable)*

![Figure 3.1 Oligon](image)
3.2.2 Synthesis

In the synthesis for melody, the close connection between synthesis and the syllables of the hymn, and the melodic lines for the various modes, present many forms. A consecutive ascent may be manifest with the Oligon, the Petasti, or Kentimata, and a consecutive descent may be manifest with the Apostrofos, the Hyporoe, or the Running Elafron, depending on the rules of orthography. A consecutive ascent for example, of many notes where every note has a particular syllable, must be written with the Oligon, i.e.

\[
\begin{array}{c}
\pi \\
\Delta \alpha \tau \omicron \tau \iota \mu \iota \omicron \omicron \omicron \Sigma \tau \alpha \upsilon
\end{array}
\]

If in a consecutive ascent of particular syllables, where the last ascent happens not to be a particular syllable (but extended), then this last ascent will be Kentimata above the Oligon with a Psifiston underneath, and Apostrofoi must follow. If only one Apostrofos follows, then the Psifiston is not written but only the Kentimata over the Oligon, eg.

\[
\begin{array}{c}
\omicron \\
\Theta \eta \nu \tau \iota \mu \iota \omicron \omicron \omicron \chi \varepsilon
\end{array}
\]

\[
\begin{array}{c}
\digamma \\
\Theta \eta \nu \tau \iota \mu \iota \omicron \omicron \omicron \chi \varepsilon
\end{array}
\]

If there is a consecutive ascent of three or four notes, each having the same syllable, then alternatively after the Oligon the Kentimata are placed, either above or below the Oligon, i.e.

\[
\begin{array}{c}
\varsigma \\
\upsilon \mu \nu \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \omicron \OMICRON \OMICRON \OMICRON \OMICRON \OMICRON \OMICRON \OMICRON \OMICRON
\end{array}
\]
If the ascent has alternative syllables, then after the Oligon the Kentimata are placed on the side, and for the last ascent the Kentimata are placed above the Oligon,

An important note is that the Kentimata never coincide with the thesis when in two beat rhythm. If the Kentimata are observed to be on the thesis, then the rhythm would be a four beat rhythm. The Klasma and Hapli are never on the thesis. It is possible in an ascent for the Kentimata to have a Gorgon or Digorgon without any influence on their synthesis,

If in a consecutive ascent the last ascent has a Klasma, then that will be a Petasti, but there must follow a row of Apostrofoi,

If only one Apostrofos or Elafron follows, the last ascent will be an Oligon, i.e.
When a *thesis* or *arsis* is divided by a Gorgon, and the second part (character) of the *thesis* or *arsis* which accepts the Gorgon does not have a particular syllable, then that character is to be Kentimata (with Gorgon) above the Oligon. If it happens that the divided *thesis* or *arsis* is with an Ison, or an Apostrofos, or an Elafron etc., then the Oligon is to be subordinate and keeping its emphasis, i.e.

If, in the course of a melody, or even at the start, there is a disjunct ascent of two or three intervals, it is preferred that this ascent is a combination with the Petasti, given that there follows one Apostrofos on the *arsis*, i.e.
If after a two or three disjunct ascent interval follow two or three Apostrofoi, then the ascent will have a Klasma,

But if after the ascent follows a character of equal pitch or an ascent, then the combination is to be with the Oligon,

A two interval disjunct ascent combination of an Oligon and Kentima underneath, and particularly with a Psifiston, stands whenever there follows two or more descending characters of equal time:
It is also possible after the disjunct ascent of two intervals to follow a descent with a Gorgon on the first descending note, either with the Hyporoe or the Running Elafron,

If, after the two or three interval ascent follows a descent of two Apostrofoi with a Gorgon or Running Elafron on the second, then the ascent is to be a combination with the Petasti:

Generally, if the ascent is followed by Apostrofoi with Gorgon, then the ascent is to be with the Petasti,

If after a consecutive ascent with a Klasma on the last ascent follows a descent of two tones where the first has a Gorgon, then the ascent is to be a Petasti and the descent an Hyporoe with Gorgon:

If in the above circumstance follows another descent after the Hyporoe, then in place of the Petasti would be an Oligon with Psifiston,
If in the synthesis of the Kentimata there follows a confusion, then an Oligon is placed instead of Kentimata,

\[ \delta \chi \]

and not

\[ \eta \gamma \]

and possibly this \[ \chi \eta \]

The synthesis Oligon with Gorgon and Antikenoma, instead of the Kentimata with Gorgon is most frequent:

\[ \pi \varphi \]

as also the following line because the equal pitch after the Kentimata makes it essential:

\[ \pi \varphi \]

\[ \chi \varepsilon \iota \sigma \tau \omega \varphi \xi \alpha \nu \varepsilon \sigma \tau \eta \eta \]

The nenanism hymns are an exception to these previous rules which apply to characters that have no particular syllable.

Also common are the forms for final cadences of various modes:

\[ \pi \varphi \]

\[ \Delta \]

\[ \eta \gamma \]

\[ \delta \chi \]
Figure 3.2  Summary of Synthesis examples.

Consecutive ascent with a syllable for every note:

Consecutive ascent with the same syllable is written thus:

When a thesis or arsis is divided by a Gorgon having one syllable, the second character of the divided thesis or arsis is to be Kentimata.

For the qualitative characters, i.e. the Psifiston, the Vareia, the Antikenoma, the Heteron, and the Homalon, attention needs to be given for each of their performance. Given according to tradition,
the character may have two or three ways of performance. The Psifiston for example, when it is placed under the Oligon and there follows descending notes, its qualitative value is transferred to the descending note if it is to be accented. The following often appears in various modes:

\[ \text{Ωý Ë ·W ã " ‰ g ÛW ã ã ã `} \]

The accent is on the \( \text{Κυ} \) and not on the \( \text{μου} \).

Another example:

\[ \text{œ Û ‰ Û ` ù · ã c} \]

performed like so: \[ Û ‰ Û ` ù · ã e b ã ` \]

If there are Kentimata above the Oligon (with Psifiston underneath) and there follow descending notes of equal time, then the quality value of the Psifiston is performed as the emphasis on the Psifiston (i.e. for the Oligon), and with a slight fluctuation on the Kentimata, i.e.

\[ \text{FÈ Ë ‰ ¢W ã ã ã `} \]

is performed like so: \[ FÈ Ë ‰ Û × e ¾ ã ã ã ã ` \]

The Vareia placed always before the character, gives an emphasis on the character, but not as strong as the Psifiston. Its forms are as follows:

\[ \text{ει σα κου σο ον Κυ ρι ε} \]
\[ \text{ο ο Θε ος η μω ων} \]
\[ \Lambdaυ ου κα δε ε και} \]
\[ \text{πι τα α τα α τα α α δε ε και} \]

\[ \tauα α τα α τα α \] for pairs, \[ \tauι ις ε ε ξι ι \]
If after an Ison an Apostrofos has a particular syllable, then a Petasti (even though subordinate) is placed under the Ison,

\[
\text{Ku $\xi_t$ $\varepsilon$ $\varepsilon$}
\]

\[
\text{ei $\sigma\alpha\varsigma\omega\upsilon$ $\sigma\omicron\upsilon\nu$ $\mu\omicron\upsilon$}
\]

### 3.2.3 Orthography and Synthesis

The orthography rules for Byzantine music are like the grammar for the Greek language. Every character has its place, and *intonation* is compared with *punctuation signs* (see also Cadences on p.130). The Ison is used only as an Ison, the Oligon as an ascending character, and both accept all the signs of intonation or undulation, i.e. the Vareia, the Psifiston, the Antikenoma, the Homalon and the Heteron.

The Vareia is placed before the Oligon or Ison whenever they are followed by a descent without a particular syllable, and even if the descent is with a Gorgon.

The Psifiston is placed underneath (the Ison or Oligon) when there follows at least two descending characters of equal time, \(\text{Ku $\xi_t$ $\varphi_t$ $\varepsilon$ $\varepsilon$}\). The Vareia is also placed when the Apostrofoi proceed in pairs, \(\text{Ku $\varphi_t$ $\varsigma_t$ $\varepsilon$ $\varepsilon$}\), and before the ison in the following characteristic line \(\text{Ku $\varphi_t$ $\xi_t$ $\varepsilon$ $\varepsilon$}\).

The Homalon is placed when characters have a Klasma and are followed by a descending character with Klasma. Also in the following line \(\text{Ku $\varphi_t$ $\varepsilon$ $\varepsilon$}\).

The Heteron is placed when joining two equal pitch characters, \(\text{Ku $\alpha_t$ $\varepsilon$ $\varepsilon$}\), and calls for a slight undulation, or, \(\text{Ku $\alpha_t$ $\varepsilon$ $\varepsilon$}\), which calls for no break or interruption in the line (this is when it is called Syndesmos).
The Antikenoma is placed underneath in the line, Û ã e · Û ã e, or in the intonation of the *aris*, Ù Ù Ù Ù. The main rules are those for the Oligon and the Petasti. When after the Oligon follow descending notes of equal time, then the Oligon accepts the Psifiston. If though before the descending characters the character has a Klasma, then a Petasti takes the place of the Oligon. In the final cadence and synthesis, Ù Ù Ù Ù, the Gorgon should be an Argon in order to perform the undulation of the Homalon. If it is a Gorgon, then it calls for a toss of the voice, i.e. Ù Ù Ù Ù is performed like so, Ù Ù Ù Ù.

All of the quantitative characters accept the Gorgon, except for the Petasti. The Petasti, whether it be subordinate or not, accepts only the Klasma, and the Hapli in the following form, Ù Ù Ù Ù, (with neither a Digorgon nor an Argon).

In the hymns of tererism, if the time key Ù Ù, is applied, the rhythm is to be six beat rhythm in *double time*, and is called *Ditrochaisos Daktulikos* or *Hyposkazon* (meaning of a slight limp). In this rhythm the first beat of the *thesis* or *aris* is made long with the Klasma, and the Gorga are disabled (ignored) therefore making the following form: Ù Ù Ù Ù Ù Ù. If the *thesis* or *aris* in the *Ditrochaion* form has a Klasma (Ù Ù Ù Ù), then it becomes a Dipli (Ù Ù Ù Ù). The use of this rhythm (also called *Diploun Analelimenon*), may also be found in hymns of Wishing many years (*Polichronismoi*), or in *Katavasias*. 
In Byzantine music, genre (*genos*) is a word describing a type of melody consisting of all the musical elements, i.e. a specific scale divided into tetrachords consisting of particular tones (such as Natural tones, Semitones, Super-Major tones, Hemiola tones, Super-Hemiola tones), Modal systems, and all the other musical ingredients. Therefore, we may simply distinguish the genre in music to be a specific division of a tetrachord or pentachord.

There are three genres: the Diatonic, the Chromatic, and the Enharmonic genres.

The Diatonic genre is the name used to describe a melody which works with the Natural scale consisting of the standard tones, i.e. the Major tone, the Minor tone and the Minute tone.

The Chromatic genre is the name used to describe a melody which works with a scale consisting of Major tones, Super-Major tones, Hemiola tones, Super-Hemiola tones, Semitones, Third and Quarter tones. This scale is called a Chromatic scale.

The Enharmonic genre is the name used to describe a melody which works with a scale consisting of (Major) tones and Semitones (i.e. a tetrachord with the intervals of 12, 12, and 6 units).

The difference between the Enharmonic and Chromatic genres is great, as for the difference between the Enharmonic and Diatonic genres is less. The reason being, the Enharmonic scale mostly works Diatonically with the only difference that the three notes, high Zo, low Zo, and Vou, are performed diminished (i.e. Semitones), and all the other notes remain fixed.
A mode is “a set of notes which form the material of melodic idioms used in composition”.

In Byzantine music each mode has the following four components:
- An Apihima,
- A scale,
- Dominating notes, and
- Cadences.

**APIHIMA**

The *apihima*, also known as an intonation, is a kind of melodic prelude. It is a preparation or an introduction to a particular mode, in the form of a short melodic line or phrase. Every mode has a melodic prelude, which is performed with the pronunciation of one or more syllables, and the melody ends on the base note of the mode.

**SCALE**

Every mode uses a scale, whether it be a Diatonic, a Chromatic, or an Enharmonic scale.

**DOMINATING NOTES**

In a melody’s progress, the melody works around particular notes of the scale. These notes are dominating notes. Each melody and mode has a base note, which will always be one of the dominating notes. Dominating notes also have an effect on their neighbouring notes, attracting them and influencing their intervals (i.e. making an interval of 4 units).
CADENCES

All melodies have cadences, or endings of musical phrases. These cadences may be compared to the punctuation of a hymn i.e. the comma (,), the semicolon (;), represented in Greek by a high period (·); and the period or full stop (.). There are three types of melodic cadences: the incomplete cadences, which correspond to the comma, the complete cadences, which correspond to the semicolon, and the final cadences, which correspond to the period. Each cadence ends on one of the dominating notes which vary according to the mode in use.

The eight modes may be divided into two groups, the Authentic modes (i.e. First, Second, Third, and Fourth modes), and the Plagal modes (i.e. Plagal First, Plagal Second, Varis (Plagal Third), and Plagal Fourth modes), which derive from the Authentic modes. We shall discuss separately each mode with their melodic idioms.

3.4.1 FIRST MODE

The First mode belongs to the Diatonic genre. It works with the Diatonic scale from the note Pa. This base note Pa was transferred from the original position Ke for various reasons, though there are still melodies of First mode which are performed from Ke.

APIHIMA

The old traditional apihima for the First mode is:

```
A α α ια α ιε ε ε ε α α ιε ε Ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε
The simplified version more common today is:

\[
\begin{array}{c}
\varepsilon \\
\alpha \\
\varepsilon \\
\varepsilon
\end{array} \quad \begin{array}{c}
\gamma \\
\varepsilon \\
\varepsilon
\end{array}
\]

or

\[
\begin{array}{c}
\varepsilon \\
\varepsilon \\
\varepsilon
\end{array} \quad \begin{array}{c}
\nu \\
\varepsilon \\
\varepsilon
\end{array}
\]

or the following for the note \( Pa \),

\[
\begin{array}{c}
\varepsilon \\
\nu \\
\varepsilon
\end{array}
\]

**SCALE**

The First mode uses the Diatonic scale from the note \( Pa \), as shown in figure 3.3.

**Figure 3.3** First mode scale with Tone keys and fthoras.

Depending on a melody’s range of notes, some melodies use the Octave system (this includes the whole scale in figure 3.3), and other melodies use the Pentachord system or Wheel (this includes only the four intervals from \( Pa \) to \( Ke \)). The diagram in figure 3.4 compares the Diatonic scales of the Octave system and the Pentachord system, and the effects on the Tone keys and intervals.

**DOMINATING NOTES**

The dominating notes vary according to the type of melody being performed.

- The eirmologika melodies have the dominating notes: \( Pa \) and \( Thi \) (and sometimes \( Ga \)).
The Wheel is achieved by placing the fthora of Diatonic Pa, φ, on the notes indicated, for ascending the scale. The fthora of Diatonic Ke, δ, is placed on the same notes for descending the scale.
• The sticherarika melodies have the dominating notes: Pa and Ga (and sometimes Thi).
• The papadika melodies have the dominating notes: Pa, Ga, Thi and Ke.

CADENCES

The cadences also vary according to the type of melody being performed.
• The eirmologika melodies have incomplete cadences on note Thi (and Ga), complete and final cadences on note Pa (the base note).
• The sticherarika melodies have incomplete cadences on note Ga (or Thi), complete and final cadences on note Pa.
• The cadences for the papadika melodies vary.

3.4.2 SECOND MODE

The Second mode belongs to the Chromatic genre. It works with the Soft Chromatic scale from the note Ni. The base note for this mode is Thi (which was transferred from the original base note Vou).

APIHIMA

The old traditional apihima for the Second mode is:

The simplified apihima for Second mode:
SCALE

The Second mode uses the Soft Chromatic scale from the note Ni, see figure 3.5.

![Second mode scale with Tone keys and fthoras](image)

The Chromatic genre melodies use the Pentachord system. The Soft Chromatic pentachord used for this system is the scale segment from note Ni to note Thi.

DOMINATING NOTES

- The dominating notes for the eirmologika melodies are, Thi, Vou, and Zo’.
- The sticherarika melodies have the dominating notes: Ni, Vou, Thi, and Zo’.
- The papadika melodies have the dominating notes: Ni, Vou, Thi, and Zo’ (or they rather vary because of variations).

CADENCES

- The eirmologika melodies have incomplete cadences on note Vou, complete and final cadences on note Thi.
- The sticherarika melodies have incomplete cadences on notes Vou and Zo’, complete and final cadences on notes Thi and low Ni.
- The papadika melodies have the cadences same as those for the sticherarika melodies. Within the papadika melodies, various
melodic lines use the Plagal Second mode which vary the cadences.

**NOTE**

In the Second and Plagal Second modes, there is a mutual borrowing of mode. Various *eirmologika* melodies of Second mode are performed in Plagal Second mode (from the note *Vou*), and vice versa.

When a melody in Second mode descends to the note *Pa* (and then returns), then *Pa* will be performed on its Natural Diatonic position (i.e. making the interval *Pa-Vou* 10 units). When the melody descends to the note *Ni*, then the note *Pa* is performed on the Soft Chromatic position (i.e. the interval *Pa-Vou* is 14 units).

### 3.4.3 Third Mode

The Third mode belongs to the Enharmonic genre. The base note for the Third mode is *Ga*.

In the progress of a melody in Third mode, the position of the note *Zo’* will always be in Enharmonic position whether there is an Enharmonic *fthora*, ☞, on note *Zo’* or not (i.e. the interval *Ke-Zo’* is 6 units). As for the melodic progress below the note *Ga*, it is always Diatonic.

The general flat and sharp are only used in Third mode. They are used for a short period, i.e. a melodic phrase, and are undone with a *Tone key* or another *fthora*. The general flat, ☞, is placed on the note *Ke*, and calls for a flat *Zo’* making the interval *Ke-Zo’* 4 units. The general sharp, ☞, is placed on the note *Ga*, and calls for a sharp *Vou* making the interval *Vou-Ga* 4 units.
In the papadika melodies, there is a transposition of a tetrachord. The fthora of Diatonic Ni, ɔ, is placed on the base note Ga changing the melodic scale (i.e. the Diatonic Scale of Ni on the pitch of note Ga, which is like performing the Plagal Fourth mode from note Ga).

APIHIMA

The old traditional apihima for the Third mode is:

\[ \text{APIHIMA} \]

A simple apihima would be the syllable \( \text{ιε} \) on the base note, Ga.

SCALE

In order to make an Enharmonic scale from the note Ga, the Enharmonic fthora is placed on the notes Zo’ and Vou’ (i.e. making two Enharmonic tetrachords attatched, or linked to each other, with a Major tone at the peak.), see fig. 3.6.

The diagram in figure 3.7 compares the scales of the three ways for chanting in Third mode (i.e. from above to below): with the Enharmonic fthora; with the general flat and sharp; and with the transposition of a tetrachord.
Figure 3.7
The different scales for Third mode, with Enharmonic fthora (above), general flat and sharp (middle), and transposition of a tetrachord (below).
Dominating Notes & Cadences

- The dominating notes for the *eirmologika* and *sticherarika* melodies are *Pa*, *Ga*, and *Ke*.
- The *eirmologika* and *sticherarika* melodies have incomplete cadences on note *Ke*, complete cadences on note *Ga*, and final cadences on note *Pa*.
- For the *papadika* melodies, the dominating notes and cadences are those of Plagal Fourth mode. This is due to the placing of the Diatonic *fthora* of *Ni*, 2, on the base note *Ga* (i.e. a *para-chord*).

3.4.4 Fourth Mode

The Fourth mode belongs to the Diatonic genre.

The base note for this mode varies according to the melody being performed. In Fourth mode the *eirmologika* melodies have the base note *Vou*, the *sticherarika* melodies have the base note *Pa*, and the *papadika* melodies have the base note *Thi*. The names used to distinguish the three types of Fourth mode are: *Legetos* mode for melodies with base note *Vou*, Fourth mode for melodies with base note *Pa*, and Hagia mode for melodies with base note *Thi* (the traditional base note for Fourth mode).

Apihima

The old traditional *apihima* for Hagia mode is:

```
A α α χα α α χα α α α α γι ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε ε
And for Legetos mode is:

\[ \text{λε} \text{ ς ς ς ς ς \ λε \ ς ς ς ς ς \ γε \ ς \ το \ ος} \]

The simple apihima for Hagia mode is:

\[ \text{Α \ γι \ α \ α \ α \ α \ α \ α} \]

For Legetos mode is: \[ \text{λε} \text{ ς ς ς ς ς \ γε \ ς \ το \ ος} \]

or \[ \text{λε} \text{ ς ς ς ς ς} \]

or \[ \text{λε} \text{ ς ς ς ς ς} \]

For Fourth mode with base note Pa:

\[ \pi \text{ λε} \]

SCALE

The Fourth mode uses the Diatonic scale in the Octave system. (See figure 3.11 on p.148)

DOMINATING NOTES

- The dominating notes for the eirmologika melodies are, Vou and Thi (and sometimes Zo’).
- The dominating notes for the sticherarika melodies are, Pa, Vou and Thi.
- The dominating notes for the papadika melodies are, Thi, Vou and Zo’.

CADENCES

- The eirmologika melodies have incomplete cadences on note Thi (or Zo’), and complete and final cadences on note Vou.
- The sticherarika melodies have incomplete cadences on notes Thi
and *Vou*, complete cadences on note *Pa*, and *final* cadences on note *Vou*.

- The *papadika* melodies have *incomplete* cadences on notes *Pa* and *Zo’*, *complete* and *final* cadences on note *Thi*.

**NOTE**

Noteworthy idioms for Hagia mode:

- When a melody ascends further than note *Zo’*, then *Zo’* is performed on its Natural Diatonic position. The same applies when note *Zo’* dominates and also calls for the attracting of note *Ke*.
- When a melody ascends and only touches the note *Zo’* (and then returns), then *Zo’* will be diminished by only 2 units, and not more because it will sound Enharmonic. The same applies when descending from above the note *Zo’* (this idiom for note *Zo’* is valid for all the Diatonic modes).
- When a melody descends below the note *Thi*, and only touches the note *Ga* and then returns, then *Ga* will be attracted to *Thi*.
- When a melody descends from note *Thi*, and touches the note *Vou* and returns, then *Vou* after being touched will be attracted to *Ga*, and *Ga* will be attracted to *Thi*, on the ascent.
- When a melody descends below the note *Thi*, and only touches the note *Pa* and then returns, then *Pa* will be attracted to *Vou*, *Vou* to *Ga*, and *Ga* to *Thi*, on the ascent.
- When a melody remains on a note, the note stands on its Natural position.

*Legetos* mode often likes to indicate the note *Ke* with a 2 unit flat, to make a perfect fourth when working with the note *Vou*. 
3.4.5  Plagal First Mode

Plagal First mode belongs to the Diatonic genre, and works with the Diatonic scale from the note Pa, like First mode.

The base note for Plagal First mode is Pa. The eirmologika melodies have the base note Ke, because they borrow the First mode.

APIHIMA

The old traditional apihima for Plagal First mode is:

```
A     a   lae   e   e   e   e   e   e   a   a   a   a   Na   a   a   a   uae5
```

The simple apihima for Plagal First mode is:

```
A        lae   a   uae5     or      pi   uae

or       u2   uae
```

when the base note is Ke.

SCALE

The Plagal First mode uses the Diatonic scale from the note Pa. It uses the Octave system, and sometimes uses the Pentachord system (like in First mode).

DOMINATING NOTES

- The eirmologika melodies have the dominating notes: Ke and Ni´.
- The sticherarika melodies have the dominating notes: Pa, Thi, and Ke.
- The papadika melodies have the dominating notes: Pa, Ga, Thi, and Ke.
CADENCES

- The *eirmologika* melodies have *incomplete* cadences on note *Ni´*, and *complete* and *final* cadences on *Ke*.
- The *sticherarika* melodies have *incomplete* cadences on notes *Thi* and *Ke*, *complete* cadences on note *Pa*, and *final* cadences on notes *Thi* and *Pa*.
- The *papadika* melodies have *incomplete* cadences on notes *Thi* and *Ke*, *complete* cadences on notes *Thi* and *Pa*, and *final* cadences on note *Pa*.

NOTE

Often, Plagal First mode likes to indicate the note *Zo´* flattened, with either the flat sign, $\flat$, or with the Enharmonic *fthora*, $\flat$. When the Enharmonic *fthora* is used, it makes the second tetra-chord of the scale Enharmonic.

3.4.6 PLAGAL SECOND MODE

Plagal Second mode belongs to the Chromatic genre, and has the base note *Pa*. The base note also varies according to the melody being performed. There are melodies that have the base note *Thi* (a second type of Plagal Second mode, also known as *Nenano*), and melodies that borrow the Second mode having the base note *Vou* or *Thi*.

APIHIMA

The old traditional *apihima* for the Plagal Second mode is:
And the old traditional *apihima* for *Nenano* of Plagal Second mode is:

\[
\begin{array}{cccccccccccc}
\varepsilon & \delta & \alpha & \alpha & \varepsilon & \delta & \alpha & \alpha & \varepsilon & \delta & \alpha & \alpha \\
\end{array}
\]

The simple *apihima* for when the base note is *Pa*, is:

\[
\begin{array}{cccccccccccc}
\varepsilon & \delta & \chi & \varepsilon & \alpha & \varepsilon & \varepsilon & \varepsilon & \varepsilon & \varepsilon & \varepsilon & \varepsilon \\
\end{array}
\]

The simple *apihima* for when the base note is *Thi*, is:

\[
\begin{array}{cccccccccccc}
\varepsilon & \delta & \varepsilon & \delta & \alpha & \varepsilon & \varepsilon & \varepsilon & \varepsilon & \varepsilon & \varepsilon & \varepsilon \\
\end{array}
\]

The simple *apihima* for the melodies that borrow Second mode is:

\[
\begin{array}{cccccccccccc}
\varepsilon & \delta & \varepsilon & \varepsilon & \varepsilon & \varepsilon & \varepsilon & \varepsilon & \varepsilon & \varepsilon & \varepsilon & \varepsilon \\
\end{array}
\]

**SCALE**

The Plagal Second mode uses the Hard Chromatic scale from the note *Pa*, as shown in figure 3.8.

**Figure 3.8** *Plagal second mode scale with Tone keys and fthor\(\alpha\)s.*

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>20</td>
<td>4</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>20</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Melodies in Plagal Second mode belong to the Chromatic genre, and use the Pentachord system. The Hard Chromatic pentachord used for the system is the scale segment from note *Pa* to note *Ke*. 
Dominating Notes

- The *eirmologika* melodies which have base note *Pa*, have the dominating notes *Pa* and *Thi*.
- The *eirmologika* melodies which have base note *Vou* or *Thi* (because of the borrowing of Second mode), have dominating notes *Thi* and *Vou*.
- The *sticherarika* melodies have dominating notes *Pa*, *Thi*, and *Ke*.
- The *papadika* melodies have dominating notes *Pa*, *Thi*, and *Ke*.

Cadences

- The *eirmologika* melodies that have base note *Pa*, have *incomplete* cadences on note *Thi*, *complete* and *final* cadences on *Pa* (*final* cadences are sometimes on *Thi*).
- The *eirmologika* melodies that borrow Second mode have *incomplete* cadences on note *Thi*, and *complete* and *final* cadences on note *Vou*.
- The *sticherarika* melodies have *incomplete* cadences on notes *Thi* and *Ke*, *complete* and *final* cadences on note *Pa* (*final* cadences are sometimes on note *Thi*).
- The *papadika* melodies have same cadences as the *sticherarika* melodies.

Note

Those melodies of Plagal Second mode that have base note *Thi*, are also called *Nenano* or *Palatinon* melodies. These melodies begin and end on note *Thi*. Depending on the pentachord in which the melody is walking in (i.e. *Pa-Ke* or *Thi-Pa*′), the cadences are on notes *Pa*, *Ga* and *Ke*, or *Thi*, *Zo*′ and *Pa*′.

In a Hard Chromatic pentachord, the interval *Ga-Thi* has a distance of 4 units. When a melody is to remain on the note *Ga* (i.e.
for more than one beat, or as a cadence), the acoustic performance of the note Ga is 2 units lower than its natural Chromatic position (i.e. the interval Ga-Thi becomes 6 units).

### 3.4.7 VARIS MODE (Plagal Third mode)

The Varis mode belongs to the Enharmonic genre, though there are melodies which use the Diatonic scale from the note Zo (low), which belong to the Diatonic genre.

The base note for the Enharmonic Varis mode is Ga, and the Diatonic Varis mode has the base note Zo.

**APIHIMA**

The old traditional apihima for the Varis mode (i.e. Enharmonic) is:

\[
\begin{align*}
\phi & \quad \alpha & \quad \alpha & \quad \alpha & \quad \alpha & \quad \alpha & \quad \alpha & \quad \lambda e & \quad \varepsilon & \quad \varepsilon & \quad \varepsilon & \quad \varepsilon & \quad \varepsilon & \quad \varepsilon
\end{align*}
\]

The simple apihima for Varis mode (Enharmonic) is:

\[
\begin{align*}
\phi & \quad 5 & \quad \Gamma & \quad \Gamma \\
\Lambda & \quad \alpha & \quad \lambda e & \quad \varepsilon & \quad \varepsilon & \quad \varepsilon & \quad \varepsilon & \quad \varepsilon & \quad \varepsilon & \quad \varepsilon
\end{align*}
\]

The apihima for Diatonic Varis mode is:

\[
\begin{align*}
\lambda e & \quad \varepsilon & \quad \varepsilon & \quad \varepsilon & \quad \varepsilon & \quad \varepsilon & \quad \varepsilon & \quad \varepsilon & \quad \varepsilon & \quad \varepsilon
\end{align*}
\]

**SCALE**

The Enharmonic Varis mode uses the same scale as the Third mode. There are also melodies which are performed in Varis mode Enharmonic Heptafonos (meaning seven tones), which use the Enharmonic scale from Zo in the Enharmonic position, in figure 3.9.
The Diatonic Varis mode uses the Diatonic scale from note Zo, see figure 3.10.

**Figure 3.9**  *Enharmonic Varis mode scale with Tone keys and fthoras.*

\[
\begin{array}{cccccccc}
12 & 12 & 6 & 12 & 12 & 12 & 6 \\
\text{	extasciitilde{H}} & \text{\textasciitilde{I}} & \text{\textasciitilde{Q}} & \text{\textasciitilde{O}} & \text{\textasciitilde{A}} & \text{\textasciitilde{K}} & \text{\textasciitilde{N}}
\end{array}
\]

**Figure 3.10**  *Diatonic Varis mode scale with Tone keys.*

\[
\begin{array}{cccccccc}
8 & 12 & 10 & 8 & 12 & 12 & 10 \\
\text{\textasciitilde{G}} & \text{\textasciitilde{I}} & \text{\textasciitilde{Q}} & \text{\textasciitilde{O}} & \text{\textasciitilde{A}} & \text{\textasciitilde{K}} & \text{\textasciitilde{N}}
\end{array}
\]

**DOMINATING NOTES AND CADENCES**

- The dominating notes for the *eirmologika* and *sticherarika* melodies are *Ga*, *Thi* and *Zo*.
- The *eirmologika* and *sticherarika* melodies have incomplete cadences on note *Thi* (sometimes on note *Pa* or *Ni*), and complete and final cadences on note *Ga*.

The *papadika* melodies use the Diatonic Varis mode.

- Diatonic Varis mode has dominating notes: *Zo*, *Pa*, *Ga*, *Thi*, and *Zo*.
- *Incomplete* cadences are made on notes *Ga*, *Thi* and *Zo*, and *complete* and *final* cadences on note *Zo*. 
The forms of Diatonic Varis mode that appear are:
- First-Varis Pentafonos;
- Varis Tetrafonos;
- Varis Heptafonos; and
- Varis Mixed (i.e. Chromatic and Diatonic).

In First-Varis Pentafonos, the melody works with the First mode tetrachord, Pa-Thi, and ends on Zo.

In Varis Tetrafonos, the melody works around the dominating note Ga, which calls for a flat on note Zo’, and attracting its neighbouring notes Thi and Vou towards it.

In Varis Heptafonos, the melody works with the Tetrachord Ga-Zo’, where Zo’ has the Diatonic position. This calls for a sharp Ga (making a perfect tetrachord) and the note Ke is attracted to Zo’. When the melody moves away from the tetrachord Ga-Zo’, then Ga returns to its Natural Diatonic position (i.e. the interval Ga-Thi is 12 units).

3.4.8 PLAGAL FOURTH MODE

The Plagal Fourth mode belongs to the Diatonic genre, and has the base note Ni. This mode works with the Natural Diatonic scale from note Ni, from which all other scales derive from.

This mode generally uses the Octave system. Some melodies though, have the base note Ga, because of the transposition of a tetrachord and therefore using the Tetrachord system.

Also, there are melodies which have the base note Vou.
APIHIMA

The old traditional *apihima* for Plagal Fourth mode is:

![Image of the old traditional apihima for Plagal Fourth mode]

The simple apihima is:

![Image of the simple apihima for Plagal Fourth mode]

or

![Image of another variation of the simple apihima]

or

![Image of another variation of the simple apihima]

or for when the base note is Ga:

![Image of the apihima for Ga]

and when the base note is Vou:

![Image of the apihima for Vou]

SCALE

The Plagal Fourth mode uses the Natural Diatonic scale from note *Ni* with the Octave system, see figure 3.11:

![Figure 3.11 Plagal Fourth mode scale with Tone keys and fthoras]

For the Plagal Fourth mode scale with the transposition of a tetra-chord, see p.137, figure 3.7.
DOMINATING NOTES

- Melodies in the Octave system with base note Ni (or Vou), have dominating notes: Ni, Vou, Thi (and sometimes Ni’).
- Melodies in the Tetrachord system with base note Ga, have dominating notes: Ga and Thi (and sometimes Ke and Zo’).

CADENCES

- Melodies in the Octave system have incomplete cadences on notes Vou, Thi and Ni’, and complete and final cadences on note Ni (rarely final on Vou).
- Melodies in the Tetrachord system have incomplete cadences on note Thi (sometimes on note Ke), and complete and final cadences on note Ga.

NOTE

In a melodic ascending movement the note Zo is attracted to Ni, Pa to Vou, Ga to Thi, and Zo’ to Ni’.

In a melodic descending movement the note Zo’ is attracted to Ke (as explained in the note for Hagia mode).

Plagal Fourth mode also likes to use Second mode on note Thi.
3.5 **Precedent Verses.**

Many of the hymns chanted are preceded by a verse. The way these verses are chanted play an important role for the following hymn. They introduce the rhythm, tempo and the mode of the melody that is to be chanted. The verses vary according to the type of the hymn and the idiom of the mode.

The *Time key* used for the verses is the fastest, \( \sqrt[4]{\text{ti}} \), forming an *accented rhythm*. The verse is recited melodically on a particular note. The ending or cadence of the verse changes in tempo into that of the hymn to be chanted, and with a little melodic enrichment introducing the mode.

In the **First mode**, hymns of the *eirmologikon* type have their verses performed on the dominating note *Thi*, and end on the same note. Hymns of the *sticherarikon* type have their verses performed on the note *Pa*, and end on the same note.

In the **Second mode**, the hymns of the *eirmologikon* type have their verses performed on the note *Thi*, and end on note *Pa* (because of the borrowing of Plagal Second mode). Hymns of the *sticherarikon* type have their verses performed on note *Thi*, and end on the same note.

In the **Third mode**, the hymns of the *eirmologikon* type have their verses performed on note *Ke*, and end on note *Pa*. Hymns of the *sticherarikon* type have their verses performed on note *Ke*, and end on note *Pa*.

In the **Fourth mode**, hymns of the *eirmologikon* type have their verses performed on note *Vou*, and end on note *Vou*. Hymns of the *sticherarikon* type have their verses performed on note *Pa*, and end on note *Pa*. 
In the **Plagal First mode**, hymns of the *eirmologikon* type have their verses performed on note *Ke*, and end on note *Ke*. Hymns of the *sticherarikon* type have their verses performed on note *Thi*, and end on note *Pa*, or, performed on note *Ke*, and end on note *Ke* (depending on the hymn).

In the **Plagal Second mode**, hymns of the *eirmologikon* type have their verses performed on note *Thi*, and end on note *Thi* (because of the borrowing of Second mode). Hymns of the *sticherarikon* type have their verses performed on note *Thi*, and end on note *Pa*.

In the **Varis mode**, hymns of the *eirmologikon* type have their verses performed on note *Ga*, and end on note *Ga*. Hymns of the *sticherarikon* type have their verses performed on note *Ga*, and end on note *Ga*.

In the **Plagal Fourth mode**, hymns of the *eirmologikon* type have their verses performed on note *Thi*, and end on note *Ni*. When with the *variation of a Tetrachord*, the verses are performed on note *Ga*, and end on note *Ga*. Hymns of the *sticherarikon* type have their verses performed on note *Vou*, and end on note *Ni*. Verses for hymns with base note *Vou* are performed on note *Vou*, and end on note *Vou*.

The following are some examples of verses for hymns in the Plagal Fourth mode:
Example 3.3  Verse examples

For brief/short eirmologikon type:

For long eirmologikon type:

For brief/short eirmologikon type with variation of a Tetrachord:
For sticherarikon type:

Εξα γα γε εκ φυ λα κης την ψυ χην μον
tου ε ξο μο λο γη σα σθαι αι αι τω ω ο νο μα
tι ι ι ι σου

For eirmologikon type ending on note Vou:

Άι νει τε αυ τον εν τυμ πα νω και χο ρω
αι νει τε αυ τον εν χωρ δαι αις και ορ γα α νω
RHYTHMICS\(^1\) for the ancient Greeks was a science for the use of rhythm. Rhythm is a system of beats according to their order. It may be characterized in relation to its speed (whether it be fast or slow) into four parts: thesis, arsis, psofos and eremia. Thesis is the downward movement of a body; arsis is the upward movement of a body; psofos is the body’s impact; and eremia is the stillness of the body.

Rhythm is accomplished with the movement of a body where its beats are measured and kept in a particular order. A drummer plays the drum in rhythm, when the sounds of the drum are kept in a designated order, the beats are measured with the four characteristics (i.e. thesis, arsis, psofos and eremia), therefore fulfilling one rhythm and repeating the same rhythm in equal time span.

There are three senses that perceive rhythm; sight (used in dance); hearing (used in melody); and touch (in feeling the heart’s pulse-rate). As for musical rhythm, it is perceived by two of the above, namely sight and hearing. In music, movement of body, melody and words are regulated. The various parts of rhythm are; the beat, the poda, the pace (tempo) of the rhythm, variations, and rhythm-making. We shall assess the first element of rhythm, the beat.
4.1 Beat.²

For our purpose, the beat is the shortest measured unit. The ancient Greeks related beats with syllables. Short syllables were noted with the sign, ˘ (breve). Long syllables were noted with the sign, ˉ (long). A compound beat is one which may be divided. This may be double, or triple, or quadruple the short beat (or breve).

Beats are measured with thesis and arsis. When a short beat is in thesis it is noted with 0, and when it is in arsis it is noted with 1. In practice, thesis (down movement) is performed by hitting the right knee with the right hand, and arsis (upward movement) is performed by lifting the right hand. Due to the no impact sound of arsis, the left hand clarifies the arsis by hitting the left knee.³

The short beats are noted 0, 1; the double beats are indicated with a dot 0, 1; the triple beats are indicated with two dots 0, 1; the quadruple beats are indicated with three dots 0, 1; and so forth.

When relating one beat with another, three terms are used; equal time, double time, and hemiola time (whole plus a half).⁴ These two beats 0 1 (i.e. one thesis and one arsis), when compared with each other, have equal time value (i.e. the thesis and arsis show equal time). When we have two beats compared to one, i.e. 0 0 1, the double thesis show us that the thesis has double the time of the arsis. Further more, when comparing three beats to two, i.e. 0 0 0 1 1, the triple thesis shows us it has one and a half the time (or hemiola time) of the double arsis.

In performing thesis and arsis, psofos and eremia are observed. On a drum’s impact, the psofos lasts for as long as the beat calls for. Eremia is the time the hand is sustained in the air waiting for the next beat.
As an exercise let us consider the following *poda* (a type of set of beats), \( \text{0 1 0} \). Here we have the right hand hitting the right knee for the long beat \( \text{0} \), starting the *psofos*, and then staying in *eremia* until the second beat of the *thesis* is complete. Before the *thesis’* completion, the left hand begins its downward movement (at least the *hemiola* of the *thesis* should be complete by now), in order to make the impact or *psofos* of the *arsis* \( \text{1} \), as soon as the long *thesis* has completed its time. Again just before the completion of the *arsis*, the right hand begins its downward movement to sound the *psofos* of \( \text{0} \), as soon as the *arsis* is complete, and then remaining in *eremia* completing the time of the *poda*.

When we have two equal signs of equal time, the first *eremia* is shorter than the second, as in \( \text{0 0 1 1} \). Here the first *thesis* calls for the right hand to rise for a shorter *eremia* in order for the second *thesis* which is followed again by a long *eremia*, through to the end of the double long *arsis*. The same stands for the double long *arsis*.

### 4.2 PODA.\(^5\)

A *poda* is a part of a rhythm (or a metrical foot). The *poda* makes it easier to understand the rhythm as a whole. A *poda* can not be made up of only *thesis* or only *arsis*, but is made up of a combination of both *thesis* and *arsis*. Therefore combining *thesis* and *arsis*, whether it be one with many or many with one, forms a *poda*. When combining the parts of a *poda*, i.e. *thesis* and *arsis*, in various ways, we get the following *podas*:

- The two beat *poda*, \( \text{0 1} \), or \( \text{1 0} \).
- The three beat *poda*, \( \text{0 1 1} \), or \( \text{0 1} \), or \( \text{0 0 1} \), or \( \text{0 1} \), or \( \text{1 1 0} \), or \( \text{1 0} \).
- The four beat *poda*, \( \text{0 0 1 1} \), or \( \text{0 1 1} \), e.t.c.

If we look at *poda* \( \text{0 1} \), we can say it is made up of a one beat or short *thesis*, and a two beat or long *arsis*. Likewise, \( \text{1 0} \), is made up of a three beat *arsis* and a four beat *thesis*. 
There are three types (or genres) of podas: the *equal poda*, the *double poda* and the *hemiola poda*.

- The *equal poda* is called *Daktilikon*. As in 0 1 1, the *thesis* has equal time with the *arsis*.
- The *double poda* is called *Iambikon*. As in 1 0, the *thesis* has double the time of the *arsis*.
- The *hemiola poda* is called *Paionikon*. As in 0 0 1, the *thesis* has *hemiola* time of the *arsis*.

The rhythmic *podas* of the *Daktilikon* type are as follows, with their names:

- 0 1  *Simple Prokeleusmatikos*
- 0 0 1 1  *Double Prokeleusmatikos*, it can also be 1 1 0 0
- 0 1 1  *Anapaistos in the major*
- 1 1 0  *Anapaistos in the minor*
- 0 1  *Simple Spondeios*
- 0 1  *Double Spondeios*

The rhythmic *podas* of the *Iambikon* type are four:

- 1 0  *Iambos*, or 0 1
- 0 1  *Trochaisos*, it has also been called *Horeion*
- 1 0  *Upright Iambos*
- 0 0 1  *Trochaisos semantos*

The rhythmic *podas* of the *Paionikon* type are two:

- 0 0 1  *Paion diaguios*
- 0 1 0 0 1  *Paion epibatos*

The *equal podas* begin with the two beat *poda*, 0 1, and may expand to fill a sixteen beat rhythm. The *double podas* begin with the three beat *poda*, 1 0, and may expand to fill an eighteen beat rhythm. The *hemiola podas* begin with the five beat *poda*, and may expand to fill a twenty-five beat rhythm.
A melody may be said to be in meter when the musical characters are divided with vertical lines (bar lines), enclosing as many beats the meter calls for. Meters (or bars) are kept in such manner.

If for example we consider the Prokeleusmatikon poda, 0 1, the meter will embrace two beats, making a two beat meter. This meter performed will involve one hit on the knee, and one hit in the air. Therefore the meter may be identified with the poda.

If we consider a three beat poda, i.e. one thesis and two arsis, 0 1 1, the meter will embrace three beats, making a three beat meter. This performed involves one hit on the knee and two in the air. Again the meter may be identified with the Iambikon poda, 0 1.

Furthermore, considering the four beat poda, i.e. two thesis and two arsis, 0 0 1 1, the meter embraces four beats making a four beat meter. When performed, it involves two hits on the knee and two in the air, and may be identified with the Double Prokeleusmatikon poda.

Again, if we consider two thesis and three arsis, when the meter is kept it embraces five beats making a five beat meter. In performance this meter involves two hits on the knee and three in the air (to the right, then to the left and then upwards). If we perform the five beats as one long thesis, one short thesis and one long arsis, then we may identify the meter with the Paion Diaguios poda, 0 0 1.

When considering two thesis and four arsis, the meter when kept embraces six beats making a six beat meter. Performing involves two hits on the knee and three in the air (short to the right, short to the left and one long upwards).
When we are to divide a melody complete with quantitative and qualitative characters, the following should be observed whilst drawing in the vertical lines or bar lines, ||:

- As many *thesis* and *arsis* are to be embraced by the meter, so many beats of melodic characters are to be in between the bar lines.
- It may happen that the place where the bar line is meant to be put, will be in-between inseparable characters due to the duration of the characters. This calls for the meter to be left undivided, and joined with the following meter.
- If for example a melody is divided into four beat meters and two meters are to be joined for the above reason, an eight beat meter is born and is to be marked with a number 8, for informative purpose. Similarly a 7, 6, 5, 3, or 2, is to be marked corresponding to the number of beats within the combined or different meter appearing in the melody.

*Emphasis* is when the melodic length of a word’s syllables, begin and end with the meter. We shall consider the two expanded syllables κυ and ρι, of the word Κύριε, from the hymn «Τὰς ἐσπερινάς» (found in the *Anastasimatarion*, Saturday Evening Vespers, First mode).

Each of the two syllables have been expanded into four beats. If we divide (or measure) the hymn with the four beat meter, the emphasis is saved, otherwise the emphasis is destroyed.

Wherever there is a syllable of melodic length, there we place the beginning of the meter, whether it be a four beat or a two beat meter. If before an emphasis there is a final note which happens to be short, then that note may be modified into two beats or three beats depending on the following emphasis.
A melody is said to be in rhythm when its melodic notes are kept in order with the beats of the rhythm, allowing the melody to be divided into rhythmical meters. Each meter therefore embraces a number of characters the rhythm calls for.

Each rhythm consists of joined *podas*, of which there are two types. One type is *according to match* and the other *according to period*. Joined *podas according to match* are the rhythms composed of two *podas* simple and different, and joined *podas according to period* are the rhythms composed of more than two *podas* and different.

Rhythms therefore *according to match* of the *Daktilikon* type are the following two:

- \[0101\] Ionikos in the major
- \[0101\] Ionikos in the minor

Rhythms of the *Iambikon* type are also two:

- \[1001\] Bakcheos from Iambos
- \[0110\] Bakcheos from Trocheos

Rhythms *according to period* of the *Iambikon* type are the following twelve:

- \[10010101\] Trochaios from Iambos
- \[01100101\] Trochaios from Bakcheios
- \[01011001\] Bakcheios from Trocheios
- \[01010110\] Iambos epitritos
- \[01101011\] Iambos from Trochaios
- \[10011010\] Iambos from Bakcheios
- \[10100110\] Bakcheios from Iambos
- \[10101001\] Trochaios epitritos
- \[10100110\] Simple Bakcheios from Iambos
- \[01101101\] Simple Bakcheios from Trochaios
- \[01110100\] Middle Iambos
- \[10010110\] Middle Trochaios
When we mix these two types of rhythm, i.e. according to match and according to period, more rhythms are born, like the following:

- 1 0 0 0 1 First Dochmios
- 1 0 0 1 1 0 1 1 1 Second Dochmios
- 1 0 0 1 0 1 0 1 } Prosodiakoi of two matches
- 0 1 1 0 1 0 0
- 0 1 1 0 0 1 Prosodiakoi of three
- 0 1 1 0 0 1 1 0 Prosodiakoi of four
- 1 0 0 Iamboeides } Choreioi alogoi
- 1 1 0 Trochoeides
- 0 0 1 1 1 1 1 Kretikos
- 0 0 1 1 Daktilos according to Bakcheion from Trochaeios
- 0 0 1 1 Daktilos according to Bakcheion from Iambos
- 0 0 0 1 1 1 Daktilos according to choreion Iamboeide
- 0 0 0 1 1 Daktilos according to choreion Trochoeide
- 0 0 1 1 Daktilos from Iambos

These rhythms have been passed down through Hellenic tradition. In the Turkish tradition, there are approximately thirty two rhythms. They also have other two signs: 2, and 1. 2 stands for two short beats (performed as 01), and 1 stands for four short beats (performed as 1).

**Clarifying note**

Consider the following paragraph as a simple explanation for the relationship between beat, thesis, arsis, poda and rhythm:

The smallest unit in *musical rhythm (literature writing)* is the single *rhythmic beat (letter)*. Of these *beats (letters)*, there are two types, the *thesis and arsis - i.e. down beat & up beat* - *(vowels and consonants)*. It is the combination of both of these two types that make *podas (syllables)*. Furthermore, when combining the various *podas (syllables), rhythms (words)* are created.
4.5 **Rhythmic Emphasis**

*Rhythmic emphasis* is when each *psofos* of the rhythm runs along with each note of the melody. For clarity we shall consider the melody of the hymn «Θείω καλυφθείς» with the rhythm *Daktilos* according to *choreion lamboide*, i.e. 0 0 1 1 1, see example 4.1.

In example 4.1, it is evident how the bar lines embrace the amount of beats the rhythm calls for. Any character that has a Gorgon, or Digorgon, etc., is tied with the previous character (it may be...
extended with a Klasma, an Hapli, a Dipli, etc.) and therefore connected with the psофos of that note.

Although some melodic endings of verses of the same hymn may not end with the endings of rhythms, the last verse must end with the end of the rhythm. As in example 4.1, there are five melodic verses (that are separated with Tones keys), of which not all melodic endings match with the rhythmic endings, but at the end both melodic verse and rhythm end together.

At times some beats within a rhythm will need to be substituted with an empty beat in order to fulfill the rhythm. This might occur when the melodic verses do not match with the rhythm, and is indicated with an Hapli, Dipli or Tripli (with Vareia), according to the number of beats needed.

It is through long term experience and study interest that one may determine the following on emphasis:

- Different rhythmic ingredients (i.e. 0, 1, \(\dot{0}\), \(\dot{1}\)), are appropriate for different melodies.
- Different melodies belong to different rhythms.
- A variety of rhythms may belong to a particular melody.
- Various melodies may belong to a particular rhythm.
- Various rhythms begin together with the melody.
- Various rhythms begin before the melody.
- Various rhythms begin after the start of a melody.

4.6 TYPES OF RHYTHMS.\(^{12}\)

There are three types of rhythms: Systaltikon, Diastaltikon, and Hesychastikon. The Systaltikon type of rhythm is that which moves the sorrowful and painful passions, the Diastaltikon type of rhythm is that which rouses the temper, and the Hesychastikon type of rhythm brings peace to the soul.
The simple rhythms that begin with *thesis* are of the *Hesychastikon* type, and those that begin with *arsis* are of the *Diastaltikon* type. The former gives a kind of peace and easiness, and the latter restlessness and uneasiness. The *Hesychastikon* type show gracefulness when concerning rhythms of *equal time*. The *Diastaltikon* type shows more excitement and enthusiasm when concerning rhythms of *hemiola time*. Also, rhythms that follow a slow pace (or tempo) are hesychastic, and those that follow a fast pace are warm and vigorous.

Compound rhythms are of the *Diastaltikon* type because they annoy the soul. They also stir and trouble the soul when the rhythms combined are unequal, and even more so, when they are made of more rhythms of various types.

Chanting is observed to be of the *Systaltikon* and *Hesychastikon* type because it mainly works with rhythms which are of equality, extensive and long.

As the soul is charmed through the senses, so each sense through

**4.7 VARIATION IN RHYTHM.**

the variety of its subject. It is through the variety of sound and rhythm that hearing charms the soul. Musicians therefore use variation of rhythm when regarding their objective.

Rhythmic variation is when there is a change of one rhythm to another. Though it is not common in Byzantine music, it may be found in melodies with *kratimata*.

Variation in tempo is when the same rhythm is kept, but its tempo or pace changes.
A melody with a rhythm in fast tempo is performed in less time than the same melody with the same rhythm in slow tempo. It is the time length of the beat that appoints the tempo or pace of a rhythm.

Various melodies have their own tempo. The tempo is indicated with what may be called a *Time key*. The following five *Time keys* are used to appoint the tempo of a melody’s rhythm.

A basic analysis of these *Time keys* would be as follows, although various sources may differ a little in the approximate.

**THE SLOWEST TEMPO**

This *Time key* has the slowest tempo of approximately 50 beats per minute.

**THE SLOW TEMPO**

This *Time key* has a slow tempo of approximately 60 beats per minute.

**THE MEDIUM TEMPO**

This *Time key* has a medium tempo of approximately 100 beats per minute, and is most commonly used in Byzantine music.

**THE FAST TEMPO**

This *Time key* has a fast tempo of approximately 180 beats per minute, and is most commonly used in Byzantine music.
THE FASTEST TEMPO

This Time key has the fastest tempo of approximately 240 beats per minute.

This is another Time key that may also be found in musical pieces. This Time key would have a moderate tempo in-between the medium and fast Time keys.

When comparing Byzantine music’s Time keys with those of Western European music, their equivalence are in figure 4.1.

![Figure 4.1](image)

In Byzantine music the accented beats follow the accented syllables of the hymns, and because not all hymns are written in a manner where the accented syllables match a regular rhythm, irregular rhythm is born, or what is called accented rhythm.

Concerning the various melodies of the hymns in Byzantine chant, we may characterize them into three types or genres; the Eirmologikon melody, the Sticherarikon melody and the Papadikon melody. Each of these melodies has its own style of rhythm.
The rhythm in Eirmologikon melody is mostly irregular, compared to the Sticherarikon and Papadikon melody. The reason for this is that the Eirmologikon melody usually has one musical character (of one beat length) for every syllable.

Following are some basic rules that are kept for the Eirmologikon melody:

- The accented syllable becomes the beginning of a *poda*, whether it be a two or three or four beat *poda*.
- When an accented syllable is extended into two musical characters or two beats, only the first beat is to be the beginning of a *poda* and not the second.
- An un-accented syllable may become the beginning of a *poda* only when an un-accented syllable follows.
- When there are two consecutive accented syllables, the first is extended into two beats or two characters, making a two beat *poda*, or, the second accent becomes the beginning of a new *poda*, or one is regarded as un-accented to form an appropriate *poda*. According to situation the same rule applies to three or four consecutive accented syllables.
- Many a time, accented syllables are written with qualitative melodic signs (e.g. Psifiston, Vareia, or Homalon). These are to be regarded as the beginning of a *poda*. The same applies to the accented syllables written with a Petasti.

*It is worth noting that there are always exceptions to rules.*

Within the Eirmologikon type of melody there is also the Long Eirmologikon melody, as apposed to the Brief/Short Eirmologikon melody. The rhythm of this type is mostly regular. The fact that each syllable on average, lasts for two beats, makes it easier to keep a rhythm with *podas* of the same kind. The usual rhythm observed in this type is a four beat rhythm (i.e. four simple beats). Even in this Long Eirmologikon melody the rhythm is not always regular because of the effect of accented rhythm.
The rhythm in the *Sticherarikon* and *Papadikon* melody appears at times regular, but usually is a combination of four beat, two beat and three beat *podas*. The formation of these *podas* are led by the accented syllables of the words, like in the *Eirmologikon melody*.

For the *Sticherarikon* melody there are in addition the following rules:

- The syllable of a word expanded into three or four beats can not be divided into two *podas*, but forms a particular *poda* of three or four beats. This also may be observed in the *Long Eirmologikon melody*.
- A syllable expanded melodically into more than four beats forms either, a combined *poda* (of five or six beats, etc.), or, more than one *poda*, or, a four beat *poda* with a supplementary *poda* with other syllables;
- Words of two syllables, three syllables or four syllables etc., form a particular *poda* or *podes*, depending on the position of the accent in the word. The word may be otherwise divided into the regular rhythm where the remaining syllable(s) would supplement the *poda* including a syllable(s) of the consecutive word before or after.

In the *Sticherarikon melody* and more so in the *Papadikon melody*, because of the expansion of syllables into many beats, it would be quite comfortable to divide the melody into *podas* of same kind making a regular rhythm. It seems this was not always preferred by the music writers, maybe because they did not want to bind the music with rhythmic demands. Therefore, one will observe melodies of both varieties (i.e. regular rhythm and rhythmic freedom).

In melodies of Byzantine music one may find a five beat *poda*, six beat *poda*, eight beat *poda*, etc. mainly when a single syllable is extended into five beats, six beats, eight beats etc., though they may be simplified (e.g. a five beat *poda* into a three beat and two
beat *podes*, a six beat *poda* into 2 three beat *podas* or a four beat and two beat *podas*, and so forth).

Apart from the three main types of melodies mentioned so far, there is also the *Kalophonic melody*. Rhythmic freedom is mostly observed in this type, because of the extra attention on melodic technique.

There is also the rhythm of melodic recitation, as in the melodic reciting of the Gospels and Epistles. The tempo used here is the fast or fastest tempo, of which we discussed earlier. Although recitation may be considered as *arhythmos* (without rhythm), the stressing of accented syllables develops its own particular rhythm.

**Metronome**

The metronome is a device which helps one to become familiar with tempo proper. It was patented by Johann Nepomuk Maelzel in 1816. The regular sounds it produces correspond to beats, making it very helpful for keeping in tempo. Depending on what tempo one chooses to follow, the metronome produces the sounds in that tempo from a simple adjustment of a weight along the device’s moving hand. This moving hand is marked specifically, allowing one to choose the exact desired tempo, whether it be 40 beats per minute, 60 beats per minute, 120 beats per minute, etc.\textsuperscript{14}

Technology has influenced the design of the metronome allowing us to have it also in electronic form.
4.8 Rhythm Making.15

Rhythm making is the dynamics of forming rhythm. It may be divided into three areas: Lipsin, Chrisin, and Mixin.

- **Lipsin** (reception), is the recognizing what rhythm is to be used.
- **Chrisin** (use or application), is the proper attaching or applying of arsis with thesis.
- **Mixin** (mix), is the interlacing of podas or rhythms with one another.

If we consider forming a rhythm from a number of beats, we would first set them out in their shortest form, and then divide or group them to form a rhythmic pattern. For the pattern to be “in rhythm”, the beats of the podas formed need to be in ratio proper (i.e. equal, double, or hemiola).

For example, if there are ten beats, 0000000000, from which we want to form a pattern in rhythm, the grouping or dividing of the beats need to be in proper rhythm ratio (i.e. equal, double or hemiola). The dividing into 00, 00000000, makes a ratio of 1:4 which is not a rhythm ratio. Even if we break the eight beats into three and five, again we have an inappropriate ratio, but if we break the five beats into three and two beats, then we have both three beats in hemiola ratio with each of the two beats, 000,00’000,00, making ten beats in rhythm of proper ratio.

Further more, if we divide the ten beats into groups of six and four beats, we form a hemiola ratio. Dividing them into groups of five beats we form an equal ratio. Both of these divisions are proper to be in rhythm.

Therefore, Lipsis of the above example would be recognizing the three different patterns in rhythm, i.e. 000,00,000,00; 00000,00000; and 000000,0000. Chrisis would then be attaching the appropriate
arsis for thesis to form the poda (because a poda is not made from only thesis or only arsis, but both).

If, from the first recognized pattern (000,00'000,00), we make the first three beats into two thesis (one long and the other short) and the following two beats into one long arsis, we have formed the first five beats into Paion diaguios (0 0 1), a rhythmic hemiola poda. Applying the same process to the last five beats of the example makes the ten beats form two podes of Paion diaguios.

From the second recognized pattern (000000,0000), already in hemiola ratio, if we make three long thesis and two long arsis in order of 0 1 0 1, the poda Paion epibatos is born.

If from the third recognized pattern (00000,00000), in equal ratio, we make five short thesis and five short arsis and place them in alternation, a group of five Prokeleusmatikon podas are formed. This poda is not used in such manner so we re-arrange the group of five beats into 000,00, from which we may form a Trochaios poda, 0 1, followed by a Prokeleusmatikon poda, 0 1. In a similar fashion from the next five beats we may form an Iambos poda with a Prokeleusmatikon poda 1 0, 0 1.

That which concerns Mixin is the interlacing of already made podas to make a whole rhythm. When we interlace two Paiona podas, we make the following ten beat rhythm, 0 0 1 0 0 1, and when we interlace the Paiona, Prokeleusmatikon and Iambos podas with each other, we make the following ten beat rhythm, 0 0 1 0 1 1 0.

Further more, interlacing Spondeion with Prokeleusmatikon makes 0 1 0 1, which is called Ionikos in the major, and interlacing one Iambos with three Trochaios podas makes 1 0 0 1 0 1 0 1.

Mixin is the interlacing of not only podas with podas, but rhythms
with *podas*, and rhythms with rhythms, to make one body of rhythm.

### 4.9 Hand Gesture.

Hand gestures were used by Ecclesiastic musicians as a form of visual performance of the melody, and for measuring time. With these various hand gestures it was possible to decipher the written musical characters of quantity and those of quality. Though this is not practiced today, the etymology of the musical characters give us evidence for their close connection with hand gestures.\(^{16}\)

The basic hand gestures which are used today are those for measuring time (i.e. two beat, 0 1, three beat, 0 1 1, and four beat, 0 1 1 1, rhythms).

The hand movement for the two beat rhythm is performed with a downward movement of the hand for the *thesis* (i.e. the first beat), followed by an upward movement of the hand for the *arsis* (i.e. the second beat), see figure 4.2.

The hand movement for the three beat rhythm is performed with a downward movement of the hand for the *thesis* (i.e. the first beat), followed by a movement towards the right for the first *arsis* (i.e. the second beat), and a movement upwards for the second *arsis* (i.e. the third beat), ending at the hand’s original position ready for the *thesis* that will follow, see figure 4.2.

The hand movement for the four beat rhythm is performed with a downward movement of the hand for the *thesis* (i.e. the first beat), followed by a movement towards the left for the first *arsis* (i.e. the second beat), then a movement across towards the right for the second *arsis* (i.e. the third beat), and finally an upward movement for the last *arsis* (i.e. the fourth beat), ending again at the original position ready for the *thesis* that will follow, see figure 4.2.
When considering *double time rhythm*, the only thing that changes is the amount of beats counted for each hand movement (i.e. each hand movement measures two beats).

There are also variations in *double time rhythm*, depending on how a meter is sub-divided, e.g. a six beat meter can be sub-divided into three hand movements of two beats each, or into two hand movements of three beats each.
“What breath is to life... song is to love.”

5 RELATED THEMES

5.1 VOICE DEVELOPING.

IN ORDER to perform properly, any instrument needs to be clean and in good condition.

In chanting or singing, it is not only the voice that acts, but the whole body participates as one instrument. The stance of the body, tension of the body, correct breathing, projection of the voice, diction, psychology, general health, everything works together in harmony when someone chants or sings properly.

All these aspects need constant developing in order to be always in good condition. Since every body is unique and different from another, some aspects need more attention than others. Approaching a good experienced voice teacher/coach would be a wise decision for someone pursuing in developing their chanting or singing.

5.2 HISTORY.

Byzantine music as it is practiced today, is the development of a centuries old tradition. It has developed within the bosom of Eastern Orthodox Christian Liturgical practice.
There were two systems used in Byzantine musical notation. One involved ecphonetic signs and the other neumes (musical signs), and both derive from the prosodic signs or accents which “were introduced in the Hellenistic age as a guide for declamation when Greek became the predominating language in the East.”

“The ecphonetic signs are set, in the main, at the beginning and at the end of a group of words; the musical signs correspond to the syllables of the text.”

“The system of the ecphonetic signs seems to have been introduced towards the end of the fourth century, appearing fully developed in eighth-century manuscripts. The number of the signs and their shape are maintained, practically unchanged, from the eighth century to the end of the thirteenth. From the beginning of the fourteenth to the end of the fifteenth centuries the texts show a slow disintegration of the ecphonetic system, and by the end of the fifteenth century the meaning of the signs has become obscure.”

“The neumes show a development from simple forms, consisting of strokes, hooks, and dots, to elaborate and compound signs. During the twelfth century the straight lines of the neumes were converted into curved. At the same time a number of new dynamic and rhythmical signs were added, until, in the first half of the fifteenth century -when the melodies had become florid- all the signs were revised and a new group of subsidiary signs in red ink, called the “Great Signs” (μεγάλα σημάδια) or “Great Hypostases” (μεγάλαι ύποστάσεις), was introduced. This system survived the end of the Empire and remained in use up to the beginning of the nineteenth century, when a reformed system of notation was introduced by Chrysanthus, who retained a small number of the old signs and added some new ones.”

It is this reformed system that is in practice today since the beginning of the nineteenth century. This reform gave rise to
the publishing of books in printed Byzantine musical notation from c.1820. Before this, only manuscripts were the vehicle for recording this rich tradition.

5.3 Liturgics.

The subject of liturgics is inevitable when involving Byzantine music.

Liturgical worship is the field where Byzantine music blossoms, and may be divided into various services. All these services have their place within a particular cycle. These cycles as explained in The Festal Menaion are five:

- The cycle of a person’s life, where the service embraces a unique time in one’s life, i.e. baptism, chrismation, marriage, monastic profession, holy orders, and burial.
- The daily cycle of prayers beginning from sunset, i.e. vespers, compline, midnight office, mattins, first hour, third hour, sixth hour, and ninth hour.
- The weekly cycle of the eight modes, i.e. each week various hymns are dedicated to one of the eight modes.
- The annual cycle of movable feasts, centered upon Easter.
- The annual cycle of fixed feasts, commencing on 1st September.

In practice some cycles are combined with others and some superimpose others.

For theological reasons the service of the Divine Liturgy (or Holy Eucharist) is considered as unique and not like all the other services.

A chanter needs to understand the effect of a cycle upon the structure of a service, and also become familiar with the various liturgical books containing the material for these cycles and services.
These books are the following:

- **The Book of the Gospels.** “This contains the text of the four Gospels arranged in sections, following the order in which they are read throughout the year.”

- **The Book of the Epistles.** “This contains the readings from the Acts of the Apostles and the Epistles for the whole year: as with the Book of the Gospels, it is arranged in extracts according to the order of the daily Epistle readings.”

- **The Psalter.** “The 150 Psalms of David, divided into their kathismata, together with the nine Biblical Canticles.”

- **The Euchologion.** “This is a book for the use of the priest and to a lesser degree, of the deacon—containing the sacraments and other services, together with numerous special prayers and blessings.”

- **The Horologion or Book of Hours.** “The Euchologion is an altar book for the priest; the Horologion, a choir book for the reader and singers, it includes: the fixed portions of the daily offices, a list of the feasts and saints’ days throughout the year, and miscellaneous canons and other services in frequent use.”

- **The Octoechos or Book of Eight Modes.** “Also known as the Parakletike. This contains the variable portions for the daily offices throughout the week. Eight series of offices are provided, one for each of the eight tones[or modes]; and within each series there are seven sets of services, one for each day of the week. Throughout the year, the services proceed week by week through the various tones[or modes]: on the Sunday of St. Thomas (the first after Easter) the sequence begins with Tone One[or First mode], and then through the different tones until Tone Eight[or Plagal Fourth mode] is completed; after which the offices for Tone One[or First mode] are resumed, and so once more through the whole sequence.”

- **The Triodion.** This contains “the texts for the Great Fast of Lent: the book begins with the Sunday of the Publican and Pharisee
(the tenth before Easter: twenty-two days before the beginning of Lent), and concludes with Saturday in Holy Week.”

• **The Pentekostarion.** “This is a companion volume to the Lenton Triodion, and contains the services for Eastertide and Pentecost: it covers the period from Easter Sunday until the Sunday of All Saints (the first after Pentecost).”

• **The Menaia.** “In this are contained the services for the fixed feasts throughout the twelve months, from 1 September (the beginning of the ecclesiastical year) until 31 August.”

• **The Eirmologion.** “This gives the text of the irmoi sung at the beginning of various canticles of the canon. The larger service books, such as the Menaia and the Triodion, often give only the opening words of the irmos: and so a cantor who does not know the irmoi by heart will need to have the Irmologion ready to hand.”

• **The Typikon.** “This contains the rules and rubrics governing every aspect of the Church services and their celebration throughout the year.”

The typikon that is practiced today, though some parts are omitted and others abbreviated, is a synthesis between two traditions: one for the monastic life (focussing more on readings), and the other for the city life (focussing more on melody). Their interlacing occurred between the ninth and twelfth centuries.

There is also the *unwritten typikon* which designates specific hymns (i.e. the Doxology, Cherubic and Communion hymns) to be chanted in specific modes. (The remaining part of this section elaborates this)

**THE WEEKLY CYCLE**

• **Monday:** the Cherubic and Communion hymns are to be chanted in the First mode.
• **Tuesday:** the Cherubic and Communion hymns are to be chanted in the Varis mode.

• **Wednesday:** the Cherubic and Communion hymns are to be chanted in the Fourth mode.

• **Thursday:** the Cherubic and Communion hymns are to be chanted in the Plagal Fourth mode.

• **Friday & Saturday:** The Cherubic and Communion hymns are to be chanted in the Plagal First mode.

**VARIOUS FEATS**

• **January 1st (The Circumcision or our Lord):** the Doxology, Cherubic and Communion hymns are to be chanted in the First mode.

• **January 5th:** the Cherubic and Communion hymns are to be chanted in the Second mode.

• **January 6th (the Holy Theophany of our Lord):** the Cherubic and Communion hymns are to be chanted in the Varis Mode.

• **January 7th:** the Cherubic and Communion hymns are to be chanted in the Second mode.

• **Palm Sunday:** the Cherubic and Communion hymns are to be chanted in the Fourth mode.

• **The Third Sunday of Lent (the Worshipping of the Cross):** the Cherubic and Communion hymns are to be chanted in the Fourth mode.

• **Easter Sunday & the Sunday of Thomas:** the Cherubic and Communion hymns are to be chanted in the First mode.

• **The Sunday of Pentecost:** the Cherubic and Communion hymns are to be chanted in the Varis mode.

• **Christmas Eve:** the Cherubic and Communion hymns are to be chanted in the Second mode.

• **Christmas Day:** the Cherubic and Communion hymns are to be chanted in the First mode.

• **December 26th:** the Cherubic and Communion hymns are to be chanted in the Second mode.
On Sundays, the Doxology hymn is to be chanted in the mode of the day (according to the cycle of the eight modes), and not in the mode of the Doxastikon (i.e. the hymn with the preceding verse Glory to the Father and the Son and the Holy Spirit, found at the end of the Lauds and Stichera, chanted just before the Doxology). For the Feast of the Cross (September 14th) the Doxology is to be chanted in the Fourth mode (i.e. Hagia Mode). The hymn to the Theotokos (i.e. Υπερευλογημένη...) after the Doxastikon, is to be chanted always in the Second mode.

On Weekdays, for the feasts of Saints, our Lord, and the Theotokos, the Cherubic and Communion hymns are to be chanted in the mode of the day, except for September 1st, when they are to be chanted in the First mode. The Doxology hymn follows the mode of the day’s Doxastikon (or the hymn with the verse Now and forever...).

On Christmas Day and the day of the Theophany, the Doxology hymn is to be chanted in the Second mode (i.e. short version).

5.4 Hymnology.

The object of Byzantine chant is to express melodically the faith in common worship. This is done by applying melody to hymns, showing the unity between hymns and music. Hymnology is the study of hymns, and more specifically the study of Hymnography (the writing of hymns) involves the various forms of hymns.

The hymns of the Eastern Christian Faith are rich in her dogma and theology. The various subjects and poetic forms of hymns may also be related to the different periods of Church history.

For example, the first part of the service of the Divine Liturgy (i.e. the three Antiphons), as it is practiced today, is related to the typikon for the city life which was born in Antioch and was triumphant in Constantinople until the thirteenth century.
The basic form for the Antiphon is the melodic reading (or reciting) of a psalmic verse by a reader, followed by the a melodic refrain by the choir or people. The refrain is repeated after each psalmic verse (for the whole psalm), and varies from a simple sentence, "Through the intercessions of the Theotokos, Saviour, save us."

"Ταῖς πρεσβείαις τῆς Θεοτόκου, Σῶτερ, σῶσον ἡμᾶς."
to a troparion (short hymn), like the resurrection hymns chanted on Sundays. Today’s practice in the Divine Liturgy includes only three or four psalmic verses for each Antiphon.

The various forms of hymns (eg. the kontakion and the kanon) are numerous, making hymnology and hymnography a vast field for research.¹⁹

As for the types of hymns, there are three; the *Eirmologikon*, the *Sticherarikon* and the *Papadikon*, for which they all may be divided into two versions i.e. *short* (σύντομον) and *long* (ἄργον).

Examples of hymns belonging to the *short* *Eirmologikon* type are: *Thou Kyrie* (during vespers), the *short* *Stichera*, the *Prosomoia*, the *Anavathmoi* (Hymns of Degrees), the *Kanons*, the *Katavasias*, the *Doxology hymn*, Tin Temioteran (You who are more honorable than the Cherubim...), the *Short Anastasimatarion*, the *Short Eirmologion*, the *Makarismoi*, the *Kataniktika*, the *Apolitikia*, and *Kathismata*.

Examples of hymns belonging to the *long* *Eirmologion* are: the *long Katavasias*, the *Polyeleoi*, the *long Doxology hymns*, the *First Antiphon of the Fourth mode*, and the *Axion estin*.

The *Kekragaria*, *Pasapnoaria*, the *Dogmatika*, the *Eothina*, belong to the *Sticherarikon* type. The *Idiomela* belong to the *short Sticherarikon* type, of which the Fourth mode are of the *short Eirmologikon* type. Others of the *short Sticherarikon* type are the *Doxastika*, the *long Stichera* of the *Anastasimatarion*, and the *Anoixantarion*. Of
the *long* *Sticherarikon* type belong: the *long* *Doxastarion* of Iakovou *Protosaltou*, and his *Idiomela*, *Kekragaria* and *Pasapnoaria*.

The Cherubic and Communion hymns belong to the *Papadikon* type. Of the *short* *Papadikon* type are the short Cherubic and Communion hymns, and the classic lessons (i.e. “Τῇ ύπερμάχῳ”, τὰ Δύναμις, “Ιδοὺ ὁ Νυμφίος”, “Τὸν Δεσπότην”, τὰ ὄργα Κεκραγάρια καὶ Πασαπνοάρια, τὸ “Ἅγιος ὅγιος”, τῆς “Κασσιανῆς” κλπ.). The distinguishing is not that simple, because hymns of the *short* *Papadikon* type get confused with the *long* *Sticherarikon* type.\(^{20}\)

5.5 **TRANSLATING BYZANTINE MUSICAL TEXTS.**

There is a close connection between the melodic notation of a hymn and the syllables of a hymn (as discussed in section 3.2). When a text is translated into another language, the syllabic, rhythmic and accentual structure of the hymn changes. This makes the translated text a different ‘size’ to its original.

Since the melody of a hymn is closely connected with the structure of the language of the text, the original music will not usually suite or fit the translated text (i.e. according to orthography and synthesis).

To make ends meet, either the melody is to be rearranged or rewritten completely to suite the translated form or structure, or more attention is to be applied on the melodic structure when translating the original text, keeping in mind that music should never override the text and its message.

It is difficult for a harmonious result when the translator has no melodic understanding, or when the translator focuses on the melody without considering the message of the text. An incorrect translation may rearrange the theology of the text. For this reason it is beneficial for translators and melodists to work together when considering the translation of Byzantine musical texts.
5.6 Transposing for Western European Musical Notation.\textsuperscript{21}

When transposing for Western European music, there are three basic things which are to be considered: the correspondence for the notes; the rhythmic correspondence; and the correspondence for the note intervals.

**Note Correspondence**

The Byzantine music notes have the following correspondence for Western European music:

- \( Ni \) = Doh \( (C) \)
- \( Pa \) = Re \( (D) \)
- \( Vou \) = Mi \( (E) \)
- \( Ga \) = Fah \( (F) \)
- \( Thi \) = Soh \( (G) \)
- \( Ke \) = Lah \( (A) \)
- \( Zo \) = Si \( (B) \)

**Rhythmic Correspondence**

The qualitative characters (concerning time) for Byzantine music correspond to the Western European notation in the manner shown in figure 5.1.\textsuperscript{22}

**Interval Correspondence**

In Western European music, mainly (Major) tones and Semitones are in use. This makes it difficult to represent the three different tone sizes and the various sharps and flats used in Byzantine music. Though it is possible, if we consider the various sharps and flats which are used in Arabic music (i.e. \( \#, \#, \# \), \( \dagger \), \( \# \), \( \flat \), \( \natural \)).
**Figure 5.1**  *Rhythmic correspondence*

\[
\begin{align*}
\text{\(\frac{3}{2}\)} & = \circ \quad & \text{\(\frac{3}{2}\)} & = \circ \\
\text{\(\frac{2}{3}\)} & = \cdot & \text{\(\frac{2}{3}\)} & = \cdot \\
\text{\(\frac{3}{4}\)} & = \bullet & \text{\(\frac{3}{4}\)} & = \bullet \\
\text{\(\frac{4}{5}\)} & = \cdot \cdot \cdot & \text{\(\frac{4}{5}\)} & = \cdot \cdot \cdot \\
\text{\(\frac{5}{6}\)} & = \cdot \cdot \cdot \cdot \cdot & \text{\(\frac{5}{6}\)} & = \cdot \cdot \cdot \cdot \cdot \\
\text{\(\frac{6}{7}\)} & = \cdot \cdot \cdot \cdot \cdot \cdot & \text{\(\frac{6}{7}\)} & = \cdot \cdot \cdot \cdot \cdot \cdot \\
\text{\(\frac{7}{8}\)} & = \cdot \cdot \cdot \cdot \cdot \cdot \cdot & \text{\(\frac{7}{8}\)} & = \cdot \cdot \cdot \cdot \cdot \cdot \cdot \\
\end{align*}
\]
The Arabic sharps and flats correspond to the Byzantine sharps and flats in the manner shown in figure 5.2.

As an example, we shall consider the Western European musical scale of C Major, in figure 5.3.

The tone intervals in the scale of C Major (from left to right in figure 5.3) are as follows:

- C - D  Tone
- D - E  Tone
- E - F  Semitone
- F - G  Tone
- G - A  Tone
- A - B  Tone
- B - C  Semitone
These intervals correspond to the following Byzantine interval sizes:

- C - D 12 units
- D - E 12 units
- E - F 6 units
- F - G 12 units
- G - A 12 units
- A - B 12 units
- B - C 6 units

If we are to represent the Byzantine Natural Major Diatonic scale from \( Ni \) (C), in Western European music, with the use of the Arabic influential signs, then the above scale of C Major will be modified in the manner shown in figure 5.4. From chapter 2 section 2.2, we now know that the notes E and B are a touch diminished, when compared with the Western scale of C Major.

In transposing the Natural Major Diatonic scale from \( Ni \) into Western notation, the 2 unit flat is placed on notes E and B, changing the sizes of the intervals: D - E, E - F, A - B, and B - C.

- D - E becomes 10 units.
- E - F becomes 8 units.
- A - B becomes 10 units.
- B - C becomes 8 units.
The intervals therefore of the whole scale have the following order:

- C - D = 12 units
- D - E = 10 units
- E - F = 8 units
- F - G = 12 units
- G - A = 12 units
- A - B = 10 units
- B - C = 8 units

and they correspond to the following Byzantine tones:

- Ni-Pa (C - D) = Major tone
- Pa-Vou (D - E) = Minor tone
- Vou-Ga (E - F) = Minute tone
- Ga-Thi (F - G) = Major tone
- Thi-Ke (G - A) = Major tone
- Ke-Zo’ (A - B) = Minor tone
- Zo’-Ni’ (E - F) = Minute tone

In the same manner the various Arabic sharps and flats may be used to represent in Western European notation, the variety of intervals and influences that occur in Byzantine music, keeping in mind that it can only be performed by the voice and instruments that have the ability to perform more than just the Major tone and Semitone (as the violin for example).

"Therefore, whether you eat or drink, or whatever you do, do all to the glory of God."

1 Corinthians 10:31
GLOSSARY

ACCENTED RHYTHM (τονικός ρυθμός - tonikos rhythmos): a rhythm formed when the melody is guided by the accents of the spoken language.

ANAPAISTOS IN THE MAJOR (ἀνάπαιστος ἀπὸ μεῖζονος - anapaistos apo meizonos): the name of a specific poda.

ANAPAISTOS IN THE MINOR (ἀνάπαιστος ἀπ’ ἐλάσσονος - anapaistos ap’ elassonos): the name of a specific poda.

ANOIXANTARIA (ἀνοιξαντάρια - anoixantaría): the name given to a group of melodic verses, of a psalm found at the beginning of Vespers.

ANTIKENOMA (ἀντικένωμα - antikenoma): the name given to a specific qualitative character concerning expression of voice.

APIHIMA (ἀπήχημα - apehema): also known as intonation, a kind of melodic prelude introducing the mode of the hymn to be chanted, in the form of a melodic line or phrase.

APOSTROFOS (ἀπόστροφος - apostrofos): the name given to a specific quantitative character.

ARGON (ἄργον - argon): the name given to a character that decreases and increases specifically specific characters.

ARSIS (ἄρσις - arsis): the upbeat of a bar or measure, also “the long syllable or part on which the ictus falls in a metrical foot” - Collins Dictionary.

AUGMENTED (αὐξημένο - auxemenon): a note is augmented when its pitch is raised from its natural position.

AUTHENTIC MODE (ἀθεντικός Ἑχος - authentikos echos): one of the four modes from which the Plagal modes derive from.

BAR LINE (διαστολή - diastole): a vertical line that separates measures or bars i.e. grouping of beats.

BASE NOTE (βασικός φθόγγος - basikos fthoggos): a specific note
belonging to a mode, also one of the dominating notes for every mode.

**BEAT (χρόνος - chronos):** the smallest unit for measuring rhythmic time.

**BODY CHARACTERS:** see Somata.

**BRIEF (σύντομον - syntomon):** a term used to describe a subdivision of a type of melody e.g. the brief or short eirmologikon, or brief or short sticherarikon. In this type the melodies are less elaborate than those of the long versions.

**CADENCE (κατάληξη - katalexe):** a melodic ending of which there are various kinds: incomplete, complete and final. There is also a terminal (ὁριστική) cadence that is not discussed in this text. They are all compared with the punctuation of a hymn.

**CHARACTER (χαρακτήρας - charakters):** “a symbol used in a writing system, such as a letter of the alphabet”-Collins Dictionary. In our context, the term character is used generally for the various symbols and signs used for writing Byzantine musical notation.

**CHRISIN (χρησιν - chresin):** the attaching or applying of arsis with thesis.

**CHROA (χροά - chroa):** the name given to influential characters having a specific function i.e. a specific division of a genre.

**CHROMATIC (χρωματικόν - chromatikon):** a term used to describe a specific genre, or a scale consisting of major tones, super-major tones, hemiola tones, super-hemiola tones, semitones, third and quarter tones.

**CHRONIC (χρωνικό - chroniko):** a term used to describe an object concerned with time.

**COMPLETE CADENCE (ἐντελῆς κατάληξη - enteles katalexe):** one of the various cadences used in melody, which corresponds to the semicolon of a hymn.
**Compound Characters** (συνθετοὶ χαρακτήρες - synthetoi charakteres): these characters consist of more than one character. Some have just one function, while others have more which in this text are distinguished as combination characters.

**Conjunctively** (συνεχόμενα - synechomena): to ascend or descend the musical scale one step or interval at a time.

**Cross** (σταυρός - stauros): a qualitative character concerning expression of voice.

**Crown** (κορώνα - korona): a qualitative character equivalent to the pause in Western European music.

**Daktilikon** (δακτυλικόν - daktylikon): the name given to a poda when the thesis has equal time with the arsis.

**Diargon** (διαργὸν - diargon): the name given to a character that decreases and increases specifically specific characters.

**Diastaltikon** (διασταλτικὸν - diastaltikon): a type of rhythm that rouses the temper.

**Diatonic** (διατονικὸν - diatonic): a term used to describe a specific genre, or a scale consisting of the natural tones i.e. major, minor and minute tones.

**Digorgon** (διγοργὸν - digorgon): a qualitative character concerning time, used for decreasing the duration of three quantitative characters, making all three last for one third of a beat each.

**Diminished** (ἐλαττωμένο - elattomeno): a note is diminished when its pitch is lowered from its natural position.

**Dipli** (διπλή - diple): a qualitative character concerning time, used for increasing the duration of a quantitative character by two beats.

**Ditrochaios Daktylikos** (διτροχαίος δακτυλικός - ditrochaios daktylikos): the term for the six beat rhythm in double time.

**Disjunctively** (ὑπερβατῶς - hyperbatos): to ascend or
descend the musical scale more than one step or interval at a time, ignoring all the intervals in between.

**DOMINATING NOTES** (δεσπόζοντες φθόγγοι - despozontes fthoggoi): specific notes for every mode, on which a melody will focus on or work around.

**DOUBLE PROKELEUSMATIKOS** (διπλοὺς προκελευσματικὸς - diplous prokeleusmatikos): the name of a specific poda.

**DOUBLE SPONDEIOS** (σπονδεῖος διπλοῦς - spondeious diplous): the name of a specific poda.

**DOUBLE TIME** (διπλάσιος χρόνος - diplasios chronos): a term used when an object lasts for twice the time of another, the object has double time of the other. Also means to play twice as fast.

**DOUBLE TIME RHYTHM** (συνεπτυγμένος ρυθμός - syneptygmenos rythmos): or rhythm in double time, is when the melody is performed twice as fast, i.e. where there are two beats for every hand movement whose pace does not change.

**DOWN BEAT**: see thesis.

**EIRMOLOGIKON** (εἰρμολογικόν - eirmologikon): one of the three main types of melody in Byzantine chant. It has a characteristic of an average of one beat per syllable, and may be further divided into a slow or fast eirmologikon type.

**ELAFRON** (ἐλαφρόν - elafron): the name given to a specific quantitative character.

**ELEMENTS** (στοιχεῖα - stoicheia): a term used in our context for all the building blocks for Byzantine musical notation.

**EMPHASIS** (ἐμφασίς - emphasis): a term used for when the melodic length of a word’s syllables begin and end with the meter. Rhythmic emphasis is when each beat of a rhythm runs along with each note of a melody.

**EMPTY BEAT** (κενὸς χρόνος - kenos chronos): a beat performed in silence, also known as a beat *rest*.

**ENDOFONON** (ἐνδόφωνον - endofonon): the name given to a
specific qualitative character concerning expression of voice.

**Enharmonic** (ἐναρμονικόν - enharmonikon): a term used to describe a specific genre, or a scale consisting of only major tones and semitones.

**Equal Time** (ἰσος χρόνος - isos chronos): two objects having the same duration, are said to be in equal time.

**Eremia** (ἐρεμία - eremia): literally meaning stillness. In our context would be the stillness or waiting of our hand when keeping rhythm, i.e. waiting for its next movement such as a thesis.

**Final Cadence** (τελική κατάληξη - telike katalexe): one of the various cadences used in melody, which corresponds to the full stop or period of a hymn.

**First-Varis** (πρωτόβαρυς - protobarys): see Varis Pentafonos.

**Flat** (ὑφεσίς - hyphesis): a sign that lowers the pitch of a note, and results in making a flat note.

**Four Beat Rhythm** (τετράσημος ρυθμός - tetrasmomos rythmos): a rhythm consisting of four beats.

**Fthora** (φθορά - fthora): a sign used for a specific change or variation in a melody.

**Ga** (Γα - Ga): the name of a specific pitch or note of a scale, equivalent to note F in Western European music.

**General Flat** (γενική υφεσίς - genike hyphesis): a specific influential sign, which calls for a specifically diminished note, and used in Third mode.

**General Sharp** (γενική διέσις - genike diesis): a specific influential sign, which calls for a specifically augmented note, and used in Third mode.

**Genre** (γένος - genos): a word describing a type of melody consisting of all the musical elements, or a specific division of a tetrachord or pentachord.

**Gorgon** (γοργόν - gorgon): a qualitative character concerning
time, used for decreasing the duration of two quantitative characters, making both last for one half a beat each.

**HAGIA** (ἁγια - hagia): a type of Fourth mode where the base note is Thi.

**HAMILI** (χαμηλη - chamele): the name given to a specific quantitative character.

**HAPLI** (ἄπλη - haple): a qualitative character concerning time, used for increasing the time of a quantitative character by one beat.

**HARD CHROMATIC** (σκληρο χρωματικό - sklero chromatiko): a term used to distinguish one of the two kinds of the Chromatic genre.

**HEMIOLA** (ἡμιόλα - hemiola): a term describing a ratio of one to one and a half, also used in rhythm.

**HEMIOLA TIME** (ἡμιόλιος χρόνος - hemiolios chronos): a term used when an object lasts for one and a half the time of another, the object has hemiola time of the other.

**HEMIOLA-TONE** (ἡμιόλιος τόνος - hemios tonos): a tone with an interval of a whole plus a half.

**HEMIOLION** (ἡμιόλιον - hemiolion): the name given to a character that decreases and increases specifically the duration of specific characters, also called Triemiargon.

**HETERON** (ἕτερον - heteron): the name given to a specific qualitative character concerning expression of voice.

**HOMALON** (ὁμαλόν - homalon): the name given to a specific qualitative character concerning expression of voice.

**HOREION** (χορείον - choreion): the name for a specific rhythmic poda.

**HYMN OF DEGREES** (ἀναβαθμοί - anabathmoi): a set of hymns found in mattins.

**HYPHEN** (ὑφέν - hyphen): a curved line used in joining two or more characters with the same pitch and syllable. Equivalent to the slur in Western European music.

**HYPOROE** (ὑποροή - hyproe): the name given to a specific quantitative character.
**Hypsili** (ὑψηλή - hypsele): the name given to a specific quantitative character.

**Iambikon** (Ἰαμβικόν - Iambikon): the name given to a poda when the thesis has double the time of the arsis.

**Iambos** (Ἰαμβός - Iambos): the name of a specific rhythmic poda.

**Incomplete Cadence** (ἀτελής κατάληξη - ateles katalexe): one of the various cadences used in melody, which corresponds to the comma of a hymn.

**Influential Sign** (σημείον ἀλλοίωσις - semeion alloiosis): a sign which has an effect on augmenting or diminishing various note(s), a term often used for sharps and flats.

**Initial Mode Key** (ἀρκτική μαρτυρία ἢχου - arctike martyria echou): a key at the beginning of a melody determining the mode and starting note.

**Interval** (διάστημα - diastema): the distance of pitch between two sounds.

**Intonation** (τονισμός - tonismos): “the sound pattern of phrases and sentences produced by pitch variation in the voice.”; “an intoned, chanted, or monotonous utterance; incantation.”; “the opening of a piece of plainsong, sung by a soloist.” -Collins Dictionary. A term used for the Apihima.

**Intruding Melody** (ἐπείσακτο μέλος - epeisako melos or παρείσακτο μέλος - pareisako melos): a melody belonging to a mode or genre, but with a fthora on the initial mode key or first or second character of the melody. The melody is performed to the end in the mode or genre belonging to the fthora.

**Ison** (ἴσον - ison): literally meaning ‘equal’, the name given to a specific quantitative character.

**Katavasias** (καταβασίες - katabasies): a name for specific hymns found in mattins.
KE (Ke - Ke): the name of a specific pitch or note of a scale, equivalent to note A in Western European music.

KENTIMA (κέντημα - kentema): the name given to a specific quantitative character.

KENTIMATA (κεντήματα - kentemata): the name given to a specific quantitative character.

KEY (μορτυρία - martyria): a sign indicating a note and genre of a scale, found at the beginning and at various points within a melody.

KLASMA (κλάσμα - klasma): a qualitative character concerning time, used for increasing the duration of a quantitative character by one beat.

KLITON (κλίτον - kliton): the name for a specific fthora with its specific effects on a scale.

KOMMA (κόμμα - komma): a minute interval equal to the difference between the Major and Minor tones.

KRATIMATA (κρατήματα - kratemata): particular hymns which work with particular syllables i.e. τε, ρι, ρεμ, and τε, νε, να. The term kratema literally means hold[ing], keeping. Kratimata are usually performed at times of filling in time when needed, and focus on melodic technique.

LEGETOS (λεγετός - legetos): one of the types of Fourth mode where the base note is Vou.

LIMMA (λείμμα - leimma): a minute interval equal to the difference between the Minor tone and the Remainder of the Minor tone.

LINK (συναφή - synafe): a term given to a common note for two intervals, where the peak of one interval is the base of the other.

LIPSIN (λῆψιν - lepsin): the recognizing what rhythm is to be used, concerning rhythm making.

LONG (ἄργόν - argon): a term used to describe a sub-division of a type of melody e.g. the long eirmologikon, or long
sticherarikon. In this type the melodies are more elaborate than those of the brief or short versions.

LYGISMA (λυγίσμα - lygisma): a kind of bend in the voice.

MAJOR TONE (μείζων τόνος - meizon tonos): the first interval in the Natural Diatonic Scale of Ni, the equivalent to the whole tone in Western European music.

MELOS (μέλος - melos): the term used for chanting proper, as apposed to paralagi.

MINOR TONE (ἐλάσσων τόνος - elasson tonos): the second interval in the Natural Diatonic Scale of Ni, an interval just a fraction smaller than the Major tone.

MINUTE TONE (ἐλαχιστος τόνος - elachistos tonos): the third interval in the Natural Diatonic Scale of Ni, an interval just a fraction smaller than the Minor tone.

MIXIN (μίξιν - mixin): the interlacing of podas or rhythms with one another, concerning rhythm making.

MODE (ὴχος - echos): “a set of notes which form the material of melodic idioms used in composition” - Collins Encyclopedia of Music. In Byzantine music, a mode consists of four main ingredients; an apihima, a scale, dominating notes, and cadences.

MODE GENRE (γένος ἡχοῦ - genos echou): one of the three genres for which a mode belongs to i.e. diatonic, chromatic, or enharmonic.

MODE KEY (μαρτυρία ἡχοῦ - martyria echou): a term used for the two types of keys used in Byzantine music. In our text, it is used for the starting or initial mode key found at the beginning of a melody, as apposed to the Tone key which is used for the keys found at various points within the melody.

N

NATURAL DIATONIC SCALE FROM NI (φυσική διατονική κλίμακα ἀπὸ τὸν Νη - physike diatonike klimaka apo ton Ne): the basic scale from which other scales originate. It
is consists of two tetrachords and a Separating tone. The whole scale is made up of only Major, Minor and Minute tones.

**Natural Tone** (φυσικός τόνος - *physikos tonos*): a tone originating from the Natural Diatonic Scale i.e. either a Major, Minor or Minute tone.

**Nenanism** (νενανισμός - *nenanismos*): one of the types of Kratimata hymns, using the syllables τε, νε, να.

**Nenano** (Νενανώ - *Nenano*): a type of Plagal second mode where the base note is Thi.

**Neumes** (πνεύματα - *pneumata*): “one of a series of notational symbols used before the 14th century” - Collins Dictionary. The term today is used for particular characters which need to be in combination with ‘body’ characters, for their effect to take place.

**Ni** (Νή - *Ne*): the name of a specific pitch or note of a scale, equivalent to note C in Western European music.

**Notation** (σημειογραφία - *semeiographia*): “the writing down of music so as to indicate its pitch and rhythm” - Collins Encyclopedia of Music.

**Note** (φθογγος - *fthoggos*): “a musical sound of definite fundamental frequency or pitch” - Collins Dictionary. Also called tone, but not used in our context in order not to confuse *tone* with its preferred definition as interval.

**Octachord** (ὀκτάχορδον - *octachordon*): “a series of eight [consecutive] notes, esp. a scale” - Collins Dictionary.

**Octachord System** (ὀκτάχορδον σύστημα - *octachordon systema*): a system where the whole scale of eight notes is repeated, as an extension of itself.

**Octave** (διαπασών - *diapason*): “the interval between two musical notes one of which has twice the pitch of the other and lies eight notes away from it counting inclusively along the diatonic scale” - Collins Dictionary.
OCTAVE SYSTEM (διαπασῶν σύστημα - diapason systema): another term used for the Octachord System.

OLIGON (ὁλίγων - oligon): the name given to a specific quantitative character.

PA (Πα - Pa): the name of a specific pitch or note of a scale, equivalent to note D in Western European music.

PAION DIAGUIOS (Παίων διάγυνος - Paion diagyios): the name of a specific rhythmic poda.

PAION EPIBATOS (Παίων ἐπιβατός - Paion epibatos): the name of a specific rhythmic poda.

PAIONIKON (παιωνικόν - paionikon): the name given to a poda when the thesis has hemiola time of the arsis.

PALATINON (παλάτινων - palatinon): another name given to Nenano mode, meaning belonging to or relating to a palace, where it was often used.

PAPADIKON (παπαδικόν - papdikon): one of the three main types of melody in Byzantine chant. It has a characteristic of an average of more than four beats per syllable, e.g. the Cherubic hymns.

PARACHORD (παραχορδή - parachorde): the placing of a fthora on a note other than that which the fthora belongs to.

PARALAGI (παραλαγή - paralage): the equivalent to solfège in Western European music. The chant involving the names of notes of the scale being used.

PENTACHORD (πεντάχορδον - pentachordon): a series of five consecutive notes.

PENTACHORD SYSTEM (πεντάχορδον σύστημα - pentachordon systema): a system where a scale of five notes is repeated, as an extension of itself.

PETASTI (πεταστή - petaste): the name given to a specific quantitative character.

PLAGAL MODE (πλάγιως ἡχος - plagioschos): a mode derived from an authentic mode. Classically, the base note of a plagal mode
is derived from descending four intervals or a pentachord from the base note of its relative authentic mode.

PODA (πόδας - podas): a metrical foot, consisting of both thesis and arsis, either one with many or many with one.

PRECEDENT VERSES (προψαλλόμενοι στίχοι - propsallomenoi stichoi): verses usually taken from the psalms, which are performed prior to a hymn. (in style of recitativo)

PROSODIC SIGNS (προσωδία - prosodia): signs used in prosody which is “the study of poetic metre and of the art of versification, including rhyme, stanzaic forms, and the quantity and stress of syllable”-Collins Dictionary.

PSIFISTON (ψηφιστόν - psefiston): the name given to a specific qualitative character, concerning expression of voice.

PSOFOS (ψόφος - psofos): literally meaning death. In our context would be, the impact of our hand (like a dead body), when keeping rhythm, indicating the beginning of a beat.

QUALITATIVE CHARACTER (ποιοτικός χαρακτήρας - poiotekos charakteras): a term used for characters concerning time and expression of voice.

QUANTITATIVE CHARACTER (ποσοτικός χαρακτήρας - posotekos charakteras): a term used for characters concerning the ascent or descent (and neutral) of a melodic scale.

REMAINDER OF THE MINOR TONE (ἀποτομή ἐλάσσονος τόνου - apotome elassonos tonou): a minute interval equal to the difference between the Major tone and the Minute tone.

REST: see Empty Beat

RHYTHM (ρυθμός - rythmos): “the arrangement of the relative durations of and accents on the notes of a melody, usually laid out into regular groups (bars) of beats, the first beat of each bar carrying the stress”-Collins Dictionary.

RHYTHMICS (Ρυθμική - Rythmike): “the study of rhythmic movement”-Collins Dictionary.
RHYTHMS ACCORDING TO MATCH (Ῥυθμοὶ κατὰ συζυγίαν - Rythmoi kata syzygian): compound rhythms of a kind, i.e. rhythms composed of two podas simple and different.

RHYTHMS ACCORDING TO PERIOD (Ῥυθμοὶ κατὰ περίοδον - Rythmoi kata periodon): compound rhythms of a kind, i.e. rhythms composed of more than two podas and different.

ROOT SIGN (ῥίζα μαρτυρία - riza martyria): the lower sign of the two found in a Tone key.

RUNNING ELAFRON (συνεχές ἐλαφρόν - syneches elafron): the name given to a specific quantitative compound character.

SCALE (κλίμακα - klimaka): “a group of notes taken in ascending or descending order, esp within the compass of one octave”-Collins Dictionary.

SEMITONE (ἡμιτόνιον - hemitonion): a term used for the part interval of a tone. A varied fraction of a tone which is not always known to be an exact half tone.

SEMITONE OF THE MINOR TONE (ἡμιτόνιον ἐλάσσονος τόνου - hemitonion elassonos tonou): a minute interval equal to the difference between the Minor tone and the Minute tone.

SEPARATING TONE (διαζευκτικός τόνος - diazeuktikos tonos): the tone or interval found in-between the two perfect fourths, as in making a scale.

SHARP (δίεσις - diesis): a sign that raises the pitch of a note, and results in making a sharp note.

SHORT: see Brief.

SIMPLE PROKELEUSMATIKOS (᾿Απλοὺς προκελευσματικός - haplous prokeleusmatikos): the name of a specific poda.

SIMPLE SPONDEIOS (Σπονδείος ἀπλοῦς - Spondeios haplous): the name of a specific poda.

SIX BEAT RHYTHM (ῥυθμός ἕξασημος - rythmos hexasimos): a rhythm consisting of six beats.

SLUR: a curved line joining two or more notes which are to be played legato.
**SOFT CHROMATIC** (μαλακό χρωματικό - *malako chromatiko*): a term used to distinguish one of the two kinds of the Chromatic genre.

**SOLVEGE**: *see* Paralagi

**SOMATA** (*σώματα* - *somata*): particular characters that can stand on their own, and in combination with neumes.

**SPATHI** (*σπάθη* - *spathe*): literally meaning sword. The name of a specific fthora with its specific effects on a scale.

**STICHERARIKON** (*στιχηραρικόν* - *sticherarikon*): one of the three main types of melody in Byzantine chant. It has a characteristic of an average of two to four beats per syllable, and may be further divided into a slow or fast sticherarikon type.

**SUPER-HEMIOLA TONE** (ὑπερ-ήμιόλιος τόνος - *hyper-hemiolios tonos*): a tone just larger than the hemiola tone, e.g. the interval Vou-Ga of Plagal second mode being 20 units.

**SUPER-MAJOR TONE** (ὑπερ-μείζωνος τόνος - *hyper-meizoonos tonos*): a tone just larger than the Major tone, e.g. the interval Pa-Vou of Second mode being 14 units.

**SYNDESmos** (*συνδέσμος* - *syndesmos*): The same specific qualitative character concerning expression of voice as the Heteron, but with a different expressed performance depending on its synthesis.

**SYSTALTikon** (*συσταλτικόν* - *systaltikon*): a type of rhythm which moves the sorrowful and painful passions.

**SYSTEM** (*σύστημα* - *systema*): any part of a scale (of a minimum of two intervals), which is repeated in an ascending or descending order.

**TERERISM** (τερερισμός - *tererismos*): one of the types of Kratimata hymns, using the syllables τε, ρι, ρεμ.

**TETRACHORD** (τετράχορδον - *tetrachordon*): a series of four consecutive notes.

**TETRACHORD SYSTEM** (τετράχορδον σύστημα - *tetrachordon system*
**systema**: a system where a scale of four notes is repeated, as an extension of itself.

**Thesis** (θέσις - *thesis*): “the downbeat of a bar, as indicated in conducting”- *Collins Dictionary*.

**Thi** (Δι - *Di*): the name of a specific pitch or note of a scale, equivalent to note G in Western European music.

**Three Beat Rhythm** (τρίσημος ρυθμός - *trisemos rythmos*): a rhythm consisting of three beats.

**Time Key** (χρονική ἀγωγή - *chronike agoge*): A sign consisting of two characters, one above the other. The upper character indicating the tempo or pace and the lower being the first letter from the Greek word *time* - Χρόνος.

**Tone** (τόνος - *tonos*): an interval, whether it be Major, Minor, or Minute. Tone is also another word for note. It is also used for naming modes i.e. Tone One for First mode, Tone Five for Plagal First mode, and so forth. In our context, for uniformality it is used as interval.

**Tone Key** (μαρτυρία - *martyria*): in our text this term is used for describing one of the two types of keys used in Byzantine music. It is used for the keys found at various points within, and at times at the end of a melody. It consists of two signs (i.e. a letter and a Root sign) one above the other. *cf.* Key & Mode Key.

**Transposition of a Tetrachord** (μεταβολή κατά τριφωνίαν - *metabole kata triphonian*): a variation where the scale shifts position of three intervals.

**Trigorgon** (τρίγοργον - *trigorgon*): a qualitative character concerning time, used for decreasing the duration of four quantitative characters, making all four last for one quarter of a beat each.

**Triemiarargon** (τριημιάργον - *trihemiargon*): *see* Hemiolion.

**Tripli** (τριπλή - *triple*): a qualitative character concerning time, used for increasing the duration of a quantitative character by three beats.
TROCHAIOS (τροχαίος - trochaios): the name of a specific poda.
TROCHAIOS SEMANTOS (τροχαίος σημαντός - trochaios semantos): the name of a specific poda.

UNWRITTEN TYPikon (ἀγραφὸν τυπικὸν - agraphon typikon): an informal prescription for when particular hymns are to be chanted in specific modes.

UP BEAT: see Arsis

UPRIGHT IAMBOS (Ἰαμβὸς ὁρθὸς - Iambos orthios): the name of a specific poda.

VAREIA (βαρεία - bareia): the name given to a specific qualitative character, concerning expression of voice.

VARIATION IN GENRE (μεταβολή κατὰ γένος - metabole kata genos): a change from genre to genre.

VARIATION IN MODE (μεταβολή κατ’ ἡχον - metabole kat’echon): a change from mode to mode.

VARIATION IN SYSTEM (μεταβολή κατὰ σύστημα - metabole kata systema): a change from system to system.

VARIATION IN TONE (μεταβολή κατὰ τόνον - metabole kata tonon): a change where a note shifts one tone above or below itself.

VARIS (βαρύς - barys): the name given to Plagal Third mode.

VARIS HEPTAFONOS (βαρύς ἐπτάφωνος - barys heptaphonos): heptaphonos meaning seven intervals or tones. This mode works mainly around the seventh note above its base note.

VARIS MIXED (βαρύς μικτός - barys miktos): this mode works with the Chromatic Second mode, where Pa becomes Thi, the base note of Second mode. A mixed mode of two genres.

VARIS PENTAFONOS (πρωτόβαρυς πεντάφωνος - protobarys pentaphonos): this mode works mainly with the First mode tetrachord Pa-Thi, with its final cadence on Zo, its base note.
VARIS TETRAFONOS (βαρύς τετράφωνος - barys tetraphonos): this mode works mainly with the note four intervals above its base note, i.e. Ga.

VERTICAL LINE: see bar line.

VOU (Bou - Bou): the name of a specific pitch or note of a scale, equivalent to note E in Western European music.

WHEEL (τροχός - trochos): a term used for the Pentachord system. Also given to a system used for teaching the modes.

WISHING MANY YEARS (πολυχρονισμός - polychronismos): hymns directed to Political and Ecclesiatical leaders, wishing them many years of life.

ZO (Zo - Zo): the name of a specific pitch or note of a scale, equivalent to note B in Western European music.

ZYGOS (ζυγός - zygos): The name of a specific fthora with its specific effects on a scale. The term has various literal meanings i.e. a device for weighing, yoke, or even as in even numbers.
Notes

Chapter 1 - Practical Exercise

1. The exercises in this chapter with the heading ‘More Practice’, are selected from Μαργαζιώτη, Ἱωάννου Δ., Μελωδικαὶ Ἀσκήσεις Βυζαντινῆς Ἐκκλησιαστικῆς Μουσικῆς, Αθῆναι, 1968. In section 1.6.1 the exercises are selected from Κώστ. Δ. Πατανδρητίου, Μελωδικαὶ Ἀσκήσεις Βυζαντινῆς Μουσικῆς. In section 1.6.3 the exercises are selected from the Ἀναστασιματάριον, Πέτρου Λαμπαδαρίου, and Μουσικὸς Πανδέκτης, τόμος τρίτος, i.e. ex.6.17 from Ἀναστ. p.401, ex.6.18 from Ἀναστ. p.54, ex.6.19 from Μουσ. Πανδ. p.378, ex.6.20 Ἀναστ. p.440, ex.6.21 from Ἀναστ. p.425, ex.6.22 from Ἀναστ. p.148, ex.6.23 from Ἀναστ. p.185, ex.6.24 from Ἀναστ. p.188. The translated text used for the melodic hymns in section 1.6.4, are from The Divine Liturgy, by the Greek Orthodox Archdiocese Translation Committee on Liturgical Texts.

Chapter 2 - Elements

1. The information for this section on Theory of Intervals is from hand-written notes by the Ἄρχων Μουσικοδιδάσκαλος τοῦ Οἰκουμενικοῦ Πατριαρχείου, Καθηγητής Μουσικῆς, Πρωτοψάλτης, κ. Δημήτριος Γ. Σουρλαντζής, Θεωρία περὶ διαστημάτων, given by him to his students. Also cf. Johnston, I., Measured Tones, p.71. ‘The frequency of a vibrating string is inversely proportional to the length, proportional to the square root of the tension and inversely proportional to the square root of the density of the material in the string.’

2. The understanding for the Semitone was not always an exact half-tone, cf. Χρυσάνθου τοῦ ἐκ Μαδύτων, Θεωρητικὸν Μέγα τῆς Μουσικῆς (Ἐν Τεργέστη 1832, Michele Weis Press), pp.100-2.

3. The information for this section on the Scale is also from the hand-written notes by the Ἄρχων κ. Δημ. Γ. Σουρλαντζής.

4. The information for this section on the Mode Key is also from hand-written notes by the Ἄρχων κ. Δημ. Γ. Σουρλαντζής, and Χρυσάνθου τοῦ ἐκ Μαδύτων, Εἰσαγωγὴ εἰς τὸ θεωρητικὸν καὶ πρακτικὸν τῆς Ἐκκλησιαστικῆς Μουσικῆς (Ἐν Παρισίοις 1821, Ριγνίου), pp.51-3.

5. For this section on Quantitative Characters cf. Εἰσαγωγὴ εἰς τὸ θεωρητικὸν καὶ πρακτικὸν τῆς Ἐκκλησιαστικῆς Μουσικῆς, pp.4-5, Θεοδώρου Φωκαέως, Κρητίς τοῦ Θεωρητικοῦ καὶ Πρακτικοῦ τῆς Ἐκκλησιαστικῆς Μουσικῆς (Γ. Καμπάς, Ἐν Αθήναις 1902, Β’ ἐκδόσεως τοῦ 1864) pp.11-12, Θεοδωσίου Β. Γεωργιάδου, Ὁ Βυζαντινὸς Μουσικὸς Πλούτος Νέας Μέθοδος τῆς καθ’ ἡμᾶς Ἐκκλησιαστικῆς Βυζαντινῆς Μουσικῆς,
(Εθνικοῦ Τυπογραφείου, Αθήναι 1960), pp.11-12, Θεωρία και Πράξεις τῆς Βυζαντινῆς Ἐκκλησιαστικῆς Μουσικῆς, pp.53-4, 84, and Ιωάννου Δ. Μαργαζώτη, Θεωρητικόν Βυζαντινῆς Ἐκκλησιαστικῆς Μουσικῆς (ἐκδοσις Μουσικοῦ Οίκου Χαριλ. Στασινοῦ, Αθήναι 1958), pp.13-17.

6. For this section on Qualitative Characters cf. Θεωρητικόν Μέγα τῆς Μουσικῆς, pp.51-9, Κρηπὶς τοῦ Θεωρητικού και Πρακτικού τῆς Ἐκκλησιαστικῆς Μουσικῆς, pp.12-14, Ὅ Βυζαντινὸς Μουσικὸς Πλούτος Νέας Μέθοδος τῆς καθ’ήμας Ἐκκλησιαστικῆς Βυζαντινῆς Μουσικῆς, pp.16-24, Θεωρία και Πράξεις τῆς Βυζαντινῆς Ἐκκλησιαστικῆς Μουσικῆς, pp.58-63, and Θεωρητικόν Βυζαντινῆς Ἐκκλησιαστικῆς Μουσικῆς, pp.17-18.

7. For this section on Compound Characters cf. Εἰσαγωγή εἰς τὸ Θεωρητικὸ καὶ πρακτικὸ τῆς Ἐκκλησιαστικῆς Μουσικῆς, pp.6-8, Κρηπὶς τοῦ Θεωρητικοῦ καὶ Πρακτικοῦ τῆς Ἐκκλησιαστικῆς Μουσικῆς, pp.12-14, Ὅ Βυζαντινὸς Μουσικὸς Πλούτος Νέας Μέθοδος τῆς καθ’ήμας Ἐκκλησιαστικῆς Βυζαντινῆς Μουσικῆς, pp.16-24, Θεωρία και Πράξεις τῆς Βυζαντινῆς Ἐκκλησιαστικῆς Μουσικῆς, pp.58-63, and Θεωρητικόν Βυζαντινῆς Ἐκκλησιαστικῆς Μουσικῆς, pp.17-18.

8. The characters and , are performed in the following order: and . When these characters are written with a Gorgon or an Argon, the Gorgon or Argon stand for the Kentimata.


10. Sharp and flat signs may also be considered as fthoras because of their influential character. For this section on Sharps & Flats cf. Ὅ Βυζαντινὸς Μουσικὸς Πλούτος Νέας Μέθοδος τῆς καθ’ήμας Ἐκκλησιαστικῆς Βυζαντινῆς Μουσικῆς, ibid., Θεωρία και Πράξεις τῆς Βυζαντινῆς Ἐκκλησιαστικῆς Μουσικῆς, pp.91-7, and Θεωρητικὸν Βυζαντινῆς Ἐκκλησιαστικῆς Μουσικῆς, pp.32-3.

11. For this section on Chroa cf. Θεωρητικὸν Μέγα τῆς Μουσικῆς, pp.117-22, Κρηπὶς τοῦ Θεωρητικοῦ καὶ Πρακτικοῦ τῆς Ἐκκλησιαστικῆς Μουσικῆς, pp.63-6, Ὅ Βυζαντινὸς Μουσικὸς Πλούτος Νέας Μέθοδος τῆς καθ’ήμας Ἐκκλησιαστικῆς Βυζαντινῆς Μουσικῆς, pp.69-70, and Θεωρία και Πράξεις τῆς Βυζαντινῆς Ἐκκλησιαστικῆς Μουσικῆς, pp.107-11.

12. For this section on System cf. Θεωρητικὸν Μέγα τῆς Μουσικῆς, pp.25-34, and Θεωρία και Πράξεις τῆς Βυζαντινῆς Ἐκκλησιαστικῆς Μουσ., pp.118-23.
CHAPTER 3 - FORMATION - COMPOSITION

1. For this section on Reading the Music cf. Θεωρητικὸν Μέγα τῆς Μουσικῆς, pp.16-19, Κρηπὶς τοῦ Θεωρητικοῦ και Πρακτικοῦ τῆς Ἐκκλησιαστικῆς Μουσικῆς, pp.14-19, and Ὄ Βυζαντινὸς Μουσικὸς Πλούτος Νέας Μέθοδος τῆς καθ’ήμας Ἐκκλησιαστικῆς Βυζαντινῆς Μουσικῆς, pp.12.


3. The information in this section on Orthography & Synthesis is from Θεόδωρου Γεωρ. Χατζηθεοδώρου, Ἁπλὴ Μέθοδος τῆς Βυζαντινῆς Μουσικῆς (Αθήναι 1977), pp.107-19.

4. For the information in this section on The Three Genres cf. Θεωρητικὸν Μέγα τῆς Μουσικῆς, pp.94-9, and Ὄ Βυζαντινὸς Μουσικὸς Πλούτος Νέας Μέθοδος τῆς καθ’ήμας Ἐκκλησιαστικῆς Βυζαντινῆς Μουσικῆς, pp.39-40.


7. The two Greek letter-signs, ι and ι, correspond to the English letter ‘N’, where the sign, ι, is always written before the vowels ‘ε’ and ‘α’, and the sign, ι, is written before all the other vowels.

8. For this section on Precedent Verses cf. Ἀπλὴ Μέθοδος τῆς Βυζαντινῆς Μουσικῆς, pp.74-80.
Chapter 4 - Rhythm

1. The information in the following three paragraphs are taken from Θεωρητικὸν Μέγα τῆς Μουσικῆς, pp.63-5, for the rest of this chapter also cf. Μαθήματα Βυζαντινῆς Εκκλησιαστικῆς Μουσικῆς, pp.47-65.
2. The information in this section on Beat is from Θεωρητικὸν Μέγα τῆς Μουσικῆς, pp.65-8.
3. This practice is found in Turkish tradition, and when exercised, the word Doum (Δούμ) is pronounced for thesis (right hand impact) and the word Tek (Τέκ) for arsis (left hand impact). This distinction aids in the learning of thesis and arsis. For more detail see Π. Κηλτζανίδου, Μεθοδικὴ Διδασκαλία Θεωρητικὴ τε καὶ Πρακτικὴ (Ἐκδόσεις Βασ. Ρηγοπούλου, Θεσσαλονίκη 1991), pp.25-31.
4. Chrysanthos has a footnote discussing another relation of beats where the ratio is 3:4, and is called epitritos (ἐπίτριτος, eg. 0 1 ).
5. The information in this section on Poda is from Θεωρητικὸν Μέγα τῆς Μουσικῆς, pp.69-71.
6. The information in this section on Meter is from ibid. pp.72-5.
7. The information in this section on Rhythms is from ibid. pp.75-9.
8. For the Turkish rhythms and their names see ibid. pp.79-80.
9. The information in this section on Rhythmic Emphasis is from ibid. pp.81-3.
10. The psos here concerns both the thesis and arsis when the arsis is performed with the left hand on the left knee.
11. The melody for this hymn is the long version. This hymn is the First Canticle of the Iambic Katavasia which is chanted on the Sunday of Pentecost. Also cf. Μεθοδικὴ Διδασκαλία Θεωρητικὴ τε καὶ Πρακτικὴ, pp.35-7.
12. The information in this section on Types of Rhythm is from Θεωρητικὸν Μέγα τῆς Μουσικῆς, pp.84-6.
13. The information in this section on Variation in Rhythm is from Θεωρητικὸν Μέγα τῆς Μουσικῆς, pp.86-8, and Δ.Γ. Παναγιωτοπούλου, Θεωρία και Πράξεις τῆς Βυζαντινῆς Εκκλησιαστικῆς Μουσικῆς (Ο ΣΩΤΗΡ, Αθήνα - Μάρτος 1986) pp.144-8, 159-71.
15. For this section on Rhythm Making cf. Θεωρητικὸν Μέγα τῆς Μουσικῆς, pp.88-91.
16. Cf. Θεωρητικὸν Μέγα τῆς Μουσικῆς, pp.91-3. Not all musical characters had their own hand gesture eg. neumes, because they were written always in combination with somata - body character.
Chapter 5 - Related Themes

4. Ibid. p.217.
6. Ibid. p.535.
8. Ibid. p.536.
9. Idid.
11. Ibid. p.539.
12. Ibid. p.540.
13. Ibid.
14. Ibid.
15. Ibid. p.541.
16. Ibid.
19. For the development of Byzantine music and the study of Hymnography through the centuries, the works of Egon Wellesz are of great worth.
20. For the above mentioned on the three types of hymns cf. Ἁπλὴ Μέθοδος τῆς Βυζαντινῆς Μουσικῆς, pp.73.
21. For this section on Transposing for Western European Musical Notation cf. Θεωριτικόν Βυζαντινῆς Εκκλησιαστικῆς Μουσικῆς, pp.72-4, and Οἱ Μουσικοὶ Τρόποι στήν Ανατολική Μεσόγειο, pp.44-6.
22. In Western notation it is a custom for various notes (i.e. quavers, semiquavers, etc.) to be grouped together. The following examples are not grouped together, since there is no syllable(s) for these notes. In vocal music their grouping depends on the syllables of the written text. Stewart Macpherson writes in his book (*Rudiments of Music*, p.21): “In vocal music, only as many notes may be grouped together as are sung to one syllable.”
ΒΙΒΛΙΟΓΡΑΦΙΑ

ΑΛΥΓΙΖΑΚΗ, Αντωνίου Ε. Η Οκταηχία στην Ελληνική Λειτουργική Ύμνογραφία, Θεσσαλονίκη, 1985.
Τοῦ ἰδίου, Ἐκθέσεις Παλαιῶν Εντύπων Βυζαντινῆς Εκκλησιαστικῆς Μουσικῆς, περίοδος 1820-1910, «Ψαλτικά Βλατάδων, παράρτημα Αρ.1.»
ΓΕΩΡΓΙΑΔΟΥ, Θεοδωσίου Β. Ο Βυζαντινός Μουσικός Πλούτος Νέα Μέθοδος τῆς καθ’ ἡμᾶς Εκκλησιαστικῆς Μουσικῆς, Αθήνα, 1960.
ΔΑΜΑΡΛΑΚΗ, Ιωάννου X. Τὸ Ἀγραφό Τυπικό τῆς Ὀρθοδόξου Ανατολικῆς Εκκλησίας, Νεάπολις - Κρήτης, 1993.
ΚΗΛΤΖΑΝΙΔΟΥ,Π. Γ. Μεθοδικὴ Διδασκαλία Θεωρητικὴ τε καὶ Πρακτική, Κωνσταντινούπολις, 1881.
ΚΥΡΙΑΖΙΔΟΥ, Αγαθαγγέλου Ὁ Ρυθμογράφος, ήτοι ὁ χρόνος, τὸ μέτρον καὶ ὁ ρυθμός ἐν τῇ καθόλου μουσικῇ καὶ τῇ ποιητικῇ, Κωνσταντινούπολις, 1909.
ΚΩΝΣΤΑΝΤΙΝΟΥ, Γεώργιος Ν. Θεωρία καὶ Πράξη τῆς Εκκλησιαστικῆς Μουσικῆς, Αθήνα, 1997.
ΜΑΡΓΑΖΙΩΤΗ, Ιωάννου Δ. Μελῳδικαὶ Ἀσκῆσεις Βυζαντινῆς Εκκλησιαστικῆς Μουσικῆς, Ἀθήνα, 1958.
ΜΕΘΟΣ, Μάριος Δ. Οἱ Μουσικοὶ Τρόποι στὴν Ανατολικὴ Μεσόγειο, Αθήνα, 1999.
ΜΗΤΣΑΚΗ, Κ. Βυζαντινὴ Υμνογραφία, Αθήνα, 1985.
ΠΑΝΑΓΙΩΤΟΠΟΥΛΟΥ, Δημητίου Γ. Θεωρία καὶ Πράξη τῆς Εκκλησιαστικῆς Μουσικῆς, Αθήνα, 1986.
ΠΑΠΑΔΗΜΗΤΡΙΟΥ, Κωνστ. Δ. Μελῳδικαὶ Ἀσκῆσεις Βυζαντινῆς Εκκλησιαστικῆς Μουσικῆς, Αθήνα, 1928.
ΠΑΠΑΔΟΠΟΥΛΟΥ, Γεωργίου Ι. Συμβολαὶ εἰς τὴν Ιστορίαν τῆς παρ’ ἡμῖν Ἐκκλησιαστικῆς Μουσικῆς, Αθήνα, 1977.
ΣΟΥΡΛΑΝΤΖΗ, Δημητήριου Γ. Μουσικοὶ Ὄροι στὴ Βυζαντινὴ Μουσικὴ. (Notes) Τοῦ ἰδίου, Θεωρία περὶ Διαστημάτων. (Notes)
ΦΩΚΑΕΩΣ, Θεοδώρου Κρηπὶ τοῦ Θεωρητικοῦ καὶ Πρακτικοῦ τῆς Εκκλησιαστικῆς Μουσικῆς, Αθήνα, 1902.
ΧΑΤΖΗΘΕΟΔΩΡΟΥ Φωκαέως, Θεοδώρου Γεωρ. Ἀπλὴ Μέθοδος τῆς Βυζαντινῆς Μουσικῆς, Αθήνα, 1977.
ΧΡΥΣΑΝΘΟΥ τοῦ ἐκ Μαδύτων, Εἰσαγωγὴ εἰς τὸ Θεωρητικὸ καὶ Πρακτικὸ τῆς Εκκλησιαστικῆς Μουσικῆς, Παρίσι, 1821.
Τοῦ ἰδίου, Θεωρητικῶν Μέγα τῆς Μουσικῆς, Τεργέστη, 1832.
ΨΥΛΛΑΚΟΥ, Βασιλείου Κ. Τὸ Ασματικὸ Τυπικὸ στὴ Χειρόγραφη Μουσικὴ Παράδοση, Θεσσαλονίκη, 1999. (Μεταπτυχιακὴ Διπλωματικὴ Έργασία, Α.Π.Θ.)
CONOMOS, Dimitri E. Byzantine Hymnography and Byzantine Chant, Brookline, 1984.