

# The Tonality of Middle Eastern Music

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## Introduction

With a background in brass bands and with a music education that focuses on the music of Western Europe and twentieth century North America, one is often too aware that one has become isolated from the music of other cultures. As well as being a gap of knowledge and teaching that this document will fill for its own sake, there is a large resource of new and different (to me) ideas and options that I would like to explore to push forward the frontiers of brass band music in my writing.

This dissertation focuses on the tonality of Middle Eastern music. The tonal structure of Middle Eastern music is built from and depends on micro-tones, that is to say intervals that are smaller than a tone. Strictly speaking, a micro-tone is not the same as a quarter-tone, though music composed using quarter-tones are often in the spirit of this tonality. With this in mind, and since quarter-tones are not so easily reproducible on any other brass instrument, the aim of this essay is to give the author (and reader) enough knowledge to write a simple, short trombone quartet using the tonality and rhythmic structure of Middle Eastern influences such as Safī-ad-Dīn through the use of quarter-tones (rather than micro-tones).

This dissertation will cover the melodic and rhythmic modes of the Middle East, and include tonal, rhythmic and melodic examples contained in other documents that are listed in the bibliography. It will not cover performance, form or harmony since these are less well documented.

## Geography

In the terms of this dissertation, “Middle Eastern Music” covers the music of the three racial groups Arabic, Turkish and Persian covering North Africa, Asia Minor and Iran. The differences of the groups lie in the degree of the micro-tones and scales found in different locations, going into too much detail of the differences of the music one area with that of another will, however, detract from the trombone quartet objective. Whilst some small differences exist, they can be safely ignored at the level of this document.

## History

As with Western European music, the music of the Middle East evolved with time in both the tonality and the notation that was used in practice. The historical periods cover the periods of understanding by the theorists of the music being performed rather than the growth of musical experimentation as found in the West.

There are four periods of development:

- Pre-history (to 622): little now exists
- Development (622 – 13<sup>th</sup> Century): mixing of Persian and Arabic music, latterly influenced by Turkish music; study of Greek Music forms the foundation of tonality and theory; foundation of rhythmic and tonal structures laid down as the first theories are produced

- Conservation (15<sup>th</sup> Century – 19<sup>th</sup> Century): political upheaval in the West (the migration from Spain) and the East (the rise of the Ottoman Empire) leads to musical stagnation
- Modern Period (19<sup>th</sup> Century onwards): after the Napoleonic Era Western and other non-Arabic influences lead to a decline in traditional instruments and Arabic musicality. Since the Second World War a rise in Nationalism has led to some effort to reverse this trend; Cairo conference attempts to formalise all Arabic music

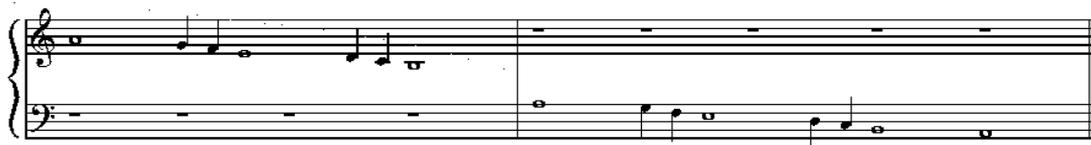
The periods primarily covered by this document are the Development and Conservation periods, though some studies carried out in the 20<sup>th</sup> Century will be mentioned.

In Middle Eastern music, practice and theory have not gone hand in hand, theory tended to be used to formalise what was already in practice and then attempted to lead. These attempts fail as new modes that were theorised by, and extrapolated from, the mathematical grouping of the scales and patterns of micro-tones within the scales were not usually taken up in practice. This process also leads to a situation where no single, correct theory of the trends of music used in performance exists and, as in the West, theories change with time even though, unlike in the West, practice did not. Space restrictions in this essay will mean that only a sample of some of the most common tonalities in use will be presented. However any of the tonalities presented may be used to produce a piece of music in a Middle Eastern style and thus help to meet the objective.

Both rhythmic and melodic modes have been derived from the performances on the four or five stringed Persian Lute known as the `ūd. Melodic modes were derived from the fretting of the instrument; rhythmic modes were derived from the possible rhythms.

## Tonal modes

The earliest modes were formulated by al-Kindi (c.790-874) and al-Fārābī (872-950) who first laid the fundamental scales and based them on tetra-chords and the Greek Great Perfect System. Headington (page 17) describes the Greek Great Perfect System as four tetra-chords:



*Figure 1*

The Great Perfect System formed from a series of four tetra-chords separated by a second led to a scale of two octaves being used. In Middle Eastern Music, the tetra-chord was a fixed interval; the notes inside the interval however would differ from mode to mode. So important is the tetra-chord that Bartók listed the tetra-chord alone as the tonality of the folk songs he collected in his *Studies in Ethnomusicology*. Since these inner notes are usually micro-tones, a large tonal base was available, much larger than in the West at the time where only a few strict order of tones and semi-tones were available. Hence one finds early Middle Eastern modes are two octaves built on a series of tetra-chords, where the descending scale often differed from the ascending scale in a manner that is similar to the Melodic Minor Scale.

Scales such as the popular Rāst scale may therefore be defined just in terms of their first tetra-chord (*figure 2b*), though practice may cause some slight differences in the descending scale (*figure 2b*) where the amount a note is flattened may differ. The glossary at the end of this essay denotes the quarter- and micro-tone symbols that are used in the musical examples.

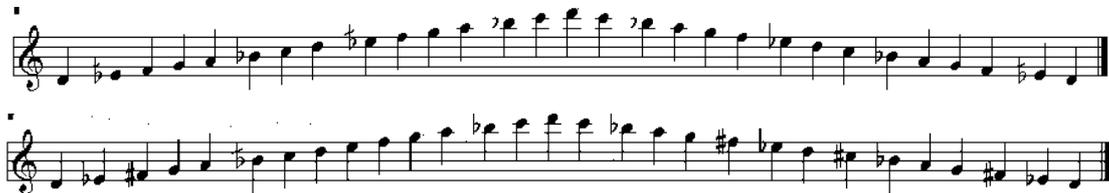


*Figure 2a: the Rāst tetra-chord*



*Figure 2b: the Rāst scale*

Two other common modes from the period were the Bayātī and Hijāzī modes:



*Figure 3: Bayātī and Hijāzī modes*

Safī-ad-Dīn (d. 1294) introduced a new system in the 13<sup>th</sup> Century that was to last until the 19<sup>th</sup> Century. Although still built using the tetra-chord system, he devised a scale of one octave based on 17 micro-tones of two sizes, Limma (90 cents) and Comma (24 cents). These scales were also built around two tetra-chords to form a scale consisting of two tetra-chords separated by a major second:

LLC LLCL; LLC; LLC LLCL

This scale was used in 18 basic modes: 12 fundamental (šudūk), and 6 secondary (awazāt).

The different modes were built upon the available tetra-chords, though in practice not all the available modes were used, indeed often we see theory for theory's sake. These modes were characterised by the first note, the last note and the intervals of notes in between.

The pivotal note (the important note – *cf* tonic) was not always the first note. An example of this is the Sehghah Mode. From Persia, this mode is not an ad-Dīn mode, but it demonstrates the point well, since it is the third note that is the pivotal note:



*Figure 4: Sehghah mode*

The systems proposed by Safī-ad-Dīn were used by theorists until the middle of the 19<sup>th</sup> Century with the start of the Modern Period with the proposals of Mikhā'īl Mašāqā, and latterly the attempts of the Cairo Congress of 1932 finally to merge theory and practice and to formally specify the scales in use by defining a complete and comprehensive set of modes known as the Maqāmāt (called Dastgāh in Persian

Music) many of which were based on the old Maqāmāt such as the Rāst (see figure 2b).

The scales used by Bartók (pp45-76) list the notes used in a melody in ascending order in each of his collection of Algerian folk tunes. He forces each note to the closest semi-tone so the scales he lists are not of use in this project. They may however be useful as a source of folk melodies for a work of a more traditional Western tonal nature.

## Rhythmic Modes

In addition to his tonal modes, Safī-ad-Dīn also outlined eight rhythmic modes based on the modes often used by and embellished upon by drummers. These eight modes were (see Grove page 520):

Oo.Oo.Ooo.O.Ooo.	(3+3+4+2+4)
Oo.Oo.O.Oo.Oo.O.	(3+3+2+3+3+2)
O.OxO.OxO.OxO.Ox	(2+2+2+2+2+2+2)
Ooo.Ooo.O.O.O.O.O.O.Ooo.	(4+4+2+2+2+2+2+2+4)
O.O.O.O.O.O	(2+2+2+2+2+2)
O.Oo.O.Oo.	(2+3+2+3)
Ooo.Oo.Oo.O.	(4+3+3+2)
O...O.O...O...O.O...	(4+2+4+4+2+4)

*Key: O – initial time – sounded; o medial time – optionally sounded; . - final time (not sounded); x –final time (sounded).*

These rhythmic modes better reflect practice than the tonal modes, and have not been revised though time.

According to Bartók (page 33) the most widely used time signature is 6/8 with some 3/4 or 2/4. In Persian Music, rhythm was less formalised than in Arabic and Turkish music though the hemiola is widely used.

Once established, the rhythmic mode and time signature of a piece does not change.

## Glossary

### ***Cent***

A unit of pitch used in acoustic theory. There are 100 cents to a semi-tone.

### ***Koron (ٲ)***

A micro-tone close to a three-quarter flat that is found in Persian Music.

### ***Micro-tone***

A micro-tone is a fraction of a tone. Different tonalities and different cultures use different micro-tones, but the most common are the Limma (90 cents) and Comma (24 cents). The quarter-tones whose symbols are used in this and other dissertations are only a Western approximation of the micro-tones that are used in practice in the

Middle East. However incorrect it may be, it has become standard practice to use these quarter-tone symbols to denote micro-tones that are often of less precise size than exactly 25 or 75 cents.

### **Neutral Third**

An interval that lies between a minor third and a major third. Neutral intervals appear throughout Middle Eastern music, but it is the neutral third that is most characteristic.

### **Quarter-tone**

Half a semi-tone (thus 50 cents). Not strictly used in Middle Eastern music, but common practice in the West dictates that the following quarter-tone symbols are used for micro-tones:

♯	Quarter sharp
#	Sharp
##	Three quarter sharp
♭♯ or ♯♭	Quarter flat
♭	Flat
♭♭ or ♭♮	Three quarter flat

### **Sori (♯)**

A micro-tone close to a quarter flat that is found in Persian Music.

### **Tetra-chord**

A perfect fourth, forming the basis both of Greek and Middle Eastern music.

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