

CREATIVITY & SELF-DISCOVERY
THROUGH
PYTHAGOREAN SUFI MUSIC

TALK GIVEN AT THE
LIFE LORE INSTITUTE

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Dr. Alan Wenham-Prosser DProf., MA.

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For examples of the Mevlevi sufi music go to YouTube
<https://www.youtube.com/@dr.alanwenham-prosser/videos>

INTRODUCTION

What do we know about Pythagoras?

Born on the island of Samos near modern day Turkey around 550 BC - but he was Greek. Studied under various teachers in the Middle East. He travelled to France, Egypt, Syria, Persia and India.

Went to India where he most likely studied the ancient Vedanta philosophy and Vedic mathematics. Some say he met the Buddha, and that his ideas of reincarnation came from India. After that time he spent more than a decade in the secretive Egyptian Temples - where he may have found out about music. Records of his life are scanty.

Returned to Samos possibly in his 60s, and later went to Croton in southern Italy, where he started the first known European idea of a school. i.e. where the teachers were in one place and the students came there to study. Previously single teachers were spread about in many cities.

He was thought to be a person with divine characteristics. He taught vegetarianism, treated women in his school as equals and lead his students to discover their true creative essence through mathematics, philosophy and music.

His approach was to counter the sophists of the day (sophos = intellectual) with the introduction of philos = love & devotion. Hence the word philosophy was first used. The western world's first philosopher.

Many of the things attributed to him may have come from India.

What do we know about Sufism?

Although maybe not called sufis in earlier times, the groups who later became known as Sufi began several centuries BC. If the tenets of Sufism are compared to those of the school of Pythagoras, they are found to be very similar. They flourished in the Middle East where Islam eventually became dominant. They survived mainly because they were tolerant of any religion of the day; but they secretly continued their Sufi ways. So attractive were some of their ideas that many followers of Islam joined them and in time many Sufi sects arose under the umbrella of Islam. Hence the modern confusion has arisen that Sufism is Islamic.

What do we know about music?

In ancient times it is almost certain that only talented and educated people would become musicians. The fact that there are no writings yet found about Egyptian music is evidence that their tradition was handed down by word of mouth. In Europe too, traditions were originally handed down orally. Very few artefacts relating to musical instruments have been found in archaeological sites. Suggesting that many ancient communities did not have musical instruments.

Across the world non-western music systems have used the natural tones which arise from simple numbers. The modern use of twelve equal tones is very recent. Theorised about in 17th century but not used on the grounds that it sounded awful. It was not really used in European music until about 1917 when a system was devised for obtaining the twelve equally spaced tones, so as to be able to tune instruments. Originally the music of Vivaldi, Mozart and Beethoven etc. was not heard the way it is today. They would probably turn in their graves.

We are brought up with our ears conditioned to think that the modern use of musical tones is what music is. So we may easily backwardly project the meaning of the word music into ancient times and think that those people heard the same thing we hear today. This is not a correct way to make any attempt to understand the music of ancient times. And so when it is read that Pythagoras used music to heal the sicknesses of his followers, we need to understand that he knew and used the magic of mathematics and the natural occurrence of musical tones to effect a remedy for poor health conditions; he was not using the intervals which we know as music today.

What do we know about creativity?

Many animals are very creative and can learn to make tools and to achieve tasks to help them survive, build nests, and find food. But few animals are creative for purposes beyond, food, mating and home building. Although some are creative for the purpose of play.

Human beings can do all that animals do with art, and much more. Above all we have the capability to use art for the purpose of self-discovery. This means delving into the subject of matters connected with the human soul using art as a tool for that journey. The word 'art' really means 'being' as in the use of 'thou art' from the verb 'to be'. But because this use of language is in some ways outdated we have lost the memory that the word 'art' relates to the human soul or our sense of being.

What do we know about Self-discovery?

Across many thousands of years the art of Self-discovery has been the greatest source of contentment and lasting happiness for countless people individually and in some cases whole communities. Yet in modern times the Western style of a materialistic approach to life has eclipsed the value of simple Self-discovery and put in its place the short lived happiness which arises from things of the material world. Yet it is evident that many people are deeply dissatisfied with modern living and the hype from which the commercialisation of all things has created the huge wave of consumerism and materialism.

Self-discovery is really finding that creative principle which dwells in the heart of all people. But it is very illusive.

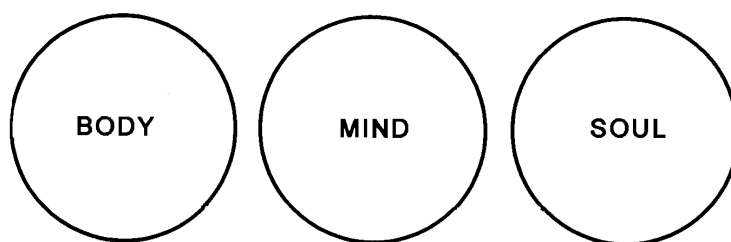
THE HUMAN BEING

In order to approach the subject of Self-discovery we need to look a little deeper into what we are as a human being. If we were to base this view on modern science we may miss those elements which the physical machines of modern methods cannot examine; meaning the subtle subjects such as mind and soul. So we need to rely on more established approaches using the kind of philosophy which Pythagoras favoured.

In many works of a philosophical nature the human being is referred to as having three bodies; here the word 'body' means a place in which to dwell. If we consider where our experiences of dreams at night take place we know that they are in the mind. We can have many experiences in dreams along with people, animals, buildings and so many things all taking their part in our dream adventure. Yet we do not sense the situation of our physical body during this time.

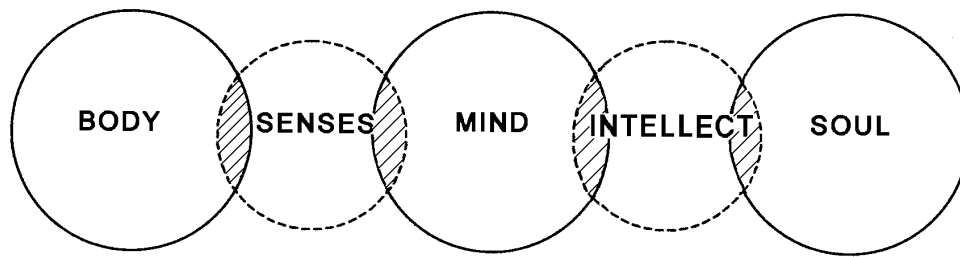
When in dreams we are living in the mind. Philosophy considers the mind as a body in which we spend part of our life. Modern science, knowing really very little of the mind, considers it as formed of electrical nerve impulses contained in the brain. This view is very limiting and is based on the human being as consisting of a physical body only. If this were true then we should all be equally creative; the truth is we are not.

What is the third body? This one is even more subtle and difficult to discern. Philosophy refers to it as the soul or causal body and that we live in it when we are in deep dreamless sleep. Since many spend almost one third of their life in that body, it is worth some consideration as to what part it plays in our life as a whole. So let's see if we can place these three bodies into some kind of relationship which may show us where creativity is placed in the human experience.



Here we start with the three shown as separate entities. Yet we know that the mind connects with the body in many ways. Also it connects to deeper non-physical things such as memory and intuition. Those things which connect us through the mind to the physical world we know as the five senses of hearing, touch, sight, taste and smell. Without them we have no experience of the world. This is evident when we are in dreams during sleep and it may be raining or sunny outside, hot or cold; but we are unaware of those conditions when our senses have become dormant during sleep.

Between the mind and the soul there are other non-physical things mentioned above. We need to connect with them too at times. Here then we need to modify the diagram to include two connecting parts.



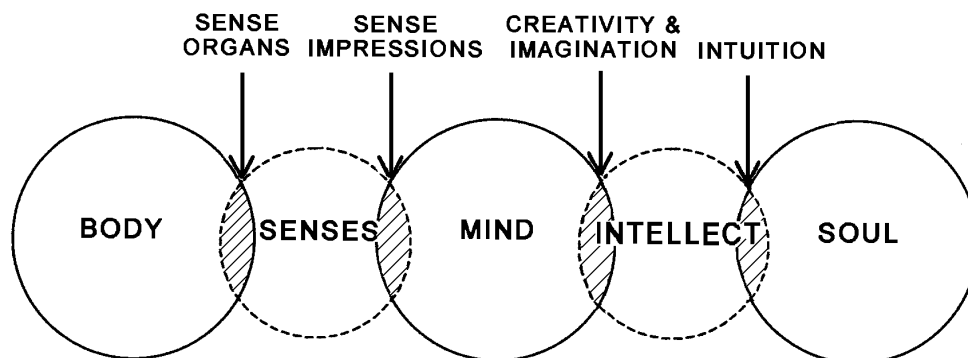
THE FIVE-FOLD NATURE OF THE HUMAN

Here we see the two joining parts, which are not bodies but are parts of our human experience which can be awake or dormant. That part which is more subtle than the mind and senses is termed intellect. But just as the senses circle has parts within it, the intellect has parts as well. But to keep the diagram simple these are not named here.

Both senses and intellect have two areas (shown shaded) which are their areas of interfacing with the parts they join. These interface areas, or functions, will also become dormant when either senses or intellect become dormant; thus breaking the connection across the diagram. It is these four interface areas which are most interesting when we wish to know more about creativity and our own creative principle (the soul).

This view of the human being, although both simple and comprehensive, is not what we are taught when we go to school or college. This is because it contains elements which cannot be studied with machines or instruments, which only enhance the experience of the physical senses. Hence these more subtle parts of human life are not studied so much.

If we now put names to the shaded areas we will have a complete picture of what the human being is in basic terms.



THE FIVE-FOLD NATURE OF THE HUMAN

Here there are nine differing functional parts of the human being, designed to work seamlessly. These are described in greater detail relating to art and creativity in the book "The Music of Rumi".

PYTHAGORAS' SCHOOL

Pythagoras was born around 550 BC on the Island of Samos off the coast of modern day Turkey, which was under Greek domination at the time. There he lived his younger years. Some say he lived to be 100 years old. Other reports say into his 80s. There are no accurate records of his life from his home town, except that his father was an engraver. Pythagoras did not leave behind any writings of his own. His teaching system was entirely oral. Other Greeks, such as Plato, finally wrote down his teachings and his discoveries a couple of centuries later.

The great teacher Thales of Miletus who lived near to Samos, was said to be his first teacher. Thales taught philosophy, history, science, mathematics, engineering, geography and politics. He investigated the origins of matter and also asserted that the planet earth was a sphere. Which was as outrageous then as it would be today to say that the earth is flat. Yet he could not answer all the questions of Pythagoras.

Thales recommended that Pythagoras should travel to the East so as to find the answers to his questions about life the universe and everything. So he travelled and studied with the Phoenicians, Chaldeans, Zoroastrians, Egyptians and Brahmins in India.

There are reports of him becoming a great teacher in India where he was known as Pitha Guru (father teacher). That name may have been confused with the name Pythagoras; no one knows the answer.

He was the only known person outside of Egypt who was admitted to the Egyptian temples, where he spent about 12 years studying their inner mysteries. The temples were a living thriving tradition at that time.

When he finally returned home he was in later life. He was not happy with the political ways of the area where he had lived, so he left to start up his school in Croton southern Italy. The main subjects which he schooled his pupils into were mathematics and music; which for him were intertwined. He saw the whole creation as being mathematical.

The seven basic tenets of his school were :-

1. Knowledge of the human soul's identity with the Creator.
2. Accepting followers of any belief system or none.
3. Men and women are treated equally in every respect.
4. The use of divinely inspired melody in the art of Self discovery.
5. The harmonious blending of knowledge and devotion.
6. Knowledge of the soul's reincarnation on its continued journey.
7. Leading a regulated, systematic and disciplined life, including truthfulness, tolerance, compassion, non-violence and self control.

In modern times those Sufi groups who keep to the above can be said to have originated as Pythagorean Sufis. Other Sufis who have deviated away from these tenets are not purely Pythagorean.

CREATIVITY

Pythagoras studied philosophy, mathematics and music. It is his basic discoveries which are behind our western idea of musical scales. Yet most modern musicians are unaware of this. The scales he devised became later known as 'Makams' in the countries from Turkey over to the Middle East. The music system was based on individual creativity. The aim is to enable the individual to connect with intuition and to project onto the screen of the mind new melodic creations on each occasion that music is played. In this way the music played has new creative elements within it each time the musician picks up his instrument. Hence compositions are played spontaneously which have not been heard before; or previously composed works are given new expression by the particular musician who is playing them.

The system of Indian Ragas is very much along these lines. In India the Makams are called Ragas. Musicians play an improvisation using a particular Raga and then with drums playing they improvise a whole new piece in their chosen Raga, which has never been heard before.

The Sufi's approach to the improvisation is called Taksim. This is a free rhythm composition which endeavours to express a particular Makam, sometimes prior to playing a known composition. When the composition is played it will also contain elements of fresh improvisation within it. All music using Makams is spontaneously creative.

This creative act is really an invocation. The musician brings into the space around him/her the presence of the chosen Makam or Makams.

This Makam presence will always carry a familiar feeling, as if the Makam is able to span time and space and bring itself into any place that an accomplished musician has invoked it. This way of understanding Makam elevates it to having a kind of immortality. i.e. although musicians and cultures come and go in time, the Makams live on.

To understand this we need to go back to the time of Pythagoras' original inspiration. In the legend of his life we have the following :-

"Pythagoras related that his Soul rose as far as the higher world. Due to the purity of his being and to the divinatory power of his heart, he heard the melodies of the Spheres and the sonorities produced by the movements of the heavenly bodies; at the same time he became aware of the discreet resonance of the voices of their Angels." ¹

It is my own understanding that Pythagoras concluded that human language was deficient when any attempt is made to use it to describe the inner joy of the soul. Hence when he was returning from that 'higher world' he paused in the world between our world and that other one. Putting his case before the Angels who dwell there, they agreed to help

¹ Godwin J (1986) Music, Mysticism and Magic : London : Penguin Group

him in his endeavour to give others a chance to experience the joy which he had found. They agreed to become embodied into suitably simple pure mathematical formulas of the language of music, so as to get around the deficiency of human language being unable to connect listeners to the joy of the soul. Later when he was working out how the language of music should be, those Angels assisted him in the creation of the original divisions of musical space, called intervals. According to the previous requirements of the Angels when in their own world, these intervals were required to be simple and mathematically pure.

The outcome of this was a system of building blocks of melody which were pure enough for the various Angels to use them for expression.

We have to thank the Sufis and other mystics who have developed this art and have also retained it through all the difficult times that various communities have had to survive. There have been many times when fanatic religious people have attempted to ban and destroy all forms of music. We now live in times where other fanatics have made attempts to alter the intervals for convenience and to thereby reduce or remove the ability of the melody to invoke the power of the Angels.

The pure and simple melodic approach of the Makam system requires no philosophy or the use of human language. Any person who is born with the love for this melodic way of life is able to connect with their own inner creativity; this would be through learning from an accomplished teacher the system of the Makams and their use.

Hence we could say that Pythagoras has achieved his aim of providing humanity with a simple and effective way that the joy which dwells in the human soul can be brought out into this physical world. This will happen when the musician has developed personal skills of communicating within him/herself and others and developing the necessary ability to be creative with the use of Makams.

However, as mentioned above, we live in times when many people are unable to connect with the above description due to the modern strength of the individual ego in its belief that it can approach deeper subjects without the help of an accomplished teacher. This has resulted in Western or European peoples seeking to alter the ancient intervals agreed between Pythagoras and the Angels; rendering them impure. Also the use of music is no longer simple. Large numbers of notes and instruments are deployed simultaneously making the language thus created deficient in being able to connect the lives of listeners to that pure and simple lasting joy, which is the birthright of every human being. Instead modern music connects us to a joy which is a shorter lived reflection of that deeper more lasting joy.

RHYTHM

Rhythm is the first thing to consider with musical performance.

The Sufi rhythm patterns used are also Pythagorean. As with all things which he devised they have symbolism contained within them to lead the musician closer to the creative Self within.

Why have rhythm? Time is a rascal. We cannot depend on our experience of it being the same as that of others. We all have the experience that an hour can pass quickly or very slowly, depending on our state of mind. Also as children the six week summer school holiday seems like an age. As adults it passes quickly. Seven hours in deep sleep pass in a flash. Yet what seems a long time in a dream during sleep will only last a few seconds or a minute or two. As we get older the years seem to pass very quickly, which means our experience of the days and hours can be just as variable. So in the same space and during the same minutes another person's experience of those minutes could be very different to our own. Simultaneously we all experience time differently.

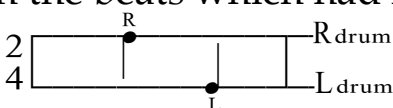
Hence, to make sure a group of musicians all play at the same rate of time we need to tame the rascal of time and introduce a discipline called rhythm. This will avoid music which sounds out of time.

The rhythms were originally designated on two drums; left and right. The right side (hand & drum) is taken to be where the Creator of time dwells. The left side (hand & drum) is where the individual rhythm creations are played out. So we take right to indicate Creator and left to indicate creation (or the individual).

The right hand often passes to the left side, but the left hand never passes to the right side. This symbolises the direction of flow of the creative influences. We can illustrate the various rhythms with a form of notation using two lines. The upper line is the right drum the lower being the left drum. The hand which beats is shown adjacent to each beat indication. The first rhythm is with no time between the beats. Indicating that time originated when space did. But since there was no creation before time and space - there was no music either.

The very first musical rhythm is called nim sofyan; which arises when time is introduced between the beats which had no time between.

Nim sofyan rhythm

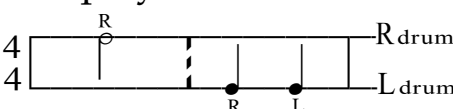


2 measures 2 beats

The diagram shows two horizontal lines representing drums. The top line is labeled 'R' at the left end and 'R drum' at the right end. The bottom line is labeled 'L' at the left end and 'L drum' at the right end. On the top line, there is a solid dot (beat) at the first measure and a vertical line (beat) at the second measure. On the bottom line, there is a solid dot (beat) at the second measure. The first measure is labeled '2' and the second measure is labeled '4'.

This develops into sofyan when the Creator decides to put His own influence into the creation of rhythm or music. i.e. creation begins. This is done when the right hand plays a beat onto the left drum.

Sofyan rhythm

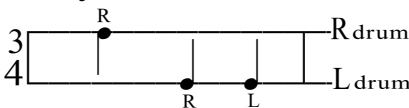


4 measures 3 beats

The diagram shows two horizontal lines representing drums. The top line is labeled 'R' at the left end and 'R drum' at the right end. The bottom line is labeled 'L' at the left end and 'L drum' at the right end. On the top line, there is a solid dot (beat) at the first measure and a vertical line (beat) at the second measure. On the bottom line, there is a solid dot (beat) at the second measure and a vertical line (beat) at the third measure. The first measure is labeled '4' and the second measure is labeled '4'. A dashed vertical line is shown between the second and third measures.

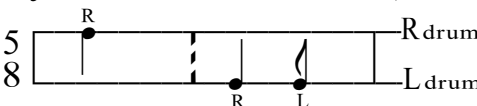
Sofyan is really nim sofyan, with each beat doubled as shown.

This fundamental rhythm will change when we make it into three measures producing the rhythm called semai.

Semai rhythm  3 measures 3 beats.

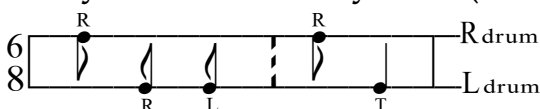
The use of the measures 2, 3 and 4 will allow any length of rhythm cycle to be created using the principle of permutation and combination. All rhythms begin right hand and drum; finish left hand and drum.

Combining one nim sofyan with one semai (2 + 3) we get turk aksak.

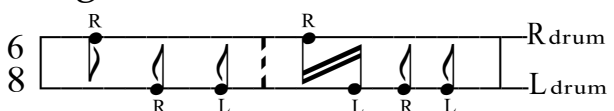
Turk aksak rhythm  5 measures 3 beats.

This creates a kind of skipping rhythm ; aksak means limping.

Two semais together makes yuruk semai rhythm. ('T' = both hands)

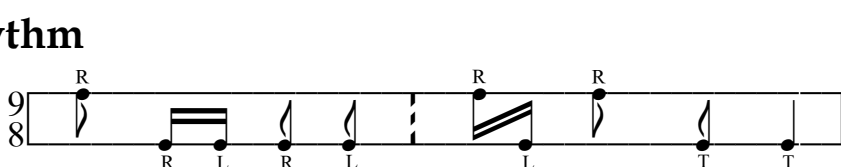
Yuruk semai rhythm 

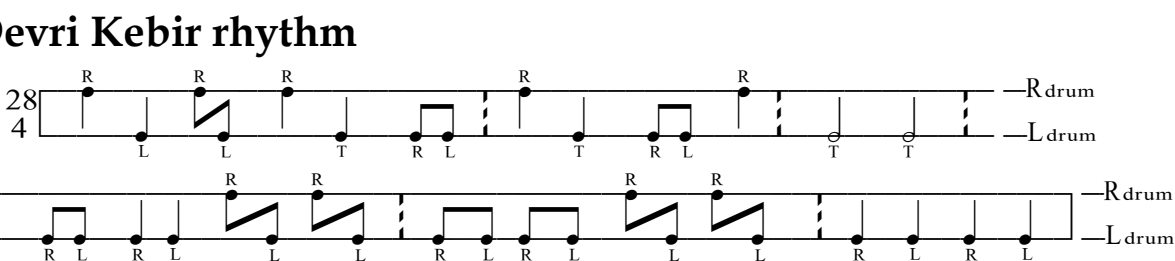
If we ornament the second part we get another version.

This is also called **yuruk semai** 

There are more than one hundred rhythm cycles which have been developed; all using combinations in the above way. Here are a few.

Aksak semai rhythm  'T' = both hands

Evfer rhythm 

Devri Kebir rhythm 

More than thirty cycles with much more information is given in the book "The Music of Rumi". Many of these cycles were developed by the Mevlevi Sufis during the previous centuries since Rumi's passing. They are used in dance, classical and Sufi ritual ceremonies. They utilise the principle of permutations and combinations, producing a wide range for the creativity of the musicians to compose with.

MELODY

Basic Intervals and Commas

The same simple numbers are used to determine the basic intervals for the Pythagorean concept of melody. The principle of melody is based on the human voice being the primary and ultimate instrument. We all carry this potential with us wherever we go. It needs no instrument maker and can easily be tuned with another. Because the human voice can only sing one note at a time Pythagorean melody is usually one note at a time. Known as 'the single melodic line'. Chords as part of the melody are not considered to be pure from the point of the Angels' requirements.

Pythagoras determined that all the natural intervals using two adjacent simple numbers would give him the intervals he needed.

These are 2:1 , 3:2 , 4:3 , 5:4 , 6:5 , 7:6 , 8:7 , 9:8 , 10:9 and so on. This is known as the Just Intonation or Natural Harmonic series.

In ancient times it was discovered that if the octave was divided into 53 equal small intervals (called commas), then the main Pythagorean intervals could be designated using complete numbers of these commas.

The octave is the difference between a man and a woman singing what they consider to be the same note. This the ratio of 2:1. Meaning that the vibrations of the higher note are double that of the lower note.

Using the octave as a starting point, all the frets on the Tanbur can be derived from basic principles without any external aids.

The Process of Halving a Gap

Deriving the frets is done by the simple process of successively halving the gap heard between the two notes one octave apart and so on. This process of recognising the intervals / notes which halve a gap is very easy for anyone to achieve, once it has been heard and described.

If we assume the first note is 400 cycles then the octave would be 800 cycles; creating a gap which is naturally 400 cycles. Half this gap is 200. so the next note is $400 + 200 = 600$. This is a perfect 5th from the lower note. So we now have three notes at 400, 600 and 800.

The perfect 5th is designated as 31 commas. i.e. 31/53 of an octave.

The next note is half the new gap of $200 = 100$. So the note would become $400 + 100 = 500$. This is a natural third from the lower note.

This natural third is 17 commas or 17/53 of an octave = 5:4 ratio

Lastly we halve the new gap of $100 = 50$. Giving $400 + 50 = 450$. This is called a whole tone from the lower note. This is a 9:8 ratio

The Pythagorean whole tone is 9 commas = 9/53 of an octave.

Developing Prime Colours of Melody

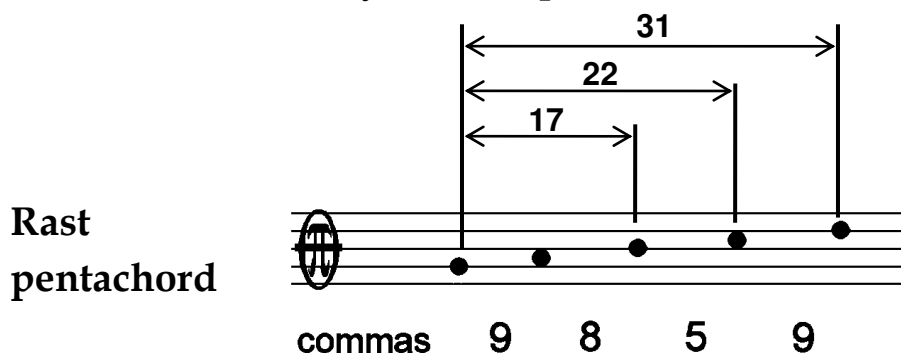
Using the supposed frequencies and the ratios of the above set of notes we can show the intervals we have discovered through halving.

$$800/400 = 2:1 ; 600/400 = 3:2 ; 500/400 = 5:4 ; 450/400 = 9:8.$$

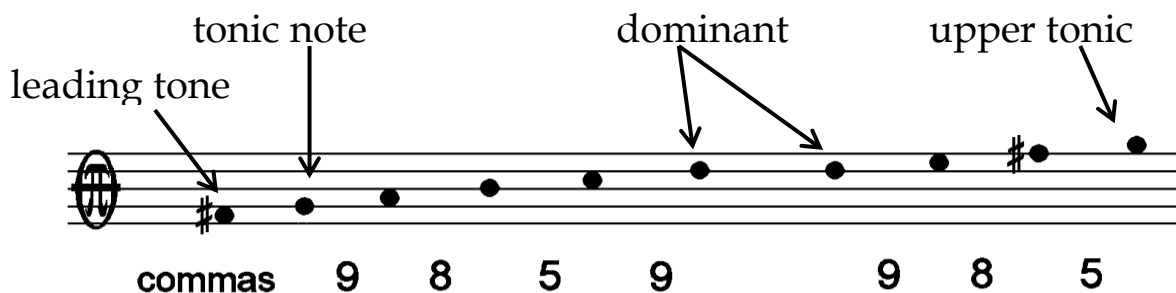
These interval in commas are $2:1 = 53$: $3:2 = 31$: $5:4 = 17$: $9:8 = 9$.

The perfect 5th was used like the octave in previous music systems as it is such a natural interval to recognise. It was Pythagoras who introduced the octave as a basis for music scales. The interval remaining between the perfect 5th and the octave is the perfect 4th = $4:3$ i.e. $4/3 \times 3/2 = 2$. Hence it is very easy to complete the first five notes by adding the perfect 4th. The perfect 4th is 22 commas, since $53 - 31 = 22$.

This group of five notes will give us the first basic building block or prime colour for melody called a pentachord. Intervals are in commas.



If we reproduce the tetrachord (4 note scale) of $9 + 8 + 5$ commas and add it to the above pentachord we will get an octave scale called a Makam. This is using the rast tetrachord as a prime colour.



This octave scale is called Rast Makam

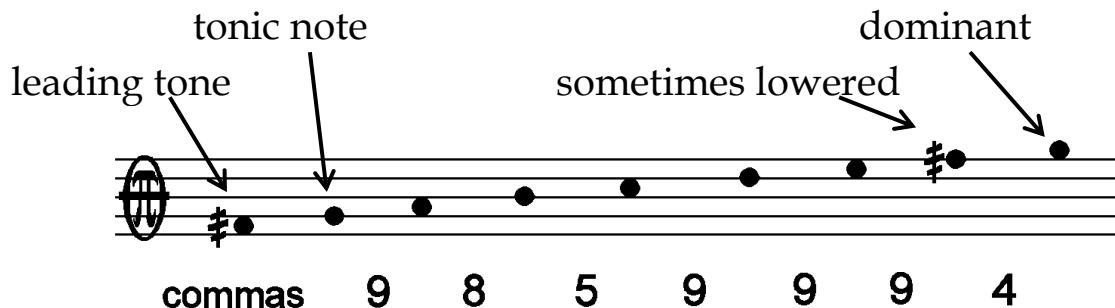
The dominant note is the perfect 5th from the tonic note. This Makam begins in the lower pentachord and passes to the upper tetrachord then finishes with the lower pentachord.

All Makams finish on the tonic note and have a leading tone (4, 5 or 9 commas) below which acts as a support to the tonic note. Also the note called Evich, $\frac{1}{2}$ tone below the upper tonic, is often lowered 4 commas to help with the final stage of descending the melody to completion. This note I call the pusher as it helps to push the Makam down to finish.

What is a Makam?

A Makam is not only a scale of notes. It has many features, such as which note is the dominant and where the starting area is etc. To give some idea of this vast subject of Makams we look at how the above set of notes can be used in different ways to produce two more Makams.

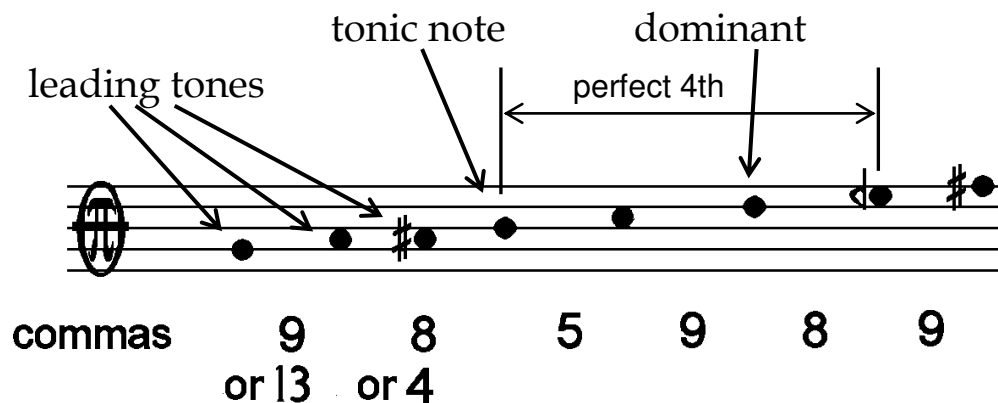
Using the same notes as Rast, with one small change and moving the dominant to the upper tonic position we get a different Makam.



The octave scale called Mahur Makam

This Makam begins around the dominant note and the upper tetra-chord. Finishing as with Rast Makam in the lower pentachord. Notice the small change of one note by one comma. This gives a stronger support to the upper tonic which has assumed the position of dominant.

We can create another completely different Makam using the same notes again but moving the tonic to the natural third position. Again we need to make one small change. Other than that we are not using different notes. The small change gives us a perfect 4th from the tonic.



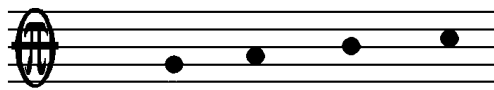
The scale called Segah Makam

The tonic has moved to the note segah; hence it is called Segah Makam. The notes below the tonic are all used at different times depending on the composer's use or expression of the Makam.

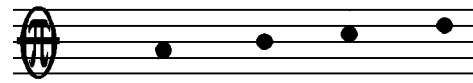
The note above the dominant is lowered by one comma so that a perfect 4th can be heard from the tonic (i.e. 22 commas). The Makam is basically a perfect 5th in range, but the notes above can also be utilised, again it depends on the composer's decisions.

The Set of Melodic Prime Colours

The above examples use only two tetrachords from the system using the 5, 8 and 9 comma intervals. These tetrachords are Rast and Segah. There are 8 tetrachords which can be used when the full range of Pythagorean intervals are used (see the list on page 12).



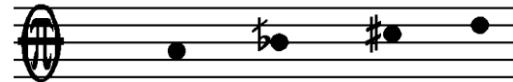
commas 9 8 5
RAST TETRACHORD



commas 8 5 9
USHAK TETRACHORD



commas 5 9 8
SEGHAH TETRACHORD



commas 5 12 5
HIJAZ TETRACHORD



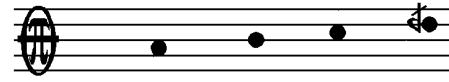
commas 9 9 4
CHARGAH TETRACHORD



commas 9 4 9
PUSELIK TETRACHORD



commas 4 9 9
KURDI TETRACHORD



commas 8 5 6.5
SABA TETRACHORD

These can be used on many pitch positions. Then using the principle of permutations and combinations a wide range of Makams can be devised. I have discovered notations in about 230 makams. All tetrachords (except saba) can be made into a pentachord by the addition of a whole tone. This gives enormous (infinite) scope for musicians.

In western or European style music there are only major and minor scales in general use. This is like giving an artist only black and white paints and expecting a colour picture. Experiment has been made with chromatic scales etc. but these are not the normal scales. Hence colour in western music has to be introduced with chords and many instruments playing simultaneously. This moves too far away from the simple purity which the Angels of the language of music need for their expression.

The difference is that modern music produces enjoyment mainly associated with the senses; however, the purpose of the language of the Angels is to connect us with the joy of the soul which can be a more lasting or enduring experience. This was the aim of Pythagoras.

Go to <https://www.youtube.com/@dr.alanwenham-prosser/videos>