



THE PHENOMENON OF TĀLAMĀ

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Abstract: This study has been undertaken to compare the Indian Tala System and the Western Rhythmic Pattern. A closer look on these two styles reveals that the western style is more canonical than the Indian Style which displays more flexibility inasmuch as the performer owns the liberty to set the tempo as the situation demands.

Introduction:

In its entirety, “Tālam” is a word originated from Indian language and it synonymizes with the English word “Rhythm”, which is not an unfamiliar term to a layman. According to Oxford dictionary, rhythm (tālam) is “a strong, regular repeated pattern of movement or sound”. Rhythm is indispensable according to a lot of studies. However, the people at large may not have perceived the different dimensions of this word, because, more than a word or function, “Tālam” could be considered a phenomenon that has different dimensions in several walks of life. In architecture, for instance, “rhythm” is defined as a unifying movement characterised by a patterned repetition or alteration of formal elements or motifs in the same or a modified form. Here, rhythm can be expressed as a repetition of elements such as lines, shapes, forms or colours, leading to organized movement in space and time. The legendary German poet, playwright, novelist, theatre director and critic, Johann Wolfgang von Goethe, referred architecture as a wonderful piece of “frozen music”.

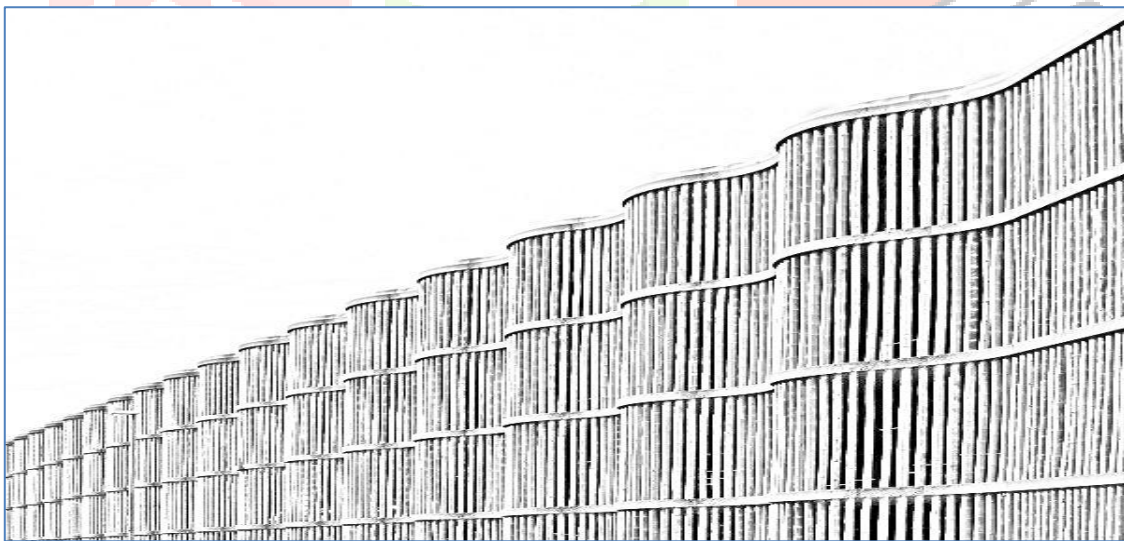


Fig 1: rhythmic expressions in architecture.

There is a saying that “Life is full of rhythms” (Kotz, 2018), and inherently, the human body is replete with rhythmical processes, such as respiration, heartbeat, circadian cycles, and menstrual cycles and so on. Further, a sense of timing is important in conversations. When we speak, for instance, we communicate not only with the words we choose, but also with the rhythm of speech.

Notwithstanding the aforementioned examples, the very moment we hear about Tālam /Rhythm, it reminds us the repeated pattern of movement in music. Tālam /Rhythm is one of the central aspects in all its forms of music. Rhythm gives structure to the music and brings the musical notes to life. In other words, Rhythm is music's pattern in time, or the time signature of melody. It is often mentioned that “*śruti mātā laya pitā*” which means that if melody is the mother, then Tālam or Laya is the father. Can't melody exist without rhythm? It might seem to be impossible, if we consider Rhythm as beats only. But if we consider Beats Per Minute (BPM), we might find a possibility for an independent existence for melody. Cycle of Rhythm is not essential for a melody. The common feature of rhythm is that it will be constant for a piece of music. But this is followed only in theory if you don't use a metronome for music and maintain the tempo along with that. In such case, the rhythm is fully aligned with the kālam (time). This article is an attempt to get more insight about the time signature theory in music.

Tālam, its interaction with melody:

Interestingly, there are instances when melody and rhythm are interdependent of each other, or they are completely independent. In Indian Classical Music, for instance, while we elaborate a Raga (“*rāgālāpana*”), the cycle of beats may not be a mandatory accompaniment. In most of the instances, *rāgālāpana* is not set to any rhythmic pattern, but on a melodic basis. In India, the rhythm is called Tālam. It is used for singing a song, playing instruments for the song, playing instruments for dance or drama and playing instruments in an ensemble. In all these cases we can find the cycle of beats being used in different patterns (tālam s). The same thing can be observed in Western Music, also known as “*time signatures*”.

Tālam and its structure in Indian context:



“Tālam ” in Indian music displays one of the most elaborated versions in the universe of music and is known for its rhythmic complexity. Each type of rhythm or Tālam cycles continuously through a number of beats set to a definite pattern or structure. For the purpose of demonstration, the Tālam applied in Carnatic music is used here as the model to explain its characteristic feature. Depending on the temporal sequences, “Tālam ” in Carnatic music is classified into many. Out of the several systems of classification, “Sūlādi sapta tālās” system seems to be one of the most reliable practices which is being depicted in this manuscript. The Suladi Sapta Tāla-s could be traced back to the 15th - 16th centuries A.D. For the first time, in Purandaradasa's Sūlādi-s, Sūlādi sapta tālā-s were employed, hence the name. The “Sūlādi” conventional practice became so rigid and systematized in course of time that eventually it became the basic lessons for the students of music. According to this system, the Tālam-s belong to seven varieties (referred to as Sapta tāla alāṅkāras) such as Dhruva matya rūpaka campā tṛpūṭa āṭa and eka. Each of these varieties will have different variants based on the number of beats. Here again, the components of beats (aṅgās) are classified into three types: (a) Laghu – starting with one beat of the palm (on the thigh) + the counting of fingers for the remaining part, (b) Drutaṁ– a beat (on the thigh) with the palm with its face down, followed by a beat (or sometimes, waving) using the back of the hand, and (c) Anudrutam- one beat of the palm. Each of these “Aṅgās” has been given a code number. Accordingly, Laghu is numbered as 1, while Drutaṁ and Anudrutam are given the codes ‘0’ and ‘U’ respectively. Further, it is to be noted that the permutation combinations of Laghu, Drutaṁ and Anudrutam might vary with respect to different Tālam-s.

Among the whole host of Tālam types, “Ādi tālam ” (Ādi – meaning “primary rhythm”), is one of the most popular one used in Carnatic music; hence, this Tala is being treated in some detail at this juncture. One cycle (akin to one “Bar” in the western music) of Ādi Tālam is comprised of one Laghu [in the order - a beat of the palm with its face down, to be followed by tapping the fingers – pinky, the little finger (2), ring finger (3), middle finger (4)] and two Drutaṁ-s [each Drutaṁ will have a beat of the palm (on the thigh), to be followed by turning the hand over and tapping the back of the hand (again, on the thigh)]. As per the aforementioned system of codes, Āditālam could be referred as 1-0-0 (1 representing the Laghu, and the zeroes representing the two Drutaṁ-s). This cycle of eight beats will be repeated over and over again all the way through the “Kṛti”. This system of coding is applicable to all the different types of Tālam s in Carnatic music. Accordingly, the code numbers for different Tālam s in the Sapta Tāla Alankara patterns are: (a) Eka (1); (b) Rūpaka (0-1); (c) Tṛpūṭa (1-0-0); Matya (1-0-1); Jhampa (1-U-0); Ata (1-1-0-0); Dhruva (1-0-1-1). The Laghu can have differing numbers of beats, referred as “jāti”, based on the number of counts. Based on this, there are at least four “Jāti-s”, being applied on Carnatic music. They are: (a) Tisra - 3 beats; (b) Caturaśra - 4 beats; (c) khaṇḍa - 5 beats; (d) Miśra - 7 beats; (e) Saṅkīrṇa - 9 beats. Consequently, each Tālam can give different variants of rhythmic expressions, depending on the type of “jāti”. This means that each of the seven tālam-s can have five types according to the jāti, giving a total of 35 different varieties of

tālaṁ-s. Evidently, the Āditālaṁ which is being profusely used in concerts would belong to “Caturaśra jāti Triputa” (1-0-0). Interestingly, there could be compositions of Tīśra Jāti Tr̥puṭa with the same equation (1-0-0), but with different rhythmic expressions. Sri Swaathi Thirunaal’s “Manthara dhara sundaratara” set to Rāgam -toti, is a typical example of Tīśra jāti tripuṭa, which has a totally different expression compared to the usual “Āditālaṁ”.

The foregoing description of “Āditālaṁ ” is aimed at giving the reader a glimpse of how scientifically, but with complexity, the Tālaṁ-s in Carnatic music are organized. Significantly, in several instances, the music may sound as if it is on a faster tempo; while the actual speed of the Tālaṁ would remain the same, the number of notes per beat will increase or decrease to give a change of tempo. If the lead performer is a vocalist, then he/she will count and display the rhythm with their hands almost all the way through the concert, so that one can watch them and follow the singer. Instrumentalists, however, as their hands are fully occupied, do not provide such cues.

Interesting comparisons with the Western style of rhythm: East versus West in rhythmic expressions

In its general outline, Tālaṁ or Rhythm shares the same features between Indian and Western styles of music. In the western style, one rhythmic cycle is represented by one “Bar” which means a segment of time corresponding to a specific number of beats; the boundaries of the bar are indicated by vertical bar lines, a single line or a double line, as the case may be. One “Bar” is synonymized with the word “Tāla vataṁ” of Carnatic music which would mean one rhythmic cycle. Accordingly, the 4/4 pattern of western style is comparable with Ekatālaṁ of Carnatic style to great extent and to some extent with Āditālaṁ , notwithstanding the differences in rhythmic expression existing between the two. The temporal distance among the “Bars” may be the same all the way through. However, in the western style, the number of notes coming in one “Bar” makes significant impact on the rhythmic expression. The temporal space in one “Bar” is divided as per the number of notes present in that “space”. Accordingly, if only one note is being played in one “Bar” then the whole Bar is represented as  . If two notes are there in one “Bar”, then it is divided into two halves, signifying the sign  , and so on. The figure 2 depicts the various sub-divisions of a “Bar”, with respect to arrangements of notes.

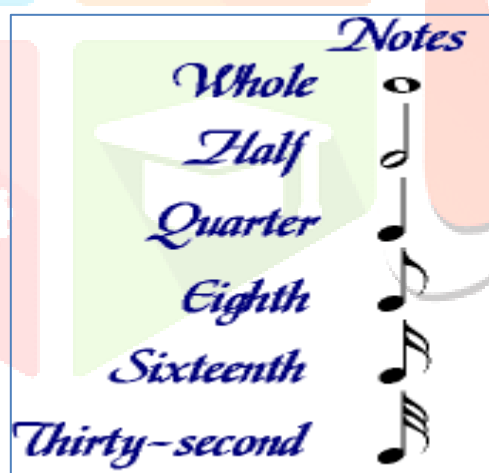


Fig.2: signs of staff notation

To take another example, in its application perspective, the Rūpaka tala could be compared with the $\frac{3}{4}$ of the western style (counting 1-2-3 in one Bar). Similarly, the “Mīśracāp” may be compared with the $\frac{7}{4}$ or $\frac{7}{8}$ timing (both these are almost synonymous in the western style in its application). However, a difference exists between the two styles inasmuch as in Carnatic style “Mīśracāp” would in most of the instances be counted as 1-2-3-1-2-1-2 (ta-ki-ṭa -ta-ka -dhi -mi) throughout the composition, which the western style would explore other possibilities using permutations and combinations (eg: 1-2-3 1-2 1-2 i.e., 3+2+2=7, or 1-2 1-2-3 1-2 i.e. 2+3+2=7 or 1-2 1-2 1-2-3 i.e., 2+2+3=7)

One of the major differences existing between the Indian “Tālaṁ ” and the Western “Rhythm” is setting up of the tempo of the composition. In general, the western style of rhythm is more rigid, but precise. Mathematical tempo markings became increasingly popular during the first half of the 19th century after Johann Nepomuk Mälzel invented the metronome, a device that produces a sound at regular intervals. In the

west, musicians use metronomes to practice playing at definite tempos. Interestingly, Beethoven was the first composer to use the metronome, and in 1817 published BPM (beats per minute) tempo indications for all of his symphonies. It is interesting to see that the western music has classified the tempo based on number of beats per minute (BPM) as shown below:

1. Grave – slow and solemn (20–40 BPM)
2. Lento – slowly (40–45 BPM)
3. Largo – broadly (45–50 BPM)
4. Adagio – slow and stately (literally, “at ease”) (55–65 BPM)
5. Adagietto – rather slow (65–69 BPM)
6. Andante – at a walking pace (73–77 BPM)
7. Moderato – moderately (86–97 BPM)
8. Allegretto – moderately fast (98–109 BPM)
9. Allegro – fast, quickly and bright (109–132 BPM)
10. Vivace – lively and fast (132–140 BPM)
11. Presto – extremely fast (168–177 BPM)
12. Prestissimo – even faster than Presto (178 BPM and over)

The metronomic precision in deciding the tempo of a composition makes the western style different from the Indian style wherein the performer himself/herself, without the help of a metronome for putting the tālam in precise temporal sequences conforming to seconds or milliseconds, takes the liberty of deciding on the tempo, based exclusively on the extrinsic and/or the intrinsic signal(s) (or mood indicators) which he/she receives at that point of time.

To elucidate this concept further, let us consider a percussionist (a person playing on the “mrudangam”, for example) who is rendering the rhythmic expression in a Carnatic vocal music concert in “Aditālam” (equivalent to 4/4 in western time signature). Here, the vocalist puts the tālam displaying the “Anga-s” using hand, and the percussionist (Mrudangist) plays according to it; and the tempo of the song (“Kṛti”) is being exclusively decided by the vocalist, as per his wisdom.

Physiological impacts of rhythm:

The healing potential of music has been utilised throughout history and in many cultures (Wheeler, 2015). Rhythm in music is known to influence the human bodily activities, as it mimics internal bodily rhythms (Zatorre et al., 2007). The rhythm or beat of music causes all sorts of bodily responses including tapping fingers and feet. A beat can even affect our heart rate and, when people sing together, their breathing may become synchronised and positive emotions will be increased. It is considered that faster music increases heart rate. When we are exposed to slow beat music the parasympathetic nervous system is stimulated decreasing the heart rate and while listening to fast beat music the sympathetic nervous system is stimulated and increases the heart rate (Suguna and Deepika 2017). Synchronisation of physical movement, heart rate, respiratory rate, and neural activity with rhythmic cues in music is known as entrainment, a temporal locking process in which one system’s motion or signal frequency entrains the frequency of another system (Schneck & Berger, 2006; Thaut, 2005; Altenmüller & Schlaug, 2013), depicting the influence of music on bodily functions. However, admittedly, in spite of these findings that indicate the impact of music (with rhythm in particular) on the human system, there exists scope for more research on each and every aspect of human physiology, including at molecular levels. It could be reasonably presumed that future research would accomplish this objective.

To conclude, the present manuscript has elucidated the structural aspects of Tālam or Rhythm in the context of Indian classical (Carnatic) music and had interesting comparisons with the Rhythm of the Western style. The paper, on the one hand, has shown similarity between the two styles of music, but on the other, it depicts how these styles are different from one another. A closer look on these two styles reveals that the western style is more canonical than the Indian Style which displays more flexibility inasmuch as the performer owns the liberty to set the tempo as the situation demands. Finally the paper discusses the influence of music (with special reference to rhythm) on the human system and tries to indicate the room for more research, which in turn would have an impact not only from the aesthetic stand-points, but also from the perspective of human well-being.

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