Tāla-DaŚa-Prāṇa and the Musicological problems in present day Tāla system.

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Tāla is the time framework within which music, drumming and dancing are created, individually or collectively. And 'TāladaŚaprāṇa' refers to ten prāṇa-s or ten vital aspects of tāla. These are –

1. Kāla	2. Mārga	3. Kriyā	4. Aṅga	5. Graha
6. Jāti	7. Kalā	8. Laya	9. Yati	10. Prastāra

Although tāla has been a part of almost all the musical systems of India except Sāmagāna, the concept of tāladaŚaprāṇa itself seems to have arrived only in the 16th century and is seen described in texts like Saṅgītasūryōdaya of Lakṣmīnārāyaṇa (1,48cd-160), Saṅgītadarpaṇa of Dāmōdara (631-717), Rasakaumudī of Śrīkaṇṭha (4,94-138), Saṅgītapārijāta of Ahōbala (2,3,5-95)) and Saṅgītamakaranda of Nārada (2,3,51-100). And, among the ten prāṇa-s mentioned above, not all the ten names have existed from the early period. For instance, the term 'Kriyā' is seen to be used for the first time in the Abhinavabhāratī commentary on NāṭyaŚāstra (AB on NS vol.4. p.151,l.3) and is adopted by all later authors. And the usage of the terms 'aṅga' and 'jāti' is seen only from the time of the texts that speak of 'tāladaŚaprāṇa'. Finally one of the most important concepts of today, namely, that of 'gati' seems to be conspicuously absent in the ten prāṇa-s and the term 'gati' as such seems to make an appearance only in the 19th or 20th century.

This paper is not going to take up the description of the ten prāṇa-s from a historical perspective but would rather go into the meaning of these terms as they relate to contemporary music. However a brief note on the ten terms would be useful before some of the important issues can be taken up. And even before that we need to be clear about what aspect of music that we are exactly dealing with.

What is Tāla? Tāla is time. How is it time? Or else what is time?

Time is a very difficult concept to define in a positive way. A musician and as a non-physicist I would perhaps look at time as not a positive /concrete entity but as a negative /abstract one. For instance, when we look at the term called 'interval' in the context of sound, we find that it is defined only as the absence of sound. In a vibrating object between two different frequencies absence of sound is referred to as interval. Thus 'interval' is defined as the absence of sound, which is a negative way of saying it. While 'sound' is perceived through the sense of hearing or through ear, interval would refer to a sound not heard.

Again when we look at the term 'space' we find that it is understood or defined in terms of the absence of an object. It is not a concrete entity. While an 'object' is perceived through the sense of sight and touch, space would denote the absence of the object.

On the same lines, time is not an entity that we perceive through our sense organs. It is known through the absence of an event or action. The term for action is 'Kriyā' and the term for time is 'Kāla'. Kriyā itself is defined by Bhartṛhari thus - "Whenever something, finished or unfinished is presented as something to be accomplished, it is called 'action', because of its having assumed the form of sequence". (Subramania Iyer, 1974:1) The element of non-action or rest helps link two successive actions or events and creates the illusion of time. The intervening period of rest connects the two actions by calling them first, second and so on.

The reason why the nature of time had to be gone into is that, tāla too is an embodiment of time and is created through actions separated by absence of action or non-action. In tāla we create or simulate time through actions of hands, which today include beating of the palm, throwing the hand with the palm facing upwards and moving the fingers of the hand. These actions interspersed with rests that contribute to link the actions, collectively form a time span. And in reality it is the period of non-action or the interval between actions, that is time and that becomes the basis of time measurement. A common example from our daily life is the notion of the time unit 'second', which is known as the period of non-action or interval between the 'ding' and the 'dong' in a pendulum clock or between the successive appearances of the 'colon' sign, two black dots of Liquid Crystal Display (LCD) in a digital watch. Coming to music, in an Āditāla, there are eight actions, namely, a Taṭṭu, movements of little finger, ring finger, middle finger, again a taṭṭu, a vīccu, a taṭṭu and finally a vīccu. Normally we find that after the end of the last action, that is the vīccu, the tāla is concluded by a taṭṭu again. The eight actions are separated by intervals or periods of non-action. There would be eight intervals or eight small time spans of the extension of the eight kriyā-s. It is the interval between the two kriyā-s, that forms the fundamental unit of time measurement and which is referred to variously as akṣara, akṣara-kāla or mātrā.

In the case of music, however, we come across two kinds of events that express the existence of time. One is time expressed by the actions of hands and the other is by the musical structure or the melodic line itself. For instance, in a varṇam, we come across melodic stresses of svara-s interspersed with rests, also referred to as pulses, which create time. In a kīrtana, the rests and svara-s do not reveal a perceptible periodicity or rhythm, except when we are singing the madhyamakāla-sāhityam passage. In tavil and mṛdaṅgam too the syllables interspersed with rests express time as do the stamping of feet on the ground or the movement of hands,

eyes and other limbs in dance. This is why tāla is said to be the basis of all these three arts, Music (gīta), Drumming (vādya) and dancing (nṛtta) -- gītam vādyam tathā nṛttam yatastālē pratiṣthitam. (SR 5,2cd)

Coming back to the ten prāṇa-s of tāla, we find that most of these terms are related to one or the other of the two basic aspects of time, namely, action (kriyā) and rest (viśrānti). For instance, kriyā denotes the aspect of action. Kāla, mārga, aṅga, jāti, laya and yati relate to the interval between actions that manifest tāla. The term kalā is used in two different senses one denoting 'action' and the other 'interval'. Graha on the other hand does not pertain purely to tāla but rather speaks of the connection between tāla and music. Finally, prastāra, is not describing any aspect of tāla but speaks of the derivation of possible number tāla-s from a prototype. Let us take them up one by one.

1. Kāla

Kāla is literally time. And we have seen that 'kāla' is time created through actions of hands. But as an element of tāla-daśa-prāṇa, kāla deals with standardising the time units used in music, sometimes with reference to the time used in day-to-day life. For instance, Bharata standardises the time units like laghu, druta and pluta used in his time with reference to the spoken syllables. He conceives of a hypothetical reference time-unit called mātrā, which he equates with the time taken for uttering five short syllables (pañca-hrasvākṣara-s) (NS 31,4). As is evident, time taken to utter five short syllables is not a very precise measure and this is a rather approximation based standardisation. However the dēśī tradition did bring in the time-units of daily life without using the hypothetical mātrā unit. It starts with kṣaṇa as the smallest time unit and goes on to higher ones like, lava, kāṣṭhā, nimēṣa, kalā, truṭi and then to aṇudruta, druta, laghu, guru etc. (SDar 638-641)

This consciousness of having to standardise tāla units is by and large missing in today's music and musicology. For instance, when a song is prescribed to be rendered in oru-kaḷai āditāla or in miśracāpu tāla, there is no mention regarding the kālapramāṇa or tempo in which it is to be rendered. That aspect is expected to be preserved in oral tradition. A.M.Chinnaswamy Mudaliyar (1893:37) did take a step in this direction and indicated the Metronome number for the quarter note or crochet. Hence at least with reference to the songs he notated, we have an idea of the kālapramāṇa in which the song must have been rendered by him. Raṅgarāmānuja Ayyaṅgār in his book 'Carnatic Music Pallavi Tradition', when presenting each pallavi, gives the total duration of an āvarta of the tāla in terms of seconds (AyyangarRR 1970:1). Thus Oru-kaḷai Āditāla is said to have a total duration of eight seconds for one āvarta. Some of the Long Playing records releases of Karnataka music from the West do indicate the Metronome numbers against the song.

Now in the last five years or so the Tālometre of the Radel system has also incorporated the digital display of the number of 'ticks' per minute in the rendering of a tāla. The Madras University in its audio lesson material for the Correspondence Course has started indicating this kālapramāṅa of the tāla. For instance the orukaḷaki āditāla would normally have 60 to 70 kriyā-s in one minute or approximately one kriyā per second. In other words each kriyā in any of the 35 tāla-s will have a duration of approximately one second in its normal madhyamakālam state. The reṇḍu-kaḷai will have 30 to 40 and nālu-kaḷai 20 or so. Miśracāpu is conceived of as Tisra-triputa tāla rendered at a tempo of 120 to 140 with the 2, 3, 5 and 7th kriyā-s muted.

The need to standardise the kālapramāṅa of the tāla will be realised when we observe that the kīrtana "Śrī dumdurgē" in Śrīraṅjanī by Muttusvāmi Dīkṣitar has been rendered by the Violinists Sri Ganesh and Sri Kumaresh in Khaṇḍacāpu tāla, by Smt. Prema Rangarajan in Oru-kaḷai Khaṇḍa-ēka tālam, while in the tradition of Kallidaikuricci Sri Mahadeva Bhagavatar, it is rendered in Reṇḍu-kaḷai Khaṇḍa-ēka tālam. Of course it is true that if the tāla is rendered fast it still does not mean that the song too is being rendered fast and vice-versa. In this case however the song too was fast when rendered in Khaṇḍacāpu and in oru-kaḷai khaṇḍa-ēka tāla.

Some issues relating to kāla will be taken up in the later part of this paper.

2. Mārga

Mārga is really an extension of the previous prāṅa 'kāla' as understood in the system of Bharata (NS.31,6-7) and Dattila (Datt 116-117). Mārga, literally meaning 'the way or path', characterises the different ways of rendering a tala on basis of the elongating durations of the time units. For instance, when the duration of laghu is one mātrā or that of guru is two mātrā-s, the mārga is said to be 'citra'. But in the next mārga, that is, vṛtti or vārtika mārga the duration becomes doubled, in other words, laghu would be of two mātrā-s and guru of four mātrā-s.

The original notion of mārga is totally absent today. Sambamurti (1963:170-171) writes, "This element relates to the rhythmical construction of musical composition and helps a person to reckon the tāla accurately. It is independent of the tempo of a composition. It also helps in the writing of pieces in correct notation. What constitutes the unit number of svaras for a tālākshara is made clear by the Mārga of the piece." This is certainly not the sense in which the term was used either in the tradition of Bharata or of Matańga. This concept as outlined by Sambamurti is not far removed from the one of 'Gati' or 'Naḍai' and although the concept as used by Sambamurti is a very useful one, we rarely find

any book on notation in recent times mentioning the mārga of a composition or a music teacher using this term. Further the same concept appears to have been projected under the term 'Kaḷai' in books like 'Saṅgītānubhava-sāra-saṅgraham' (AyyangarP 1913:6), where the author uses the terms 'kāl-kaḷai cavukkam', 'arai-kaḷai cavukkam' and 'oru-kaḷai cavukkam' etc. to denote the 2, 4 and 8 svara-s respectively occurring in one kriyā.of the tāla (198-253).

3. Kriyā

As mentioned in the commencement of this paper, the term 'Kriyā' is not employed in the Gāndharva tradition by Bharata or Dattila. Even Matańga does not appear to have used this term in his Bṛhaddēśī. Abhinavagupta, the commentator on Nāṭyaśāstra seems to be the first scholar to use this term. The earlier term used by Dattila was 'Kalā' (Datt. 113cd-114;). Bharata (NS 31,1) uses the term 'pāta' to denote 'saśabda-kriyā' and 'kalā' to denote 'niḥśabda-kriyā' and does not appear to use a common term to convey the sense of kriyā. However in NS 31,5ab the term kalā may have been used in the general sense of an 'action'. Kriyā as already referred to earlier, denotes action of hands and is the most important aspect of tāla since it is kriyā that primarily manifests tāla. And today there are three kinds of kriyā, Taṭṭu (beat), Vīccu (wave of the hand) and the movement of different fingers called 'viral eṇṇikkai'.

4. Ańga

Again as mentioned earlier, the term ańga is not seen in earlier works and makes its appearance only from the time of the texts that describe the tāla-daśa-prāṇa (SSur 1,49). 'Ańga' literally would mean 'limb'. And here it would have the notion of being a limb of tāla. Tāla is a span of time and ańga would be that time span which would be a portion of the bigger span, a time unit within a tāla. Textbooks list 'laghu', 'druta' and 'aṇudruta' as ańga-s figuring in present day music.

The term 'laghu' and other terms like 'guru' and 'pluta' occur from very early times. Once again in the ancient works like Nāṭyaśāstra and Dattilam, the term 'kalā' itself was used to denote these time units (Datt 124cd-125ab). 'Laghu' was a span of time that was equal to one mātrā, 'guru' of two mātrā-s and pluta of three. However all the three units were manifested by the action of only one kriyā each, only the duration of the kriyā differing. In spite of the centuries that have gone past, the term 'laghu' still survives but has an enlarged time-span of four units. And by laghu we refer to the caturaśra-jāti laghu, which is the default laghu. Moreover now the four-unit laghu requires four kriyā-s to manifest it, although among them three are un-sounded kriyā-s. In fact we must remember that when manifesting any of the ańga-s through kriyā-s, whether it be laghu, drutam

or aṇudrutam, the first kriyā is a taṭṭu and this is followed by as many niḥŚabda kriyā-s as are required to complete the duration value of a tāla.

Conceptually we have a lot of problems. First of all when ańga is understood as a limb of a tāla, then all the five kinds of laghu, namely, Tryaœra, Caturaœra, Khaṇḍa, Miśra and Sańkīrṇa should be shown as ańga-s. This, most of the textbooks do not do so. Secondly, as pointed out above laghu should not be understood in the sense in which it was used in the system of Bharata. Laghu is meaningful only if its duration is half of that of guru. And this would be valid only for caturaśra-jāti laghu. Again talking of five kinds of laghu itself is a very amusing kind of situation. It is like talking of five kinds of 'inch' or five kinds of 'centimetre'. And when it comes to a basis and a unit of measurement one cannot accept variability in a measure. Even assuming that like a teaspoonful of sugar, laghu is not a very precise measure, still one cannot speak of a variety of laghu, namely, sańkīrṇa-jāti which is bigger than a guru, a case of the teaspoon being bigger than a tablespoon. Terminologically, our theory at present, is in a disorganised state. We are confronted with five kinds of 'laghu' but each one is technically an ańga and hence it would be wrong to treat them as five varieties of 'laghu'. As for instance, Khaṇḍajāti laghu is very much an ańga of Aṭatāla. Hence the textbooks should at least take note of the five laghu-s as five ańga-s when describing 'Ańga'.

One other area which has still not been seriously attended to is the set of tāla-s which lie outside the set of 35, namely, MiŚracāpu, Khaṇḍacāpu, Short-rūpaka and Deśādi tāla-s. The sections of time units in these tāla-s have not been described in terms of ańga-s. In an earlier article (Ramanathan 1997:37-44) it has been pointed out by this author that there must be a rethinking on the definition of ańga and of tāla-s like miśracāpu and khaṇḍacāpu. In that article it had been suggested that these two tāla-s should be looked at as having the structures pluta + guru + guru (Ś S S) and guru + pluta (S Ś) respectively.

5. Graha

Graha literally means 'to catch or to grasp'. The term Graha as well as its Tamiz equivalent 'eḍuppu' are in use. Similar to kriyā, this term also does not seem to have been used in the gāndharva system of Bharata. The term in use then was 'Pāṇi' (NS 31, 373; Datt. 152cd). Today 'graha' denotes merely the simultaneity or, the absence of simultaneity in the time of commencement of music and tāla. When the tāla and music start simultaneously then the graha is called 'sama' otherwise depending on which starts first the graha is designated as 'anāgata' or 'atīta'. Today anāgata-graha is that when the tāla starts first and the song joins in later. Some issues regarding 'graha' will be taken up in the later part of this paper.

6. Jāti

Jāti, again, is a term that makes its appearance from the time of the texts that describe the tāla-daśa-prāṇa. Today 'Jāti' points to the variability in the time unit Laghu and five kinds of laghu are spoken - caturaśra, tryaśra, khaṇḍa, miśra and saṅkīrṇa (SSur 1,148-155) These varieties refer to the number of mātrā-s in a laghu. And each mātrā requires one kriyā each for manifesting it. Thus caturaœra-jāti laghu is manifested by one ghāta followed by three fingers, namely, little, ring and middle fingers being moved, making it a total of four kriyā-s to manifest the four time units. Thus laghu becomes a time span or section made up of 4, 3, 5, 7 or 9 units.

Laghu is a problematic concept if one looks at the primary denotation of the term. Laghu by definition is a relative unit being half the value of guru and double of drutam. And if one speaks of five types of laghu then obviously one should have five kinds of guru-s and five kinds of drutam. This is not the case today. We shall go into this at a later stage.

7. Kalā

Two different concepts are represented by this term as we gather from the descriptions in the different tāla-daśa-prāṇa texts. Most of the works like Saṅgīta-darpaṇa (702-706) and Saṅgītapārijāta (2,3,46-50), list a set of kriyā-s, namely, Dhruvakā, Sarpiṇī, Kṛṣyā, Padmini, Visarjitā, Vikṣiptā, Patākā and Patitā. Other works like Saṅgīta-sūryōdaya (1,107-131) and Rāgatālacintāmaṇi (5,87-88) take up the description of the Ekakala (orukaḷai), Dvikala (reṇḍu-kaḷai) and Catuṣkala (nālu-kaḷai) varieties of tāla. Books written in the earlier part of 20th century, namely, Saṅgīta-sampradāya-pradarśini of Subbarāma Dīkṣitar (SSP;SLS p.40) and Saṅgīta-svara-prastāra-sāgaramu of Nādamuni Paṇḍita (p.575) speak of only the varieties of Ēkakala etc., under the prāṇa 'Kalā', which is what Sambamurti (1963:176) and other textbook writers have also done. It is however important to note here that Subbarāma Dīkṣitar mentions the prāṇa as 'Kala' or 'Kala' and not as 'Kaḷā'. Sambamurti too mentions it as 'Kala' while Nadamuni Paṇḍitar retains 'Kaḷā'. Grammatically however if the prāṇa were to refer to 'Ekakala', 'Dvikala' and 'Catuṣkala' then it should be mentioned as 'Kala' and not as 'Kalā'.

The set of kriyā-s Dhruvakā etc. are heard of only in the Dēśī system. They came as additional kriyā-s for sustaining the extension of the duration of laghu, guru etc. when mārga of a tāla changed from Citra to Vṛtti and then to Dakṣiṇa. These are not relevant today. They are not mentioned in the Gāndharva system of Bharata and Dattila. Regarding Ēkakala, Dvikala and Catuṣkala forms of tāla some issues will be discussed at a later part of this paper.

8. Laya

Laya is again a very important term and relates to the most basic aspect of tāla, namely, to the interval between two successive kriyā-s. It is also defined as the duration of a kriyā. Actually Laya itself is tāla (AB on NS vol.-4 p.285, l.20). It is tāla in the sense that, what we refer to as time unit, namely, the period of non-action between two actions is nothing but laya.

Under the prāṇa laya, three kinds of intervals are observed. If the laya in between the kriyā-s in a tāla is a medium interval then the tāla is said to be having madhyama-laya. If the interval is long it is vilamba-laya and if it is very short then it is druta-laya.

The term laya has been in use from the time of the Gāndharva system. The understanding of laya is perhaps the only thing that has not changed in history. However in the Karnataka tradition the term laya is not used that commonly as is the other term, 'kāla-pramāṇa'. The term 'laya' is more popular in the Hindustani system. Kālapramāṇa is a term that occurs in Nāṭyaśāstra (31,6cd) too and is synonymous with 'laya' and would literally refer to the 'pramāṇa' or dimension of the 'kāla', kāla referring to the interval between two successive kriyā-s.

9. Yati

This term refers to the manner of change of laya. This term has been in use from the time of Gāndharva system. The change of laya can be seen to occur in two ways, one within a tāla and the other between two renderings of a tāla.

a) The duration of different aṅga-s differ. For instance, the duration of guru is greater than that of laghu (as a single unit) and of laghu greater than that of druta (as a single unit). So if a tāla has the structure "Guru-Laghu-Druta" then the laya is gradually decreasing. In other words, the duration between successive kriyā-s is decreasing (although the change in terms of speed is increasing). When the laya is uniformly the same then it is referred to as samā yati. If the laya is decreasing then it is srōtōgatā-yati according to ancient texts (and gōpucchā according to modern works). The opposite of this is gōpucchā yati. Some of the medieval texts have indicated the form of yati visible in the structures of various dēśī tāla-s. (RJM p.160)

   Modern textbooks merely repeat what the medieval writers wrote. From contemporary music they have not cited examples. For instance, in miśracāpu tāla there are three kriyā-s. The first kriyā is longer in duration than the succeeding two. This would be a case of srōtōgatā yati or Viṣama yati.

b) The other understanding of yati is as follows. When a tāla is being rendered in a particular laya and at a later point of time it is rendered in a relatively druta laya then the yati is srōtōgatā. (See Ramanathan 1997:123)

Today this can be observed when in Pallavi, a feature called 'pratilōma' is done. It is a case of yati too. Modern textbooks do not appear to be aware of this aspect of yati.

While works upto Saṅgītaratnakara speak of three kinds of Yati - Samā, Srōtōgatā and Gōpucchā, later works add varieties like Mṛdaṅgā, Ḍamaru / Pipīlikā and Viṣamā.

Some issues regarding Yati will be taken up later.

10. Prastāra

Prastāra literally means 'extension'. Although occurring in the Nāṭyaśāstra in the context of Chanda (NS 14,46-116) and not in the context of tāla, tāla prastāra has figured in all the musical traditions. In tāla it deals with breaking of a time units like druta, laghu, guru etc. into smaller time units and thus deriving maximum possible number of tāla patterns having that time value. In the present context with the sense of laghu etc. having vanished, and the tāla system having moved away from Dēśī to Sūlādi, this prāṇa seems to be unnecessary.

Now we take up some of the terms that require deeper study in the modern context.

Kāla

Under that topic of Kāla we iterated the need to standardise the duration of the fundamental time unit. In addition we also have to identify and define the fundamental time unit of tāla. Today two terms are in use, namely, 'Akṣara' and 'Mātrā'. The term 'Mātrā in the Gāndharva system (Datt. 117cd & SR 5,16cd-17ab) was more a hypothetical time unit used as a reference for standardising the time units, laghu, guru and pluta which actually played a role in structuring a tāla. The tāla system of Gāndharva had two methods for calculating the time value of a tāla. If the tāla was made up of different kinds of units like laghu, guru and pluta, which was normally the case in the Ēkakala form of a tāla, as for instance, Caccatpuṭa (S S I Ś), the value was not computed in terms of numbers but merely in terms of the time units, namely as guru-guru-laghu-pluta (NS 31,10). In the other forms of a tāla, as for instance, Dvikala and Catuṣkala, the time units were all uniformly guru-s and hence the value was computed in terms of the total number of guru-s and referred to as 'so many' kalā-s. For instance, the dvikala form of Caccatpuṭa consisted of eight guru-s (SS SS SS SS), was referred to as having a duration of 8 kalā-s.

In the Dēśī system, where the most fundamental unit used for standardising the tāla units is 'kṣaṇa', there is no mention of mātrā or akṣara. Most of the medieval works merely describe and present the structure of the Dēśī tāla-s and do not mention the total duration value. However a few texts and the texts from Tamiz tradition, for instance, Tālacamuttiram (p.38) and Caccapuṭaveṇbā (p.2), present the structure in terms of mātrā value, a mātrā being equal to the duration of laghu.

In the medieval period, with the arrival of the concept of Jāti, the five laghu-s were distinguished in terms of the number of varṇa / akṣara or syllables that were sung in one mātrā. Thus caturaśra-jāti laghu was said to be of the value of 4 akṣara-s and khaṇḍa-jāti laghu of the value of 5 akṣara-s. But as we moved from the Sūlādi period to the modern, the laghu increased its dimension and each akṣara of a laghu became a time unit by itself. Now within each akṣara we are singing 1, 2, 3, 4, 5 etc. number of syllables. Now the pulses within each akṣara is being referred to as mātrā. Hence the tables are now reversed. With akṣara having been a sub-division of a mātrā, now we have reached a position where mātrā is a sub-division of akara. There is, of course, nothing wrong in using terms in these senses.

However we find some inconsistencies in the use of such terms. For instances Raṅgarāmānuja Ayyaṅgār (1970:1) describes Oru-kaḷai āditāla as having a value of 32 akṣara-s. Obviously the term akṣara is being used as the inner sub-division of a tāla unit. So the question is, which term is proper and suitable. To get into this question we have to understand the two concepts, namely, the tāla time unit and the sub-division or pulse or inner stresses.

Tāla-s in vogue today are of two kinds, those that have kriyā-s of equal or uniform duration and those having kriyā-s of non-uniform duration. For instance, all the tāla-s in the 35 tāla system and the Short-Rūpaka and the Deśādi tāla-s have uniform interval between two successive kriyā-s. The duration or interval between two successive kriyā-s is the basic or fundamental time unit. What name do we assign to it? We may call it one akṣara or one mātrā. But the term akṣara is more suited for describing a syllable of a text rather than for an abstract time unit. Hence mātrā seems a better term suited to refer to a tāla unit.

Akṣara on the other hand is used in two senses. In a general sense it would refer to a syllable or a letter. Thus, for instance, in the word 'rāma', there are two akṣara-s or syllables, 'rā' and 'ma'. But between these two syllables the first one being a long syllable, would be said to be of 'two-mātrā' duration while the second one would be said to be of 'one-mātrā' duration. Even grammar uses the term mātrā to denote the duration of a letter. However to avoid confusion the term 'one-akṣara' may be used to refer to the duration of a short syllable and 'two-

akṣara' to the duration of a long syllable. But language or poetry has only syllables while music has tāla as well as melodic stresses/ words. So to avoid confusion the duration of tāla kriyā may be defined in terms of mātrā while the duration of the syllables in dhatu / mātu (sāhitya) or may be defined in terms of akṣara.

Thus āditāla would be said to have a total duration of 8 mātrā-s in one āvarta. And if the flow of music is such that there are four syllables sung in one mātrā then the total number of akṣara-s would be 32 in one āvarta.

Now this time unit 'mātrā' would be applicable only when the tāla is of the kind in which all the kriyā-s are of uniform duration. For instance, in the case of a tāla like Miśracāpu where the three kriyā-s are not of uniform duration the fundamental measure cannot be 'mātrā. For instance, in miśracāpu the three kriyā-s have a proportional duration value in the order 1½ : 1 : 1 or 3:2:2. It is this proportional value that is being, in an informal way, totalled to 7 by musicians and the tāla is said to have a value of 7 mātrā-s. Such an attribution is technically wrong. This aspect has been dealt with in another paper. (Ramanathan 1997: 37-44)

Jāti

The concept of Jāti speaks of five varieties of Laghu and not of other units like druta or guru. This is a very uncomfortable development since laghu is a relative or proportional unit linked to guru and druta.

If we go into history we find that at one stage there was a change in laghu and then guru and druta too relatively changed. (K on SR 5, 261-262ab, pp. 176-177). According to Kallinātha normal laghu is the one, which has five akṣara-s or syllables in it, and there was another laghu in which four short syllables were sung and correspondingly two short syllables were sung in drutam and eight short syllables in guru. Singing five short syllables in one laghu is actually a premise based on Bharata's definition of the temporal magnitude of laghu. Bharata used the 'five short syllable' yardstick only for standardising the time duration of laghu, guru etc. In actual art music of Bharata, four short syllables were sung in one guru-unit of tāla and two short syllables in one laghu-unit of tāla. But in the Dēśī system things must have changed and laghu must have become a larger time unit and must have started accommodating four short syllables of mātu.

Now singing 4 short syllables in laghu, 8 in guru and 2 in druta or singing 6 in laghu, 12 in guru and 3 in druta and so on is related to the aspect of 'Gati' or 'Naḍai' of today. Thus the variation in laghu being referred to by Kallinātha is actually dealing with the aspect of gati. And by the time of the tāla-daśa-prāṇa texts the variation got restricted to laghu alone. It is not clear how this came to happen.

Perhaps the system had moved away from the Dēśī tāla to Sūlādi. In the Sūlādi, the only laghu and units of lower values figured. There was no guru or pluta. And the varieties of laghu that the tāla-daŚa-prāṇa texts are talking about, appears to indicate not enlargement of the time duration of laghu into 4, 3, 5, 7 and 9 mātrā-s but singing of respective number of syllables within the same duration. This again is akin to the gati of today. Thus in each jāti variety, 4, 3, 5, 7 and 9 varṇa-s were respectively sung. For instance, in caturaœra-laghu four varṇa-s were sung.

And when the change occurred from the Sūlādi system to the Pallavi / Kīrtana tradition then the laghu must have undergone further enlargement in its magnitude. And the caturaśrajāti laghu must have enlarged or magnified to an extent where each sub-division became a time unit by itself because of which the caturaśra-jāti laghu came to require four kriyā-s to manifest it. Thus the laghu could be said to have changed from one-mātrā laghu to a four-mātrā laghu. However with regard to the physical mode of manifesting the four-mātrā time unit, this transformation from one-mātrā laghu to four-mātrā laghu did not introduce additional saśabda-kriyā-s but only niḥśabda-kriyā-s. Thus for manifesting the caturaśra-laghu we have one taṭṭu and movement of three fingers starting with the little one. Similarly the five-mātrā laghu is manifested by one taṭṭu and the movement of four fingers.

Thus it is inferred that the Jāti concept in the tāla-daśa-prāṇa texts must have denoted a kind of gati feature restricted to laghu alone. This must have accounted for the absence of the term gati among the tāla prāṇa-s. And since the concept of Jāti itself underwent change the need for a new term became necessary and from the 19th century onwards the term Gati / Naḍai has come into use. I am not very certain when exactly this term came into use.

One interesting point about Jāti is that today it is prefixed to a tāla as much as it is prefixed to the laghu. Thus caturaśra-jāti Dhruva tāla means that variety of Dhruva tāla in which the laghu is of the variety of caturaśra-jāti. Thus the prefix denotes actually the jāti of the laghu rather than that of a tāla. Technically 'Jāti' is that of the laghu and not of the tāla. But in the music texts from Kerala tradition, in the context of tāla, the term jāti refers to the class to which the total time value of a tāla belongs. Thus a tāla of the total mātrā value of 16 will belong to caturaśra-jāti; 12 to tryaśra-jāti; 9, 18 etc. to khaṇḍa-jāti; 7, 14 etc. to Miśra; 5, 10, 15, etc. to saṅkīrṇa-jāti. (STL, pp. 94-96, SV & TV). This usage appears more logical.

Kalā

Ēkakala, Dvikala and Catuskala forms of tāla present a very interesting case in history. They were very much part of the tāla system of Bharata and Dattila's

Gāndharva. (NS 31,26; Datt. 125-135) But they seem to have disappeared in the DēŚī system and surfaced again in the last 200 years or so. The three kalā forms were applied to a single tāla as they are being done now. In the Gāndharva system, Ēkakala was the basic form while dvikala was of double the duration. In dvikala form extra kriyā-s were introduced, which were only niḥśabda-s. The catuṣkala was again double the duration of dvikala and more niḥśabda kriyā-s were introduced.

The modern forms of Oru-kaḷai, Reṇḍu-kaḷai and Nālu-kaḷai are not very different from the earlier ones. And these three forms are today applied only to the 35 tāla-s and not to others, at least only to those tāla-s in which all the kriyā-s are of uniform duration. However we come across differences in the interpretation and execution of this aspect of tāla.

Māṇikka Mudaliyār (1902:134) understands the term kalā in the sense of 'gati'. Peruṅguḷam Srīnivāsa Ayyaṅgār, in his book Saṅgītānubhava-sāra-sangraham speaks of the three forms Ēkakala, Dvikala and Catuṣkala and in addition refers to Arai-kaḷai caukkam and Kāl-kaḷai caukkam as pointed out above under the prāṇa 'mārga'. Subbarāma Dīkṣitar (3,40) and Nadamuni Paṇḍita (p.575) explain Ēkakala as the form in which the kriyā is of one akṣara duration, Dvikala form being that in which the kriyā is of two akṣara duration and the duration being four akṣara-s in catuṣkala. However the terms one akṣara, two akṣara-s etc. seem to have been used for denoting the dimension of the extension of the duration of the kriyā rather than to denote the kriyā being sub-divided into two kriyā-s of one-akṣara each as is being done today by some musicians.

As stated in the earlier sentence, today we see some musicians using two kriyā-s, namely by rendering the first kriyā twice, to express the two akṣara-s of Reṇḍu-kaḷai. Other musicians do not render two kriyā-s but sustain one kriyā itself for an extended duration. If introduction of extra kriyā-s is considered wrong then the Kalā-prāṇa becomes similar to the Mārga-prāṇa of ancient period. And this understanding of kalā could be applicable to tāla-s like Miśracāpu and Khaṇḍacāpu too which is not being done at present.

If the introduction of additional kriyā-s for sustaining the extra akṣara-s is acceptable then the picture would be fairly similar to what was existing in the tāla of the Gāndharva system. And if these forms are applied to MiŚracāpu and Khaṇḍacāpu then the Reṇḍu-kaḷai and Nālu-kaḷai varieties will be Tryaśra-tripuṭa and TryaŚra-rūpaka tāla-s respectively as has been discussed by this author elsewhere (Ramanathan 1997:37-44).

One other issue is the popular reference to 8 kaḷai, 16 kaḷai, 32 kaḷai and even 64 kaḷai forms of tāla and their having been used in Pallavi singing. Although this

might be a difficult and challenging proposition from the tāla point of view, if the pallavi theme has too many words then neraval would be easy and elementary in nature. If only a pallavi like 'parimalarañgapatē! mām pāhi' or any other pallavi with not more than 15 to 16 syllables in its text is taken as the theme even in the 32 kaḷai, instead of a pallavi like 'harē rāma gōvinda murārē ! mukunda śaurē murahara' having 28 syllables, singing neraval in a melodious manner would be a difficult proposition. Thus mere extension of the kaḷai of a tāla one to two, four, eight, sixteen, thirty-two etc. does not make music very complex and challenging, durations in music too should get extended.

Yati

Laya and Yati are two concepts that are observed in the tāla line as well as in the melodic line. For instance, if laya is the interval between two successive kriyā-s of a tāla then the interval between two successive syllables of the sāhitya too is laya. While the former may be called tāla-laya, the latter may be called pada-laya or mātu-laya. And so the change of laya within the sāhitya syllables could also be called 'yati'.

For instance, if the text of a song has the following words 'karadhṛtavīṇā', the first four letters are hrasva or short and the last two dīrgha or long. There is change from drutalaya to madhyalaya which is gōpucchā yati.

Again when there is a change in the sāhitya of a song from samakālam to madhyamakālam as we notice in the change in the following sāhitya passage in the song 'vātāpiganpatim bhajē'ham', there is presence of 'yati'.

I_4		1		2		3		O		v		O		v	
pa	rā		di	ca		tvā		ri	vā		gā		tma	ka	
pra	ṇa	va		sva	rū			pa	va		kra	tu		ṇḍam	
ni	ra		nta	ram		ni	ṭhi	la	ca		ndra	kha		ṇḍam	
ni	ja	vā		ma	ka	ra	vi	dhṛ	tē		kṣu	da		ṇḍam	

karā	.mbu	japā	.śa	bī.	jā.	pū.	ram	kalu	ṣavi	dū.	ram.	bhū.	tā.	kā	ram.
harā	.di	guru	guha	tō.	ṣita	bi.	mbam	ham	sa.	dhvani	bhū.	ṣita	hē.	ram.	bam.

We notice in the above arrangement of sāhitya syllables that, as compared to the text of the samakālam, namely, "parādi catvāri ..... ikṣudaṇḍam" the duration between or laya of syllables in "karāmbuja .... hērambam" is less. Thus there is a decrease of laya from samakālam to madhyamakālam which would be srōtōgatā-yati.

Modern textbooks cite the example of 'tyāgarāja yōgavaibhavam', namely,

tyāgarāja yōgavaibhavam
agarāja yōgavaibhavam
rāja yōgavaibhavam
yōgavaibhavam
vaibhavam
bhavam
vam

for a kind of yati. In the above there is really no change of mātu-laya or yati involved. There is only a decrease in the size of the successive phrases. This could be at best be called 'gōpucchā' or 'srōtōgatā' "alaṅkāra" but definitely not 'yati'. At least the term yati cannot be used based on the definition applicable to the prāṇa of the tāla.

Graha

Graha, although denoting, at a very basic level, the shift of the commencement of the song, either prior to the commencement of the tāla or after it, appears assume larger dimension. Its impact does not appear to cease after the song and tāla have commenced,

For instance, we observe that anāgata-graha (or even atīta) is primarily of two kinds, one where the song joins in after one or more complete mātrā-s of the tāla have elapsed and the other where the song commences after a fraction of a mātrā. In the first type, the song starts along with a particular kriyā and not in the middle of a kriyā or mātrā. For instance, most of the aṭatāla varṇam-s start two mātrā-s late and the song 'endarō mahānubhāvulu' in Śrīrāgam starts one full mātrā later. In this kind of songs the anāgata graha has practically no significance. For instance, if one were to start singing the 'viribhōṇī" varṇam from the first mātrā of the Aṭatāla one would not feel any difference or discomfort. The same would be the case if one were to start singing 'endarō mahānubhāvulu' from the first mātrā of Āditāla. And we also see that the shift of graha is consistently maintained in each of the pallavi, anupallavi and caranam refrain except in the svara /sāhityam passages which have a sama-graha and this is true of both Aṭatāla varnams and the song in Śrīrāga.

In the case of some kīrtana-s the presence of anāgata-graha seems to be merely incidental and occurs in just one of the sections, pallavi, anupallavi or caraṇam. For instance in the song "dharmasamvardhani" of Muttusvāmi Dīkṣitar in Madhyamāvatī rāga, the pallavi starts in samagraha but the anupallavi starts after a delay of one mātrā. (SubbaramaD 1904:650)

O		l_4				O		l_4			
pallavi											
dha		rma	sam			va		rdha	nī		
da	nu	ja	sam			ma	.	rda	nī		
dha	rā		dha	rā		tma	jē		a	jē	.
da	ya	yā		mām		pā		hi	pā		hi
anupallavi											
	ni	rma	la	hṛ	da	ya	ni	va		si	ni
	ni	tyā		na		nda	vi	lā		si	ni
	ka	rma		jñā		na	vi	dhā		yi	ni
kā		ṅkṣi	tā		rtha		pra	dā		yi	ni

The anāgata-graha of the anupallavi however does not have any other significance in the building up of the over all structure of the composition and anāgata graha does not recur in caraṇam. The purpose of anāgata seems to be more for melodic reasons.

However in the case of another kīrtana of Muttusvāmi Dīkṣitar 'Akṣayalingavibhō' we do notice an anāgata-graha of one full mātrā which is consistently maintained, mainly in every alternate āvarta. (DīkṣitarS 1904 : 889 - 890)

l_7	1	2	3	4	5	1	l_7	1	2	3	4	5	1
pallavi													
	a		kṣa		ya		li			ṅga			.vi
bhō		.				sva	yam			bhō			
.	a	khi	lā			ṇda	kō	.		ṭi		.	pra
bhō					pā			hi		śam		bhō	
anupallavi													
	a		kṣa		ra		sva		rū			pa	
	a	mi	ta		pra		tā					pa	.
.	ā		rū			ḍha	vṛ	ṣa	vā			.	ha
ha						ja	ga			mō		ha	

The rest of the anupallavi is a madhyamakāla-sāhityam passage which gets into ṣama-graham. We generally see that irrespective of the composer, most of the songs that do not have a sama-graha get to sama-graha when they reach the

madhyamakāla-sāhitya stage. Coming back to this song we find that consistently every line (not every āvarta), has an anāgata-graha of one mātrā. This continues even in caraṇam section. This is a kind of plan that we see underlying some songs of Muttusvāmi Dīkṣitar. The kīrtana, 'Śrī mātṛbhūtam', except for the opening line falls into this plan. This plan which is visible mainly in kīrtana-s in miśra-jāti ēkatālam, is also seen to be present in kīrtana-s of Tyāgarāja set in Miśra-cāpu tālam, as for instance, 'pakkala nilabaḍi' in Kharaharapriya rāga (cf. AyyaṅgārKVS. 1927 : 176 - 180) and 'manasu svādhīnamaina' in the rāga Śaṅkarābharaṇa (cf. AyyaṅgārRR 1965 : 294 - 297). Only the structure of the pallavi and anupallavi are being given below although the structure is maintained in the caraṇam too.

I_7	1	2	3	4	5	1	I_7	1	2	3	4	5	1
pallavi													
	pa	.	kka		la		ni	la		ba		ḍi	
	go	li	cē		.ḍi		mu			cca		ṭa	
..	bā		ga		de		lpa			rā			
dā	.												
anupallavi													
	cu		kka		la		rā			ya		ni	
	gē	.	ru				mō	.mu		ga		la	
	su	da	ti		sī		ta			mma		sau	
mi			tri		Śrī		rā		mu	nī		ki	
ru													

I_7	1	2	3	4	5	1	I_7	1	2	3	4	5	1
pallavi													
	ma	na	su		svā					dhī		na	
mai		.	na		yā		gha	nu		ni		ki	
.	ma	ri	ma		ntra		ta		ntra	mu		lē	
la	.												
anupallavi													
	ta	nu	vu		tā		nu			gā		.	
da	ni		e		ñcu		vā			ni		ki	.
	ta	pa	su		sē		ya			nē			la
da	śa		ra		tha.		bā			la			

Although it might be possible to sing all these songs in sama-graha yet that would upset a bigger organisational strategy which the composers appear to have in mind, the discussion of which would be out of scope of this paper. Thus anāgata-graha which denotes a shift by a full mātrā/s does not appear to play a very critical role in the temporal organisation of a song. We may not be able to say the same for songs that start fraction of a mātrā later.

Now let us turn to the other kind of anāgata-graha where the song starts fraction of a mātrā later. This is seen many of the songs of Tyāgarāja, as for instance the songs in DēŚādi and Madhyādi tāla now rendered in āditāla. If we sing the song 'teliyalēru rāma' in sama-graha we encounter a lot of discomfort.

I_4	2	3	4	0	V	0	V
anāgata-graha							
, ,	te li	ya lē	ru	rā . . ma	. bha	kti mā	rga
mu. . na							
sama-graha							
te li	ya lē	ru	rā	. ma	bha kti	mā	rga mu . na

Most of the kīrtana-s that were originally set in DēŚādi tāla and that are now being sung in Ādi tāla with +1½ (anāgata)-eḍuppu, have by and large a standard arrangement for the distribution of the syllables of the text over the tāla āvarta.. There would be a syllable invariably on the 2nd half of the 2nd mātrā , 4th mātrā, 6th mātrā and the 8th mātrā and again there would be one syllable on the 1st half of 3rd mātrā, 5th mātrā, 7th mātrā and the 1st mātrā.

Kīrtana-s that were originally sung in madhyādi tāla and later set in vilambakāla āditāla with + ½ or anāgata eḍuppu also have a very similar arrangement of syllables of the text distributed over the tāla āvarta.

The purpose in pointing this out is that the impact of graha does not stop with the commencement alone. It is seen to be affecting the whole āvarta. In fact, graha seems to have been only an extension and enlargement of what is called 'usi' a feature in fast speed that is very commonly met with in Bharatanāṭyam and Harikathākālakṣēpam.

The progression of a melody is very smooth when graha is 'sama'. When it is sung with graha shifted by half then singing has to be a bit guarded. But when the beat of a tāla has sub-divisions of four akṣara-s then the graha, which is a shift of ¼ or ¾ makes singing very tense. For instance, in the elementary laya exercise of making a student sing the four syllables ta-ka-di-mi in Ēkatālam with graha shifting by quarter of a mātrā in each successive āvarta a student would usually find the ¼ and ¾ very tough to sing.

I_4				1				2				3			
ta	ka	di	mi	ta	ka	di	mi	ta	ka	di	mi	ta	ka	ta	ki
ṭa	ta	ka	di	mi	ta	ka	di	mi	ta	ka	di	mi	ta	ka	ta
ki	ṭa	ta	ka	di	mi	ta	ka	di	mi	ta	ka	di	mi	ta	ka
ta	ki	ṭa	ta	ka	di	mi	ta	ka	di	mi	ta	ka	di	mi	ta
ka	ta	ki	ṭa	ta	ka	di	mi								

Rendering the second and fourth rounds are generally felt by students to be difficult. And the extension of this is seen in the Pallavi too when we examine the traditional nālu-kaḷai pallavi-s which are sung with ¾ anagata graha.

The text of these pallavi-s

1. parimalarańgapatē ! mām pāhi
2. māmadurai mīnākṣī ! ambā dēvī
3. gāṇalōlakaruṇālavāla
4. mandahāsavadana ! harē kṛṣṇa
5. dēvasēnāpatē ! dayānidhē
6. dāŚarathē ! karuṇāpayōnidhē
7. nelata marulukoṇṭini vāni pai

	$|_4$	1			2			3		
1.		pa	ri	ma	la	ra	ńga	pa		
2.		mā		ma	du	rai		mī	nā	
3.		gā		na	lō	la		ka	ru	
4.		ma		nda	hā	sa		va	da	
5.		dē		va	sē	nā		pa		
6.		dā		sa	ra	thē		ka	ru	
7.		ne	la	tā	ma	ru	lu	ko		ṇṭi

	O	V	O	V	
1.	tē		mām		pa
2.	kṣī		a mbā		dē
3.	ṇā		a la		vā
4.	nā		ha rē		kṛ
5.	tē		da yā		ni
6.	ṇā		pa yō		ni
7.	ni		vā ni		pai

	$|_4$	1	2	3
1.	hi			
2.	vī			
3.	la			
4.	ṣṇa			
5.	dhē			
6.	dhē			
7.				

We find in the above table that most of the traditional pallavi-s had similar format where with the ¾ eḍuppu, the syllables mostly fell on the ¼ position or the ¾ position. At the point of arudi of course, a syllable coincided with the mātrā commencement. Thus the advanced standard of a pallavi was always associated with one that had the ¾ eḍuppu. And we notice that the impact of the graha is visible through out the āvarta.

If we take a normal ½ iḍam anāgata-eḍuppu pallavi the impact of this eḍuppu does seem to be effective in the rest of the āvarta. e.g.,

$|_4$			1			2			3		
	ha	rē		rā		ma	gō		vi	nda	mu	rā
O			V			O			V		
rē				mu	ku		nda	sau	rē		mu	ra
$|_4$			1			2			3		
ha	ra										

However there is really no feeling of a tension of the ½ anāgata-graha felt in the music in the rest of the āvarta, as is felt in the eḍuppu of ¾. In a half-iḍam pallavi the graha alternates between emphasis on ½ and samam. The progression appears elementary. This is perhaps the reason that most of the pallavi-s of earlier days, which had anāgata-graha, preferred a ¾-eḍuppu since an off-beat movement was felt in the entire āvarta and not in the commencing portion alone. Of course when rendered in a tāla in nālu-kaḷai, a ¾-eḍuppu pallavi will not have the tension one associates with 'usi' but the overall graha displacement will be slow and grand.

Thus the concept of graha has a wider sense than merely denoting the non-coincidence of the commencement of tāla and the song. The wider sense does seem to have been prevalent in the system of Gāndharva of Bharata as we gather from the commentary of Abhinavagupta. (Ramanathan 1999:123-129)

Gati

Gati as stated above is not one of the terms included in the tāla-daŚa-prāṇa-s. It means 'movement' or 'gait' and similar to graha it is a term that relates music or melodic line to the tāla movement. Thus if the number of svara-s sung in a time-unit of tāla is 1, 2, 4 or 8 then the gait is said to be of caturaŚra-gati. If the number of svara-s sung in a unit of tāla is 3, 6, 12 etc. then it is tryaŚra-gati. Similarly we have Miśra, Khaṇḍa and Saṅkīrṇa gati-s which are self-explanatory. Thus there are five gati-s.

Although the term 'gati' only denotes the number of svara-s being rendered in one time unit and may vary without the execution of the tāla varying, writers from 19th century onwards have expressed that variation of gati in the same tāla gives rise to different tāla-s. For instance, Aditāla, when a song is being rendered in tryaœra-gati is said to be of one kind and when it is used for another song in khaṇḍa-gati it is said to be another. Thus the thirty-five tāla-s have been expanded to 175 tāḷa-s on the basis of gati-bhēda. This is an erroneous notion and wrong development. Change of gati does not bring about any change in a tāla. For example if an āditāla is being rendered by a Tāla-metre then the singer can go on singing svara-s and also change the gati from 2 to 3, to 4, 5, 6, 7, 8 and so on, and the tāla expressed in the tāla-meter will go on unchanged.

Gati and Naḍai

Finally we come to the old issue of 'gati' and 'naḍai'. They are taken as synonymous words. Some scholars interpret 'naḍai' as denoting the different grouping of syllables or svaram-s without changing the gati. Thus ta-ka-di-mi would be caturaœra-naḍai, ta-ka-ta-ki-ṭa would be khaṇḍa-naḍai and so on. Thus in the second āvarta of the Āditāla varṇam in Mōhana rāgam we have the following structure.

I_4	2	3	4	0	V	0	V
g p g g	r s - r g	r r s d -	s r g r -	g p g - p	d p - d s	d , p - g	d p g r

In the 32 akṣara-s in one āvarta, we have groupings of 6, 6, 4, 3, 3, 5, 5 svaram-s exhibiting different naḍai-s. This would be the other interpretation of the term 'naḍai' as different from 'gati'.

One possible reason for the evolving of this meaning of naḍai as different from 'gati' is the absence of any other term for denoting this concept. The term 'jāti' has been used for denoting this concept, as for instance, when it is said, 'khaṇḍa-jāti collu' for a grouping of five and 'miŚra-jāti collu' for a grouping of seven. Peruṅguḷam Śrīnivāsa Ayyaṅgār has used both these terms 'naḍai' and 'jāti' for denoting groupings of 4, 3, 7 etc. (1913:18-94).

Thus this paper has tried to stress that the ten prāṇa-s are not as important in terms of their names but in terms of the concepts they stand for today. Relationship between some of the terms like Aṅga and Jāti has to be gone into with greater seriousness. When talking in the context of present day music it would be wise to discard some of the earlier terms, laghu, guru etc. or use them in a meaningful way. Like the 72-mēla system, the 35 tāla prastara too has been accepted by the music world unquestioningly and this has created many problems musically and musicologically. Presence of terms like laghu and druta in the 35 tāla system has

prevented us from giving a more serious definition to the non-35 tāla-s. And when we realise that none of these four tāla-s that are in use today, namely, ādi, rūpaka-cāpu, miŚracāpu and khaṇḍacāpu has been a part of the original sūlādi tala-s, the need for a designing a new tāla system appears to be an urgent need. But then this need perhaps is more musicological than musical.

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