South Indian Konnakkol in Western Musicianship Teaching

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Abstract

Konnakkol (or South Indian vocal percussion) is an important part of the classical music curriculum in South India. In that tradition, every music student (instrumentalists and vocalists alike) must be familiar with its concepts and theory. The unique aspect of this pedagogical tool is that it is also a performance medium on its own. Classical concerts in India have featured a konnakkol soloist performing a vocal percussion solo in the same way that a jazz concert may feature a drum solo. As a student of mridangam (the predominant percussion instrument in South Indian or Carnatic music), I have discovered that the rhythmic ideas of konnakkol are very relevant for a global music curriculum and have used these ideas in my teaching of Western musicianship at the Yong Siew Toh Conservatory (National University of Singapore). Although there have been books published specifically about konnakkol as a South Indian art, there has not been much written about how this art could be applied in the teaching of Western music. In this article, I will introduce the basic syllables of konnakkol to those without prior exposure to this art form and describe how konnakkol can be used in teaching Western musicianship. I will also explain how I have taught it as a memory aid for musical score study and as an improvisational device. The exercises I have used in my classroom teaching are based on traditional Carnatic practiceI inherited from my teachers; while the use of konnakkol in score study is part of my ongoing research and experimentation. Konnakkol is appealing in its beauty and allows students to express their musical rhythms in performance tempo (even when it is very fast). This relates directly to how music is felt internally by a performer and is precisely why it is of great use in Western music education.

Keywords Carnatic, Music Education, mridangam, konnakkol, solkattu, tala

INSPIRED BY CARNATIC PERCUSSION

Growing up in Asia, the classical rhythmic language of Carnatic music from South India always attracted me and I started to take lessons on the mridangam about six years ago from Mr. T.R. Sundaresan of the Singapore Indian Fine Arts Society. My current teacher is Mr. ChettitharaveetilHaridasSreekanth (the resident mridangam tutor at the Singapore Indian Fine Arts Society). Being trained as an orchestra conductor and jazz musician, I had originally expected to merely learn a new way to count rhythmic subdivisions as well as pick up an interesting percussion instrument. I had no idea that I would encounter a new way of thinking about Western music and the teaching of musicianship.

The rhythmic concepts in Carnatic music have been described in English by musicologist Pichu Sambamoorthy in the 1950s (Sambamoorthy, 1954) but this text is difficult to obtain outside of Asia. Meanwhile, legendary stalwarts like Trichy Sankaran and T.V. Gopalakrishnan have written books in English about the art of playing mridangam for a Western audience (Sankaran, 1994; Gopalakrishnan, 2007). Umayalpuram K. Sivaraman also recorded a seven DVD set on the subject (in English). Although Konnakkol and Solkattu (rhythmic words) appear in these documents as tools used in the teaching of mridangam, only a few sources (Nelson, 2008)(Sankaran, 2009) and (Abstract Logix, 2007) are available in English that are dedicated to the art of konnakkol as a main subject. However, these documents focus on teaching konnakkol as it is used in Carnatic music. Thus, the rhythmic motifs shown are eventually combined into compositional forms such as koraippu, mora, and korvai (Sankaran, 1994). Please note that the anglicised spellings to refer to Carnatic musical terms come from Trichy Sankaran (Sankaran 1994, 2009) and may differ with other authors. The preference is personal and is due to my admiration for the maestro.

Initially, it appeared that Hoffman (1996) had already employed this approach in teaching Western music when he created a method of rhythmic pedagogy called the Takadimi System in the United States. Although he acknowledged that the syllables he used resembled North Indian tabla syllables, he saw his system as an improvement of the old French Time-Names system from the 19th century rather than a method borrowed from Indian music. He described his method as 'beat-oriented'. In simple time (when beats are subdivided into two or four), the syllable, Ta, is used for the beginning (or attack) of the beat and, Di, is used for the middle of the beat. Hence, Takadimi represented four subdivisions of a beat where Ta is the first unit, Ka is the second, Di the third (or middle), and Mi the fourth unit. In compound time, Ta is again used for the attack of the beat while Ki and Da are the subdivisions (Ta-Ki-Da making up the three subdivisions in compound time). This system also included specific syllables when dealing with quintuplets and septuplets. Like similar 'beat-oriented' systems used in Western music pedagogy, the Takadimi System used specific syllables for specific positions of subdivisions in relation to the beat. So the Ta syllable will always represent the attack (or beginning) of the beat. Despite similarities between the syllables used by Hoffman and those found in Carnatic music, the Takadimi System could be considereda more sophisticated version of other similar 'beat-oriented' systems used in Western music teaching rather than a system similar to konnakkol.

In my opinion, konnakkol is a more flexible system. It is more than a system of syllables used to represent subdivisions of beats (although this is an important component). It includes beat displacement and other musical (or rhythmic) manipulations that shift the accents to off beats. The freedom to keep the same syllabic grouping even when the motif starts on the offbeat can allow for a better understanding of musical situations where similar or exact motifs do not start on the same part of the beat. This freedom makes connections between different points in the music clearer and mirrors what happens in improvisation. In this system, we are also allowed to use varying combinations to represent the same rhythmic grouping. For example, 8 subdivisions may be represented as 4 + 4 or 5 + 3 or 2 + 6, etc. This encourages more musical variety and breathes life into what is normally a theoretical/mathematical situation. These features have prompted me to find ways of incorporating such a fluid system into my musicianship classes. Lockett (2008), a renowned percussionist, has

introduced konnakkol methods into drumset playing. Several prominent jazz drummers (such as Steve Smith) have also demonstrated konnakol in their performances and teaching. However, I have managed to find ways to use the system in score study as well as the more natural usage in beat subdivision, groupings and polyrhythm. Konnakkol is an ancient system with a deep theoretical tradition. My desire was to borrow or tweak ideas and concepts from this system in order to facilitate the development of musicianship skills in my students.

METHODOLOGY

This paper is a product of the musicianship module I taught at Yong Siew Toh Conservatory. I was fortunate to have had great teachers who mentored me through modelling (Sang, 1987). My mridangam teachers studied their art through a Gurukula tradition (Pisharody, 1987). At a young age, students were sent to live with their teachers for the sole purpose of studying the art of playing mridangam. The teaching was done through oral tradition (which could be another form of "mentoring through modeling"). My teaching methodology may be described as task and performance modelling. The first class meeting with the students is spent on explaining the tasks students would need to complete during each half of the semester. The tasks consist of rhythm drills, singing drills, score reading exercises and sight-reading. After that, the class turns into a tutorial-style setting where I demonstrate and practise the required tasks with them. At times, the atmosphere would resemble an ensemble rehearsal where the conductor (teacher) teaches the students on the proper music performance (the tasks). The conclusions I reach in this article are based on student online feedback about the class (and materials), and my assessments of each student at the beginning and end of the module. Overall, the response and feedback from my students have been very positive.

RHYTHMIC CONCEPTS FROM SOUTH INDIAN CLASSICAL MUSIC

Konnakkol and *Solkattu*

Konnakkol and solkattu are terms used to describe the rhythmic syllables employed in South Indian classical music (also called Carnatic music) to vocalise rhythmic patterns in songs or improvisations. The idea is to use syllables or words to represent percussive sounds in a similar way that Do-Re-Mi syllables are used to represent melodic notes in Western music. The syllables used in rhythmic vocalisation come from their traditional association with different sounds produced on the mridangam (shown in Figure 1).

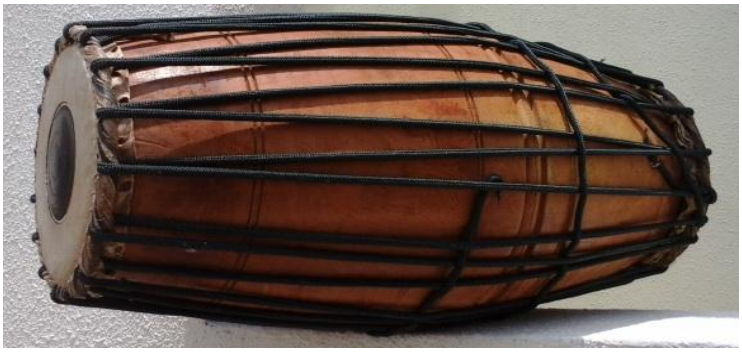

Figure 1 The mridangam

The different sounds produced on the mridangam (the main percussion instrument of Carnatic music) are represented by syllables. These sounds are produced either by a finger or part of the hand striking a specific part of the drum. The sounds may also be created by a combination of left and right hand striking the drum simultaneously. For example, the sound produced by the full left hand striking the left drum head would be called Tha; while three right hand fingers striking the centre of the right drum head (where the dark circle is) would be called Di. The four syllables Ta, Ka, Di and Mi each correspond to a specific set of drum fingerings but may also be used to represent four subdivisions of a single beat or pulse. The syllables may becombined into *one* word: Takadimi. We can then use this word to represent four semiquavers. In common time (4/4), four such sets of semiquavers would be vocalised as: Takadimi, Takadimi, Takadimi, Takadimi. Over the course of my studies, I have learned that Takadina or Tarikita or Kitataka or other such rhythmic words may also be used to represent such a grouping of four. The choice of which rhythmic word to use depends on the related fingerings on the mridangam but is also governed by musical requirements of a specific piece of music (giving the performer a variety of syllabic colours). This is especially true when it comes to vocal music or music of other instruments such as veena or Carnatic flute. Other examples of commonly used rhythmic words are Takita (three syllables: Ta-ki-ta) for a grouping of three and Tadikitadoom (five syllables: Ta-di-ki-ta-doom) for a grouping of five. Although this method of employing rhythmic syllables is used to teach rhythm, konnakkol is unique in that it is also used as a performance medium in and of itself. Therefore it is common to see konnakkol artists performing vocal percussion solos in a classical concert. I can relate to this idea as a jazz musician because it is similar to what jazz singers do when they sing scat (and mimic musical instruments).

Solkattu and the rhythmic subdivisions they represent

This is a good time to differentiate between the terms solkattu and konnakkol. Solkattu refers to the words that represent rhythmic sounds while konnakkol refers to the performance practice of using solkattu to create combinations of phrases and larger structures. Using jazz scat singing as an analogy, Solkattu would represent a short melodic motif (for example a word like ‘Shoobydoo’) while konnakkol would represent the act of using that short motif in musical compositions or improvisations (for example

singing 'Shooby-dooby-doo-dah-doo' and so on). Even so, the two terms (konnakkol and solkattu*)* are often confused and used interchangeably by teachers and practitioners, although it is more common to see konnakkol used to refer to solkattu (rather than the other way around). The following is a list of solkattu words and the number groupings they represent (Sankaran, 2009):

Ta	= 1	
Taka	= 2	
Takita	= 3	
Takadimi	= 4	
Taka-Takita	= 5	(2 + 3)
Taka-Takadimi	= 6	(2 + 4)
Takita-Takadimi	= 7	(3 + 4)
Takadimi-Takajonu	= 8	(4 + 4)
Takadimi-Taka-Takita	= 9	(4 + 5)

This is the most basic version of these Solkattu groupings that is taught to Carnatic music students. As you can see, after the rhythm words for 1, 2, 3, and 4, namely Ta, Taka, Takita and Takadimi, the following numbers may be created from combinations of these four basic Solkattu words. 5 is a combination of 2 and 3, and recited as Taka-Takita; 6 is a combination of 2 and 4, and recited as Taka-Takadimi; and 7 is a combination of 3 and 4, and recited as Takita-Takadimi.

It is helpful to note that 8 is Takadimi-Takajonu. A new word for 4 (Takajonu) is added to the regular Takadimi so that the whole combination is heard as 8. If we merely recited Takadimi twice, it is easy to lose track of the grouping of 8 when we need to repeat the grouping many times. For example, if we recited TakadimiTakadimiTakadimiTakadimiTakadimiTakadimi over and over, it will end up sounding like groupings of 4; whereas when we recite many sets of Takadimi-Takajonu, we will be able to hear them as units of 8. Try saying this really fast to yourself and you will see the logic of using Takadimi-Takajonu.

In practice, it is rare to teach these number groupings as a separate theoretical concept as Carnatic music students often learn these solkattu number groupings as part of their instrumental (or vocal) curriculum. Western music students, however, may find this way of presenting the groupings (as a list) helpful since they often think of rhythm as being grouped by beat or pulse.

Phrase structures and groupings

South Indian classical music has a rather comprehensive theory relating tothe time cycle. Its term for the time cycle is Tala and is akin to theWestern concept of time signatures. For example one of its 175 SaptaTalas is a 4 beat time cycle called ChaturasraJathiEkaTala. This means that a song set in this tala, has a 4 beat cycle that keeps repeating (in the same way that Western music has a 4/4 time signature). In a Carnatic music performance, you will often see the time cycle (or Tala) indicated through a series of finger counts and claps. Where a Carnatic musician differs from a

Western musician is in the way he or she relates to the time cycle and its corresponding beats. The following musical fragment will help to illustrate the difference.

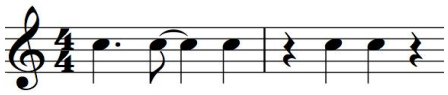

Figure 2 A rhythmic fragment

As a Western musician (relating to the beats of each bar), I tend to count the syncopated rhythm above as: *One*, Two *And*, Three, *Four* | One, *Two, Three,* Four (where the italicised words correspond to where I would play the notes). A Carnatic musician would interpret the rhythm as groupings of numbers. In this example, he or she would think in terms of quaver subdivisions and group the rhythm as 3 + 3 + 4 + 2 + 4 (quavers). Then he or she would vocalise the rhythmic phrase as: TakitaTakitaTakadimi Taka Takadimi (and play the notes at each "Ta" syllable). Using the Carnatic musician's approach, a performer would think less of each bar line and interpret the music in phrases. As a Western musician, I may think of a certain musical phrase as consisting of four bars of 4/4 time while a Carnatic musician would think of the same four bars as 32 subdivisions of quavers that may be combined in different ways. In a way, this is akin to the Western concept of additive rhythm and allows a performer to feel music in a linear manner rather than measure-by-measure.

TEACHING MUSICIANSHIP WITH KONNAKKOL

The main goal of musicianship is to teach our students to hear and feel music internally. These apply to melodies, harmonic structures, and rhythmic variations. Often, a solid sense of rhythm involves the ability to feel subdivisions of beats over a steady pulse. For this reason, all the drills are to be performed from memory because this allows the student to feel how the syllables relate to the main pulse without the distraction of having to read notation. Also, I have found that students are able to apply these skills to musical situations more easily if the drills are committed to memory. All the drills I use in class have come from my mridangam teachers in some form or other (especially Mr. T. R. Sundaresan and Mr. R. Karthikeyan).

Feeling the rhythm inside you

As mentioned above, the feeling of rhythmic subdivisions is an important habit for musicians to acquire. The following are two drills (from many) I have used in class to help students to achieve this internal feeling of subdivisions:

First, a metronome is set at crochet equals 60. The student then recites the Solkattu groupings of 1 through 9, repeating each 4 times. In other words they will recite: Ta TaTaTa, Taka TakaTakaTaka, etc. This allows the student to feel how each beat or pulse is subdivided. Western music may have equivalents for groupings of 3 or 4 but not usually for 5, 7, or 9. Although this concept is from Carnatic music, a mridangam teacher would not ask his student to merely recite subdivisions for their

own sakesince these groupings are used to create longer phrases for performing on the drum. In Western music, training a student to feel precise subdivisions internally is an important feature of rhythmic training. Over the years, many students have given positive feedback about being able to learn how to sense quintuplets and septuplets using this method. An additional tweak I added was to require the students to perform the same exercise in quavers. In other words, the metronome would be set at quaver equals 90 and each grouping is performed over two clicks (with the student clapping along with the metronome). Ta would receive two metronome clicks per syllable, Taka would receive one click for each syllable, and so on. Even though the tempo is slightly slower at the crochet level, the real challenge comes when the student needs to clap twice against the odd number groupings. The effect being 3 against 2, 5 against 2, or 7 against 2. Some simple polyrhythms. This drill is unique for its application in Western music study because a Carnatic musician would not employ 5 or 7 against 2 in this manner. This information comes from my current mridangam teacher.

The second drill is performed in triplet subdivision. In other words, each measure in common time contains 4 sets of quaver triplets (as shown in Figure 3).

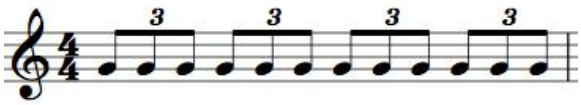

Figure 3 Triplets in common time

The metronome marking is a crochet equals 55 and the student has to recite continuously a grouping of 8 subdivisions (Takadimi-Takajonu) for two measures in three different speeds (each time doubling the speed of the syllables). At the first speed, each crochet has three syllables associated with it (as shown in Figure 4):

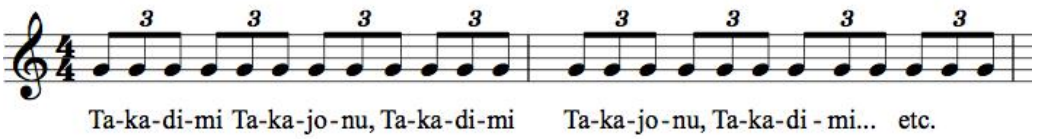

Figure 4 Three syllables per crochet

Here, the grouping of Takadimi-Takajonu is recited 3 times over the 2 measures. Next, the student recites the grouping twice as fast and each crochet will now have six syllables associated with it, as follows (only 1 measure is shown in Figure 5 due to spacing considerations):

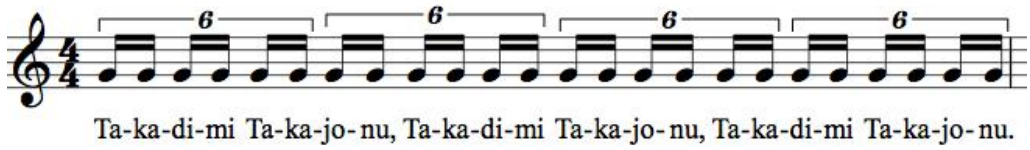

Figure 5 Six syllables per crochet

Here, the grouping of Takadimi-Takajonu is recited 6 times over the 2 measures. Next, the student recites the grouping twice as fast again and each crochet will now have 12 syllables associated with it, as follows (again only 1 measure is shown in Figure 6):

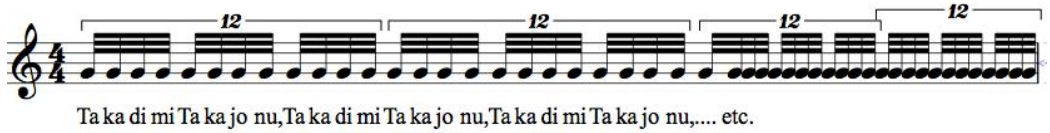

Figure 6 Twelve syllables per crochet

Here, the grouping of Takadimi-Takajonu is recited 12 times over the 2 measures. The purpose of this exercise is to reinforce a student's internal feeling of the crochet pulse and the triplet subdivision. The changing rate of syllabic vocalisation ensures an overall security of tempo through diligent practice. This exercise is one that Mr. Sundaresan taught me and is based on the concept of *trikalam* (Sankaran, 2009) where a short phrase of syllables are repeated twice as fast, then four times as fast.

Groupings and syncopation

As mentioned above, rhythmic motifs such as in Figure 7 may be reinterpreted as groupings of quavers.

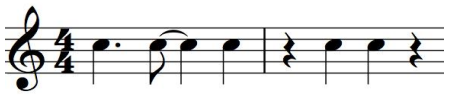

Figure 7 Syncopated rhythmic fragment

In this case, it is 3 + 3 + 4 + 2 + 4. With solkattu syllables, this is recited as TakitaTakitaTakadimi Taka Takadimi. When reciting while clapping the crochet beats along with a metronome, even young children are able to understand the idea that syncopations involve accents that do not conform to the crochet beats. In my classroom teaching, I have developed several drills that use solkattu groupings to teach the student to feel syncopations. One set of these drills involves reciting the solkattu at varying rates of sustain. The example below shows where the word Takita is recited with each syllable 3 semiquavers long, then 2 semiquavers, then 1 semiquaver; while Takadimi is recited with each syllable 2 semiquavers long, then 1 semiquaver, then half a semiquaver (as shown in Figure 8):

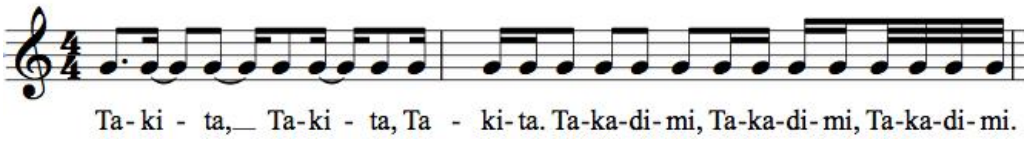

Figure 8 Exercise with varying lengths of syllables

Note the complex looking syncopations that have been created because we recited the solkattu words at various rates. Since there are 6 distinct parts to this drill (i.e. a slow speed Takita, a medium speed Takita, a fast speed Takita, a slow speed Takadimi, a medium speed Takadimi, and a fast speed Takadimi), it is possible to permutate 216 different drills from the original drill. This gives us quite an exhaustive set of drills designed to introduce many different syncopation situations. This method allows the student to perform some interesting and difficult rhythmic combinations in a simple way. Meanwhile, later analysis and visual connections with the written notation will strengthen the student's ability to sight-read similar patterns in the future.

Groupings and polyrhythms

Another wonderful use of solkattu groupings is in the teaching of polyrhythms. I will now explain how to teach a student to feel the polyrhythm of 3 against 4 as a model for teaching other polyrhythmic combinations. First, we find the lowest common multiple of 3 and 4. In this case, it is the number 12. In other words, 12 is 3 times 4; or 12 is 4 times 3. In this instance, I will start with the 12 subdivisions of four sets of triplets as shown in Figure 9 and recite them as TakitaTakitaTakitaTakita. This gives us 4 groupings of 3s (as shown by the accents on the "Ta" part of each Takita):

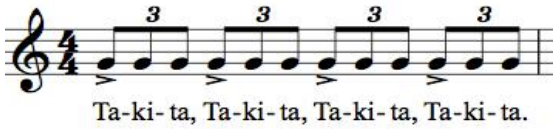

Figure 9 Four groupings per measure

Next, we will keep the triplet subdivisions and regroup them into 3 sets of 4 by fitting the word Takadimi three times over the subdivisions (as shown in Figure 10). When we recite this as TakadimiTakadimiTakadimi, it gives us 3 groupings of 4s (as indicated by the accents on the "Ta" part of each Takadimi):

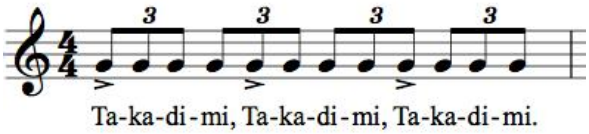

Figure 10 Three groupings per measure

In order to create the feeling of 3 against 4 it is necessary to get the student to perform the two groupings simultaneously. First, I will ask the student to recite TakitaTakitaTakitaTakita while tapping his foot on the 'Ta' of each Takita. This sets up the initial 4 beats to the measure and the sense of 12 subdivisions. Next, while the foot is tapping, I will ask the student to regroup the subdivisions into 4s and recite TakadimiTakadimiTakadimi. Finally, the student will be asked to clap on the 'Ta' of each Takadimi while the foot is still tapping 4 beats to the measure. This will allow the student to feel 3 (the clapping) against 4 (the foot tapping). Again, a Carnatic musician would not practise such a drill because this is a slightly simplified version of a concept he or she would use in group improvisation (as I have learnt from my current guru, Mr. ChettitharaveetilHaridasSreekanth).

Is there an equivalent in the teaching of Western musical instruments?

A key feature of Carnatic rhythmic groupings is that they are easier to articulate at faster tempos due to the use of words that are easier to speak at a fast pace. Another feature is that the beginning of each grouping is clearly articulated (in most cases this is done with the syllable 'Ta'). In Western musical instrumental teaching, I have seen a parallel in the teaching of brass and woodwind instruments (Arban, 1982). Often, students are taught to start phrases by saying the words Tu or Tee, and double tonguing passages would involve articulation of words such as Tu-ku or Tee-kee while triple tonguing passages would involve articulation of words such as Tu-tu-ku or Tee-tee-kee. I have found that my students tend to accept the Solkattu syllables better after I point out the similarities to Western brass or woodwind teaching. In fact, I have even allowed brass students to substitute theirregular articulation of word 'Tu-tu-ku' for the Carnatic "Ta-ki-ta" in our exercises, and their word 'Tu-ku' for the Carnatic 'Ta-ka', and so on. In this way, the students are actually enhancing their own instrumental practice by vocalising the rhythmic drills from our class.

SCORE STUDY WITH KONNAKKOL

Konnakkol is also a useful tool in the study and memorisation of musical scores or structures. In Indian music, due to the fact that words (solkattu) are used to represent rhythms, Carnatic musicians are able to memorise music of rather lengthy duration. The effect would be similar to someone memorising lengthy pieces of poetry or prose. I am old enough to recall that, as a high school student, I was required to memorise important monologues from the plays of William Shakespeare and so the process of remembering a series of rhythmic syllables would not seem too far outside the realm of possibility. This process is also aided by the fact that musical compositions often have a poetry-like structure where sections may be repeated or speech-patterns may emerge.

It is in this area where I believe I have contributed some new ideas with regards to how konnakkol can be used. Traditionally, a konnakkol artist performing a lengthy improvisation would organise his syllables into some artistic or poetic construction (aesthetically controlled by what a listener might perceive to be a mathematical order). This is the artistry of this music. What I started to do a few years ago was to use

konnakkol syllables to represent grouping of notes with the specific idea of using the syllables as a memory aid. I found this method to be quite intuitive and made it much easier to memorise longer sections of music. This proved to be an invaluable aid to me as a conductor. An interesting outcome was that some previously hidden (to me) features of the pieces revealed themselves through my Konnakkol verbalisations of certain passages. These structural features or formations were not obvious through regular harmonic and rhythmic analysis that employed methods from Western music theory.

Let me take you through the learning of one such konnakkol piece so you may get a better understanding of the process. The following musical passage will be written out as if it were a poem to be recited. Each underlined group represents an equal length of time. Here we will give the underlined group the time value of a minim (but this will also depend on how the music is to be notated later). In the course of learning this passage, you will also begin to notice some patterns inits compositional structure:

Takadimi	Ta		
Takadimi	Takadimi	Takadimi	Ta
Takadimi	Takadimi		
Takadimi	Takadimi		
Takadimi	Takadimi	Ta	

It is best to clap a steady pulse while reciting the passage above so that you may experience it like a poem. Please try this experiment and repeat the stanza several times. I hope you will feel (intuitively) the logic in the construction and also begin to memorise the whole passage. In fact, the whole stanza begins to feel like a song to me and you may find it easier to remember the passage using the syllables. We are also aided by the fact that the composer employed repeating rhythmic elements that I will describe below.

What do we notice about the construction of the stanza? The main feature that caught my attention is the fact that the composer liked to highlight the number 3 by repeating motivic material in sets of 3. The phrase ‘Takadimi Ta’ is developed by repeating the word ‘Takadimi’ three times before the second ‘Ta’ appears. Next the composer presented 3 sets of two ‘Takadimi’s’ before the third ‘Ta’ appears.

Here is another presentation of the same stanza where I have used the shortform of ‘TKDM’ to represent ‘Takadimi’ but without the underlining. Perhaps this presentation of the same stanza would make my point clearer in a visual way:

TKDM	Ta
TKDM, TKDM, TKDM,	Ta
TKDM-TKDM	
TKDM-TKDM	
TKDM-TKDM,	Ta.

I hope you are able to see the pattern of 3s in the stanza. This is an important detail because the composer of the music represented by our konnakkol reinterpretation was well-known for his link to the number 3. He liked the number 3 because it was a symbolic number used by the Freemasons (an organization of which he was a member).

This mystery composer is none other than Wolfgang Amadeus Mozart and we have just memorised the opening phrase of his *Marriage of Figaro Overture* (see Figure 11). I have added the solkattu words to the notation of the main melody played by the strings so that you are able to see the underlying rhythmic structure of this phrase and how this is represented by the stanza of words above.

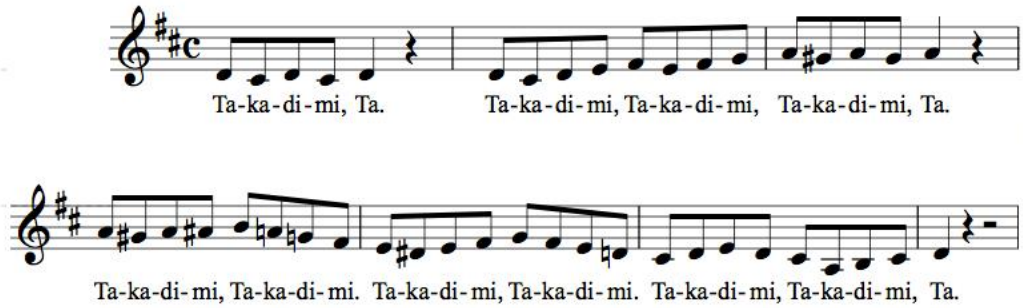

Figure 11 An excerpt from Mozart

It is interesting how Mozart's phrase does not consist of predictable four measure segments. In fact, his phrase germinates from a simple rhythmic cell: Takadimi, Ta. That rhythmic cell develops in a logical way over the course of 6 measures until it resolves in measure 7. First as 1 measure of Takadimi, Ta; then 2 measures of Takadimi, Takadimi, Takadimi, Ta; then 3 measures of Takadimi-Takadimi, Takadimi-Takadimi, Takadimi-Takadimi, before resolving rhythmically to the downbeat of measure 7. The numerical logic of the passage (i.e. 1 then 2 then 3) is at once pleasing to our ears and yet slightly mysterious in its hidden pattern. However, it does appear a little more obvious when recited as a konnakkol passage. This is the true value of analysing the structure of musical compositions using this rhythmic method. We are able to remember the structure logically and also uncover the underlying patterns.

I have employed this method of solkattu syllables in my classes thatdeal with score study (e.g. conducting or orchestral literature). My students have used solkattu syllables to analyse musical compositions by Stravinsky, Richard Strauss, Bartok, Holst, and Brahms. They have also generated konnakkol passages (similar to the stanza I created for Mozart's overture above) that have greatly aided the understanding and performance of the music they were studying. For me, a good sign that myWestern music students have adopted this method is the many times I have observed them in rehearsal communicating musical ideas about how to perform certain passages using konnakkol. It has become their rhythmic language of choice.

IMPROVISATION WITH KONNAKKOL

In a traditional mridangam, curriculum, drum solos in different time cycles are first vocalised and then played on the instrument. Some of these pieces are 15 to 20 minutes long and may take weeks to learn. I am old enough to remember a time before YouTube

when I had to learn jazz solos from recordings or live concerts, so the Carnatic way of teaching through oral tradition was not uncomfortable for me.

As part of my education, I learned new methods of developing motifs. One example is how the South Indian musician augmented motifs by adding fragments to the front of the motif rather than back end. There are also traditional ways to approach cadential sections of a drum solo as well as ways to add coda sections that other musicians (trained in the tradition) would be able to follow in real time. A lot of this could be thought to mirror some practices in a jazz musician's education. As a jazz bassist, I had to learn how to respond to reharmonisations a pianist may use in a standard song or how to accompany a coda ending or vamp that a singer may feel inspired to create on the spot.

The rhythmic concepts for improvisation in Carnatic music may be seen as based in arithmetic and number play. If we were in a time cycle of 3 crochets, we would have 12 subdivisions of semiquavers. Here a Carnatic musician may think of the 12 subdivisions as 4 + 4 + 4 (three groupings of four) and vocalise the rhythm as Takadimi, Takadimi, Takadimi. In subsequent variations, he or she may regroup the subdivisions as 3 + 4 + 5 (i.e. Takita, Takadimi, Tadikitadoom) or 5 + 4 + 3 (i.e. Tadikitadoom, Takadimi, Takita). This creates variety but gives a sense of cohesiveness because the number combinations are related presentations of three numbers that add up to twelve.

In Carnatic music, spaces or rests could be inserted into phrases to create more interesting rhythmic effects. In a time cycle equivalent to the Western odd-time signature 7/8, three measures would give us 21 subdivisions of quavers. A Carnatic musician may choose to group the 21 subdivisions as 5 + 3 + 5 + 3 + 5 and vocalise this as: Tadikitadoom, Tham, Tadikitadoom, Tham, Tadikitadoom. The "Tham" in the phrase having the value of three quavers. This will allow the musician to create various interesting number combinations. The original 5 + Tham + 5 + Tham + 5 could be modified as 4 + Tham + 5 + Tham + 6, or 3 + Tham + 5 + Tham + 7.

The default subdivision of each beat (or pulse) in Carnatic music is often four. This is equivalent to the Western music practice of dividing a crochet into 4 quavers. It is quite common for a Carnatic musician to switch to a different subdivision of the beat during improvisation and create a special section of the piece that subdivides the beat into five, six, seven or nine. One interesting way to use this device is to reinterpret the same musical phrase with a different subdivision of the pulse. In the time signature of five-four time there would be 20 subdivisions of quavers per measure (with each crochet subdivided into four.) Here, three measures would give us 60 subdivisions. A musical phrase composed of 60 subdivisions could be grouped as 6 + 6 + 6 + 3 + 6 + 6 + 6 + 3 + 6 + 6 + 6, and the rhythmic vocalisation could be:

TaTadikinadoon, TaTadikinadoon, TaTadikinadoon, Tham;
TaTadikinadoon, TaTadikinadoon, TaTadikinadoon, Tham;
TaTadikinadoon, TaTadikinadoon, TaTadikinadoon.

This simple example utilises ‘TaTadikinadoon’ for six subdivisions and ‘Tham’ for three subdivisions. If we switch to a subdivision of six per beat in each measure of five-four time, we would have 30 subdivisions since each beat is now a semiquaver sextuplet. The same phrase would be completed in two measures (of sextuplets) instead

of the original three measures (of semiquavers.) The beauty of this sort of improvisation lies in the connection between the changing subdivisions of the beat.

Improvisation is the creative offspring of musicianship training. The improvisational concepts and ideas from konnakkol practice may be taught to students through a series of games that explore spontaneous creativity. I have found that the konnakkol-based improvisations enhanced the compositional sensibilities in my students while solidifying their musicianship skills.

SUMMARY AND CONCLUSION

In the area of rhythm and structure, konnakkol is a great, untapped resource for Western music students. The advantage of using konnakkol and solkattu in musicianship teaching includes the ease of articulating rhythms at the actual performance tempo. Try to say 'One-E-And-A, Two-E-And-A' at a fast tempo (let us say crochet equals 120) then try it with the solkattu equivalent of 'Takadimi, Takajonu' and you will instantly understand the advantage of the more natural articulations offered by the Carnatic method. Another useful feature of konnakkol is the simple fact that rhythms are expressed as words. This makes it very easy to translate rhythmic patterns into internal rhythmic feeling for the student (or performer). Related to using words to express rhythms is the idea that we can combine the words into phrases or larger stanzas (just like in poetry) that facilitate music learning and memorising. This is an invaluable aid to students and performers alike. In fact, all my musicianship students had to memorise a specific 2-minute passage from Stravinsky's *Rite of Spring* using konnakkol syllables (as part of their classroom work). Furthermore, the improvisational concepts borrowed from traditional konnakkol practice also aid in the development of creative impulses in a music student. The facility with which ideas can flow in improvisations can lead to compositions or just strengthen the musicianship skills of the learner. The ability to vocalise the rhythmic phrases of music you will play on your instrument is a great aid in developing that elusive element often called "feel" or "groove". The security of rhythmic vocalisation also ensures a more solid performance with fewer errors (as well enhance the ability to recover from mistakes made during the performance).

So far, the chief disadvantage I have encountered is acceptance of the method by peers. I am pleased to report that once you explain yourself clearly, most teachers would understand and appreciate the simplicity and versatility of the konnakkol approach. In the past, when I have shared my ideas about the use of konnakkol in the teaching of Western music (with other teachers), the question often arises about how to gain acceptance with colleagues in the music department. It is often useful to point to similarities the konnakkol system already shares with Western music teaching practices. A simple example would be what I had mentioned had earlier about brass players employing their own set of syllables for articulation. Many brass teachers would teach the syllables 'Tu-ku' or 'Tu-tu-ku' to their students to help with their tonguing. It would not be a stretch to see the similarity between those syllables and the Indian solkattu of 'Ta-ka' and 'Ta-ki-ta'. An interesting observation is that most of my brass students found an improvement in their articulation after studying konnakkol. I have learnt this from some verbal feedback from former students. Konnakkol has a certain degree of flexibility in that some variation in the pronunciation of the words is acceptable as part

of the tradition. For example, 'Takadimi' may be pronounced as 'Dagadimi' (especially at high speeds) without losing its value as a word that indicates a subdivision of 4. It is common for teachers who came from different schools of mridangam to use slightly different syllables to express similar rhythmic combinations. It is this flexibility that facilitates acceptance by students from a different culture. In Western music study and performance, there is also a need for a way to express larger number groupings. Typically, although there are syllables for grouping of 3 or 4 (like One-E-And-A), Western music students are not taught rhythmic syllables for groupings of 5, 6, 7 and so on. This is where konnakkol can enrich the Western music curriculum. The modern music my Western music students performs often contains odd number groupings such as quintuplets, septuplets and larger ones. The simple way konnakkol expresses quite complex subdivisions of the beat have helped my students to develop a sense of accuracy when they encounter such music. I am aware of this improving sense of rhythmic accuracy when I compare their musical skills from the beginning and end of the module I taught. As mentioned before, a method called 'Takadimi' or 'The Takadimi System' has found an audience in some school curriculums in America (Hoffman, 1996). However, I feel that they have only employed the subdivisional aspects of the syllables and have not explored the compositional and organisational potential of konnakkol. For example, a simple but effective practice in konnakkol is to count the time cycle with hand movements. The Western music equivalent would be to sight-sing while conducting the beats of the measure. The hand counts free the Carnatic musician from having to indicate the beginning of beats with a Ta and allowssyncopated rhythms to be accented with a Ta on the offbeat. This more correctly mirrors how music behaves.

In conclusion, I have only covered a small amount of theoretical material and classroom exercises. The online student feedback I have received over the years have indicated that my Western music students responded well to my use of konnakkol to help them in their music study. My continuous assessment of their progress through the module also reflects positive benefits of this Carnatic method. I hope that this article will open your mind to the potential for more experimenting and research. I have even used the konnakkol approach to teach musicianship workshops for the National Arts Council (Singapore) and Perkamus (Malaysia). There is much more to discover in terms of how we can use these tools borrowed from Carnatic musical tradition to teach Western music. The result may be that we will have a common musical language in the future to explore the music of various cultures and even break new ground towards creating new musical horizons.

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BIOGRAPHY

Conductor, composer and bassist, **Tony Makarome** is Associate Professor at Yong Siew Toh Conservatory. He has DMA (Orchestral Conducting) from USC. His teachers include George Monseur, AttilioPoto, Robert Spano, MiroslavVitous, Herb Pomeroy, T.R. Sundaresa and ChettiharaveetilHaridasSreekanth (Singapore Indian Fine Art Society). He was conductor of NUS Wind Symphony. His *Scifi Lounge* (2006) premiered in Bangkok and *Name with No Street* in Shanghai. Other works include *East Wind* (solo percussion) and his opera, *Faybulous* at Pawley's Island Music Festival. His arrangements of the 'Seven Steps to Heaven' and 'Asiana' were performed by Singapore Chinese Orchestra and China Broadcasting Folk Orchestra (Beijing). As bassist, he performed with Louis Bellson, Tony Bennett and Quartet West. He has been amridangist in Chennai. He is a leading pedagogue of solfége and jazz. In summers, he is an award-winning teacher at Walden School (USA). Current projects include Esplanade's Jazz Program and course for Perkamus.
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