

Jati Scales from South India: Unlocking the Mysteries of Rhythm

By Jerry Leake

Overview

The majority of my students at the New England Conservatory are non-drummers who seek to understand world music from the rhythm perspective, to discover ancient yet fresh insights beyond fundamental training on their primary instrument. As a student myself of North and South Indian drumming, and their rich underlying rhythm systems, I have discovered that many of the mysteries of rhythm can be unlocked using the Jati rhythm scales of South Indian (Carnatic) music.¹ This article places the reader into my own experience of Indian theory and practice with the old and vast jati system. I encourage you to explore more about this and other concepts of Indian music.

If rhythm is the one universal element found in all musical styles then it is quite simply math.² In its highest application, rhythm is also a deeply rooted science. Just as the ascent and descent of melodic scales provide an initial framework to create melodies and motifs, jati rhythm scales function as the skeleton and backbone to the overall rhythm fabric of the music³. Jati rhythm scales allow one to always be visualizing the infinite shapes of musical time while also practicing away from the instrument.⁴

Stepping Sequence:

The practice pattern of jati rhythm scales is simple: Establish a steady beat using unison stick-strikes and side-to-side stepping, while reciting/chanting combinations of varying density from 1 to 10 syllables per beat. Stepping grounds one's sense of pulse, and prevents speeding up or slowing down. Unison stick-strikes connect the limbs and strengthen the pulse, while adding the kinesthetic energy necessary to complete the full "body orchestration."

Begin by stepping in a slow (approx 40 bpm) 4-beat pulse. Start with the feet together in parallel. Do not step too far in either direction as this may cause you to lose balance and accelerate time. Always plant the feet firmly with each step, as described below.

Beat 1: Right foot steps out, weight is placed to this foot

Beat 2: Left foot steps in lightly, minimal weight to this foot

Beat 3: Left foot steps out, weight is placed to this foot

Beat 4: Right foot steps in lightly, minimal weight to this foot

Repeat the above 4-beat sequence, adding unison stick-strikes (or hand claps, if you prefer). Once a crisp and steady pulse is established begin reciting the jatis four times each, repeating each 4-beat sequence as many times as needed to be relaxed and consistent.

- 1 = TA (pronounced "tah" with a short "a")
- 2 = TA KA
- 3 = TA KI TA (recite as "tah ki tuh")
- 4 = TA KA DI MI (recite "di mi" in a slightly lower pitch)

Shown below are the jatis 1–4 in Western notation with step and stick pulse. Repeat each as needed before proceeding to the next. After you complete jati "4" (ta ka di mi) go backwards until you return to jati "1". Cycle the 1–4–1 sequence until proficient.

jati 1 TA TA TA TA
 jati 2 TA KA TA KA TA KA TA KA
 jati 3 TA KI TA TA KI TA TA KI TA TA KI TA
 jati 4 TA KA DI MI TA KA DI MI TA KA DI MI TA KA DI MI
 step pattern R L L R
 stick pattern X X X X

Increasing Rhythm Density

The beauty of the jati system is that all other treatments are derived using the previous jati of 2, 3, and 4. A jati in “5” is built using the numbers 2+3 (taka takita), or 3+2 (takita taka).⁵ More advanced treatments could span two beats as 334 or 433 (consecutive “2”s become a jati in “4”). Shown below are the single-beat possibilities for the jati 5 thru 10.

- 5 = 2+3 taka takita / 3+2 takita taka
- 6 = 2+4 taka takadimi / 4+2 takadimi taka
- 7 = 3+4 takita takadimi / 4+3 takadimi takita
- 8 = 3+3+2 takita takita taka / 3+2+3 / 2+3+3
- 9 = 2+3+4 taka takita takadimi / 243 / 324 / 342 / 423 / 432
- 10 = 2323 / 3232 / 433 / 334 (double the tempo of scale “5”)

You should master the previous single-beat jati before exploring possibilities that span two beats (5 = 433 / 334 • 7 = 3344 / 4433, etc.). Then create your own shapes in 11, 12 (double 6), 13, 14 (double 7), 15, and 16 (double 8).

Suggested Practice Models

The entire sequence should begin from 1 and proceed to 10, then back down to 1 (1–10–1). You may discover that it is easier going up the “ladder” (increasing beat density) as opposed to going down (decreasing density). Many contemporary music arrangements often begin in an additive manner with the bass and drums beginning a composition, followed by rhythm guitar and piano, with the melody entering last. It is less intuitive to take away musical elements to a given arrangement, except for dramatic effect.

Recite each jati four times, always changing to the next when the right foot steps out on beat 1. When proficient with 4xs each, challenge yourself further by reciting twice each up and down. When reciting each jati once per beat the entire 1–10–1 sequence can be rendered in about twenty seconds!

An additional level to this exercise involves hitting sticks together for the initial syllable of *each* subdivision. This would only occur for the scales 5–10; scales 1–4 have no internal subdivisions. Continue stepping, sticking and reciting as before. Now strike sticks on each subdivision, as shown below in **bold** print.

- 5 = **taka takita**
- 6 = **taka takadimi**
- 7 = **takita takadimi**
- 8 = **takita takita taka**
- 9 = **taka takita takadimi**
- etc...

Mixing up single- and double-beat combinations, with stick syncopation, will prove challenging and exciting. There are no limitations to how this exercise could be realized and explored.

Practical Application

One question remains: how does this exercise translate to good music making? Clearly, an exercise such as this is great for the mind, body, and soul. The jati concept may subconsciously filter its way into your musical sensibilities, providing you with added confidence and understanding of rhythm from contemporary “free” jazz to Igor Stravinsky. Recently, I was asked to play tabla for concert of Iranian music lead by the great singer Shahram Nazeri. Music for the overture involved every time signature and meter that I could imagine. With only one rehearsal, I survived by quietly reciting the appropriate jati scales to each meter change while improvising strokes on tabla. Without this added awareness I would have been lost. As a literal underpinning to the music, jati scales were my salvation. I also recorded a tabla solo in slow tinal whereby each successive 16-beat cycle progresses thru all of the scales 1–10, then to 12, 14, 16 and 24 strokes per beat. The exercise-turned-composition titled “Growing Time” (to appear on my forthcoming CD “Cubist: Shapes of Sound & Time”) provided an even more literal entrance through the doorway of musical time and shape.

Conclusion

It is never too late to rediscover the power and sophistication of rhythm; to hear rhythm as a high art and science that requires great patience, understanding, and practice to master. In this article I have only scratched the surface of this immense world that realizes rhythm in so many different contexts and systems. It is humbling and awe-inspiring to be able to glimpse at so many great traditions. Having grown up in a backbeat focused Western society of 2+2=4, I had to work hard to get to a point of modest world-rhythm proficiency. I know my journey into the infinite possibilities will never end. Join me!

Notes:

1. George Ruckert, Senior Lecturer at MIT, and senior sarod disciple of Ali Akbar Khan, initially taught me the jati system.
2. The concept of changing beat density is also prevalent in North Indian Classical (Hindustani) music, as well as Arabic, Turkish and Bulkan traditions, to name a few. Many of the jati syllables are similar to those used for playing North Indian tabla. It is the syllable combination “ta ka di mi” that is found in the South Indian drum language. Nowadays it is common for drummers of Indian music to be familiar with both North and South systems.
3. The word “jati” literally means “type” and the word “scale” means “ladder” or “strain.” In Western music “scale” refers to a step-wise arrangement of melodic notes. However, if we also think of a melodic scale as a structural “framework” or “backbone” to a given melody, the notion of a “rhythm scale” is acceptable and appropriate. Also, the suggested jati exercise (1–10–1) follows a step-wise “ladder” of increasing density which further supports the use of the term “scale” to describe rhythm.
4. My book “Relating Sound & Time” is a collection of rhythm systems and exercises from India and West Africa. It is the primary reference for my students of world rhythm theory.
5. Students of Carnatic music incorporate the phrase “ta di ki na thom” for jati in “5.” However, this 2+3 phrase cannot be rearranged as a 3+2. The benefit of jati system is the ability to shuffle the deck of possible combinations.

Sources

Leake, Jerry.

2003. *Relating Sound & Time*. Boston: Rhombus Publishing.

Ruckert, George.

1998. *The Classical Music of North India, vol. 1*, Delhi: Munshiram Manoharlal.