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INTRODUCTION

In the 1970s, 1980s, and 1990s, ethnomusicologists strove to make known the technical details of modal improvisation as practiced in the Eastern Arab world, Iran, North India, South India, and Turkey. A supplement to such monographs and dissertations was Harold Powers’s (1980b) ambitious encyclopedia entry that sought to synthesize data about modes from these five regions. Powers’s broad conception of mode perhaps to some extent legitimated his project to compare and contrast such diverse musical traditions. Powers defined the term “mode” as any group of pitches that fall on a scale-tune spectrum (1980b, 830, 837).

During the last ten years ethnomusicologists have attempted to build upon the above-cited studies of modal improvisation. In the realm of North India, for example, Widdess (2011) and Zadeh (2012) argue that large-scale form and small-scale chunks of repeated melody can be understood as schemas and formulaic language, respectively. Widdess’s article is important because it introduces two terms—“internal scalar expansion” and “consonant reinforcement” (Widdess 2011, 199–200, 205)—to describe key features of North Indian ālāp. Zadeh’s article is noteworthy because she contends that Albert Lord’s ([1960] 2000) argument that Serbo-Croatian epic poets fashioned poetry out of “formulas” can also be made with regard to rāga improvisation.

One lacuna in the academic quest to understand the nuances of modal improvisation is scholarship about a type of modal improvisation that could be considered “hybrid” because of its dual emphasis on rhythm and melody. The purpose of this article is to begin to fill this lacuna through a detailed examination of a form of improvisation in South Indian Karnatak (often spelled “Carnatic”) music known as svara kalpana. In svara kalpana Karnatak musicians improvise with Indian music’s solfège (solfization syllables) known as sargam. Part of the improvisation involves setting sargam to the Karnatak rhythmic language (solkaṭṭu). Svara kalpana is a standard feature of any full concert of Karnatak music. Yet svara kalpana has remained somewhat arcane to ethnomusicologists who do not focus on Indian classical music.

3. Widdess first introduced the notion of internal scalar expansion in 1981. He defines internal scalar expansion as the process by which “a phrase is expanded by inserting material into it that reaches one or more higher pitches before regaining the original conclusion of the phrase” (2011, 199). Widdess (2011, 205) defines “consonant reinforcement” as the process in which, in the course of an ālāp, a musician draws the listener’s attention to the focal pitch by echoing it in the lower octave. For a discussion of similar features in South Indian Karnatak ālāpāna of Mandolin Shrinivas, see Field (2008, 45–75).
4. Svara kalpana is also called kalpana svara. In English three studies focus on svara kalpana: Reck (1983); Cormack (1992); and Viswanathan and Cormack (1998).
Perhaps this is due to the lack of detailed analyses of svara kalpana in both recent scholarship and popular textbooks that survey world music. In the disciplines of music theory and musicology the phenomenon of svara kalpana is almost never discussed.

The goal of music theorists has often been to “account for the singularity of the musical work” (Donin and Goldman 2008), while the goal of ethnomusicologists has traditionally been to analyze the cultural context of music. For example, in 1974 the ethnomusicologist Steven Feld asserted that it was erroneous to analyze music separate from its cultural context (Field 1974, 207). In 1980 Harold Powers, who made scholarly contributions to ethnomusicology, music theory, and musicology, responded: “Some music may sometimes be more efficiently interpreted by discussing it as though it did have a life of its own” (Powers 1980a, 8). I tend to agree with Powers because some forms of “music-itself” create a musical context of sorts.5 Someone who thus painstakingly transcribes and decodes such forms of musical communication could be said to have completed a musicological “thick description” (Geertz 1973).6

In this article, I aim to demonstrate that the “music-itself” of svara kalpana indeed has, in Powers’s words, a “life of its own.” In what follows I explain what svara kalpana is, investigate three rhythmic-melodic designs found in svara kalpana, and then focus on ways Karnatak musician U. Shrinivas (often spelled “Srinivas”) used such designs in a concert held in 1995. U. Shrinivas (1969–2014) was a famous Karnatak musician. In his youth the Karnatak musical world hailed him as a “child prodigy.” For example in 1983 the magazine Sruti—a Chennai-based English-language publication that focuses on South Indian music, theater, and dance—published an article about Shrinivas entitled “Arc of Triumph: A Prodigy at Play.” The same magazine featured an article dedicated to exploring the phenomenon of the child prodigy (see Sruti no. 1 [1983], 10). Also, Shrinivas’s first album was entitled The Adorable Child Prodigy (1985). One reason his music shocked aficionados of Karnatak music was because by the age of twelve Shrinivas had figured out how to perform Karnatak music with virtuosity on a new instrument, the electroacoustic “Karnatak mandolin,” which he modified from the Western solid-body mandolin.7

**What Is Svara Kalpana?**

According to Jody Cormack (1992, 30), Karnatak musicians in South India have likely performed svara kalpana for at least two hundred years, and the style of improvisation was originally a way for court musicians in South India to please their patrons and obtain reputations as virtuosos. In Sanskrit the term svara means “note” while the word kalpana connotes “imagination” or “invention.” One reason svara kalpana requires imagination is because the soloist and accompanist (the violinist) must improvise with sargam. The names of these solmization syllables are: Sa, Ri, Ga, Ma, Pa, Da, Ni.8

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6. Further, Feld’s argument was a blanket statement about “music.” It overlooked the ways in which different musical forms are associated with different sets of expectations for how listeners should listen and engage with the music.
7. On Shrinivas, his unique instrument, and his approach to improvisation, see Field (2008).
8. In this article’s transcriptions I abbreviate these note names to their initial consonants. Upper case letters refer
After a Karnatak musician performs a composition he or she will often segue into svara kalpana. To segue the musician must select one melodic theme from the composition just performed. This melodic theme is most often a phrase that commences a section of the composition. In svara kalpana the musician uses this theme to conclude each round of improvisation. The theme is therefore akin to what North Indian classical musicians refer to as the mukhda.

To use the theme properly the musician must ask two questions about it. First, at which beat in the tāla does this melodic theme begin in the composition? The precise location in the tāla where the theme begins is known in the Tamil language as the idam or eduppu (Cormack 1992, 164–68). I use the term eduppu in this article. The eduppu is crucial because it is where all the svara kalpana improvisations must end. In practice the eduppu tends to fall either on beat one (sama eduppu); the middle of beats one and two (arai idam, Tamil: “half-place”); or after one-and-a-half beats (anāgata eduppu) (Cormack 1992, 164–68; Reck 1983, 501–502).

The Karnatak musician must ask an additional question about the selected melodic theme: on which note does this melodic theme begin? The note on which the melodic theme begins is known as the graha svara or eduppu svara (see Cormack 1992, 174–81). This second question is also important because the artist must end each round of svara kalpana not only at the eduppu but also at the correct note. To reach the correct note he or she must approach it from the closest note below or above.

One round of svara kalpana is complete once the soloist and accompanist each take a turn. A turn involves three steps. If it is the soloist’s turn he or she performs with the solfège of the particular rāga. Second, the soloist ends the improvisation at the eduppu and graha svara of the melodic theme. Third, the soloist concludes by performing the melodic theme. Then the accompanist does the same. The accompanist will perform for roughly the same number of cycles the soloist just took during his or her turn.

An entire svara kalpana improvisation can be said to have five distinct parts. In part one the soloist and accompanist perform in the “first speed” (usually two notes per beat). In part two they perform in “second speed” (usually four notes per beat). In part three they commence the koraippu. A koraippu often reminds jazz musicians of trading fours, a technique in jazz in which musicians alternate solos of four bars. However, the koraippu additionally progresses from large to small: from one full tāla cycle, to one half of the cycle, a fourth, and finally an eighth. Once the musicians reach the smallest trading unit they commence part four: semi-continuous streams of notes performed without regard to mathematical formulas.

To conclude the music climaxes with a körvai, where the musician sets solfège to two rhythmic designs (see pp. 7–8 below for a more detailed explanation of the körvai).

When the soloist or accompanist improvises with sargam she or he has two general options: the first is to construct melodic patterns that draw attention to the flow of melody. The second is to set sargam to mathematical designs. The second option, which is the focus of this article, is what I am calling “hybrid” because of its dual emphasis on rhythm and melody. I say “dual emphasis on rhythm and melody” because the musicians set sargam to rhythmic designs used in solkaṭṭu, the rhythm language of Karnatak music. There are three common rhythmic-melodic designs: solfège added to rhythmic shapes called yati; solfège set to triple cadential formulas known as móra; and the fusion of solfège with large solkaṭṭu-based formulas known as körvai. The following section describes these three hybrid designs.

**THREE HYBRID DESIGNS: YATI, MÓRA, AND KÖRVAI**

**Yati**

Musicians performing svara kalpana sometimes set sargam to solkaṭṭu shapes called yatis (Cormack 1992, 113–15, 133–35, 243; Reck 1983, 153–55). There are six primary types. In Example 1.1 I present four of these types with sargam and analogues in Western staff notation. The major scale implied here is arbitrary. A yati can be performed in any rāga. I use C as the tonic as a matter of convenience. Shrinivas coincidentally performs with C as the drone because he tunes his Karnatak mandolin C5 G5 C4 G4 C3.

In the srōtōvaha yati the pattern begins with one note and grows in size by the measure of one ascending or descending note. The opposite of the srōtōvaha yati is the gopucca yati. In Sanskrit the term gopucca literally means “cow’s tail.” The gopucca yati begins with a set of ascending or descending notes and shrinks in size by the measure of one ascending or descending note. The second two patterns are combinations. The mṛdanga yati consists of a srōtōvaha yati followed by a gopucca yati. Here the pattern grows in size but then shrinks. It is called mṛdanga because the pattern resembles the barrel shape of the mridangam. The opposite of the mṛdanga yati is the ċāmaru yati, which shrinks and then grows. It is an hourglass shape that consists of a gopucca and srōtōvaha yati, respectively. There are two additional types of yati: viśama yati describes a series of shapes without a particular order, and sama yati refers to a series of shapes of equal sizes (Cormack 1992, 113).

The examples in Example 1.1 do not employ rests. But it is also common in yatis to increase or decrease the number of rests. For example, in the gopucca yati in Example 1.2, the number of rests (indicated in the sargam notation with a comma) decreases from 2 to 1 to 0.

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14. The rhythmic equivalent to this is called sarvalaghu, which Nelson defines as “patterns that draw attention to the flow of rhythmic time, rather than to its design possibilities” (Nelson 1991, 29).
16. For an introduction to solkaṭṭu, see Nelson (2008).
17. Cormack (1992, 243) contends that the srōtōvaha yati is the most common non-calculated pattern in svara kalpana.
18. For a recent discussion of the gopucca shape in the context of West Bengal, see Graves (2017).
Srōtvaha yati

Gopucca yati

Mṛdāṅga yati

Ḍamaru yati

Example 1.1. Four basic types of yati in Karnatak music.

Example 1.2. Gopucca yati with rests.
Mōrā

Musicians who perform svara kalpana often combine solfège with solkaṭṭu to create mōrās (Cormack 1992, 127–32). A mōrā is akin to the triple cadential formula known in Hindustani music as tihai.19 David Nelson defines mōrā as a design that consists of a statement, gap, statement, gap, and statement (Nelson 2008, 23).20 Nelson places the statements in parentheses and he puts the gaps in brackets. It can thus be indicated in this way: (statement)[gap](statement); or abbreviated to: (x)[y](x)(x) (Nelson 1991, 46). Nelson’s observations of these structures enabled him to theorize fundamental rules regarding the mōrā. First, the three statements must have the duration of at least one pulse, and they must have an “orderly” relation to each other. For example, the number of pulses of each statement tends to be the same, or they increase or decrease by an ordered amount. Second, the gap’s size may be zero or greater (Nelson 1991, 46–52).

In svara kalpana a singer or an instrumentalist sets solfège to mōrās. To demonstrate, in Example 2.1 I have transcribed one svara kalpana improvisation in which Shrinivas improvised in rupaka tāla, a three-gesture (clap-clap-wave) cycle with four pulses per gesture. I indicate the tāla with underlined numbers and commas on the top line: 1 , 2 , 3 , 1 , 2 , 3 , . . . The numbers represent the beats (akshara) per cycle (avartanam) and the commas indicate the pulse rate (nādai) per beat, which in this case is four (chatūrāshra). Underneath the numbers and commas I transcribe the sargam that Shrinivas performed to finish the svara kalpana idea at the fifth scale degree (P) at the eduppu of beat 1 (in bold).21

When one organizes the improvisation into its mōrā form of (x){y}{x}{y}{x} one produces the pattern (RGM)[P,P,P,P](RGM)[P,P,P,P](RGM). If one then reduces these notes to only the duration of the building blocks in pulses one arrives at (3){7}{3}{7}{3}. One tāla cycle equals 12 pulses. This mōrā is a total of 23 pulses (3+7+3+7+3). Thus, to end the mōrā at the eduppu of beat one Shrinivas starts the mōrā on the second pulse of beat 1. Example 2.2 shows this mōrā in Western staff notation. The bar lines indicate the beat (akshara). Here the eighth note functions as the underlying pulse. I place parentheses around the statements, and I place brackets around the gaps.

There are two fundamental ways in which Karnataka musicians modify just-performed mōrās in their next turns. Imagine a musician performs a mōrā with three six-pulsed statements interspersed with gaps of zero: (SN,DPM)[0](ND,PMG)[0](DP,MGR). This can be indicated with numbers as: (6)[0](6)[0](6). The total number of pulses is 18. It is common in Karnataka music to play around with these 18 pulses in two ways. For now, let us forget about


19. Martin Clayton (2000, 169) defines tihai as “a rhythmic phrase played a total of three times, constructed so as to end on or just before a structurally important point in the tāl cycle (usually on sam or just before the mukhra),”
20. The term Karnataka musicians often use for “gap” is kārvai (Cormack 1992, 126).
21. This composition is set to the rāga Purvikalyani.
Improvising Rhythmic-Melodic Designs


the gap of zero. The first way is to change the statements to this: (ṠNDPM)(ND,PMG) (D,P,MGR). This can be written in numbers as (5)(6)(7). Here the number of pulses (18) remains the same (5+6+7=18) but now the statements increase by one pulse from 5 → 6 → 7. Once this modification has been made it is common to reverse the idea to (7)(6)(5), which can be expressed in sargam notation as (Ṡ,N,DPM)(ND,PMG)(DPMGR).

Kōrvai

Another important feature of svara kalpana is the setting of solfège to the rhythmic phenomenon called kōrvai. David Nelson argues that kōrvais have two parts. The first part consists of a shape (often a gopucca yati) and the second part is a mōrā (Nelson 1999, 67). Further, the kōrvai will in most cases be played three times (83). I will refer to each instantiation as a “unit.” In svara kalpana the soloist and accompanist set the three units to a melodic idea expressed in solfège. The melodic contour in each unit usually descends. Let us consider one example that Shrinivas performed for the composition “Enduku Dayaradura” (rāga Toḍī) in which the eduppu is located on pulse number 3 (Example 3). Allow me to first analyze the features of the kōrvai in a transcription that does not indicate the tāḷa. After I explain the features of the kōrvai I will analyze how it fits in the tāḷa to arrive perfectly at the eduppu.

If one puts the melody aside for a moment, the rhythmic structure of the kōrvai is the same structure Nelson describes as the “paradigm form” of kōrvai: each unit has a gopucca yati followed by a mōrā (see Nelson 1991, 67–68). More specifically, in the kōrvai in Example 3 each unit has characteristics of a gopucca yati with rests (the type presented in Example 1.2): in each unit’s first line every note is followed with two rests; in each unit’s second line every note is followed with one rest; and in each unit’s third line every note obtains zero rests. The mōrā is the third line of each unit.

Shrinivas designed this kōrvai for the tāḷa named misra chapu. Misra chapu is a seven-beat cycle with claps, indicated with an “x” in Example 4, on the first, second, fourth, and sixth

Example 4. Misra chapu tāla with two pulses per beat.

beats. Each beat receives two pulses, so one cycle equals fourteen pulses. Each unit in the kōrvai equals a total of 42 pulses, which conveniently is a multiple of 7, the basic number of beats in misra chapu. Since the eduppu is on pulse 3, Shrinivas started the kōrvai on pulse 3.

SHRINIVAS’S SVARA KALPANA IN RĀGA KAMBHŌJI

In 1995 U. Shrinivas brought his Karnatak mandolin to Ohio to perform at the Cleveland Thyagaraja Festival, one of the largest Karnatak music festivals held outside of South India. His accompanist was the violinist A. Kanyakumari. That day Shrinivas performed svara kalpana in the rāga Kambhōji, a rāga that evokes the sound of a Mixolydian scale. However, the flat seventh scale degree in Kambhōji can be played only in descending phrases. In Example 5 I have transcribed the ascent and descent of rāga Kambhōji as well as the gamaka.

Ascent

Sargam: S R G m P D Š
Gamaka: SGRGR GPGPG GSDSD

Descent

Sargam: Š n D P m G R Š
Gamaka: FŠ FSn(Š) Fm GMG GR(shake R slightly)

Example 5. Sargam and gamaka in ascent (arohana) and descent (avarohana) of rāga Kambhōji.

25. Different Karnatak musicians will perform the ascent and descent with slightly different gamaka. This is the version I learned from Karnatak vocalist B. Balasubrahmaniyam.
Although scholars commonly define *gamaka* as characteristic ornamentation, the definition can be misleading because it tends to erroneously equate melodic ornamentation with the idiomatic ways in which notes are connected to each other in the performance of Karnatak *rāgas*. Ornamentation can be said to exist on a spectrum. At one end is idiomatic “external” ornaments that musicians perform to decorate a melodic line. At the other end of the spectrum is ornamentation that is “internal” to the mode. *Gamaka* in Karnatak music falls on the internal side of the spectrum because *gamaka* are fundamental, idiomatic ways in which Karnatak musicians are taught to connect (rather than decorate) notes of *rāgas*.\(^{26}\)

Shrinivas performed *svaṇa kalpaṇa* in *rāga Kambhoji* after he performed the composition entitled “Evarimāṭa” composed by Thyagaraja.\(^{27}\) “Composed” means Thyagaraja created both the Telugu-language text and its musical setting. The *ṭāla* of “Evarimāṭa” is ʻādi ʻṭāla ṛṇḍu kalai, a common *ṭāla* for slower-tempo Karnatak compositions. ṛṇḍu kalai means each beat receives two of the same hand gestures, as shown in Example 6.

As explained above, when a vocalist or instrumentalist prepares to sing *svaṇa kalpaṇa* the vocalist or instrumentalist must first select a melodic theme from the through-composed composition. Shrinivas selected the melodic theme that opens the composition’s third major section (ex. 7).\(^{28}\) The *ṇṇalu* of the melodic theme is “second 1 clap” and the *graha svara* is *P* (scale degree 5). The transcription in Example 7 shows the way in which Shrinivas tended to handle the theme on the Karnatak mandolin. The precise performance of the theme, however, will vary from musician to musician in subtle ways.

A key challenge of *svaṇa kalpaṇa* is to learn to approach the *ṇṇalu* at two notes per beat in part 1 and four notes per beat in part 2 (see my discussion of the five parts of *svaṇa kalpaṇa* on pages 3–4). Thus the musician must feel precisely where the *ṇṇalu* exists in the *ṭāla* for these

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**Example 6. Representation of Ādi ċṭāla, ṛṇṇḍu kalai.**\(^{29}\)

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\(^{26}\) I owe this point to David Nelson.

\(^{27}\) On Thyagaraja, see Jackson (1992). For additional case studies of *svaṇa kalpaṇa* performed for the *kṛiti* Evarimāṭa, see Cormack (1992, 257–371). She compares three *svaṇa kalpaṇa* performances of Karnatak flutist T. Viswanathan with three performances of vocalist K. V. Narayanawamy.

\(^{28}\) In Cormack’s study of *svaṇa kalpaṇa* the Karnatak musicians T. Viswanathan and K. V. Narayanawamy used the same theme in their *svaṇa kalpaṇa* (see Cormack 1992, 168–70, 257–371). The Telugu text of the theme is “bhakta parā” which is part of the larger phrase “bhakta parādhiṇḍuṇānuca parama bhāgavatula.” Cormack translates this phrase as “I have been thinking that you [Lord Narada] are the protector of devotees. This you have revealed to the great teachers of religious discourse” (Cormack 1992, 169). On the relationship between text and *svaṇa kalpaṇa* improvisation, see Cormack (1992, 168–74).

\(^{29}\) Readers may find this portrayal of ādi ṛṇṇḍu kalai confusing. They may think it better to depict the *ṭāla* as having 16 beats. I believe it is best to illustrate ādi ṛṇṇḍu kalai as shown above because it captures the way in which musicians feel the *ṭāla*. That is, ādi *ṭāla* is ultimately an eight-beat *ṭāla*. But in ṛṇṇḍu kalai each gesture is repeated. In this article I mark the location in the *ṭāla* through the terms used in Example 6. For example, I
Example 7. The Evarimāṭa theme that Shrinivas selected for svara kalpana (Shrinivas 1995, 6:20–6:27). Click here to listen.

two options. In Evarimāṭa when the musician performs two pulses per beat the eduppu of “second 1 clap” falls on the third pulse. However when the musician performs at four pulses per beat the eduppu of “second 1 clap” falls on the fifth pulse.

In the following sections the reader might feel that the audio examples are not cut to exactly the transcribed duration. More specifically, it might seem that there are subsequent svaras after the transcribed material. These subsequent and untranscribed svaras are the musicians’ improvisatory articulations of the theme (ex. 7).

Hybrid Designs in Part 1

In this section I analyze four mōrā or mōrā-like ideas as well as one yati that Shrinivas fashioned in part 1 of his svara kalpana. In the fourth round of svara kalpana Shrinivas introduced the improvisation’s first mōrā, notated in Example 8.1. When organized according to the mōrā form of (x)y(x)y(x), the idea can be articulated in this way: (pdsrg)s,(ndmpd)p,(sndpm). If the mōrā is reduced to numbers, the result is (5)2(5)2(5)

Although in this article I do not delve into solkaṭṭu, it is imperative to explain to the reader that the ideas that give rise to such numbers are specific vocables of solkaṭṭu. The reader should not assume that when Karnatak musicians conceive of mōrā they think about abstract numbers. The numbers are expressed through the language of solkaṭṭu. For example the solkaṭṭu in this mōrā would be something like: (ta din gi na tom)[,] (ta din gi na tom)[,] (ta din gi na tom).

It is crucial to understand the location in the tāḷa where Shrinivas started the mōrā to finish it at the eduppu. As stated above, in part 1 of svara kalpana musicians tend to perform two notes per beat. Thus one entire tāḷa cycle of ādi tāḷa reṇḍu kalai equals 32 pulses. The number of pulses of the mōrā is 19 (5+2+5+2+5=19). Shrinivas must end the mōrā at the eduppu of “second 1 clap.” Thus Shrinivas commenced the idea 19 pulses away from the eduppu, which is the upbeat of “second 4 middle” as shown in Example 8.2.

Example 8.1. Mōrā (Shrinivas 1995, 7:34–7:45). Click here to listen.
I wish to direct the reader’s attention to the melodic aspect of this “hybrid” (rhythmic-melodic) form of modal improvisation. If one analyzes this idea according to the ascent/descent and standard gamaka found in Kambhōji (see Example 5 above), it becomes apparent that Shrinivas performed the mōrā with the characteristic melodic features of Kambhōji. The flat seventh scale degree in Kambhōji can be played only in descending phrases. Thus, in the first phrase Shrinivas correctly omits n (the flat seventh scale degree) because the phrase ascends to the octave: PD|omit n|ŚRG. Shrinivas, however, introduces n when he constructs a phrase that descends from Š to nDmPD. When listening to the recording consider the standard way in which Shrinivas “takes D from Š” in the ascent to the octave, and “takes R from Š” in the phrase PDŚRG.30

The accompanist Kanyakumari responded to Shrinivas’s mōrā by repeating the same melodic idea, but she began two pulses earlier in the tāḷa. She thus had to compensate for these extra two pulses. One could consider Kanyakumari’s response an example of what Karnatak musicians term oṭṭu svara. Cormack defines oṭṭu svara in this way: “When a musician realizes a calculated pattern is not working out, and so ’sticks in’ or inserts one or more svaras to complete the round (or turn) at the appropriate eduppu” (Cormack 1992, 187). Kanyakumari added two extra pulses to the last statement: she changed it from (ŚnDPm) to (Ś,n,DPm). In Example 8.3 I juxtapose Shrinivas’s mōrā against Kanyakumari’s mōrā.

An astute reader will note that Kanyakumari’s idea is not in mōrā form. In this article I have thus far examined “ideal-type” mōrās: three statements interspersed with two gaps of an equal duration (remember that the gaps may be zero). In reality, however, seasoned artists do not limit themselves to these prototypical formations. They modify the structure of

Example 8.3. Juxtaposition of Shrinivas’s and Kanyakumari’s mōrās (Shrinivas 1995, 7:34–7:56). Click here to listen.

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30. My Karnatak music teachers often used the English verb “take” (as in, “take this note from that note”) to explain how to connect notes to produce gamaka.
(x)[y](x)[y](x) in many ways. They create statements with slightly different lengths. They expand the structure so that there are four statements and three gaps. There are many possibilities.

Consider Examples 9 and 10, transcriptions of Shrinivas’s third and fifth svara kalpana improvisations of part 1. In the third svara kalpana he keeps the gaps at two pulses but constructs statements that are 8, 6, and 7 pulses long, respectively (Example 9). If one organizes the idea into its mōrā form of (x)[y](x)[y](x), it can be displayed in this way: (PDSRGSR), (PDSRGS), (S, nDPDm). A numerical reduction can illustrate it as (8)[2](6)[2](7). Although the gaps remain constant, the statements are not equal in number nor do they increase/decrease by an “orderly” (8 → 7 → 6) amount.

Shrinivas fashioned a similar non-ideal-type mōrā in his fifth svara kalpana of part 1 (Example 10). Here he extended the structure of a mōrā: he placed one gap after the third statement and added a four-note phrase to reach the eduppu. Reducing this to numbers produces the pattern (6)[1](6)[1](6)[1](4).

As explained above, in part 1 the artist and accompanist perform svara kalpana in the “first speed” (two notes per beat) and in part 2 they perform in “second speed” (four notes per beat). Yet in the sixth svara kalpana of part 1, shown in Example 11, Shrinivas surprisingly decided to shift to “second speed.”

In parsing the pattern in Example 11.1, some aspects of the idea are beyond question: the overall structure has three well-defined units, and the overall contour is descending. We know that the idea must eventually reach the eduppu of P, which Shrinivas approaches from the closest note below, M. What is subject to interpretation is the content within each phrase.
Perhaps the best way to analyze this idea is as a mōrā with an additional gap (bolded): (x)[y](x)[y](x)[y]. Further, I find it helpful to divide each statement into three “micro-statements,” which I place in smaller parentheses in Example 11.2.

The third micro-statement of each larger statement maintains the rhythm of the first and second micro-statements, but it descends by step from the previous two micro-statements. The overall idea can be reduced to numbers like this:

\[(6)(6)(6)[2] = 20\]  
\[(6)(6)(6)[2] = 20\]  
\[(6)(6)(6)[2] = 20\]

Shrinivas knew precisely when to start this idea to arrive at the eduppu of “second 1 clap.” The total number of pulses is 60. If each beat of the tāla obtains four pulses the entire cycle consists of 64 pulses. However, recall that when musicians perform four pulses per beat the eduppu of “second 1 clap” falls on the fifth pulse (“after four”). Thus Shrinivas must begin the idea on pulse 9 (“after eight”) to arrive at the eduppu. In other words, he starts the idea at “first 2 pinky” to end at the eduppu (Example 11.3).

One of the feats of svara kalpana is the way in which the accompanist comprehends in real-time the main artist’s often pre-planned ideas and plays variations in the moment. For example, Kanyakumari created a variation on Shrinivas’s expanded mōrā, shown in Example 11.4.


Example 11.3. Begins at “first 2 pinky” to end at the eduppu (Shrinivas 1995, 8:27–8:43).
Example 11.4. Kanyakumari’s variation (Shrinivas 1995, 8:49–9:03). Click here to listen.

When one transcribes Kanyakumari’s idea in numbers it becomes clear that she also designed the statements to consist of 20 pulses, but combined the third and fourth micro-statements together into a descending eight-pulse gap:

\[
(6)(6)[8] = 20
\]

The last musical idea I wish to analyze in this section is the yati found in part 1. In Shrinivas’s fourth svara kalpana he performed a gopucca yati. Different forms of transcription capture various aspects of this figure. Example 12.1 gives a transcription of the gopucca yati in the context of the tāla. Consider the way in which Shrinivas decreased each “statement” by one pulse \((8 \rightarrow 7 \rightarrow 6 \rightarrow 5 \rightarrow 4 \rightarrow 3 \rightarrow 2 \rightarrow 1)\) and interspersed the statements with a gap of four pulses \((D,,,)\). In Example 12.2 I have reduced the gopucca yati to only the duration of its building blocks in pulses. The shrinking statements are shown in bold.


\[
\]

The Koraippu and Final Kōrvai

In this final section I turn to the concluding portion of the improvisation. More specifically, I focus here on the rhythmic designs and solfège Shrinivas performed in the trading section, or koraippu, as well as in the concluding kōrvai. The term koraippu likely derives from the Tamil verb kuralaitil. Kuralaitil means “to decrease, to be reduced in value, and to shorten in measure or number” (Cormack 1992, 143). The koraippu, as mentioned earlier, can be considered “part 3” of the overall structure of svara kalpana. In the koraippu musicians exchange improvisations that progressively become smaller, from an entire tāla cycle, to half a cycle, to a fourth, and finally to an eighth of the cycle. Once the koraippu is complete the lead artist performs solfège patterns (“part 4” of the svara kalpana’s overall structure) that draw attention to the flow of rhythmic time. Finally, they conclude with a large kōrvai (“part 5” of the svara kalpana’s overall structure). In addition to the kōrvai’s aesthetic qualities, the kōrvai has a crucial function: it links the svara kalpana back to the melodic theme of the composition (in this case, “Evarimāṭa”). The arrival back to the melodic theme marks the conclusion of the improvisation and composition. (Recall that the Karnatak musician segues into svara kalpana from the through-composed composition.)

Until now Shrinivas and his accompanist Kanyakumari had regaled their audience with svara kalpana improvisations for about eight minutes. The graha svara was P. But for the koraippu Shrinivas changed the graha svara from P to G. Doing so did not break any rules: only the final kōrvai must use P as the graha svara to conclude at the first note of the melodic theme.

That day Shrinivas used his first koraippu idea as the basis for two subsequent variations. The “seed” idea possessed characteristics of a gopucca yati because it reduced in number in an orderly way. What I find unique about this idea is the fact that Shrinivas chose to reduce the number of the gaps rather than those of the statements. Shrinivas fixed the content of the statement (G,,m,,G,) but constructed gaps that decreased by a unit of one, as illustrated in Example 13.1.

Let us take a closer look at this idea in Example 13.2. It consists of two text boxes. The text box on the left organizes the melodic content into statements and gaps. The text box on

Example 13.2. Koraippu idea 1 within ādi tāḷa reṇḍu kalai (Shrinivas 1995, 14:23–14:34). Click here to listen.

31. In practice the artists do not improvise for a complete cycle. For example, the accompanist will wait about two beats to demarcate the end of the soloist’s just-performed improvisation and the beginning of the accompanist’s turn. To add beauty to the koraippu only the mridangam player will often accompany the soloist. Likewise the other percussionist(s) (without the mridangam player) will accompany the accompanist (violin). For the koraippu analyzed in this article, Shrimushnam Raja Rao accompanied Shrinivas on mridangam and T. H. Subhash Chandran accompanied Kanyakumari on the ghatam.
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Example 13.2. Koraippu, idea 1 (Shrinivas 1995, 14:23–14:34).\(^{32}\)

| \(G, m, G,\) | \(\text{DSRGm}\) |
| \(G, m, G,\) | \(\text{SRGm}\) |
| \(G, m, G,\) | \(\text{RGm}\) |
| \(G, m, G,\) | \(\text{Gm}\) |
| \(G, m, G,\) | (9) [5] |
| \(G, m, G,\) | (9) [4] |
| \(G, m, G,\) | (9) [3] |
| \(G, m, G,\) | (9) [2] |
| (9) |

the right reduces the notes to numbers. Consider the manner in which Shrinivas created unchanging statements \((G, m, G,\)) but designed the gaps to reduce by one note in each instantiation: \([\text{DSRGm}] [\text{SRGm}] [\text{RGm}] [\text{Gm}]\).

Subsequently, in ideas 2 and 3 of the koraippu, Shrinivas experimented with statements of \((G, m, G,\)) and gaps of \([\text{DSRGm}]\). Example 14.1 is a transcription of idea 2. In idea 2, Shrinivas modified idea 1 in four ways. First, Shrinivas changed the statement \((G, m, G,\)) so that it decreased by three \((12 \rightarrow 9 \rightarrow 6)\). More specifically, what he decreased were the rests: \(G, m, G, \rightarrow G, m, G, \rightarrow G, m, G,\). Second, he interspersed the decreasing statements with gaps that remained fixed at \([\text{DSRGm}]\). Third, notice how at the second pulse of “first 7 clap” he performed the phrase \(\text{DSRGmG}\). Shrinivas could have used this as a building block for a simple \((6)[i][6][i][6] \text{mōrā} \text{of} \,[\text{DSRGmG}],[j][\text{DSRGmG}],[j][\text{DSRGmG}]\). Indeed this \(\text{mōrā}\) is precisely what Shrinivas played to complete idea 3 (see Example 15). But here in idea 2, Shrinivas ingeniously altered the pulse rate (naḍai) of \([\text{DSRGmG}]\) from four pulses per beat to three pulses per beat (shown in bold in Example 14.1) and then doubled it to six-pulses per beat (also in bold in Example 14.1). I have attempted in Example 14.2 to juxtapose the first and second ideas. Clearly one of the percussionists was impressed: Shrinivas’s creativity caused either Shrimushnam Raja (mridangam) or T. H. Subhash Chandran (ghatam) to exclaim “sābashi!” (well done!).


\[^{32}\] The final nine-pulse statement of \((G, m, G,\)) is in reality seven pulses \((G, m, G,\)) because Shrinivas designed the pattern so that \(G\) in bold here \((G, m, G,)\) fell on the \(e\text{dūppu}\).

\[^{33}\] One can also represent the idea numerically as \((444 \rightarrow 333 \rightarrow 222)\).

In idea 2, Shrinivas decreased the statements by three (12 → 9 → 6) through a reduction of the number of rests: (G,,m,,G,,) to (G,,m,,G,) and (G,,m,,G,). Subsequently, in idea 3 (Example 15) he performed the opposite: (G,,m,,G,) to (G,,m,,G,) to (G,,m,,G,,).

As pointed out, there are two fundamental ways in which Karnatak musicians modify just-performed mōrās in their next turn. The first way is to change the statements from, for example, (6)(6)(6) to (5)(6)(7). The change to (5)(6)(7) works because the total number of pulses remains the same (6+6+6=18 and 5+6+7=18). Once this modification has been made, it is common to reverse the idea to (7)(6)(5). In ideas 7, 8, and 9 of the koraippu (see Example 16), Shrinivas applied this mathematical procedure to three mōrās, each of which consisted of 48 pulses. Each mōrā consisted of statements that added up to 36 pulses, interspersed with two gaps of 6 pulses each. Shrinivas changed the statements from (15)(12)(9) to (12)(12)(12) to (9)(12)(15).


Idea 6: (15)[6](12)[6](9) = 48 total pulses
Idea 7: (12)[6](12)[6](12) = 48 total pulses
Idea 8: (9)[6](12)[6](15) = 48 total pulses

To conclude the analysis, let us turn now to the final kōrvai, transcribed in Example 17. In a performance of svara kalpana, the final kōrvai tends to be a large and pre-planned rhythmic design. Although I have selected the term “improvisation” to characterize the music I analyze, in this article the kōrvai could be considered a “composition.” As demonstrated in Example 3 above, kōrvas consist of three large units repeated identically (or nearly identically) three times.

Example 17. The final kōrvai (Shrinivas 1995, 19:54–20:14). Click here to listen.
The raw data presented in Example 17 can be analyzed best if one breaks down each unit into three mōrā-like phrases34 and one mōrā. For example, in Example 18 I have organized unit 3 accordingly. All three larger units have this structure. Notice how the first three mōrā-like ideas diminish from (8)[3][8][8][3](8)[3] to (6)[3][6][3][6][3] to (4)[3][4][3][4][3]. If one were to reduce the entire kōrvai to durations of pulses the kōrvai could be represented as in Example 19.1. Finally note that this kōrvai is precisely in line with Nelson’s (1999, 67) definition of kōrvai. It has two parts. The first part (phrases 1–3) of each unit consists of a gopucca yati, and the second part (phrase 4) consists of a mōrā, as highlighted in Example 19.2.

In the case study just presented, I first introduced the reader to the composition’s rāga (Kambhōji), tāla (Adi tāla, reṇḍu kalai) and the melodic theme that Shrinivas decided to use to end each round of svara kalpana improvisation. Next, I focused the analysis on four mōrā or mōrā-like ideas as well as one yati that Shrinivas created in part 1 of the improvisation. I revealed that Shrinivas did not limit himself to prototypical mōrās but rather altered the structure of (x)[y][x][y][x] in a variety of ways. The case study concluded with an analysis of sophisticated rhythmic-melodic designs Shrinivas created in the concluding portions of his improvisation: the koraippu and kōrvai.

**Example 18.** Unit 3 in the final kōrvai.  

34. I say mōrā-like because they have an extra gap: (statement)[gap](statement)[gap](statement)[gap].
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6.2 (2018)

Example 1. Durations in all three units of the final kōrvai.

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Example 2. Structure of one unit from the final kōrvai as a gopucca followed by a mōrā.

Gopucca Shape:

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<td>3</td>
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</tr>
</tbody>
</table>

Mora:

| 15 | 1 | 15 | 1 | 15 | 1 |

CONCLUSION

In this article, I first sought to explain the fundamental features of svara kalpana and to describe three “hybrid” rhythmic-melodic designs found in many svara kalpana improvisations: solfège added to yatis, solfège set to mōrās, and solfège combined with kōrvai. The purpose of these explanations and descriptions was to prepare the reader for the analysis of one musician’s approach to these designs in concert. My overall objective for the analysis was to use one performance to account for the moments in svara kalpana when musicians set sargam to solkaṭṭu-based rhythmic designs. The hybrid rhythmic-melodic nature of svara kalpana makes svara kalpana challenging: musicians like Shrinivas must effortlessly wed solkaṭṭu and its mathematical calculations to solfège patterns that subscribe to idiomatic rules of a particular Karnatak rāga.

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REFERENCES


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