Tadikinatom

Models and Building Blocks in Percussion Playing in South Indian Classical Music

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"*Tadikinatom* is common, but your look is different from mine," says South Indian percussionist NG Ravi (personal communication). With this statement, he defines performed music as an integration of performance and preparation, music as created during performance, controlled, guided, and informed by prepared models.

In this article [1], I propose to see music as informed performance. All music is created in performance [2], guided by pre-determined principles of various natures that are chosen by the performer. Not only is this perspective different from the traditional views on musical improvisation, it also diverges from the currently fashionable view of improvisation and composition as two extremes of a continuum of music making.

I will what I have learnt about South Indian classical percussion playing as illustration and proof of these ideas. Percussion performance in South Indian classical music is guided by learnt formulas and phrases; these models and building blocks determine the choices the musician makes in the course of performance. Preparation and performance cannot be seen as opposites but rather as interdependent collaborators. Decisions that govern the music making process can be made either during performance or beforehand (by the performer himself of herself, or by other musicians, that we then call "composers"). We will look at the factors involved in this decision-making and examine various types of techniques, models, and building blocks.

improvisation?

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[1] This article is an update / rewrite of my MA theses *Tadikinatom; Improvisation and its Guiding Principles in Percussion Playing in South Indian Classical Music* (Universiteit van Amsterdam, 2002) and *Ta Dhim—Taka Dhim—Takiṭa Dhim; Modular Improvisation in South Indian Classical Percussion Playing* (Conservatorium van Amsterdam, 2004). I would like to thank my professors dr. Wim van der Meer (UvA), dr. Richard Widdess (SOAS, London), and Rafael Reina (CvA) for their advice and support.

I use data collected during field trips in 1998, 2000-2001 and 2003-2004, which were partly financed with grants from the UvA (STUNT, 2000) and the CvA (Internationaliseringsfonds, 2003).

Thanks are due to my Indian teachers, MT Rajakesari, BC Manjunath, NG Ravi, VR Chandrasekhar, Anoor Anantha Krishna Sharma, Jahnavi Jayaprakash, and PR Mohan, without whose information, help, and support this study would not have been possible. Equally vital was the information obtained in interviews with *mridangists* Karaikudi R Mani, Guruyavur Dorai, TV Gopalkrishnan, TR Sundaresan, PG Lakshminarayana, Bangalore V Praveen, Vellore Ramabhadran, NG Ravi, Mysore N Sudarshan, HS Sudhindra, Bangalore K Venkataram, *ghātam* player Ghatam S Karthick, *kanjīrist* V Nagarajan, violinist and Head of the Music Department of Mysore University dr. Mysore M Manjunath, and musicologist R Satyanarayana. Unless indicated otherwise, all quotes from personal communication are from 2000.

Venkataram and his Bangalore Percussive Arts Centre as well as the (former) proprietors of the Karnatic Music Book Centre, TS Balasubrahmanian and TS Krishnamoorthy, were very helpful in suggesting and providing literature relevant to my study; I thank the libraries of the Indian Institute of World Culture (Bangalore) and the College of Fine Arts of Mysore University for allowing my to examine their literature.

Marcie Frishman, dr. Leo Plenckers, Ludwig Pesch, Rahel Weber, Alex Romaniuc, and Jan van Hulzen helped with useful comments and suggestions.

[2] We shall look only at music performed in real time by musicians. Recorded music and notated music not (necessarily) meant for performance are not included in this study.

Traditionally, the concept of "improvisation" is described as musical freedom or unprepared musical creation, denying the importance of composition, practice and other forms of preparation. According to the Oxford English Dictionary, the word is derived from the Latin "improvisus", "unforeseen": "create and perform (...) spontaneously or without preparation". This definition of improvisation opposes it to composition, which is supposed to fix the music before performance. The polarity originates from the fact that western art music in its presently most popular form—the music from the classic-romantic era—is notated and is therefore believed to be entirely fixed. "According to this model, composers create works and performers reproduce them" (Benson 2003:9). The performer of these supposedly fixed works is seen "more as a middleman than as co-creator" (Benson 2003:13).

The growing status of jazz and non-western musics in the second half of the twentieth century has resulted in an increase of academic attention for these musics (see Nettl 1974). Studying the processes of music making in various cultures—and examining how musicians native to the tradition view and describe those processes—leads to the traditional perspective being challenged for being based solely on (conservative) ideas about western art music (which in turn are re-evaluated themselves). (For descriptions of improvisation in western art music, see Bailey 1992; for more views on the level of fixedness in western art music, see Benson 2003.)
According to Nettl (2001:95-96), a culture's own classification of ways of making music and its "assessing of the relationship between what is memorized or given and the performance understanding of what is memorised" determines the "prominence of improvisation".

> In virtually all music cultures there is music that is improvised. Societies differ, however, in several ways: the degree to which improvisation is distinguished from pre-composition; the nature and extent of the musical material which improvisers use as a point of departure or inspiration; the kinds and amounts of preparation required of improvisers, either in their musical training or in relation to individual performances; the relationship of written to oral transmission; and the relative social and musical value assigned to improvisations, compositions and the musicians who practise them. (....) The relationship between pre-composition and improvisation may be intricate. (Nettl 2001:94-95)

A new view on improvisation is developed: the "simple line of demarcation between improvisation and pre-composition" (Nettl 1998:16) is discarded. "Would we not do well to think of composition and improvisation as opposite ends of a continuum (...)? (....) The juxtaposing of composition and improvisation as fundamentally different processes is false. (....) The two are instead part of the same idea" (Nettl 1974:6).

Nettl (1998:1, 2001:94) defines musical improvisation as the creation of a musical work, or its final form, in the course of performance; according to Widdess & Nooshin (2006:104) it is "those aspects of a musical performance that are generated by the performer". Other often-used definitions are similar (see Nettl 1998:10 and Lortat-Jacob 1987:67-70).
Performance comes to be seen as the sum total of fixed, pre-composed elements and improvisation. Both are believed to always be part of performance: "to some extent every performance involves elements of improvisation, although its degree varies according to period and place, and to some extent every improvisation rests on a series of conventions or implicit rules" (Nettl 2001:94).

> Even the performance of a pre-composed musical work, fully notated by the composer, will usually include elements that are not pre-determined, such as nuances, ornamentation or variations added by the performer in the course of performance, and today most musicologists recognise such elements as 'improvisation'. (Widdess & Nooshin 2006:104)

Nettl (1998:13-14) uses the South Indian composition form *rāgam-tāṇam-pallavi* to illustrate the continuum. In this form, he describes, various forms of improvisation—with varying amounts of freedom for the performer—are used, ranging from improvisation limited only by a scale and its characteristic melodic formulas, to improvisation restricted by a metre, a melodic theme that often recurs, and all sorts of rhythmic and melodic models. However, with the increase of types of controlling principles, the distinction between composition and

improvisation becomes vague: “In Karnatak music the formal techniques of both composed songs and improvisations include repetition, variation, melodic sequences and returns to the point of departure” (Nettl 2001:95).

The approach described above acknowledges the multitude of factors that (may) determine performance, and discards the traditional idealised view. Nevertheless, the old dichotomy is still present in this theory: composition and improvisation are still considered opposites, be it not in a dualistic sense.
What we need is a view that incorporates both the determining elements in music and the importance of the moment of performance. Music is, after all, a dynamic art; music is created by a musician’s actions at a certain time. As jazz saxophonist Eric Dolphy (1964) put it, “after the music’s over, it’s gone—in the air. And you can never capture it again.” In *Tadikinatom* (2002:22-23), I made an attempt at such a view, arguing to see all music as being improvisational. Benson (2003:x) also proposes “an improvisational model of music”. “Performers—even when performing music that is strictly notated—do not merely ‘perform’ but also ‘improvise’ upon that which they perform” (Benson 2003:25-26).
However, though these views acknowledge the dynamic, in-the-moment nature of musical performance, they do not recognise enough the crucial position of guidelines, models, and preparation.

> The idea of preparation is very important for improvisation, where real-time cognitive processing is often pushed up near its attentional limits (....) For improvised performance that aims at artistic presentation, where discrepancies between intention and result must be kept within strict bounds, practice must attempt to explore the full range of possible motor actions and musical effects, to enable both finer control and the internal modelling of discrepancies and correction procedures, including feedforward. (Pressing 2000:136)

Mak & Jansma (1995: 103-4) state that planning in advance determines the choices that are made while playing. This planning is conscious; it activates certain sets of knowledge about the form, the idiom, the composition, the style. By reflecting on the musical results, musicians can discover new possibilities. Musical thinking, in whichever form, takes place within rules, either self-made or imposed by tradition. These limits are needed to make the exploration space smaller and thus workable for our cognitive system, that needs to know which links and connections should be activated.
According to Mak & Jansma (1995:96-99), certain long-term memory plans are used in performance; the short-term memory is not capable of dealing with each note separately. Performance, no matter where from, is based on fixed idiomatic rules and fixed guiding principles. In music in which the order and / or content of musical sections are decided on in performance (informed, of course, by preparation), musical formulas can be used as a frame of mind more than literally. The bigger a musician's repertoire of formulas, the more possibilities he or she has.
Brown (1965:140-141) mentions how “musical improvisation in any context depends on the rearrangement of learned and traditional materials, no matter how unconscious and unorganized they may be, and no matter how far the performer moves from his established base. Improvisation never starts from zero”.
“The student must in some way learn the model before he can improvise upon it”, says Nettl (1974:15). According to Anderson Sutton (1998:71, 86), the performer should articulate the model by referring to it, as frequently as required by the idiom. Inventiveness comes in choice of existing formulas, of building blocks. “Musical improvisation (…) is not free expression constrained only by the inspiration of the moment, but a complex and multilevel process, one that must be learned and practised”.

Whitehead (1997) describes how around 1960, the term “instant composing” was coined by both guitarist Jim Hall and piano player Misha Mengelberg, countering notions “that improvising was (...) an art without a memory, existing only in the moment, unmindful of form”. On his website, bassplayer Eric van der Westen defines improvisation similarly: “Improvising is making a new composition with the information you have. In other words, instant composing” (my translation). Nettl’s idea from 1974 comes to mind: he proposes to

"speak perhaps of rapid and slow composition rather than of composition juxtaposed to improvisation?" (Nettl 1974:6).
Han Bennink (quoted in Bailey 1993:123) defines improvisation as "examining an idea from every angle—being busy with the idea. That's the whole thing. Looking for each way to come to the middle of it". Is that not what a "composer" does? The only difference, which is not of structural importance, is that the examining is done by the performer, in real time. Bennink's definition and the idea of "instant composing"—reminding us of the second meaning listed in the Oxford English Dictionary: "make from whatever is available"—integrate pre-determined elements and performance.
Of course there is also the fact that a composer, someone who prepares musical performance for other people, conveys his or her own ideas, visions, aesthetics et cetera in his or her instructions. However, the performer turns the instructions into sound. Once used in performance, the origin, the authorship of the model is not important. The idea of the music is important, and the performer uses his or her preparation, whether that is technical exercises, small building blocks to be combined in performance, a sound ideal in the performer's mind, a detailed set of instructions from someone else, or anything else that the performer chooses to use to produce his or her music. (The ways in which these ingredients, instructions, inspirations are used of course differ for different idioms.)

Pressing (2000:129-30) describes the physical activity during performance in a number of steps. Initial activity in the nervous and muscle systems leads to "a complex sequence of actions" of "muscles, bones, and connective tissue" (the actual act of playing), which is monitored and "set into cognitive representations and evaluated as music", after which "further cognitive processing in the central nervous system generates the design of the next action sequence and triggers it", in other words, the whole sequence starts again. He assumes that the strongest distinction between improvisation and fixed performance lies in the monitoring and evaluation of both of the activity of playing and its sounding results, and the choices based on these.
Important here is, that the actual process of producing music is the same, that only in the content of certain steps, and therefore in their results, there are differences—of a sliding rather than an opposite nature, because the ways in which a performance is guided—the choices a musician has on how to decide what to play—cannot be classified dualistically. Control can come from a variety of parameters, in various combinations and to various extents.
Berliner (1994:5) implies that improvisation is a compositional process. Blum takes this idea a step further in his definition of the term "composition" (from the stem "composit-", from "componere", which means "to put together").

> [Composition is] the activity or process of creating music, and the product of such activity. [It results in] pieces of music that remain recognizable in different performances. (....) Both the creation and the interpretation of compositions in this restrictive sense are commonly distinguished from improvisation, in which *decisive aspects of composition occur during performance*" (Blum 2001:186, italics mine).

(As an aside at this point, we may note that Blum implies that "improvised" pieces are not recognisable in different performances. This may be true for some "free improvisation", but there are many styles of music that is generally understood to be "improvised" or have "improvisation" as an important feature in which clearly identifiable pieces exist.)
We can conclude that performance, the act of music making, is what generates music. Performance is informed, guided, controlled by pre-determined and learnt elements.

Sloboda (1993:13) calls the informing, guiding, and / or controlling element the model, and describes it as a "large set of formal constraints which comprise a 'blueprint' or 'skeleton' for the improvisation. (....) A model which is, in most cases, externally supplied by the culture, and which he embellishes and 'fills in' in various ways." In his view, the pre-existence of such a model is what distinguishes improvisation from composition. However, taking into account that a model is a learnt and practised piece of information upon which performance relies, that guides it, gives it direction, we see that a model can be of several kinds, and that it can be used in several ways in performance. The shape and role of the model depend on the style of music, its tradition, the level and status of the performer, his or her mood etc. It can be a written

score, a melody, a rhythmic pattern, a chord progression, an atmosphere, a repertoire of phrases, a formula, idiomatic / stylistic considerations, patterns automatised in practice, the input of other musicians, the occasion for the musical event, the audience's reaction, physical abilities, and so on. "There are, then, very diverse kinds of models used in the world of improvisation," says Nettl (1974:12), and the only problem I have with his statement is that he limits the use of models to the world of improvisation, rather than the world of music performance.

As we saw, the origin of the guiding elements is not important once they are used in performance, as it does not make any difference to their role. Consequently, if music is created in the course of performance, shaped by pre-determined elements whose nature and origin do not make a fundamental difference for the way in which they are used in the process of producing music, then the distinction between improvised music and composed music becomes irrelevant, either as dualistic opposites or as extremes of a continuum.

Blum (2001:187) mentions how models could serve as possible limits, constraints that "severely limit the scope of permissible variation". However, rather than limiting a performer's possibilities, models offer possibilities by providing a framework for the performance. Using models of various kinds, a performer can tell his or her story. "What absolves the improviser from the task of evaluation and long term planning is the relatively rigid formal 'frame' within which his improvisation takes place, and which dictates the large scale structure of his performances. Because this frame persists over many improvisations, the performer builds up a repertoire of 'things that have worked well in the past'" (Sloboda 1993:149).

For so called composed music the model is more detailed and describes both form and content, but there is no essential difference between these ways of making music. (The idea that notated music cannot function as a model is proven wrong shows as soon as we look at renditions of the same piece by different performers.) Models and guidelines provide (material for) form and content of performed music, and absolve *all* musicians from the tasks of evaluation and long term planning. How directly the performance is based on a fixed idea, how strictly it follows rules and models, varies not only for different musical cultures, but also within cultures, genres, and even musical pieces themselves.

south indian classical percussion performance

The Sanskrit term *manōdharma* is often defined as improvised music in the conventional meaning of the term: "improvisational and (…) produced instantaneously and without forethought" (Menon 1995:115). According to Lakshminarayana (personal communication), however, "it is difficult to define *manōdharma,* because many things are preset." This difficulty disappears when we leave behind the idea of improvisation as the opposite of composition, when we realise that performance consists of using and combining—either on stage or before—learnt components. Learning about percussion playing in South-Indian classical music showed me how performance and pre-determined elements work together in an inseparable way to produce music [3]. Looking at it this way, we can understand why the late

[3] I went to India as an improvising musician, a percussionist. My aim was to learn about musical improvisation, to understand the way South Indian percussionists learn how to shape their music in the course of performance. Studying the *mridaṅgam* helped me understand the organisation of South Indian rhythm and its concepts of improvisation.

According to Hood (1971:34-35), "the very best way to train the ear is by learning to sing and to play musical instruments yourself (….) making music is the most direct mode of music discourse." Practical study, participation rather than observation, learning how to play the initial lessons, is, as Brown (1965:x-xi) puts it, "one of the most reliable means of acquiring an understanding of performance techniques." By studying the initial lessons and exercises, the technique of the instrument, and by trying to understand the underlying philosophical concepts, I acquired the tools to reach an understanding of the inner workings of the music. It enabled me to start understanding it, analysing it, recognising its building blocks and ingredients. Nettl (1983:324) describes how learning music means learning a musical system, "and this in any case consists of many (and sometimes various types of) discrete units that a musician (...) learns to manipulate. (...) The method of teaching breaks a system down into these basic units. (....) In order to establish the grammar of a music, one must identify these

Venkataram (personal communication) equalled *manōdharma* to playing practice, to performance.

Nettl (1983:325-326) describes how music education in South India usually starts with learning vocal music, even if the student will eventually be an instrumentalist, learning "fundamental units such as rhythmic and melodic motifs" that will later return in compositions and "in the improvisation that forms much of the core of musical performance. The emphasis is upon memorizing materials that will make it possible for one to improvise". Blum (2001:187, talking about learning music in general) describes how such a deconstruction is useful: "Systems of solmization may assist musicians (...) in mastering patterns that are useful in composition during performance".
The curriculum of a South Indian drumming student consists of playing techniques (fingerings), characteristic phrases, characteristic structures of e.g. *kaṇakku*s (see below) and so on: the fundamental units, the material that will later return in performance. The content of the lessons themselves is roughly planned, but not fixed: "the choice of patterns depends on many small imponderables like the mood of the teacher, or the day to day needs of the student and his particular physical capabilities and limitations. As the lessons are given, traditional procedures and patterns move in a constantly shifting re-arrangement that is always fresh and creative" (Brown 1965:107). This manner of teaching also acquaints the student with considerations involving the choice of patterns and techniques in a musical situation.

An example of the basic units of percussion playing that are taught in the initial lessons is the solmisation of the subdivision of the beats of the *tāla*, which serves as a practice and memory aid and facilitates the construction of new formulas.

tisra	3 *mātrās* (units) per *akshara* (beat)	takiṭa
chatusra	4 *mātrās* per *akshara*	takadimi
khaṇḍa	5 *mātrās* per *akshara*	takatakiṭa
tisra 2nd speed	6 *mātrās* per *akshara*	takatakadimi
miśra	7 *mātrās* per *akshara*	takiṭatakadimi
chatusra 2nd speed	8 *mātrās* per *akshara*	takadimi takajono
sankīrna	9 *mātrās* per *akshara*	takadimitakatakiṭa

The order of the groupings of syllables can be altered (e.g. *miśra* can also be takadimitakiṭa).

Fingerings, taught in the beginner's lessons— what strokes are used where, the sound of the strokes, whether or not grace notes are used, the *pharans* (fast filler phrases), the characteristic phrases—enable and affect decisions about the musical content of patterns, techniques, formulas. Learning *pharans*, timekeeping patterns and cadential formulas (see below), provide the building blocks for performance. While learning the patterns, the student learns about making decisions that determine their shape and development during performance.
One of the parameters for decision-making is the structure of the *tāla*.

> [*Tālas*] "have their own individuality and their distinct structures or groupings influence the drumming in a significant way. In this manner *tālas* themselves provide specific rhythmic contours, and the regular beats in a *tāla* cycle is the foundation upon which off-beat timing and cross rhythm are built." (Sankaran 1986:104)

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units and plot their interrelationships. A study of how a music is taught by its practitioners can give insight into the nature of the grammar." For an extensive examination of learning a musical system, see Berliner 1994.
With practical musical goals like this, the question of whether one should be an observer or a participant, an insider or an outsider, ceases to be much of an issue: as a musician, one wants to learn the music, and as a student of a musical instrument, one is a participating researcher from the start. Nettl (1983:259-270) deals with this subject, using various examples from his own fieldwork. See Hood 1971, Merriam 1964, Nettl 1983 for further discussion of the impact of the researcher on communities.

Brown (1965:6) states, perhaps somewhat optimistically, that the substructure—whether indicated with the krīyā, the movements that show the *tāla*, or not—is always in the mind of the player and the audience.

The construction of both timekeeping patterns and *kaṇakku*s, taught in basic and advanced lessons, is important for structural considerations: the structures become internalised and are used in performance—either as learnt, or to inform combination and permutation while playing. The percussionist can either fill in the models he learnt, adding and / or replacing strokes and stroke combinations, or construct his own, based on the learnt models. In practice, the distinction between these two ways is hard to make. Wade (1979:142) also observes this: "the basic idea behind rhythmic development in Karnatak drumming is to take a set of primary materials—a wealth of forms and a wealth of patterns—and constantly rearrange, change, and extend them." Sankaran (1986:101) elaborates: "there are many guidelines to our improvisation offered by tradition and in the presentation of our music, tradition and creativity are indissolubly merged. To develop a theme means to unfold its latent energies, to search out its capacities for growth and bring them to fruition. Thematic development represents the constructional as well as creative element in music." "The tradition has given us a number of models that provide scope for a systematic improvisation" (Sankaran 1986:104).
An important developmental technique is variation—decided in performance or before. A pattern is slightly altered, and there are various endings for a pattern to choose from. In the lessons, these variations are fixed. In later lessons and in performance, a *mridangist* chooses which of the variations he will use in a particular moment, and how he will embellish them.

Example 1: Timekeeping Pattern with Variations

	Nam	Dhin	Dhin	Nam
	Kitathaka	Dhin	Dhin	Nam
	Dhin	Kitathaka	Dhin	Nam
variation a.	Ta Thom	Kitathaka	Digutira	Kitathaka
variation b.	Thalong. thom	Kitathaka	Digutira	Kitathaka
variation c.	Thomkitadhi	Thomkitadhi	Thalong. thom	Thom Ka
variation d.	.	Tham Thaka	Digutira	Kitathaka

This is the first timekeeping pattern (see below) in the lessons for first sketch *ādi tāla* (8 beats), in the Karaikadudi R Mani tradition [4]. The first line is the basic form of the pattern; lines two and three are slight variations thereof. The fourth line is the actual variation, with which a cycle of the pattern is finished. Throughout the rendition of the lesson, the variation gets more and more important, to culminate in a short cadential formula, an *ardi*, which concludes the development of the particular variation. After all variations have been dealt with in this way, the section of the lessons that is based on this timekeeping pattern is concluded with a *kōrvai*, a larger cadential formula that does not follow the *tāla* and uses the material of the variation more freely (see below). By varying the fourth line and basing *ardis* or *kōrvais* (see below) on the variations, the student learns different possible variations and how they fit the music on a larger scale. He gets acquainted with the various stroke combinations of the idiom and with the musical parameters that play a role in choosing the appropriate pattern in performance.

Example 2: Another Timekeeping Pattern with Variations

TV Gopalakrishnan teaches how to develop variations in a way that leaves the student a choice. In a timekeeping pattern, he makes his students choose the last line from a number of options.

[4] South Indian music knows a number of playing traditions, called *banis*, comparable to North Indian *gharanas* (though not as strictly organised, it seems). To some extent, the lessons vary for different traditions, though, in Brown's (1965:289) words, "the range of difference is very small compared to the range of similarity". For a thorough analysis of percussion solos by players from different traditions, see Nelson (1991).

Nam	Dhin	Dhin	Nam
Nam	Dhin	Dhin	Nam
Nam	Dhin	Dhin	Nam
Taka	Taka	Taka	Taka

Options for the fourth line are Takadimi Takadimi, Takadimi Talan . gu, Takadimi Tarikitatarikita, Takadimi Tathom . ., Ta . Ta Tadikinatom.

After this is mastered, the elaborate version of the pattern can be used.

Nam	Dhin	Dhin	Nam
Namnam	Dhin	Dhin	Nam
Tarikita	Dhin	Dhin	Nam
Taka	Taka	Taka	Taka

Options for the fourth line are Tataku Tataka Jina and Tajam Tirakita Kitathaka Kitathaka, this last one leading into a final variation.

Nam	Dhin	Dhin	Nam
Tajam	Tirakita	Kitathaka	Kitathaka
Nam	Dhin	Dhin	Nam
Tajam	Tirakita	Kitathaka	Kitathaka

The sequence is concluded with an *ardi* (see below).

	1	2	3	4	5	6	7	8
cycle 1	Tajam	Tirakita	Kitathaka	Kitathaka	Dha	.	Tajam	Tirakita
cycle 2	Kitathaka	Kitathaka	Dha	Kitathaka	Kitathaka	Dha	Kitathaka	Kitathaka
cycle 3	Dha							

Systematic development is essential for the possibility to develop variations and combinations on the spot: it gives a clear requirement, a clear outline for fast composition (in the literal meaning of "putting together") of phrases and formulas.

Example 3: Systematic Calculation of a Solkat

The systematic development of a *khaṇḍa chāpu solkat* (an *ardi*, in the shape of a gopuccha *yāti* in its most developed form, see below), a second sketch lesson Rajakesari taught me, illustrates this desire for logic.
The basic calculation is very simple: two cycles of *khaṇḍa chāpu* have 10 beats, or 20 half beats. Playing the simplest figure available, Takadhina, lasting four half beats (i.e. second speed, hence singly underlined), twice, with a *kārvai*, a gap of four half beats as well, fills these: 4 + 4 *kārvai* + 4 + 4 *kārvai* + 4 = 20. The *kārvai* can be silent or attacked (see below). In this case, it is attacked: the stroke Dhin is played. Dhin is also played to conclude the phrase on the downbeat of the next cycle.

	1	2	3	4	5	|	1
cycle 1	Ta Ka	Dhi Na	Dhin .	. .	Ta Ka		
cycle 2	Dhi Na	Dhin .	. .	Ta Ka	Dhi Na		Dhin

Now we double the speed of the phrase (not the *kārvai*). Thus, the phrase has to be played twice to fill the cycle.

	1	2	3	4	5	|	1
cycle 1	Takadhina	Takadhina	Dhin .	. .	Takadhina		
cycle 2	Takadhina	Dhin .	. .	Takadhina	Takadhina		Dhin

Decreasing or increasing patterns are often preferred over equal patterns. Thus, 2 + 2 + 2 is replaced by 1 + 2 + 3. (This is the *solkat* as we actually saw it in the lesson; the previous steps were not given.)

	1	2	3	4	5 |	1
cycle 1	Takadhina	Dhin .	. .	Takadhina	Takadhina	
cycle 2	Dhin .	. .	Takadhina	Takadhina	Takadhina	Dhin

To take the use of addition and reduction even further, the *kārvais* are then also altered: they are decreased from 4 to 3 *mātrās*. The two *mātrās* we "win" in this way are added to the last phrase, which is slowed down into *tisra* (triplets) so it still consists of three times the four-stroke phrase.

	1	2	3	4	5 |	1
cycle 1	Takadhina	Dhin .	. Taka	dhina Taka	dhina Dhin	
cycle 2	. .	Takadhi	na Taka	dhina Ta	kadhina	Dhin

Gradually, once the materials are memorised, internalised and the student starts to understand how things are formally put together and developed, while he is still absorbing "to the last possible degree his teacher's repertoire, style, and very mannerisms of improvisation" (Brown 1965:113), he is expected to contribute more himself, testing and refining his understanding.

> "Although the student is learning a truly enormous vocabulary of set patterns in drumming, their presentation (much dependent on the fact that the tradition is oral) keeps him constantly at the breaking edge of creative growth. Tradition and creativity are indissolubly merged, and within a short time he will have a hard time knowing whether he is playing patterns that the *guru* has given him or is creating new ones of his own within the system." (Brown 1965:141)

Learning models and individual decision-making are both part of the development of a South Indian drummer.
The learnt stock phrases can be used in ways that depart from being a variation on a pattern. Nettl (1983:326) mentions the "need to practice the building blocks of the music for many hours at a time, directing one's effort only indirectly to what will happen in a performance (....) The Indian musician studies building blocks of varying degrees of complexity, units that gradually become increasingly like real music". From the extensive repertoire of formulas and stroke combinations, building blocks are chosen, combined, adjusted and transformed in the course of performance in many ways, reminding us of Bennink's definition of improvisation: taking an idea and examining it from every angle. In the (initial) lessons, the combinations are fixed.
Brown describes how the *mridangist* shapes his playing and adds material. The insertion of new patterns may be before, inside, or after an already established larger pattern.

> "Smaller patterns may be fragmented or extended. They may be arranged in certain formal configurations of a pre-determined type (...). The basic shape of a main germinal pattern may be altered so that it will fit, for example, the structural framework of another *tāla*. All of these procedures except those specifically related to *tāla* are learned in the preliminary lessons." (Brown 1965: xvi)

Manipulation of this kind, either before or during performance, is considered essential, the possibilities limited only by the artist's taste and skill; according to R Srinavasan (quoted in Bailey 1993:52), "the enemy is mere imitation without imbibing the inspiration which makes the art a living thing." As Brown (1965:60) describes: "each performer, in a sense, has his own style of playing. Because he has a great deal of freedom in the way in which he puts together the *materia technica*, his style may vary from one performance to the next".

models

All models and techniques described below share the same building blocks. The choices and adjustments are informed by a number of characteristics, including knowledge of the genre

and idiom, the *tāla*, the technique that is used, the activity level, the characteristics and known preferences of the main artist (singer or main instrumentalist), the drummer's mathematical skill and speed, the size of his repertoire (vocabulary), his technical level, and whether he is the *mridangist*, the main percussionist, or a player of one of the *upa pakka vadyam*, the secondary percussion instruments.

South Indian percussion techniques can be classified in two categories: timekeeping patterns, that follow and outline the *tāla*, and *kaṇakku*s, patterns that break up the flow of the *tāla* by means of regrouping the *mātrās*, the units. At first sight, this division may look rather artificial, considering that in some timekeeping patterns, the so-called *nadais* (see below), the grouping of *mātrās* is changed as well. However, as we shall see, the difference between the two categories is not the use of calculations as such, but whether or not the flow of the *tāla* is supported.

timekeeping patterns

A timekeeping pattern is a simple, repetitive pattern "syncopated or not, in any *gati*, that serve[s] a primarily propulsive, rather than cadential function" (Nelson 1991:29). Contrary to what Sankaran (1994:139-140) states, timekeeping patterns are not limited to the use of simply structured *chatusra*. Mani and Sudarshan emphasised that timekeeping patterns can use any *gati*, as long as the pattern retains a forward motion that supports the flow of the *tāla*. As Sankaran (1994:140) points out, different timekeeping patterns exist for different tempos. They play an important role "in accompaniment and to link the various sections of a solo" (Sankaran 1994:40-41, see also Sankaran 1986:106).
Drummers are free to vary existing patterns in any way they see fit, or to develop new ones, as long as the *tāla* is clear for the main artist. The choice of stroke is open to a certain extent, and *pharans* and other filler variations can be introduced when the drummer likes to, as long as it suits the music. The song affects the choice of pattern and the use of accents, bass patterns and other elements that follow and support it. According to Sankaran (1994:140) the articulation of the *sarvalaghu* pattern, the way it is used in the context of the song, and the transition between different *sarvalaghu* patterns depend on the taste and the skill of the drummer. The tempo, the mood, the singer's use of gamakas, and the singer's taste also determine what the drummers do with timekeeping patterns.

Timekeeping patterns are of different kinds, as many of my informants, including Mani and Rajakesari, explained. "They may reinforce the beat by organizing pulses in such a way as to emphasize its structure, or they may use a contrasting organization of pulses, thereby generating a more complicated relationship with a beat or pair of beats" (Nelson 1991:20).
A *sarvalaghu* pattern is a timekeeping pattern that uses no complex calculation (see below) and that more or less clearly reflects the inner structure of the *tāla*. Sharma (1992:66) describes *sarvalaghu* as "a free unconstrained movement of rhythm".
As Venkataram (personal communication) explained, *sarvalaghu* patterns are used mainly when the main artist sings without the use of calculation. Sudarshan (personal communication) expressed his doubts about the proper use of *sarvalaghu* patterns: he suspects that they are mainly used when the drummer does not know the composition that is being played and therefore resorts to simply keeping time. Shivu (personal communication) labels this defensive playing, realising that situations of this kind cannot always be avoided.
A *nadai*, also called *ṭhēkā*, is a timekeeping pattern that uses calculation. According to Mani (personal communication), the techniques of permutation and combination (see below), possibly involving cross rhythms, are used in *nadais*. Sometimes, however, the pattern should fall on the beat, "because we are no machines".
Nadai bhedam (*nadai* change) is the change of the subdivision of the beat. *Nadai* here means *gati*, subdivision, a meaning not to be confused with its meaning of the timekeeping pattern described above. *Nadai bhedam* is usually done in the different sections of the *tani avartanam*, the percussion solo. According to Sudarshan (personal communication), it can be used in climactic moments in accompaniment as well. Which pattern is used when relates to the gaps and other features of the composition and the taste and competence of the main artist.Satyanarayana (personal communication) expressed the view that usually only *chatusra*

and *tisra* are used. He also said that the *gati* should not be changed too often, both because it is hard to do for the performer and hard to follow for the audience.
Nadai bhedam can be prepared by regrouping the subdivisions of the previous beats following the new subdivision, the *jāti* technique (see below).

Patterns that outline a metre and articulate the subdivision of the beat can be "transposed" into different speeds. By changing the subdivision of the beat while keeping the pattern and its accents going, a new tempo, with the original groove, is established. In the lessons, these tempo changes are used as short variations within a pattern, or as a "pivot rhythm" to change from one subdivision to another.

Example 4: Pivot Rhythm from Chatusra to Khaṇḍa

chatusra	Nam Dhin Ka Nam	Ka Nam Dhin Ka	Nam Dhin Ka Nam	Ka Nam Dhin Ka
	Nam Dhin Ka Nam	Ka Nam Dhin Ka	Nam Dhin Ka Nam	Ka Nam Dhin Ka
khaṇḍa	Nam Dhin Ka Nam Ka	Ta Ka Nam Dhin Ka	Nam Dhin Ka Nam Ka	Ta Ka Nam Dhin Ka
	Nam Dhin Ka Nam Ka	Ta Ka Nam Dhin	Ka Dhi . Ka Nam	Nam Nam . Ka

kaṇakkus

*Kaṇakku*s (the word is Tamil for mathematics), also called calculations, are patterns that have an inner structure that, rather than following the *tāla* structure, is shaped by a pulse-independent regrouping of the total number of *mātrās*. (For more on *kaṇakku*s, mainly *ardis* and *kōrvais*, see Nelson (1991:43-86). For thorough descriptions and examples of various types of regroupings, with their calculations, see Rajagopala Iyer & Krishna Murthy (2000).) In other words, *kaṇakku*s break up the steady flow of the *tāla*, creating tension that is often used as a cadence, emphasising a structurally important moment in the music (e.g. the beginning of a new section) by leading to and landing on it.
The musicians move

> far away from the orbit of the tala cycle and then they try to create puzzlement or confusion in each other's minds while keeping the correct tempo and the tala cycle in the subconscious mind, and then both return exactly to the sam and re-establish the original plane of music. This is supposed to be the most exciting and thrilling section of the whole performance. (....) In this section both artistes sometimes apply not only various metres but cross rhythms too. (Ghosh 1983:189)

The complex calculations can be done on the spot, but are often decided on beforehand. However, it is mainly the calculation, in other words the framework, that is fixed, not necessarily what musical material that framework is filled with.
*Kaṇakku*s are of two types: those that temporarily disturb the pulse of the *tāla* by replacing it with a pulse in a different tempo, i.e. impose a different pulse on the original one, and those that do so by playing phrases in systematic odd groupings. Increasing and/or decreasing phrases, much used in South Indian classical music, fall in the latter category.

polypulses

A *polypulse* occurs when a new pulse layer, indicated by a rhythmic pattern—"a series of patterned impulses, the criteria for the use of the word 'pattern' being the presence of one or more repetitions of a group of one or more pulses" (Stewart 1964:68)—is superimposed on the original pulse, usually for a short period of time, while retaining some relation to it. The superimposed layer may be displaced, it may be half tempo, or "two [*dvikālam*], three [*catuskālam*], four, or any number of times faster or slower than the first. It may even stand in a complex relationship to the pulse, say three to two, or five to four, but it will always be derived from, and, in a sense, provide an embellishment of, that original pulse movement" (Brown (1965: 2-4). The suggested speed change of the music creates a tension that is resolved when returning to the original pulse, emphasising "the ultimate unity which arises with the resolution of this discord" (Stewart 1964:71).
For all *kaṇakku*s involving the substitution of the original pulse with another regular pulse, however complex the relation of the new pulse and its subdivision to the original pulse may

be, the drummer's decisions are more or less identical to the decisions in timekeeping techniques. Simple and clear patterns are played in the superimposed pulse, because the desired polypulse feeling is only obtained by clearly stating the new pulse. Using any calculations in the new pulse, apart from small cadential formulas once the new pulse is firmly established, would break the flow, which would destroy the feeling of a new pulse.

Halving and doubling the speed is a formal feature of the *pallavi* form, a rhythmically oriented type of piece in which the technique is called *trīkālam*, meaning three tempos. *Trīkālam* is usually done in *chatusra*, with the addition of one or optionally more speeds of *tisra*, but can be done in any *gati*, as Shivu told and showed me (personal communication). Doubling and halving the tempo are used apart from this formal use as well, by drummers as well as by other musicians. According to Lakshminarayana (personal communication), the use outside the *pallavi* context, e.g. in slow *krītis*, is less systematic. He also told me that various speeds are used in some *kōrvais*. According to Ravi (personal communication) however, different speeds are not used in *krīti* rendition because the meaning of the lyric only comes out in the given speed. In percussion playing it is used, though mainly in the percussion solo.

The *jāti technique* is a more complex relationship between a basic pulse and a superimposed one occurs when the *mātrās* of the original subdivision are regrouped in regular groups. The result is a pulse in a different tempo with a different subdivision. For example: the original division of the original pulse is *chatusra*, so three beats have twelve *mātrās*. By regrouping these in groups of three, we get four beats in the time of the original three, subdivided in three.
Ravi (personal communication) stressed the importance of the interpretation of this technique (as he did with all other techniques): he stated that the drummers all know these techniques, but they are without value if they are not properly used in performance. Choosing and using this material during performance is possible because it has been practiced over and over again. Drummers do not have to calculate how to use these things in the course of performance, they simply know by experience.
Brown (1965: 285) tells us that Palani Subramania Pillai sometimes regrouped *chatusra* in *khaṇḍa* and played variations and other formulas in it. "Such extensive cross-rhythmic alignment requires profound musicianship in the appreciative listener, not to mention what is required of the performer to be able to do it."

Example 5: Chatusra Feel and its Development in Tisra

By regrouping the strokes in a *tisra* pattern, *chatusra* is suggested for a few beats, creating a tension that is resolved when the original feel is restored on the downbeat of the next cycle. In a way, this process is the opposite of the technique described above (see example 4).

	1	2	3	4	5	6	7	8
cycle 1	Dhin . ka	Takita	Dhin . ka	Takita	Dhin . ka	Takita	Dhin . ka	Takita
cycle 2	Dhin . .	ka Taka	dhina Dhin	. . ka	Takadhi	na Dhin .	. ka Ta	kadhina
cycle 3	Dhin . ka	Takita	Dhin . ka	Takita	Dhin . ka	Takita	Dhin . .	ka Taka
cycle 4	Takadhi	na Dhin .	. ka Ta	ka Taka	dhina Dhin	. . ka	Taka Ta	kadhina
cycle 5	Dhin . ka	Takita	Dhin . ka	Takita	Dhin . .	ka Taka	taka Ta	kadhina
cycle 6	Dhin . .	ka Taka	taka Ta	kadhina	Dhin . .	ka Taka	taka Ta	kadhina

Once learnt, the changing of speed, by changing the subdivision, can be applied to any regular pattern a *mridangist* knows, as a filler pattern or to establish a different pulse for a longer while. Once established, the pulse does not have to be emphasised constantly, hence the *mridangist* can play other patterns, other formulas as well.

The musical material in the fixed polypulse framework is chosen in performance, in the same way a timekeeping pattern is freely chosen from the repertoire within the parameters of the song. In fact, timekeeping patterns are often played in the imposed pulse, to clearly show the contrast between the imposed and the original pulse. The context of course plays a role as

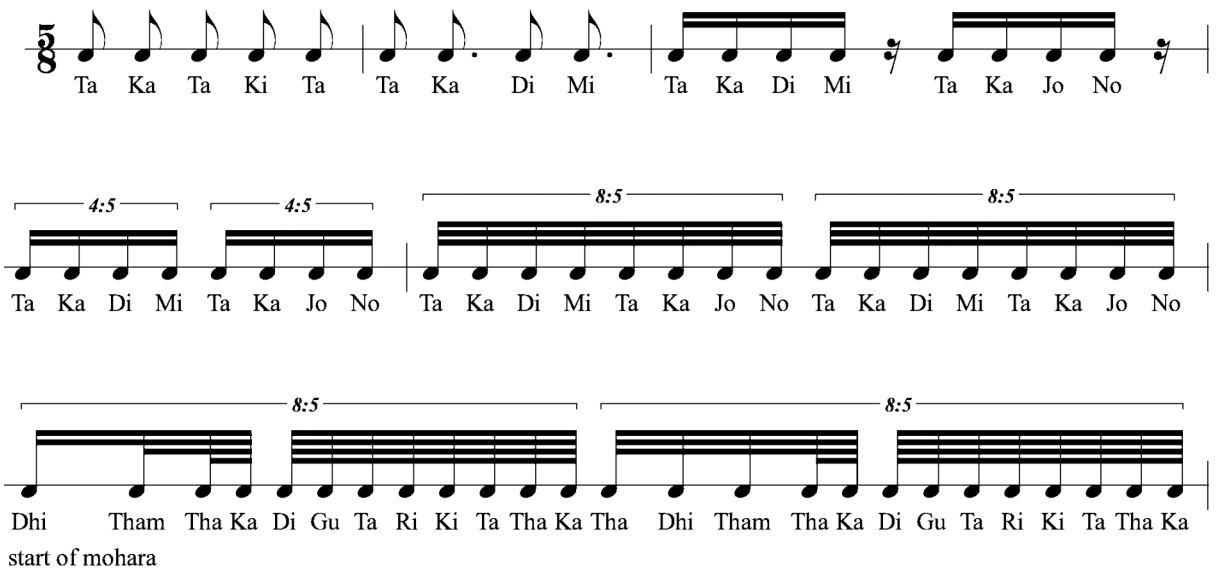
well. As with all *kaṇakku*s, whether or not polypulses can be used depends on the type of composition, its mood, the taste and competence of the drummer and the main artist, the audience, etc. A specific controlling principle for this *kaṇakku* is the number of beats it takes for the polypulse to resolve, i.e. to land on a beat or structural point.

In *motta kaṇakku*, different techniques are combined: the *nadai*, the subdivision within a superimposed pulse, is changed; in other words this is a *nadai bhedam* combined with a *jāti* technique. *Motta kaṇakku* is also called after the original *nadai* and the new *nadai*. For example, let us have a look at *tisra chatusra*. We take the above example: in the time of three beats, subdivided in four *mātrās* each, we have four beats, each subdivided in three. Now, we replace these three *mātrās* by four: *nadai bhedam* within the new pulse.
This polyrhythmic technique is rather controversial. It is said to have originated with *tavil* players. Not trained as classical musicians, *tavil* players do not usually have as thorough a knowledge of theoretical backgrounds. Them playing *ādi tāla* phrases in all other *tāla*s is said to have been the beginning of *motta kaṇakku*.

In *motta kaṇakku*, the type of decisions to be made is again very similar to deciding on timekeeping patterns, because that is how the imposed pulse is established firmly. Besides, like with the previously described polypulses, the number of beats it takes to resolve provides the length and arch of the pattern. Preference and competence of the main artist are important issues here, given the complex and controversial nature of this type of *kaṇakku*.

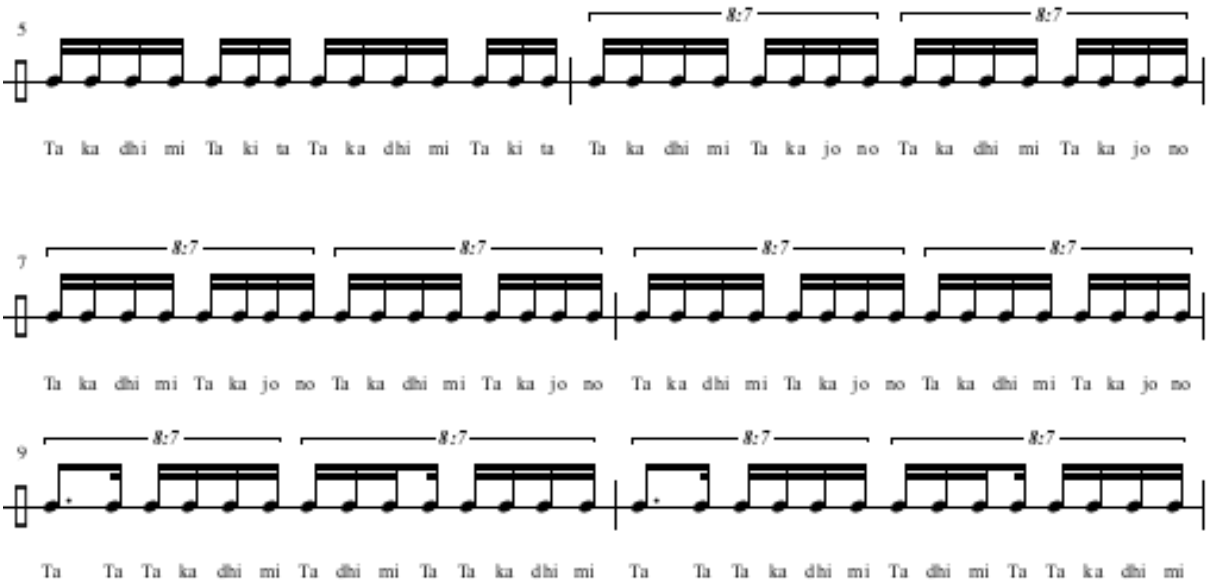
Example 6: Motta Kaṇakku: Ādi Tāla Mohara in Khaṇḍa Chāpu Tāla

To play the *ādi tāla mohara* in *khaṇḍa chāpu*, Manjunath (personal communication, 2004) started by gradually introducing the imposed pulse. Then he played the usual *ādi tāla mohara* (see below) in this new pulse, while continuing clapping the *khaṇḍa chāpu tāla*.

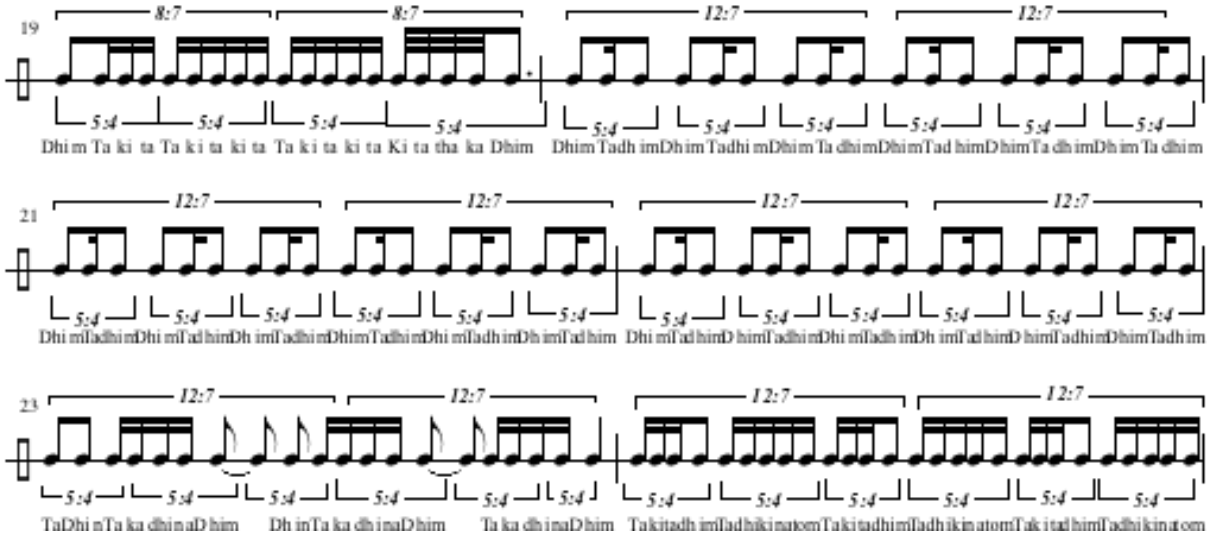


Example 7: Speedchange by NG Ravi

Ravi (personal communication) showed me a number of superimposed rhythms and metres in *miśra chāpu* (7 beats).



Which he later develops to



The change of speeds can be used for entire structures as well. *Mridangists* know certain ratios, certain "tricks" to use a pattern in a different speed and a different *tāla*. For instance, any *chatusra* pattern played three times will fit in *tisra*; any *chatusra* pattern played in first, second, and third speed in succession will fit a 7 beat frame. With knowledge like this, speed adaptations can be performed spontaneously during performance.

odd groupings

In contrast to the above mentioned polypulses, an odd grouping is a grouping of strokes or tones that breaks up the flow of the original pulse not by replacing it with another steady pulse, but with a series of irregular though usually systematic accents, that each take the function of a "downbeat". In this way, an "irregular pulse" is superimposed on the original pulse.

Prastāra, the tenth *tāla dasa prāna*, is theoretically the rearrangement of *aksharas*, beats of a *tāla*cycle, by means of permutation and combination. The ten *tāla dasa prānas*, the "life giving elements" for the *tāla*, describe several rhythmic features of South Indian classical music. For more on the *tāla dasa prānas*, see Chelladurai (2000:157-170), Sambamurthy (1998:108-112), Sharma (1992:71-80), and Subramaniam & Subramaniam (1995:69-75). For a thorough description of *prastāra*, see Sharma (1992).

The term *prastāra* is often used to denote all forms of permutation and combination. The importance of permutation and combination is explained by Fox Strangways' (1914:213) description of the construction of *tāla*s: "the secret of all these Tāls is that the units are taken as sums, not multiples." Though he talks about *tāla*, the description is valid for the rearrangement of motives and individual strokes as well. As Venkataram (personal communication) said, *prastāra* are the possible combinations of two or more strokes, notes etc. Since the material is already known to fit the *tāla*, no calculation is needed so the rearrangement can have any shape. Some of these shapes are acceptable, some are not; decisions on their structure are affected only by aesthetic and idiomatic considerations (see Brown 1965:167 & 216-223). Choices regarding the musical content are limited to *pharans* and other short fills, since otherwise the rearrangement, *prastāra*'s main feature, would be obscured.

Reducing and increasing are much-used tools in South Indian classical music in general, and in South Indian drumming in particular. This practice is started on a very basic level: the first *mridangam* lessons are structured in this way, on a formal level. After a section consisting of four lines has been played, the section is reduced by omitting the second and third line. The lesson subsequently is concluded with an *ardi* (see below) based on the fourth line. In this manner, the feeling of reduction gets deeply engrained in the student's psycho-motoric memory. Somewhat later, techniques using systematic increasing follow (see below).

The *yāti*, the ninth *tāla dasa prāna*, is a rhythmical shape that features a systematic reduction and / or enlargement of its characteristic motif. There are six different types, classified according to the way the reductions and enlargements are used. Perhaps the most common is the *gopuccha yāti*, the cow's tail *yāti* (see example 8). The number of matras systematically decreases, thus resembling a cow's tail in shape. The increase or decrease takes place by adding or omitting cells at the beginning or the end of the phrase, not by changing the lengths. *Yātis* can be used independently or as part of a *kōrvai* (see below). To use *yātis* for manipulation in performance, an artist starts from a phrase with a certain length that is played an uneven number of times (usually three or five), ending with a gap.

Example 8: Yāti

phrase				*gap*	*calculation*	
Ta	Dhim	Takadhina		Dhim . .	8	6
	Dhim	Takadhina		Dhim . .	6	6
		Takadhina		Dhim . .	4	6
			Dhina	Dhim . .	2	6
				Dhim . .	0	6

The mean of the phrase is 4 *mātrās*, the (sounded) gap lasts 6 *mātrās*. The length of the phrase is increased in the first half of the *yāti*; the increase is compensated in the reduction in the last part. This *yāti* has a length of 50 *mātrās*, or 44 if we do not count the last gap, which usually falls on the downbeat. It fits in for instance an 11 beat cycle with *chatusra nadai*.

1	2	3	4	5	6	7	8	9	10	11
Ta Dhim	Takadhina	Dhim .	. Dhim	Takadhina	Dhim .	. Taka	dhina Dhim	..	Dhina Dhim	. .
Dhim										

The most important decisions in *yātis* are structural: what is taken off on one side has to be added on the other. Again, in case of very elaborate reducing and increasing, this compensation will be calculated beforehand. The improvisation in for example *kōrvais*, though, often is of this type. The overall calculation frame is a contextual consideration, as is the usual question whether it suits the music.

Koraippu is an odd grouping that systematically decreases on an overall level. The decrease can be in the length of the strokes or notes. The term is applicable to any systematically

decreasing pattern: Manjunath (personal communication) called some of the lessons he gave me *koraippu*, Jahnavi (personal communication) named the occurrence of *koraippu* as one of the identifying features of a *mohara* (see below). The term *koraippu* is also used for a section of question and answer in a South Indian musical performance (see above).

Example 9: Koraippu

A form of *koraippu* is used in a conventional kōrvāi (see below) in two cycles *ādi tāla*.

	1	2	3	4	5	6	7	8
cycle 1	Ta	Di	Ki	Na	Tom	Ta . . Di	. . Ki .	. Na . .
cycle 2	Tom . . Ta	. Di . Ki	. Na . Tom	. Tadiki	natom Tham	Tadikina	Tom Tham Ta	dikinatom

A *mohara* [5] is a percussion-only structure that falls in the odd groupings category. After two renditions of the entire frame, it is systematically decreased (*koraippu*) and ends with an *ardi* (see below). It is used cadentially, like *ardi* and *kōrvai* (see below). The *mohara* indicates the end of the percussion solo. To this end, it has a very clear and recognisable structure, always ending with some form of the strokes Thalong . Ka Thom (or another clear ending phrase), adjusted to fit the *tāla*.
The structure of a *mohara* is a fixed model. There is a rather large repertoire of traditional *moharas*, all based on the *ādi tāla mohara*. A drummer might devise his own *mohara*, however, the *mohara* being a structure with clearly defined traditional content, there is a precarious balance between personal invention and keeping the *mohara* recognisable.

The category I have called *regular odd groupings* consists of patterns that are odd groupings in the sense that they adhere to neither the flow of the *tāla* nor the flow of any superimposed regular pulse: the *ardi* and the *kōrvai*. They are, however, regular in another way: they are played thrice, either identically or varied in a systematic way, with a gap in between, landing on a structural point. The gap or *kārvai* can be of any length, including 0 *mātrās*. The last or only component of the structure (see below) looks as follows:

phrase + *kārvai* + phrase + *kārvai* + phrase | landing on structural point

The gap can be silent or attacked (see also the *yāti*). The latter could lead to confusion: it sounds as though the last mātrā of the last time the phrase is played coincides with the structural point. This is not the case, the attacked structural point comes after the last rendition of the phrase, where in previous renditions the *kārvai* was attacked. (See also Nelson 1991:45.)

Both the *ardi* (see below) and the *kōrvai* (see below) often use some form of the phrase *tadikinatom* (the use of the word in this context should not be confused by the way some senior Chennai musicians use it, indicating a *kōrvai*). Some *ardis* entirely consist of it, while the second paḍa, part, of a *kōrvai*, the *uttarardam*, virtually always consists of a version of this phrase.

If a performer wants to come up with a complex structure using these concepts in performance, he needs a thorough knowledge of the length of the different phrases in his repertoire and a very fast brain. The school of Bangalore TAS Mani has a system for this aspect, as was explained to me by his senior students NG Ravi and VR Chandrasekhar (personal communication): a number of different lengths for the strokes Ta Dhi Ki Na Thom and the *kārvai*, gaps, in between are practised and memorised. By choosing values for the phrase and the gap, the length (number of *mātrās*) of the *uttarardam* can be worked out. By subtracting this length from the length of the given *tāla*, the length of the first half, the

[5] In Brown 1965, Nelson 1991, Frishman 1985, Sankaran 1994, Pesch 1999, the term *mōrā* is used for what I understood is called an ardi (see below), while calling what I call mohara *periya mōrā*, big *mōrā*. Mani, Karthick, and Sundaresan(personal communication) knew about this confusion, but made it clear (as did others who did not know about the issue, such as Ramabhadran (personal communication)) that nowadays the above described structure is called mohara or *mōrā*, while what some call (or called) *mōrā* is called ardi.

pūrvardam, can be worked out and subsequently filled in. The choice of phrase for the *pūrvardam* is free, though a number of phrases are in common use. Performance here is very clearly based on what is known: decisions involve the choice and arrangement of the material, not in its creation. In a structure like this, the nature of South Indian use of preset patterns, formulas, structures, models etc. in performance is shown most clearly. In less complex situations, similar modes of control are used.

An *ardi* is a cadential pattern consisting of a phrase that is repeated three times, with gaps in between, and lands on the sam, the downbeat of the *tāla*. The phrase can be a form of the phrase *tadikinatom* (see above) or any other phrase, played thrice, either identically or varied in a systematic manner. *Ardis* consist only of three phrases—as opposed to *kōrvais* that consist of at least two parts (each in turn usually consisting of three phrases, see below)—and can but do not have to start on the sam.
As Sudarshan (personal communication) said, an *ardi* is, like a *kōrvai* (see below), an ending, "but a small, very short one". It is used to show endings within *krītis* or *pallavis*. *Ardis* that suit the composition should be selected.

An often-used *ardi* in Rajakesari's lessons (personal communication) is the one below. This *ardi* is used in several *tāla*s; the beginning moment is adjusted so the pattern lands on the downbeat. Similarly, it could be adjusted to land on any other structural point.

Example 10: Ardi

Nam Nam Ka Dhin . .
Nam Nam Ka Dhin . .
Nam Nam Ka | Dhin

Ideally, the *ardi* phrase is based on a phrase from the song or from the main artist's development on it. In practice, phrases from the known repertoire of *ardi*phrases, such as *tadikinatom*, are often taken as well. Based on the location of the structural point the *ardi* leads to and the number of *mātrās* it takes to get there, the drummer chooses a frame from his repertoire—beforehand, or on the spot.

A *kōrvai* is a cadential pattern consisting of at least two paḍas, parts: the *pūrvardam* and the *uttarardam*. The inner groupings of the structure do not follow the *tāla* or the pulse, they might also superimpose a different pulse. There are many different types, distinguished by the type of phrase and development they feature. (For an extensive classification of different types of *kōrvais*, see Ramamurthy 1987.)

Example 13: Kōrvai

	Tham Thaka	Digutira	Kitathaka	
Ta Thom	Kitahaka	Digutira	Kitathaka	Takadhina Dhin
	Tham Thaka	Digutira	Kitathaka	
Ta Thom	Kitahaka	Digutira	Kitathaka	Takadhina Takadhina Dhin .
	Tham Thaka	Digutira	Kitathaka	
Ta Thom	Kitahaka	Digutira	Kitathaka	Takadhina Takadhina Takadhina Dhin .

Dhi Tha Ka Tham . Ta Dhi Ki Na Thom
Dhi Tha Ka Tham . Ta Dhi Ki Na Thom
Dhi Tha Ka Tham . Ta Dhi Ki Na Thom

This *kōrvai* is the ending of the lesson as shown in Example 1. It uses and develops the material of the last variation, and finishes the pattern with a combination of strokes including the strokes Ta Dhi Ki Na Thom, traditionally in the *uttarardam*.

Like the other *kaṇakku*s, the *kōrvai* does not follow the flow of the *tāla*. It is a structure that clearly indicates an ending, on a higher level than the above-described *ardi* does. It is used to

conclude the *svara kalpana* (melodic development) section and the percussion solo. In the latter case, it follows the *mohara*.
The increase and / or decrease in the *pūrvardam*, the first half, compensated in the *uttarardam*, can be calculated in performance. The *pūrvardam* can be any phrase; it is often a *yāti*. The *uttarardam* usually consists of a combination of the stroke sequence *tadikinatom*, counting one to ten *mātrās*. Both are played three times, with or without a gap, with or without developments through the three renditions. According to Mani, the *uttarardam* ideally has no gaps, while the first part does.
Again, important in this respect are decisions concerning musical content. The *pūrvardam* phrase of the *kōrvai* ideally reflects material from the composition or the main artist's elaborations, or it could be taken from a repertoire of appropriate phrases. In the latter case, "the central theme of a *kōvai* can be indicated as motives in the first place, then developed and crowned at the end with a *kōvai*" (Sankaran 1986:106-107).

The *uttarardam* is usually known. On a structural level there are decisions in performance as well: when some phrase is picked on the spot to be the *pūrvardam*, the length of the *uttarardam* has to be quickly calculated and filled in with musical content. The *pūrvardam* phrases can be increased or decreased and compensated in the *uttarardam*. Different *gatis* can also be used but require more complex calculations, and are, arguably for that reason, more rarely thought up in performance. Very elaborate frames are usually prepared.

Example 14: Kōrvai Variations

In the more advanced lessons, phrases are often used in different variations. In the second sketch lessons for *khaṇḍa chāpu* (5 beats), a series of *kōrvais* based on the same *pūrvardam* phrase is given. This phrase is used in the lessons for the other *tāla*s as well. These *kōrvais* are rather complex, perhaps more complex than can be achieved during performance. But although they are composed, they show us different ways of working with stock phrases. They help us understand the modular way of thinking in South Indian rhythm. I represent them according to their phrase content rather than following the *tāla* structure, because my point is to show the development and adjustment of the phrase, the building block.

Kōrvai 1

. Ki Ta Kitadhina Tirakita Digutira Kitathaka Ta Ka . Dhi Na . Ta Ka Dhi Na
Thakadhina Dhin . .
Ki Ta Kitadhina Tirakita Digutira Kitathaka Ta Ka . Dhi Na . Ta Ka Dhi Na
Thakadhina Thakadhina Dhin . .
Thakadhina Thakadhina Dhin . .
Ki Ta Kitadhina Tirakita Digutira Kitathaka Ta Ka . Dhi Na . Ta Ka Dhi Na
Thakadhina Thakadhina Thakadhina Dhin . .
Thakadhina Thakadhina Thakadhina Dhin . .
Thakadhina Thakadhina Thakadhina Dhin . .
Thakadhina Thakadhina Dhin . .
Thakadhina Thakadhina Dhin . .
Thakadhina Thakadhina Dhin . .
Thakadhina Dhin . .
Thakadhina Dhin . .
Thakadhina | Dhin

Kōrvai 2

Kitadhina Tirakita Digutira Kitathaka
Thakadhina Dhin Thakadhina Dhin Thakadhina Dhin . .
Dhi Kitadhina Tirakita Digutira Kitathaka
Dhi Thakadhina Dhin Dhi Thakadhina Dhin Dhi Thakadhina Dhin . .
Ki Ta Kitadhina Tirakita Digutira Kitathaka
Ki Ta Thakadhina Dhin Ki Ta Thakadhina Dhin Ki Ta Thakadhina Dhin . .

Ta Dhi . Ki Nam Thom Tadhi . Kinathom
Ta Dhi . Ki Nam Thom Tadhi . Kinathom
Ta Dhi . Ki Nam Thom Tadhi . Kinathom Dhin . .
Ta Dhi Ki Nam Thom Tadhi . Kinathom
Ta Dhi Ki Nam Thom Tadhi . Kinathom
Ta Dhi Ki Nam Thom Tadhi . Kinathom Dhin . .
Ta Dhi Ki Nam Tadhi . Kinathom
Ta Dhi Ki Nam Tadhi . Kinathom
Ta Dhi Ki Nam Tadhi . Kinathom | Dhin

Kōrvai 3

Ki Ta Kitadhina Tirakita Digutira Kitathaka
Thakadhina Dhin
Thakadhina Dhin
Thakadhina Dhin . .
Dhi Kitadhina Tirakita Digutira Kitathaka
Dhi Thakadhina Dhin
Dhi Thakadhina Dhin
Dhi Thakadhina Dhin . .
Kitadhina Tirakita Digutira Kitathaka
Ki Ta Thakadhina Dhin
Ki Ta Thakadhina Dhin
Ki Ta Thakadhina Dhin

Ta Dhi Ki Nam Thom Tadi . Kinathom
Ta Dhi Ki Nam Thom Tadi . Kinathom
Ta Dhi Ki Nam Thom Tadi . Kinathom
Ta Dheem . Ki Nam Thom Tadi . Kinathom
Ta Dheem . Ki Nam Thom Tadi . Kinathom
Ta Dheem . Ki Nam Thom Tadi . Kinathom
Ta Dheem . . Ki Nam Thom Tadi . Kinathom
Ta Dheem . . Ki Nam Thom Tadi . Kinathom
Ta Dheem . . Ki Nam Thom Tadi . Kinathom

Example 15: Structural Kōrvai Development

Sudhindra (personal communication) described the development of a *kōrvai* in a different way, integrating decisions about the musical content. “You increase the silence, do some improvisation there (….) This we do on the stage.”

Ta Dhi Takadina Dhi
Dhi Takadina Dhi
Takadina Dhi
Tadim . Kinatom
Tadim . Kinatom
Tadim . Kinatom

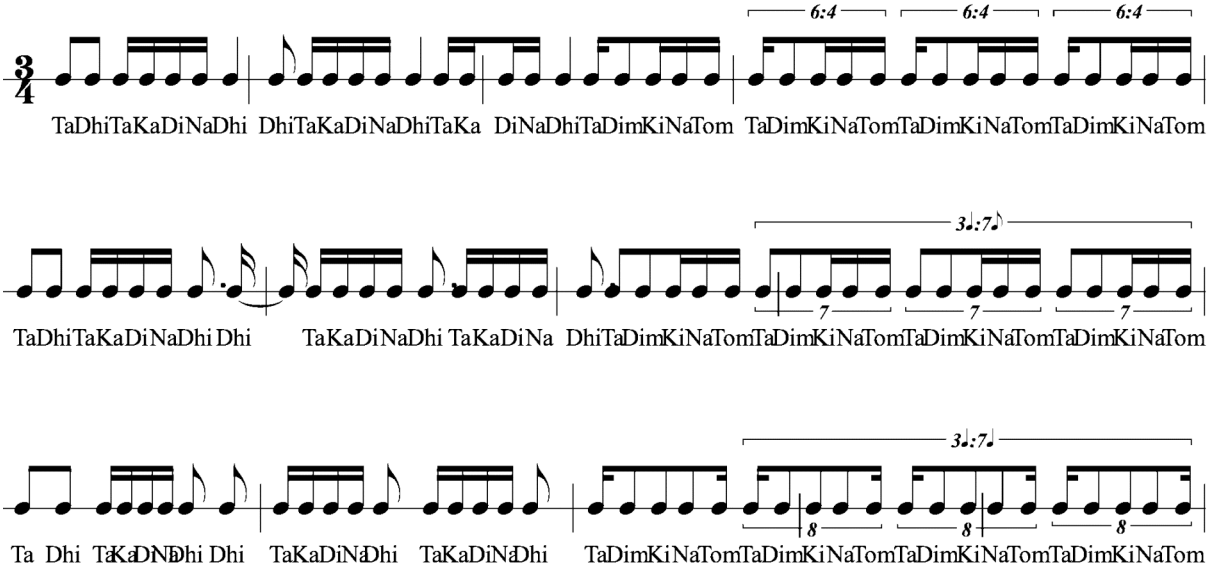
The *kōrvai* is played thrice. The first rendition is—obviously—the unchanged original. One possible type of development is changing the length of the *kārvai* in the *pūrvardam* in the repeats, compensating this in the *uttarardam*. In the first rendition, the *kārvai* lasts four *mātrās*. This is reduced to three and two *mātrās* in the repeats. The *uttarardam* phrase is increased by one mātrā at the time.

Ta Dhi Takadina Dhi . .
Dhi Takadina Dhi . .
Takadina Dhi . .
Ta . Dim . Kinatom

Ta . Dim . Kinatom
Ta . Dim . Kinatom

Ta Dhi Takadina Dhi
Dhi Takadina Dhi
Takadina Dhi
Tadim . Ki . Na . Tom
Tadim . Ki . Na . Tom
Tadim . Ki . Na . Tom

Another type of development is changing the *nadai* of the *uttarardam* phrase, in the following case combined with compensating the reduction of the *kārvai* in the *pūrvardam*. In the second and third rendition of the *pūrvardam*, *motta kaṇakku* (see above) is used to adapt the phrases.



Venkataram (personal communication) addressed the role of *manōdharma* in *kaṇakku*s. He stated that *kaṇakku*s should be "in your mind earlier", fixed beforehand in other words, but the way the prepared material comes out depends on your instrument, the audience, the main artist. In other words, on the general mood; that is *manōdharma* . "The feeling should be there, *anubhāva*". These things cannot be rationalised or planned; it is learnt by experience, by listening a lot. Without the "wisdom of hearing", everything will sound the same.

There is a repertoire of commonly known and used *kaṇakku*s. By learning the repertoire, a drummer acquires a large number of phrases and structures as well as an analytical knowledge of the structures, which enables him to devise his own *kaṇakku*s. The *kaṇakku* is shaped to follow—and emphasise—certain structural points. When the structures are very sophisticated—when complexity itself is considered more important than it being constructed during performance, which can be the case in for instance Karaikudi Mani's tradition—they may be put together in advance, but this process can also take place on the stage, relating to the structure of the song, characteristic (rhythmic) turns, something done by the main artist etc. A percussionist's skill is measured, among other parameters, by his speed at calculation. Using his knowledge, the drummer can very quickly, while playing timekeeping patterns or other simple patterns that precede the improvised *kaṇakku*, choose a combination that will work well in the *tāla*.

conclusions

The description of models and techniques in South Indian music showed us that there are basically two types of rhythmic techniques. In general, techniques from the category of the timekeeping patterns are less complex than the techniques using calculation. Hence, the structure of *kaṇakku*s is fixed before performance to a greater extent than timekeeping patterns. In both categories the choice of musical material can be made in performance, of

course based on a repertoire of known phrases. For *kaṇakku*s there are clearer "ideal sounds", such as the traditional *mohara* phrases or the *tadikinatom* in the second half of the *kōrvai*.
The guiding principles in South Indian drumming are on the one hand the idiomatic collection of motives and phrases, and on the other hand the repertoire of calculation models, both either handed down by older players or developed by the drummer himself. Worth further investigation is a third guiding principle, the formal requirement of the song (as performed by the main artist), in which some structures have a fixed place, while others can be used at the discretion of the musician.
South Indian rhythm has a modular nature, to be found on all levels. In the South Indian rhythmic techniques we saw, we encountered a number of different types of guiding principles. We have seen basic patterns that could be varied by changing the order of the motives, making choices of stroke / sound, and by changing the *gati* and by decreasing and / or increasing motives or phrases, while compensating for the lack or surplus of *mātrās* somewhere else. All these variation techniques have to do with the actual sounding result, with the musical material that is used. The variations, combinations, and changes of speed and grouping are clear, yet flexible concepts for use in performance. Structures, patterns, and phrases serve as models and building blocks, to be combined and manipulated, beforehand and / or in the course of performance.

Music comes into existence in performance, informed, guided, and controlled by predetermined elements. Decisions can be made before or during performance—the moments in which they are made does not affect their nature—depending on a variety of factors including idiomatic considerations and the speed and skill of the performer. South Indian music can only be explained this way.

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