

Application of Modal Shift of Tonic in *Audava Rāga-s*

Praveena Arjun Thodge

Research Scholar

Music Academy Research Centre

Introduction

The quest to find new *rāga-s* has been of interest to scholars since ancient times. Various methods have been used to arrive at new *rāga-s*. Among these methods is the “modal shift of tonic or “*graha bhēdam*” as it is known in Karṇāṭaka Music. This method refers to the shift of the tonic or *ādhāra ṣaḍja* to another *svara*, keeping the intervals between the *svara-s* same, thus resulting in a new *rāga*. The *Grāma-Mūrcchana* system prevalent in the 2nd century CE, used *mūrcchana-s* which were the sequential order of *svara-s* derived from the *ṣaḍja* and *madhyama grāma-s*. The *mūrcchana-s* were 14 in number and they differed in their commencing note, though the interval between the *svara-s* remained the same. This system resembles the modal shift of tonic except that it moves in *avarōhaṇa krama* and not in *ārōhaṇa krama* as used in modal shift of tonic.

In the tamil music tradition, this method is used for the birth of the seven *pālai-s*. The seven *svara-s* and twelve *svarasthāna-s* are placed in a circle which is divided into twelve parts, representing each *svarasthāna*. Each of these twelve parts are assigned a *rāsi* (star) and certain verses are followed to interpret the birth of the *pālai-s*. “*Kural kuralāyadu sempālai*” refers to the *pālai* obtained when starting from *kural* or *ṣaḍjam*. “*Tuttam kuralāyadu padumalaiippālai*” refers to the *pālai* obtained when the *ṛṣabha* or *tuttam* becomes *ṣaḍja*. Thus, through the modal shift of the tonic, the seven *pālai-s* are obtained.

In the evolution of the *rāga* system, the emergence of the 72 *mēlakarta* scheme and the concept of assigning an *ārōhaṇa* (*svara-s* in ascent) and *avarōhaṇa* (*svara-s* in descent) to *rāga-s* further opened up the possibilities for the birth of new *rāga-s*. The variety of the *svara-s* and the movement of the *svara-s* in a *rāga* are revealed through its *ārōhaṇa* and *avarōhaṇa*, which merely denotes its skeletal form. The *ārōhaṇa* always commences with the *ādhāra ṣaḍja* or the tonic note. The pitch of the *ādhāra ṣaḍja* will depend entirely on the instrument or the voice of an artist in question.

Rāga-s are today classified in various ways. *Janaka rāga-s* or *mēlakarta-s* are those that take all seven *svara-s* in order, in their *ārōhaṇa* and *avarōhaṇa*. *Janya rāga-s* are classified in many ways such as *varja*, *vakra*, *upāṅga*, *bhāṣaṅga*, *ṣāḍava*, *auḍava* and *svarāntara*.

Modal shift of tonic in *mēlakarta-s*

In the case of *mēlakarta rāga-s* where the *ārōhaṇa* and *avarōhaṇa* contain all the seven *svara-s* in order, the modal shift of tonic results in various other *mēlakarta-s* as well as *rāga-s* that cannot be sung due to the presence of two varieties of the same *svara -s*. Modal shift of tonic is done based on the twelve *svarasthāna-s*, though there are 16 *svara* names. *Śaṅkarābharaṇam*, the 29th *mēlakarta* is a “*sarva svara mūrccana kāraka rāga*” where it’s *ṛṣabha*, *gāndhāra*, *madhyama*, *pañcama*, *dhaivata* and *niṣāda* gives rise to five other *mēlakarta-s*, *kharaharapriya*, *hanumatōḍi*, *mēcakalyāṇi*, *harikāmbhōji* and *nāṭabhairavi* and one scale with two *madhyama-s* respectively. This *rāga* with two *madhyama-s* stands out among the other four *rāga-s* and is not practicable as it does not satisfy the rules to be a *mēlakarta*. The *ṛṣabha mūrccana* of *śaṅkarābharaṇam* gives the scale of *kharaharapriya* and the *niṣāda mūrccana* of *kharaharapriya* will give *śaṅkarābharaṇam*. This can be applied to all the *rāga-s* in this group and the modal shift of tonic is cyclic in nature. When modal shift of tonic is applied to *vivādi mēlakarta-s*, the resultant viable *rāga-s* are few. For Example, if we apply the modal shift of tonic to the 1st *mēlakarta kanakāṅgi*, its *ṛṣabha mūrccana* gives the 51st *mēlakarta kāmavardhini*. The rest of the *svara-s* do not give rise to any practicable *rāga-s*.

<i>Rāga</i>	S	R ₁	R ₂	G ₁	G ₂	M ₁	M ₂	P	D ₁	D ₂	N ₁	N ₂
<i>Kanakāṅgi</i>	S	R ₁	R ₂ /G ₁			M ₁		P	D ₁	D ₂ /N ₁		
<i>Kamavardhani</i> (51)	N ₂	S	R ₁			G ₂		M ₂	P	D ₁		
Not Viable	N ₁	N ₂	S			G ₁		M ₁	M ₂	P		
Not Viable	P	D ₁	D ₂			S		R ₂	G ₁	G ₂		
Not Viable	M ₁	M ₂	P			N ₁		S	R ₁	R ₂		
Not Viable	G ₂	M ₁	M ₂			D ₂		N ₂	S	R ₁		
Not Viable	G ₁	G ₂	M ₁			D ₁		N ₁	N ₂	S		

This is the same for the 6th *cakra*, which does not give rise to any practicable *rāga-s* for singing. They are not viable as

- They lack one of the seven *svara-s*
- Presence of unmusical intervals
- There are more than one variety of the same *svara*

Mēlakārta rāga-s which are not *vivādi-s*, give rise to more *rāga-s* as the *svara-s* are not so close to each other. For example the 14th *mēlakārta vakuḷābharaṇam* (S R₁ G₂ M₁ P D₁ N₂) results in the *rāga-s kōsalam* (71), *kīravāṇi*(21) and *hēmavati*(58) in the *ṛṣabha*, *madhyama* and *niṣāda mūrcchana-s* respectively. Among the 72 *mēlakārta-s*, 56 give rise to other *mēlakārta-s* and the remaining 16 do not give rise to scales that satisfy the rules to be a feasible *mēlakārta*.

Modal shift of tonic can be applied to *janya rāga-s* and the resulting possibilities are endless. *Mēlakārta rāga-s* are 72 but the number of *janya rāga-s* are countless. Among *janya rāga-s*, are *auḍava rāga-s* which are pentatonic or those that take five notes in their *ārōhaṇa* and *avarōhaṇa*. This article will focus on the application of modal shift of tonic in *auḍava rāga-s*.

Modal shift of tonic in *auḍava rāga-s*

Mōhanam- Sarva svara mūrcchana kāraka rāga

Among *auḍava rāga-s* is *mōhanam* which is one the most natural scales and one that is seen in various musical cultures across the globe. The notes of scale of *mōhanam* are those that are arrived at in the first four cycles of the cycle of fifths. Thus, the *vādi- samvādi* relationship is seen between all the *svara-s* in the *rāga mōhanam*. *Mōhanam* takes the *svara-s*, *ṣadja*, *ṛṣabha*(*catuśruti*), *gāndhāra*(*antara*), *pañcama*, *dhaivata*(*catuśruti*). Among these the pairs, *ṣadja -pañcama*, *pañcama -ṛṣabha*, *ṛṣabha - dhaivata* and *dhaivata - gāndhāra* share the *ṣadja -pañcama* or the fifth relationship as well as the fourth relationship as the fourth is an inverse fifth. When modal of shift of tonic is applied to *mōhanam*, each of the *svara-s* result in a new *auḍava rāga*.

<i>Rāga</i>	S	R ₁	R ₂	G ₁	G ₂	M ₁	M ₂	P	D ₁	D ₂	N ₁	N ₂
<i>Mōhanam</i>	S		R ₂		G ₂			P		D ₂		
<i>Madhyamāvati</i>	N ₁		S		R ₂			M ₁		P		
<i>Hindōḷam</i>	D ₁		N ₁		S			G ₁		M ₁		

<i>Śuddha Sāvēri</i>	M ₁		P		D ₂			S		R ₂		
<i>Śuddha danyāsi</i>	G ₁		M ₁		P			N ₁		S		

1st step of modal shift of tonic – The *ṣaḍja* is moved to the position of the next note which is *ṛṣabha*. When the *ṣaḍja* is moved to this *svara*, the *gāndhāra* becomes *catuśruti ṛṣabha*, *pañcama* becomes *śuddha madhyama*, *dhaivata* becomes *pañcama* and *ṣaḍja* becomes *kaiśiki niṣāda*. Thus, the resulting scale is that of *rāga madhyamāvati*.

2nd step of modal shift of tonic- The *ṣaḍja* is moved to the position of the *gāndhāra*, the next *svara* *pañcama* becomes *sādhāraṇa gāndhāra*, *dhaivata* becomes *śuddha madhyama*, *ṣaḍja* becomes *śuddha dhaivata* and *ṛṣabha* becomes *kaiśiki niṣāda*. The resultant scale is that of *rāga hindōlam*.

3rd step of modal shift of tonic – The *ṣaḍja* is moved to the position of *pañcama*, the next *svara* *dhaivata* becomes *catuśruti ṛṣabha*, *ṣaḍja* becomes *śuddha madhyama*, *ṛṣabha* becomes *pañcama*, and *gāndhāra* becomes *catuśruti dhaivata*. the resultant scale is that of *rāga śuddha sāvēri*.

4th step of modal shift of tonic – The *ṣaḍja* is moved to the position of *dhaivata*, the next *svara* *ṣaḍja* becomes *śuddha gāndhāra*, *ṛṣabha* becomes *śuddha madhyama*, *gāndhāra* becomes *pañcama*, *pañcama* becomes *kaiśiki niṣāda*. The resultant scale is that of *rāga śuddha dhanyāsi*.

Each of the resultant *rāga-s* have their own identity and all allow for elaboration. All the resulting *rāga-s* have a stable *śuddha madhyama* which increases their scope for elaboration. The presence of concordant *svara-s* in the resultant scales contributes to the aesthetic value of the *rāga* and in turn the possibility for elaboration. *Hindōlam* which does not have a *pañcama*, has *śuddha madhyama* playing an important role in the *rāga*. The interval of the fourth between *ṣaḍja* and *madhyama* which is also seen between *gāndhāra* and *dhaivata* and *madhyama* and *niṣāda* add to the aesthetic beauty of the *rāga*. When each of these *rāga-s* are taken as the main *rāga* for modal shift of tonic, they result in the same five *rāga-s*. These five *rāga-s* are connected to each other. Interestingly when *ṣaḍja* and *pañcama* are removed from six *mēlakarta-s*, namely *hanumatōḍi*(8), *bhavapriya*(44), *kāmavardhani*(51), *mēcakalyāṇi* (65), *śubhapantuvarāli*(45) and *gamanāśrama* (53) and modal shift of tonic is applied to the notes *ṛṣabha*, *gāndhāra* etc, the

resulting scales are of these five *auḍava rāga-s*. When the *ṛṣabha* is taken as *ṣadja* in *bhavapriya*, the resulting scale is *śuddha sāveri*. Same way the *ṛṣabha mūrccana* for *tōdi* gives you *mōhanam*.

<i>Rāga</i>	S	R ₁	R ₂	G ₁	G ₂	M ₁	M ₂	P	D ₁	D ₂	N ₁	N ₂
<i>Hanumatōḍi</i>		R ₁		G ₁		M ₁			D ₁		N ₁	
<i>Mōhanam</i>		S		R ₂		G ₂			P		D ₂	

Modal shift of tonic in other *auḍava rāga-s* :

Ābhōgi – This *rāga* takes the *svara-s* *ṣadja*, *ṛṣabha*(*catuśruti*), *gāndhāra* (*sādharaṇa*), *madhyama* (*śuddha*) and *dhaivata*(*catuśruti*). The *rāga* is *pañcama varjya* thus resulting in a strong *madhyama*. When modal shift of tonic is applied to *ābhōgi* the resultant scales are as below:

<i>Rāga</i>	S	R ₁	R ₂	G ₁	G ₂	M ₁	M ₂	P	D ₁	D ₂	N ₁	N ₂
<i>Ābhōgi</i>	S		R ₂	G ₁		M ₁				D ₂		
<i>Kalasāvēri</i>	N ₁		S	R ₁		G ₁				P		
	D ₂		N ₂	S		R ₂				M ₂		
<i>Valaji</i>	P		D ₂	N ₁		S				G ₂		
	G ₁		M ₁	M ₂		D ₁				S		

The *ṛṣabha mūrccana* of *ābhōgi* gives rise to a scale without *madhyama* and *dhaivata*. The *rāga* has *ṣadja*, *śuddha ṛṣabha*, *sādharaṇa gāndhāra*, *pañcama* and *kaiśiki niṣāda*. Though a feasible scale, which has also been named *kalasāvēri*, the scope of the *rāga* for elaboration is very limited. The *gāndhāra mūrccana* also results in a *rāga* which is not practicable. The *madhyama mūrccana* gives rise to the *rāga valaji*. The *ṣadja madhyama* relationship is an important one in the modal shift of tonic and many *madhyama mūrccana-s* of *rāga-s* result in viable *rāga-s*. The *dhaivata mūrccana* also gives rise to a *rāga* which is not practicable.

In a similar manner, when modal shift of tonic is done for *nāgasvarāvaḷi* which take the notes, *ṣadja*, *antara gandhāra*, *śuddha madhyama*, *pañcama* and *catuśruti dhaivata*. The resulting scales are as below.

<i>Rāga</i>	S	R ₁	R ₂	G ₁	G ₂	M ₁	M ₂	P	D ₁	D ₂	N ₁	N ₂
<i>Nāgasvarāvali</i>	S				G ₂	M ₁		P		D ₂		
	D ₁				S	R ₁		G ₁		M ₁		
<i>Hamsadhwani</i>	P				N ₂	S		R ₂		G ₂		
<i>Nāgavalli</i>	M ₁				D ₂	N ₁		S		R ₂		
	G ₁				P	D ₁		N ₁		S		

The *madhyama mūrccana* of *nāgasvarāvali* gives *hamsadhwani*, which is an established *rāga*. Here we see the *ṣaḍja madhyama bhāva* in play. The *pañcama mūrccana* gives a *rāga* called *nāgavalli* and the *dhaivata mūrccana* gives the *rāga* with the *ārōhaṇa* of the *rāga dhanakari*. These *rāga-s* have been created and don't allow for elaboration. *Amṛtavārṣiṇi's niṣāda mūrccana* gives *karṇāṭaka śuddha sāvēri*, *rēvati's madhyama mūrccana* is *sunādavinōdini* and the *niṣāda mūrccana* is *śivarāñjani*. Here again the *ṣaḍja madhyama bhava* is highlighted and the *madhyama mūrccana* results in a viable *rāga*. In *rāga-s* like *nirōṣṭa*, which is an *aūḍava rāga* without *madhyama* and *pañcama*, elaboration becomes limited due to the absence of these two important notes. *Rāga-s* which do not have both *madhyama* and *pañcama* are at a disadvantage. Though the modal shift of tonic can be applied to this *rāga* as well, and the resulting *dhaivata mūrccana* gives the *rāga bhārati*, these *rāga-s* can just be used as novel *rāga-s*.

The *rāga-s* discussed above are all symmetrical in *ārōhaṇa* and *avarōhaṇa*. There are *aūḍava rāga-s* which are not symmetrical in *ārōhaṇa* and *avarōhaṇa*. Modal shift of tonic is possible in such *rāga-s* as well. The process of the shift of the tonic will need to be done to the *ārōhaṇa* and *avarōhaṇa* separately. The *rāga āndōlika* takes the *svara-s*, *ṣaḍja*, *catuśruti ṛṣabha*, *śuddha madhyama*, *pañcama* and *kaiśiki niṣāda* in the *ārōhaṇa* and the *avarōhaṇa* uses *catuśruti dhaivata* instead of *pañcama*. The resultant scales in the *ārōhaṇa krama* will be that of *hindōlam*, *śuddha sāvēri*, *śuddha dhanyāsi* and *mōhanam* with the *ṛṣabha*, *madhyama*, *pañcama* and *niṣāda mūrccana* respectively. When the modal shift of tonic is applied to the *avarōhaṇa*, the resultant scales are obviously different due to the replacement of *pañcama* with *dhaivata*. These scales are given below.

Rṣabha mūrccana of āndōlika :

Ārōhaṇa- S G₁ M₁ D₁ N₁

Avarōhaṇa- Ś N₁ D₁ P G₁

Madhyama mūrccana:

Ārōhaṇa – S R₂ M₁ P D₂

Avarōhaṇa – S D₂ P M₁ G₂

Pañcama Mūrccana:

Ārōhaṇa – S G₁ M₁ P N₁

Avarōhaṇa- S D₁ M₁ G₁ R₁

Niṣāda Mūrccana:

Ārōhaṇa – S R₂ G₂ P D₂

Avarōhaṇa – Ś N₂ P G₂ R₂

From the above scales, though they are viable as scales in terms of the structure of the *ārōhaṇa* and *avarōhaṇa*, they don't have the scope for becoming a *rāga* which allows elaboration and one which is aesthetically beautiful.

Though modal shift of tonic is a method at arriving at new scales, its application in practical music is a different exercise. Karṇāṭaka Music relies on various *rāga*-s which are backbone of the system. Each *rāga* has its own identity which is brought out through characteristic phrases and the *gamaka*-s applied to it's *svara*-s. *Graha bhēdam* as an exercise in creating new scales on paper is very different as compared to when it is performed within *manōdharmā saṅgīta* forms in concerts. It is usually seen performed in *ālāpana* and *kalpana svara*, but would be difficult to execute in *niraval* as *sāhitya* also comes in to play. When *graha bhēdam* is done while rendering a symmetrical *rāga* such as *śaṅkarābharaṇam* or *mōhanam*, each of the notes can easily become the tonic and a new *rāga* can be rendered.

Another method which is adopted by artistes is to give a flash or sudden change in the *ālāpana*, by rendering just a phrase of a different *rāga* by changing a the *graha* of a particular *svara*. This way a *janya rāga* can be performed within a *mēlakarta rāga* or another *janya rāga*. For example, in the *rāga simhēndra madhyamam*, *māyāmālavagaula* is the *pañcama mūrccana*. Rather than singing this scale, the *auḍava ṣāḍava janya rāga*, *baulī* is rendered by removing the *ṣaḍja*. The *pañcama* of *simhēndramadhyamam* becomes the *ṣaḍja* of *baulī* and the rendering of the *rāga baulī* here changes the entire mood. The only problem that arises, is that in the *avarōhaṇa krama* all *svara-s* are possible but while coming back in the *ārōhaṇa krama*, the *auḍava* scale cannot be completed due to the presence of the *madhyama*. Thus, the *grahabhēdam* can be done for a few moments.

Avarōhaṇa krama:

Simmēndra madhyamam - Ġ₁ Ṛ₂ N₂ D₁ P M₂ G₁ - G M₂ P D₁ N₂ R₂ G₁

Baulī - D₁ P G₂ R₁ Ś N₂ D₁ - D₁ (N₂)S R₁ G₂ P D₁

As *rāga-s* are not rendered as scales but with their own *gamaka-s* and embellishments, the movement of *svara-s* should also be kept in mind while doing *grahabhēda*. In the case of *ābhōgi*, while rendering *kalpana svara*, the *madhyama mūrccana* gives *valaji* and the *gamaka-s* for the *svara-s* are similar such that performing *grahabhēdam* is aesthetic. The *ṣaḍja* and *pañcama* are rendered without *gamaka*.

Ābhōgi – M₁ D₂ Ś Ṛ₂ Ġ₁ M₁

Valaji- S G₂ P D₂ N₁ Ś

The aim here is to show a picture of a different *rāga* in a small snippet through a few phrases and revert back to the main *rāga*. This could be termed as partial *grahabhēdam* as the entire *ārōhaṇa* and *avarōhaṇa* is not shown. This can be done in various *rāga-s*, where a single phrase converts to a phrase in another *rāga*.

Conclusion

Modal shift of tonic results in various new *rāga-s* and the possibilities are many. The aesthetic beauty of the *rāga* and the scope of resultant scales lie in the intra relationship between the *svara-s* of the *rāga-s*. “Musical scales, where in the melodic succession of notes prevails, flourish mainly because of the presence of natural consonances.”¹ The presence of concordant intervals, the fifth and the fourth between the *svara-s* contribute to its strong tonal stability. When the interval between the notes are huge and there is no symmetry between the *ārōhana* and *avarōhana*, the scope reduces further. *Rāga-s* that have fewer consonant pairs and *vivādi* intervals in their structure inhibit its ability for elaboration. Though some of these *rāga-s* may yield themselves to a single composition, it is difficult for them to stand the test of time. Within *auḍava rāga-s* the *rāga mōhanam* and its four *mūrccana-s* stand as beautiful *rāga-s* offering large scope of elaboration. The sa- ma interval also has a special significance in the modal shift of tonic, with many of the *auḍava rāga-s* resulting in viable *madhyama mūrccana rāga-s*. If the concept of modal shift of tonic is used intelligently in performance, it adds a different and novel change to the mood of the *rāga* being presented.

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