



Challenges in Notational Aspects of Research on Manōdharmā Saṅgīta
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Abstract

One of the unique features of Indian classical music is manōdharmā saṅgīta, or improvised music. It is an artiste’s individualistic creative expression and interpretation. This is what contributes to the richness and variety in both Hindustāni and Karnāṭaka classical music, and why every artiste’s music is unique. It is vital for research to be conducted on manōdharmā saṅgīta in order to better understand the core of Indian classical music.

The challenge in research on manōdharmā saṅgīta is that it is not always possible to accurately represent what is sung in written form. For analysing manōdharmā saṅgīta the following elements are essential - the pace and tempo of the phrases, or the kālapramāṇa; the oscillations, or the gamaka-s; and the helping notes, or the anusvara-s. It is imperative to represent these three elements in the written form as close as possible to what is actually sung. Various experiments have been made to represent compositions in the form of notation. The earliest example for representing gamaka-s in notation can be found in SaṅgītaSampradāyaPradarśini of SubbarāmaDīkṣitar. Over the years, many have attempted to come up with new symbolification of the various ornamentations such as gamaka-s, but none have seen widespread adoption.

This study examines the challenges in accurate written representation of the elements of manōdharmā saṅgīta. The methodology used in this study is analytical in nature. A rendition of ‘YeṭulaBrōtovo’ by Ramakrishnan Murthy is taken up as a case study to demonstrate the notation of the three aspects of manōdharmā, namely rāga ālāpana, neraval and svara kalpana.

The study finds that it is possible to make a detailed notation, using special symbols to represent the three elements - kālapramāṇa, gamaka-s and anusvara-s, but it is important to find a balance between detail and usability when notating manōdharmā saṅgīta. Additionally, it was found that it is difficult to represent the voice modulation (in the case of a vocalist) and intonation (in the case of an instrumentalist) element in notation. Notation functions as a supplement to the primary data source (audio/video recordings). Analysis is ideally possible with the notation and audio/video recordings working in conjunction. It was concluded that the analysis is as good as the ability of the researcher to grasp the nuances in the renditions of manōdharmā.

Introduction

Notation is a visual representation of music. It is a medium which enables a musician to read and understand a new piece or a composition. Written notation has high importance in Indian as well as Western systems of music.



Fig. 1: Staff notation fromBeautifulNote.



In the Western classical system, music is represented through staff notation (Fig. 1). A staff notation denotes the different elements in a composition, and easily represents harmony and polyphony, which makes it incredibly useful in an orchestral setting.

1. || ; , s s ṇ S rg rs S s ṇ s r sr gm |
 || ē mi - nē - - - ra - mu - - - | |
 | G r r G m g | r r G mp mg rg S ||
 | - nan - - nu - | brō - - - - - va ||

2. || ; , s s ṇ sr Gmg rs S s ṇ s r sr gm |
 || - - ē mi - nē - - - ra - mu - - - | |
 | G r r G m g | r r G mp mg rg S ||
 | - nan - - nu - | brō - - - - - va ||

Fig. 2: Svvara notation for a composition.

In the Indian classical system, svvara notation or sargam notation is followed (Fig. 2). Since Indian music, as opposed to the Western counterpart, is monophonic, the focus is on representation of the main melody.

Brief History

The earliest evidence of a rudimentary notation system can be found in the Kudumiyanmalai inscriptions of Tamil Nadu. The inscriptions date back to 7th-8th century CE and contain 38 horizontal lines of notations inscribed on a 13 by 14 ft rock face(‘Musical Notation’).

Examples can be found throughout history of attempts made to document the existing music of the time period through notation. In the year 1892, A. M. ChinnaSwamiMudaliyar published a book titled ‘Oriental Music in European Notation’. This book contains a compilation of Karnāṭaka musical compositions in Western Staff notation.

Saṅgīta SampradāyaPradarśini, published in Telugu in the year 1904, marks a landmark event in the history of Karnāṭaka music. SubbarāmaDikṣitar, at the behest of ChinnaSwamiMudaliyar, authored the book which contains the compositions of MuttusvāmiDikṣitar and other composers in notation along with Veṅkaṭamakhi’s theory of music. This book serves as the only authentic reference for the compositions of MuttusvamiDikṣitar till date. It is also unique in that it is the first available work that attempts to represent gamaka-s in notation. SubbarāmaDikṣitar devised a set of symbols to represent the different types of gamaka-s that were prevalent during his time period.

~~~~	kampita
∴	sphurita
∴	pratyāghāta
w	nokku
^	ravai
✓	khaṇḍimpu
(	vaḷi
/	ēṭRa jāru
\	iRakka jāru
x	odukkal
γ	orikai

Fig. 3: Gamaka symbols given in Saṅgīta SampradāyaPradarśini

**Features of Notation**

A notation contains information about the composition such as the compositional form, the rāga and tāḷa to which the composition is set, the composer and other relevant details. It is followed by the śuddha sāhitya (in some cases), and the actual notation represented by a line of svvara followed by the corresponding sāhitya directly below, and so on. The notation provides information regarding the division



of sections, the saṅgati-s or variations, and the tāla markers. Notations can be classified as simple or elaborate based on the representation of gamaka-s. It can be seen that most notations are simple and do not contain representation of gamaka-s. Sharada Gopalam opines that since notation has generally been used by those specially equipped to interpret it, the need for the representation of gamaka-s was perhaps not felt. (1)

**Notations in Manōdharma Saṅgīta**

Manōdharma saṅgīta is the improvisational aspect of Karnāṭaka classical music. Since it is extempore, attempting to notate a rendition of manōdharma is an arduous task. There are two instances that require notating manōdharma: learning, and research.

There are several books that have presented some aspects of manōdharma saṅgīta in notation. Pallavi Svarakalpavalli by Tiruvottriyur Tyagaiyyar, Sangita Tatva Pradarsini by Prof. Vedanta Bhagavata, and Sangitanubhava Sara Sangraha by Perungulam V. Srinivasa Ayyangar contains extensive kalpana svara passages represented in notation. (Sharma 3)

Akella Mallikarjuna Sharma, a musician from Andhra Pradesh, has redefined the gamaka-s to fit in the contemporary practice and devised a set of 60 symbols to represent the various gamaka-s used. He has further utilized these symbols to notate the ālāpāna rendition of various rāga-s to facilitate music students in learning manōdharma (Fig. 4).

8th Mela 02. TODI

s r g m p d n ś  
ś n d p m g r s

pdP mpM Ḡ g r R - r ḡ mpmm Ḡ ; ḥp m Ḡ r R - m ḡ ḥp m M, d Ḡ ḡ r R - spM Ḡ R  
r r S ; - S ; ḡ r r s ṇ ḍ Ḍ Ḡ g r R - Ḡ ; ḥ m g r S r ṇ - S , r - ḡ m grR - ḡ R g M  
M - M , d d M, ḡ ḡ r R - ḡ r R g M ḥ ḍ m g r ḡ M - ḍ m g r ṇ r ḡ M - ḍ m g ṛ m  
g r ś g r s ṇ s r ḡ M - s r ḡ m p D Ḡ M - pdP ; d Ḡ mdP ; ḡ Ḡ M - mnḠ D ; ḥ d p m  
ḡ Ḡ m P, ṁ - d p m g r s r ḡ m P, ṁ - p d n d p m ḡ Ḡ m p d m P, ṁ - p d n d p ṁ  
d p m ḡ ḥp m g r s r ḡ m p d m P, ṁ ḥ P d n dpM mdP; ḡ Ḡ M - mnḠ D ; - ḍ m g r ḡ  
m D - ḍ m g r ṇ r ḡ m D - ḡ m d n ṛ n d m g r s ṇ Ḡ S - Ḡ Ḡ Ḡ P, ḍ Ḡ n d p m mdP ḡ  
Ḡ M - mnḠ D ; ḥ D D - d Ḡ Ḡ - D Ḡ M Ḡ - D Ḡ Ḡ Ḡ m P d n d p m - mdP ḡ Ḡ M mnḠ D  
; ḥ d Ḡ Ḡ n ś n n d D - ḡ d n ś n n d D - d Ḡ - d D P ; - P Ḡ n P D ṁ - pdP - d Ḡ D  
ḥ N N - d Ḡ d N - d Ḡ g Ḡ R G - M d N ; ṛ d n ḡ ṛ ś ṛ n d D ḥ N ś ṛ Ḡ ; n d P D ḡ  
Ḡ d Ḡ D - ṛ Ḡ n d Ḡ d N Ḡ ḡ ṛ Ḡ Ḡ ; ; ṛ n d m g r ḡ m d Ḡ n Ḡ ḡ ṛ Ḡ Ḡ, ṁ ḥ Ḡ ḡ

Fig. 4: Akella Mallikarjuna Sharma’s notation for rāga ālāpāna

While the above examples demonstrate the use of manōdharma notation for the purpose of learning, the following examples showcase the various attempts undertaken by researchers to represent manōdharma saṅgīta as accurately as possible.

**T. Vishwanathan**

Vishwanathan, in his doctoral thesis ‘Raga Alapana in South Indian Music’, represents renditions of rāga ālāpāna using four different systems:

The first system is staff notation (Fig. 5). In this system, the benefit is that the manōdharma element being notated is more accessible to Western musicians. However, those unfamiliar with the staff notation will find it difficult to understand the notation. Also, the gamaka-s are not represented in the staff



Fig. 5: Staff notation of Rāga Bhairavi from T. Vishwanathan's thesis

The second system is block notation (Fig. 6). In this system, the notes are represented along the vertical axis and the duration is represented along the horizontal axis. The fixed svāra-s S,P and Ś are indicated with double lines. The movement of the ālāpana is represented visually through this notation.

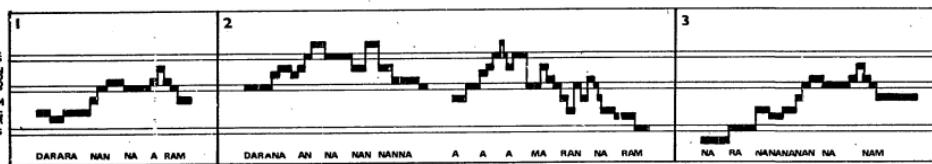


Fig. 6: Block notation of Rāga Bhairavi from T. Vishwanathan's thesis

The third system is Melograph notation (Fig. 7). A melograph is a mechanical device that notates on paper the exact music being played ('Melograph'). The minute nuances are represented accurately by the device.

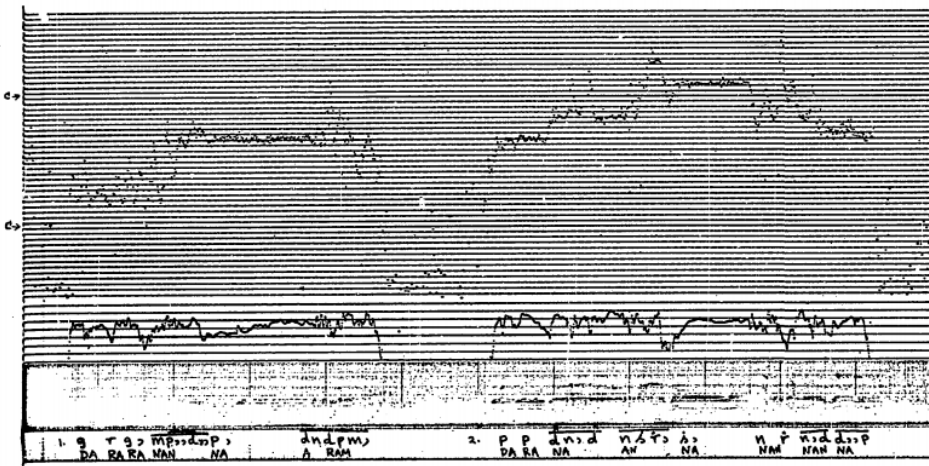


Fig. 7: Melograph notation of Rāga Bhairavi from T. Vishwanathan's thesis

Finally, he also represents the ālāpana renditions in svāra notation. He adopts the prescriptive notation, or the skeletal structure, rather than the descriptive notation. Hence, the gamaka-s are not represented in this system. In this example (Fig. 8), the bhāṣāṅga svāra D₂ is represented by a cross above the note.

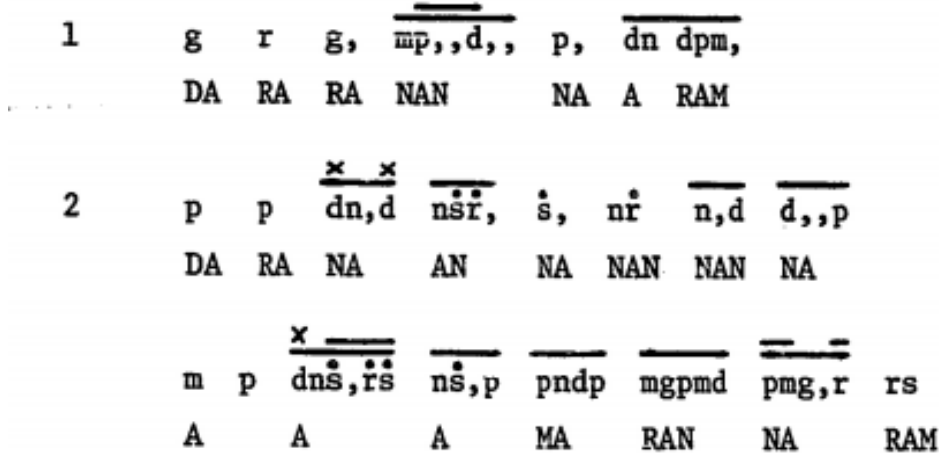


Fig. 8: Svara notation of Rāga Bhairavi from T. Vishwanathan's thesis

**Gayathri RajapurKassebaum**

The author, in her research paper titled 'Improvisation in alapana performance: A comparative view of raga shankarabharana', categorizes the gamaka-s into four broad categories based on the initial movement:

- a. Type A - Slide from a higher tone down to the principal tone
- b. Type B - Slide from the principal tone down to a lower tone
- c. Type C - Slide from a lower tone up to the principal tone
- d. Type D - Slide from the principal tone up to a higher tone

Type A	
Type B	
Type C	
Type D	

The author adopts a pitch-time graph notation system (Fig. 9 & 10). The vertical axis represents note positions, while the horizontal axis represents the time duration. The duration of each individual note was measured using a stopwatch (Kassebaum). The author has also provided the svara notation below the graph to enable the reader to identify the phrases more easily.

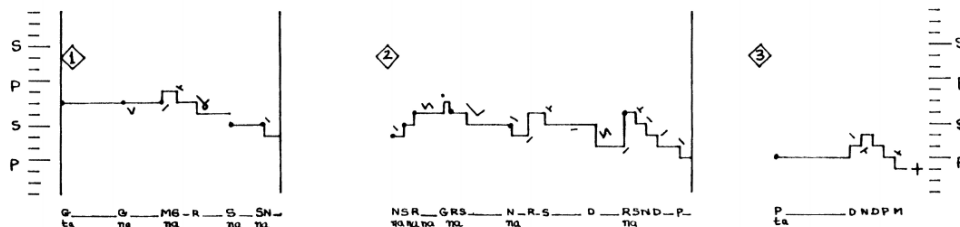


Fig. 9: Graph notation of Rāga Śaṅkarābharana from Gayathri RajapurKassebaum's article

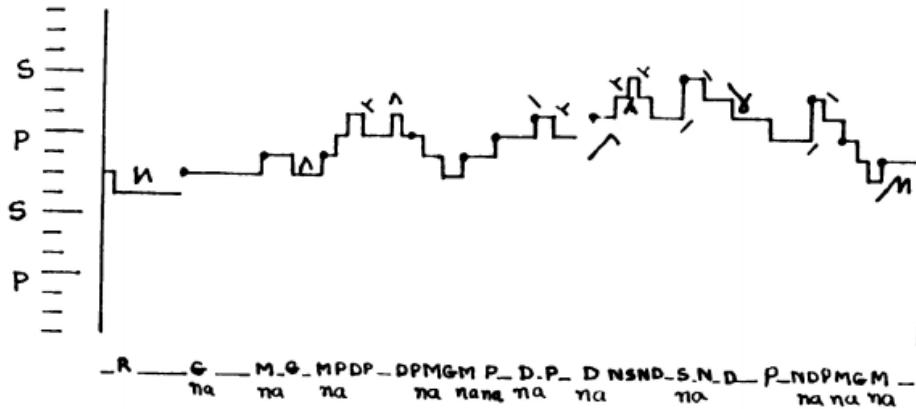


Fig. 10: Enlarged view of graph notation

**G Chandramouli**

The author has utilized technology to render amplitude-time graphs (Fig. 12) to accurately represent the nuances in the pitch variations in a rendition of a rāgaālāpana. He has also provided svara notation along with the graphs as shown below:

**Stage 1 – Introduction**

s... rsnd d  
pdnsrg..rs.....sgrn  
s....rgmpddpmgrr..  
gmpmgrp.rng....nddpmg...r  
gmdm...dmgrsn s..r gmpdpmpmg..grr

Fig. 11: Svara notation given in G Chandramouli’s thesis

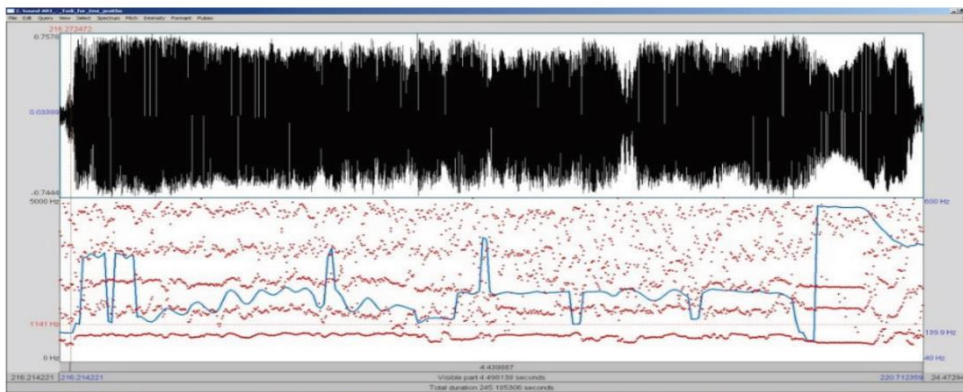


Fig. 12: Amplitude-Time Graph of a rāga ālāpana given in G Chandramouli’s thesis

Some research topics require a prescriptive, or minimal, notation while other topics require a descriptive notation with all the finer nuances captured. There is a shift in the focus of notation for each of the following topics:

- a. The importance of silence in rāgaālāpana  
 In this case, the focus of the notation would be to highlight the intervals between the different phrases in a rāga ālāpana.
- b. Structural analysis of a rāgaālāpana  
 Here, the focus of the notation would be to clearly depict the overall structure and stages as



seen in a rāga ālāpana.

- c. Analysis of the features of a rāga as seen in rāgaālāpana

The focus of notation in this case would be to represent the different characteristics of a rāga, and hence would require a more detailed notation when compared with the previous two.

## 1 Methodology

This paper attempts to highlight some aspects of manōdharmasaṅgīta that are difficult to transcribe to notation accurately. The rendition chosen for this study is the kṛti ‘YeṭulaBrōtavo’ in the rāgaCakravāka and MiśraChāputāḷa, rendered by the artiste Ramakrishnan Murthy. This rendition contains three aspects of manōdharmasaṅgīta – that is, ālāpana, neraval and svara kalpana. Prescriptive notation has been opted for the purpose of this study.

## 2 Analysis

The analysis has been carried out for the three aspects of manōdharmasaṅgīta seen in the rendition taken up for the case study.

### 2.1 RāgaĀlāpana

#### Intervals

One of the main challenges in transcribing rāgaālāpana is depicting the intervals in between phrases. For example, in the following notation excerpt, there are three distinct phrases, or groups:

p d N, n ś ř ś n d n ś n D ś n d ś N n d p MP D p d N, ġ ř Ś; n ś ř Ś ř ś n D N,

The notation alone does not provide a complete picture of the gap between each of the three groups. It simply provides a general overview of the phrase.

#### KālaPramāṇa

Using the same example given previously, another challenge lies in the case of kālapramāṇa, where a single underline or double underline does not signify double speed or triple speed. They are just relative indicators of speed and it is difficult to measure the phrases in terms of absolute speed.

#### Notes without defining positions

#### d n Ś ř ś n d

In the phrase notated above, the artiste has rendered the riṣabhā in between R₁ and R₂. The position of the riṣabhā is quite difficult to render in notation unless the system of 22 shrutis is considered. This further increases the complexity of the notation.

### 2.2 Neraval

#### KālaPramāṇa

There are two additional layers of complexity in notating neraval renditions, the first being tāḷa and second being the sāhitya.

	,	,	m		m	,	m	,	
			bhak		ṣiñ	-	ci	-	
	m	m	,		<u>m.g</u>	<u>p.m</u>	<u>G</u>	<u>r.g</u>	<u>g.r</u>
	ti	ri	-		gi	-	-	ti	-
	<u>s.n</u>	<u>d.n</u>	<u>,</u>		-	-	-	-	
	-	-	-		-	-	-	-	

In the neraval excerpt given above, it can be observed that the second line is not exactly in caturaśra. During the flow of manōdharmā, a lot of instances where the sāhitya part does not fit rigidly into the tāḷa structure can be observed.

The below notation represents the challenge more clearly. In the second line, the svāra or the akṣaracount is 13, a prime number, and in the third line, it is 10 and 9, respectively.

	,	,	s		r	g	,	m	
	-	-	vaṭ		ṭi	-	-	go	
	,	p	,		<u>p.m</u>	<u>p.dN</u>	<u>n.d</u>	<u>p.d.p</u>	



	- ḍḍu -	rī - - -	
	m P m p d N n d	d p D p m p , m	
	- - -	- - - - ti	

## 2.3 Svara Kalpana

	, , , , , m g	
	r s p m g r s	
	n d p m p d n	
	ś n ḡ ř ś n d	

Svara kalpana is comparatively easier to notate, both in the case of first speed and second speed, and in the case of gatibhēdha, as the structure is a bit more rigid and fits in the framework of the tāla. Even so, there are finer nuances in svarakalpana which may be represented using gamaka symbols.

## 3 Findings

Various attempts have been made to notate the improvisatory elements such as rāga, tāna, neraval and svara kalpana. The accurate representation of the nuances depends on the usage of gamaka symbols. But in doing so, an additional layer of complexity is added to the notation.

The kālapramāṇa cannot be notated exactly in the free-flow aspects of manōdharma, they can only be indicated as relative speeds. More detailed the notation, the more complex it becomes to understand and reconstruct the music based on notation alone.

In research, there are many systems of notations that are unique to the individual researcher as seen in Dr. Vishwanathan's block notation and Dr. Gayathri's graph notation.

Since the main focus of research is not to accurately represent the elements of manōdharma in written format, but to facilitate a deep analysis of the art form, notations can be used as a supplementary aid, or a foundation to build upon. It is not possible to represent all the minute nuances involved in renditions of the manōdharma elements.

## 4 Summary

While it is possible to utilize gamaka symbols in notation to make it more detailed, they do not capture the complete essence of the phrases in rāgaālāpana, neraval and svara kalpana. For this reason, prescriptive notation has been adopted for this study. The objective of notating manōdharmasaṅgīta in research should be to find a balance between readability and accuracy. Additionally, elements such as modulation and intonation are difficult to represent in notation.

In conclusion, it is important to remember that the purpose of notation is to facilitate the easier understanding of a musical piece. In manōdharmasaṅgīta, notations are not adequate to capture all the nuances. While it is important to document the data, it is even more important to analyze the data in research. This is possible when the notation is used as a supplementary aid to the primary data sources which are audio and video recordings. Ultimately, the analysis is as good as the ability of the researcher to grasp the intricacies and nuances of manōdharma saṅgīta.

## 5 Acknowledgements

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## 6 Bibliography

Chandramouli, G. Analysis of Established Performing Styles and Their Various Aspects Contributing to the Development of Carnatic Music. Annamalai University, 2015, <http://hdl.handle.net/10603/182937>.

Gopalam, Sharada. Development of Notation in Karnataka Music. University of Mysore, 1984, <http://hdl.handle.net/10603/92562>.

---. Facets of Notation in South Indian Music. Sundeep Prakashan, 1991.





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- Kassebaum, Gayathri Rajapur. 'Improvisation in Alapana Performance: A Comparative View of Raga Shankarabharana'. Yearbook for Traditional Music, vol. 19, 1987, pp. 45-64, [www.jstor.org/stable/767877](http://www.jstor.org/stable/767877).
- . Personal Interview. Interview by Karthik Ganesh, 19 Dec. 2019.
- Mudaliyar, A. M. C. Oriental Music in European Notation. 1st ed., A.M. ChinnaswamiMudaliyar, 1892, <https://digitalcollections.nypl.org/collections/oriental-music-in-european-notation#/?tab=about>.
- Murthy, Ramakrishnan. 'YetulaBrotuvu'. December Season 2012, Charsur Digital Workstation, 2012.
- Music Lessons UnoM-IDE MMus-2001 Printed-Texts.  
<http://musicresearchlibrary.net/omeka/items/show/2107>. Accessed 10 Jan. 2020.
- 'Musical Notation'. Wikipedia, 1 Jan. 2020. Wikipedia, [https://en.wikipedia.org/w/index.php?title=Musical_notation&oldid=933467613](https://en.wikipedia.org/w/index.php?title=Musical_notation&oldid=933467613).
- Pattabhiraman, Ananth. 'Staff Notation/Score for DharbarVarnam'. BeautifulNote, Dec. 2018, <https://beautifulnote.com/blog/2010/03/31/dharbar-varnam-score.html>.
- Sharma, AkellaMallikarjuna. 'AMS Easy Methods 2007 CD - Teaching and Learning Methods'. Sangeethapriya, <http://www.sangeethamshare.org/chandra/AMS-Easy-Methods-2007/AMS-EM-DVD/>. Accessed 3 Jan. 2020.
- Sharma, K. N. Renganatha. A Study of Pre-Composed Kalpana Svaras in Music Publications. University of Madras, 1990, <http://musicresearchlibrary.net/omeka/items/show/357>.
- Viswanathan, T. Rāga Ālāpana in South Indian Music. Wesleyan University, 1974.