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Revisiting Raga Classification as Propounded by Pandit Vishnu Narayan Bhatkhande

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Abstract

One of the significant contributions to Hindustani classical music is attributed to Pandit Vishnu Narayan Bhatkhande. In his voluminous series of publications, he organized various ragas into ten distinct groups known as "Thaat." However, the underlying principle or rationale behind such a classification remains unspecified in his works. Pandit Vishnu Narayan Bhatkhande (VNB) proposed ten primary Thaat, prompting questions about why only ten were selected and not more. If the classification were solely based on permutations and combinations of musical notes, the number of Thaat would likely exceed ten. This article aims to elucidate the potential logic behind such classification, which appears to be absent from Bhatkhande's texts. It is observed that all ten Thaat proposed by Bhatkhande adhere to a common rule that each musical note in every "Thaat" has a Samvaadi. This observation suggests the possibility of two additional Thaat, namely Kokila Pancham and Seemendra Madhyam, yet these are notably absent from Bhatkhande's works for reasons unknown. Further, we highlight ambiguities in Pt. VNB's classification and the evolving landscape of Raga classification.

1. Introduction

Humans' innate desire for classification likely arises from the need to simplify the overwhelming variety of objects around them. For Indian musicians and musicologists, the focus of interest has been classification of "melodic and harmonic combinations of sounds," known as *Ragas*. By analysing unique characteristics of *Ragas,* they attempted to group them on the basis of "diverse effects these melodies evoked" on human minds. For instance, *Ragas* captured the essence of tranquil mornings, dark nights, or sunny afternoons and were therefore categorized on the basis of time (into 8 *prahars*). Some *Ragas* captured the qualities of masculinity or femininity and were thus, classified based on gender (6 *ragas* and 36 *raginis*), while many others evoked the essence of seasons such as *Basant, Hemant, Malhars* and hence, were grouped accordingly. Although such attempts of classification seem to be thought provoking, they also appear to be very subjective in nature. Moreover, such multiple models of classification highlight that no single method can fully encapsulate the complete nature of a

raga. This is probably because understanding "what a *raga* is" intellectually often proves more complex than understanding "what it is not." A *raga* is neither a fixed melody nor a specific composition, neither just a scale and nor a mere collection of notes. Instead, it is a fluid, dynamic and an organic entity with multifaceted features; any attempt to define and encapsulate the essence of a *Raga* intellectually, always falls short of capturing its complete personality, echoing the concept of "*Neti*, *Neti*, *Neti*" (not this, not this, not this).

Among various methods of classification, the classical music world has given significant importance to *Pt. Vishnu Narayan Bhatkhande's* system, introduced in the 20th century; and his work remains a foundational framework for *Raga* classification, today. In his approach, he tried to capture the essence of a *Raga* by defining its most dominant musical note (*vaadi*), the second-most important note (*Samvaadi*), patterns of ascent, descent, and characteristic phrases. After analysing the existing *Raagas*, he grouped them into 10 different groups, based on the "kind of specific musical notes (*shuddha* and *vikrut*)" employed in a *Raga*. However, nowhere in his voluminous text did he specify a rationale for the same, when there could have been more number of groups (32). In this study, we try to comprehend a rationale for the same and also address the ambiguities persisting in his classification approach.

Note: Throughout the article, the *shuddh* forms of a musical note are denoted in uppercase and the *vikrut* forms of a musical note are denoted in lowercase. The notes belonging to *Taar saptak* are marked with an apostrophe ('). The hindi terms are italicized (e.g., *Raga*)

2. Classification by *Pandit Vishnu Narayan Bhatkhande* (VNB)

VNB grouped vast array of *Ragas* into ten distinct groups and labelled them as *Thaat* (shown in Table 1). Quoting VNB "*Thaats* are the succeeding stepstones of the octave. A *Thaat* is born out of the twelve notes of the musical octave." He mentioned the following points regarding the *Thaat* (Jairazbhoy (1995)):

(i) A *Thaat* must have only seven notes.

(ii) The sequence of musical notes should be as: "Sa, Re, Ga, Ma, Pa, Dha, Ni". Both versions of a musical note (i.e., *shuddh* and *vikrut*) must not been used in a *Thaat*.

(iii) *Thaat* must be named after prominent *Ragas*, *whether* the Ragas are heptatonic or not. (New names were not assigned to the *Thaats*, probably to make them easy to remember, rather than adding more labels to the documentation.)

One may observe that the total combinations of 12 musical notes selected in a way such that the above rules of *Thaat* formation are kept intact, one will arrive at 32 (2^5) such combinaitons (shown in Table 1). Then, why did VNB recognize only ten such combinations as *Thaat* and discarded the others? For instance, the natural scale "Sa Re Ga Ma Pa Dha Ni" was identified as "*Thaat* Bilawal." However, replacement of "*Shuddh* Re" with "Komal Re" i.e., the scale "Sa re Ga Ma Pa Dha Ni" was not considered to be a *Thaat*, despite following the above mentioned rules of the *Thaat*.

VNB's choice to limit the classification to only "ten groups" is intriguing and leaves room for further exploration and discussion. It clearly hints that there was more to his selection criteria than just the mathematical possibilities, but it remains unspecified in his work.

Table 1. Possible combinations of Thaat and combinations selected by VNB for Thaat

S. No	VNB's *Thaat*	Possible combinations for *Thaat*							
1	**Bilawal**	**"Sa**	**Re**	**Ga**	**Ma**	**Pa**	**Dha**	**Ni**	**Sa'"**
2	-	"Sa	re	Ga	Ma	Pa	Dha	Ni	Sa'"
3	-	"Sa	Re	ga	Ma	Pa	Dha	Ni	Sa'"
4	**Kalyan**	**"Sa**	**Re**	**Ga**	**ma**	**Pa**	**Dha**	**Ni**	**Sa'"**
5	-	"Sa	Re	Ga	Ma	Pa	dha	Ni	Sa'"
6	**Khamaj**	**"Sa**	**Re**	**Ga**	**Ma**	**Pa**	**Dha**	**ni**	**Sa'"**
7	-	"Sa	re	ga	Ma	Pa	Dha	Ni	Sa'"
8	**Marwa**	**"Sa**	**re**	**Ga**	**ma**	**Pa**	**Dha**	**Ni**	**Sa'"**
9	**Bhairav**	**"Sa**	**re**	**Ga**	**Ma**	**Pa**	**dha**	**Ni**	**Sa'"**
10	-	"Sa	re	Ga	Ma	Pa	Dha	ni	Sa'"
11	-	"Sa	Re	ga	ma	Pa	Dha	Ni	Sa'"
12	-	"Sa	Re	ga	Ma	Pa	dha	Ni	Sa'"
13	**Kaafi**	**"Sa**	**Re**	**ga**	**Ma**	**Pa**	**Dha**	**ni**	**Sa'"**
14	**Purvi**	**"Sa**	**Re**	**Ga**	**ma**	**Pa**	**dha**	**Ni**	**Sa'"**
15	-	"Sa	Re	Ga	ma	Pa	Dha	ni	Sa'"
16	-	"Sa	Re	Ga	Ma	Pa	dha	ni	Sa'"
17	**Todi**	**"Sa**	**re**	**ga**	**ma**	**Pa**	**dha**	**ni**	**Sa'"**
18	-	"Sa	Re	ga	ma	Pa	dha	ni	Sa'"
19	-	"Sa	re	Ga	ma	Pa	dha	ni	Sa'"
20	**Bhairavi**	**"Sa**	**re**	**ga**	**Ma**	**Pa**	**dha**	**ni**	**Sa'"**
21	-	"Sa	re	ga	ma	Pa	Dha	ni	Sa'"
22	-	"Sa	re	ga	ma	Pa	dha	Ni	Sa'"
23	-	"Sa	Re	Ga	ma	Pa	dha	ni	Sa'"
24	**Asavari**	**"Sa**	**Re**	**ga**	**Ma**	**Pa**	**dha**	**ni**	**Sa'"**
25	-	"Sa	Re	ga	ma	Pa	Dha	ni	Sa'"
26	-	"Sa	Re	ga	ma	Pa	dha	Ni	Sa'"
27	-	"Sa	re	Ga	Ma	Pa	dha	ni	Sa'"
28	-	"Sa	re	Ga	ma	Pa	Dha	ni	Sa'"
29	-	"Sa	re	Ga	ma	Pa	dha	Ni	Sa'"
30	-	"Sa	re	ga	Ma	Pa	Dha	ni	Sa'"
31	-	"Sa	re	ga	Ma	Pa	dha	Ni	Sa'"
32	-	"Sa	re	ga	ma	Pa	Dha	Ni	Sa'"

***All the *shuddh* forms of a musical note are denoted in uppercase and *vikrut* forms in lowercase**

3. Samvaad– the governing principle for the formation of *Thaat*

The very concept of *Raga* formation revolves around relationship and interactions of the musical notes. Just like in human conversations, certain exchanges feel more natural and engaging than the others, in music, certain intervals or combinations of notes are naturally more pleasing. Mathematically, these *Samvaads* (or conversations) can be expressed as ratios.
For example, a musical ratio 2:1 corresponds to the "*Shadaj* and *Taar Shadaj*". This relationship feels complete and stable. Similarly, the ratio 3:2 (the relation between "*Shadaj* and *Pancham*") and 4:3 (the relation between *Shadaj* and *Madhyam*) are naturally pleasing and harmonious to the ears. In a *raga*, every musical note is connected to at least one other note through these ratios, creating a balanced and consonant framework. If even one musical note in a certain combination would not have a *Samvaadi*, it would not qualify as a *Raga*. VNB mentions about various vaadi-samvadi pairs in the description of *Ragas* and it is quite evident that he was aware of the *Samvaad* principle. For example:

Yaman: Ga and Ni (*Vadi samvadi*: *Shadaj-Pancham* bhaav)
Bilawal: Dha and Ga (*Vadi samvadi*: *Shadaj-Madhyam* bhaav)
Khamaj: Ga and ni (*Vadi samvadi*: *Shadaj-Madhyam* bhaav)

If we analyse his Ten *Thaats*, the presence of *Samvaadi* pairs (harmonious note combinations) appears to be a key feature in his identification of *Thaat*. As shown in Tables 2–11, each *Thaat* defined by Pt. VNB includes note pairs that follow the *Samvaad* principle, such as *Sa-Pa* or *Sa-Ma*. If any combination of notes lacked a *Samvaadi* pair, it was not considered a valid *Thaat*, reinforcing the importance of *Samvaad* in the *raga* classification system. Table 12 illustrates such an invalid combination due to missing *Samvaadi* pairs.
Hence, it is very likely that Pt. V.N.B's choice of 10 *Thaats* instead of 32 was influenced by his awareness of this principle, though he did not explicitly outline this rationale in his writings for reasons unknown. He ensured that the principle of *Samvaad* was embedded in the way *ragas* were classified. Similarly, the *samvaad* tatv is visible also in various phrases in the *Ragas* e.g., "Ni Re Ga" and "ma Dha Ni" couplets of yaman appear to be *samvaadis*.

Table 2. *Thaat* Bilawal

Musical note	**Samvaad**	
	Sa-Ma	**Sa-Pa**
Sa	Ma	Pa
Re	Pa	Dha
Ga	Dha	Ni
Ma	**ni**	Sa'
Pa	Sa'	Re'
Dha	Re'	Ga'
Ni	Ga'	**ma'**

Table 3. *Thaat* Kafi

Musical note	**Samvaad**	
	Sa-Ma	**Sa-Pa**
Sa	Ma	Pa
Re	Pa	Dha
ga	**dha**	ni
Ma	**ni**	Sa'
Pa	Sa'	Re'
Dha	Re'	Ga'
ni	ga'	Ma'

Table 4. *Thaat* Bhairav

Musical note	Samvaad	
	Sa-Ma	Sa-Pa
Sa	Ma	Pa
re	**ma**	dha
Ga	**Dha**	Ni
Ma	**ni**	Sa’
Pa	Sa’	**Re’**
dha	**Re’**	Ga’
Ni	Ga’	**ma’**

Table 5. *Thaat* Bhairavi

Musical note	Samvaad	
	Sa-Ma	Sa-Pa
Sa	Ma	Pa
re	**ma**	dha
ga	dha	ni
Ma	**ni**	Sa’
Pa	Sa’	**Re’**
dha	re’	ga’
ni	ga’	**Ma**

Table 6. *Thaat* Khamaj

Musical note	Samvaad	
	Sa-Ma	Sa-Pa
Sa	Ma	Pa
Re	Pa	Dha
Ga	Dha	**Ni**
Ma	**ni**	Sa’
Pa	Sa’	Re’
Dha	Re’	Ga’
ni	ga’	**Ma’**

Table 7. *Thaat* Asavari

Musical note	Samvaad	
	Sa-Ma	Sa-Pa
Sa	Ma	Pa
Re	Pa	**Dha**
ga	dha	ni
Ma	**ni**	Sa’
Pa	Sa’	Re’
dha	re’	ga’
ni	ga’	**Ma’**

Table 8. *Thaat* Kalyan

Musical note	Samvaad	
	Sa-Ma	Sa-Pa
Sa	Ma	Pa
Re	Pa	Dha
Ga	Dha	Ni
ma	Ni	**re**
Pa	Sa’	Re’
Dha	Re’	Ga’
Ni	Ga’	**ma’**

Table 9. *Thaat* Purvi

Musical note	Samvaad	
	Sa-Ma	Sa-Pa
Sa	Ma	Pa
re	ma	dha
Ga	Dha	Ni
ma	Ni	**re**
Pa	Sa’	Re’
dha	re’	**ga’**
Ni	Ga’	**ma’**

Table 10. *Thaat* Marwa

	Samvaad

Table 11. *Thaat* Todi

	Samvaad

Musical note	Sa-Ma	Sa-Pa
Sa	Ma	Pa
re	**ma**	dha
Ga	Dha	Ni
ma	Ni	**re**
Pa	Sa’	Re’
dha	re’	**ga’**
Ni	Ga’	**ma’**

Musical note	Sa-Ma	Sa-Pa
Sa	Ma	Pa
re	ma	dha
ga	Dha	Ni
ma	Ni	**re**
Pa	Sa’	Re’
dha	re’	**ga’**
ni	ga’	**Ma’**

Table 12. Invalid combination for *Thaat* (as per VNB)

Musical note	Samvaad	
	Sa-Ma	Sa-Pa
Sa	Ma	Pa
re	**ma**	**dha**
Ga	Dha	Ni
Ma	**ni**	Sa’
Pa	Sa’	Re’
Dha	Re’	Ga’
Ni	Ga’	**ma’**

Table 13. *Thaat* Seemendra Madhyam

Musical note	Samvaad	
	Sa-Ma	Sa-Pa
Sa	Ma	Pa
Re	Pa	Dha
ga	Dha	Ni
ma	Ni	**re**
Pa	Sa’	Re’
dha	re’	**ga’**
Ni	Ga’	**ma’**

Table 14. *Thaat* Kokil Pancham

Musical note	Samvaad	
	Sa-Ma	Sa-Pa
Sa	Ma	Pa
re	ma	dha
ga	Dha	Ni
ma	Ni	**re**
Pa	Sa’	Re’
dha	re’	**ga’**
ni	ga’	**Ma’**

4. Ambiguities in VNB’s classification

While the logical basis for Pandit V.N. Bhatkhande's formation of *Thaat* may appear to be based on aesthetic principles of *Raga* sangeet (i.e., *Samvaad*) rather than mathematical jigs, several ambiguities still persist in this classification system:

(i) Analysis reveals that there are two additional combinations that adhere to *Thaat* formation rules and the principle of Samvaad, but were overlooked by Pt. V.N.B. Tables 13 and 14 present these additional *Thaat*—Seemendra Madhyam and Kokila Pancham—which

satisfy all the criteria for *Thaat*, yet are absent from Pt. V.N. Bhatkhande's texts. There is potential of formation of new Raags from these *Thaat*. For example, a *raga* named "Teevra kauns" exists which can be placed in this *Thaat*.

(ii) As per Pt. VNB's classification, a *Thaat* could contain only one variant (*Shuddh* or *Vikrut*) of a musical note; hence, it left no space for placement of the *Ragas* (e.g., Jog, Lalit) that contained both the variants of a musical note. Despite recognising the existence of such *Ragas*, he placed them within the domain of his predefined 10 *Thaat* without specifying the logic. For example, *Raga* Jog (that uses both *Shuddh* and Komal Gandhars) was assigned to *Thaat* Kaafi, *Raga* Lalit (that employs both *Shuddh* and *Teevra* forms of Madhyam) was placed under *Thaat* Marwa, while Malhar (that also employs both *Shuddh* and *Komal* forms of Nishad) was placed in *Thaat* Kaafi, Jaijaiwanti (that employs 2 *Gandhars* and 2 *Nishads*) was placed in *Thaat* Khamaj and so forth.

(iii) Some *Ragas* could have been placed in multiple *Thaats* however, were assigned a specific *Thaat* without enough explanations for such a decision. For instance, Bhoop (or Bhupali) can align with several *Thaat* like Khamaj, Kalyan, and Bilawal, yet it was classified under *Kalyan*. However, Deshkar (employing the same notes as Bhoop) was placed in *Thaat Bilawal.* Although, a newer classification system (not proposed by VNB) based on *Ragang-padhdhati* clarifies this placement.

(iv) Pt. V.N.B used the names of existing *ragas* to label his ten proposed *Thaat*, assigning a *Thaat* the name of a *raga* that employs all seven musical notes of that *Thaat*. However, some ragas, such as *Marwa*, do not use all seven notes, yet its name was used to label a *Thaat*. This *Thaat* instead could have been named as *Puriya Kalyan*. This raises questions about the criteria for naming *Thaat*.

(v) The classification reflects a snapshot of *Ragas* at the time of Pt VNB's time but does not include space for the newer ones that emerged with time. The placement of newly conceptualised *ragas* such as Vibhavati (Sa, re, Ga, Pa, ni, Sa') raises a question mark on the rigidity of the existing classification framework. In a scenario, where new *ragas* are created every now and then, the system of classification should also ensure that the new *Ragas* could fall into the system.

5. Emerging models of classification

Music, like other art forms, is always evolving and open to new ideas. Since Pandit V.N. Bhatkhande's work, there has been no major advancement in *Raga* classification. Although new models are being developed, the most recent effort is by Shrikant J. Wagh (2021), who introduced a classification system with seven distinct categories (see Table 15). According to his approach, each *raga* includes atleast a Madhyam or a Pancham; leading to the creation of seven categories: (i) Ragas with only *Shuddh* Madhyam (Ekal *Shuddh* Madhyam), (ii) Ragas with only Teevra Madhyam (Ekal Teevra Madhyam), (iii) Ragas with only Pancham (Ekal Pancham), (iv) Ragas with both Shuddh Madhyam and Teevra Madhyam (Yugal), (v) Ragas with both Shuddh Madhyam and Pancham (Yugal), (vi) Ragas with both Teevra Madhyam and Pancham (Yugal), and (vii) Ragas with Shuddh & Teevra Madhyam and Pancham (Triveni).

Although, this system has been left open for the world of Indian classical music, it needs further discussion and exploration.

The other contemporary research includes machine learning algorithms and computational approaches to identify the melodic and rhythmic features of a *Raga* for classification. These algorithms may have the potential to process large datasets, identifying patterns and correlations that may be overlooked in traditional systems (Bhagyalakshmi and Anandaraju, 2024).

Table 15. Classification model proposed by Shrikant J Wagh (2021)

Class 1	**Class 2**	**Class 3**	**Class 4**	**Class 5**	**Class 6**	**Class 7**
Ekal Shuddha Madhyam (Ma)	Ekal Teevra Madhyam (ma)	Ekal Pancham (Pa)	Yugal Shuddha & Teevra Madhyam (Ma & ma)	Yugal Shuddha Madhyam & Pancham (Ma & Pa)	Yugal Teevra Madhyam & Pancham (ma & Pa)	Triveni (Shuddh & Teevra Madhyam) & Pancham (ma, Ma & Pa)
42 ragas	11 ragas	31 ragas	12 ragas	246 ragas	61 ragas	58 ragas

6. Conclusions:

In revisiting Pandit Vishnu Narayan Bhatkhande's system of *raga* classification, this study highlighted both the innovative aspects and ambiguities inherent in his classification model. VNB's approach to systematize a vast array of *Ragas* into ten groups (*Thaat*) appears to be guided by the principle of *Samvaad*–which ensures that each musical note in a *Thaat* has a corresponding *Samvaadi*. This principle also helps to explain why various potential combinations (around 32) were not considered as potential *Thaat* in his framework.

The analysis suggests that although his model was based on aesthetic principles of *Samvaad* and not on mathematical jigs, certain ambiguities exist in the classification model. These include overlooked *Thaat* like Seemendra Madhyam and Kokila Pancham, which satisfy the *Thaat* criteria (based on *Samvaad*) but are absent in Bhatkhande's texts. His restriction of *Thaat* to only one variant of a note limits the inclusion of *ragas* that use both *Shuddh* and *Vikrut* forms, such as Jog and Lalit. Furthermore, some *ragas* could fit multiple *Thaat*, yet were assigned to one without sufficient explanation. The use of existing *raga* names for *Thaat* raises questions about naming conventions, especially when *ragas* like Marwa don't use all seven notes. Additionally, the classification reflects a snapshot of *ragas* from Bhatkhande's time and lacks flexibility for newer ragas, highlighting the need for an evolving framework to accommodate the continuously developing landscape of Indian classical music.

However, despite these limitations, Pt. VNB's classification marks a significant milestone in the world of classical music and serves as basis to ignite enquiries into fundamental principles governing *Raga* formation and classification. Contemporary efforts, including new

classification models and computational approaches to better capture the essence of *Raga* are in progress, indicating that the quest for a comprehensive classification system continues. Hence, the final word is a long way and a comprehensive model of classification is yet on its way.

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