

## *Time Theory in Relation to Music*

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**Abstract:** The effectiveness of Hindustani music is determined by the appropriateness of time (as a part of environment) besides the inborn template, the quality and intensity of training. For centuries, the *ragas* of Hindustani music have been conventionally assigned a particular time of the day/night or season. There is always a *raison d'être* for an established convention or customary practice. The scientific reason behind the psycho-physiological impact of time-based performance/perception of music has been discussed here. Studies have been conducted about the constancy or variability of the psycho-physiological status of humans both intra and interpersonal, during different times of the day/year, in order to assess her/his respective sensitivity towards music. The concept of associating the melodies to the time of day or season is also found in other cultures too like ancient China, Arabia and South East Asia but this system is not so elaborate in these places.

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### **Origin and development of time theory**

It appears that the association of *raga* with time is as old as *ragas* themselves. In ancient musical texts we find references to the prescribed time of *Ragas*.

“While describing the characteristics of the Gram *Ragas* (also referred to earlier in the *Natya Sastra*) in *Sangeet Ratnakar* Pt Sarangadeva mentions the time and season at certain places e.g., *Madhyamagrama* - Summer first part, *Shadjagrama*- rainy season first part of the day; (*Sudha*)- *Sadharita* - first part of day etc.

“Another work, *Sangit Makaranda* (13th-14th C) contains *Slokas* to the effect that he who sings with the knowledge of appropriate time of *raga* attains to happiness, but those who participate in the untimely performance of *ragas* become victims of poverty and short life.” (*Bisht*, 1985).

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In the 15th and 16th centuries *Man Kutuhal* and 1666 A.D. *Rag Darpan* (a persian translation of *Man Kutuhal*), *ragas* have been allotted specific time and seasons e.g., *Malkauns* and *Hindol* are meant for Spring and morning and *Shri* for summer evening etc.

Regarding India “the nucleus of time theory may be traced back to the Vedic music” (Bisht, 1985)

“There are Samans not only for various seasons but also for morning, noon and evening. Further, the five parts (*Bhaktis*) of the *Samagana* were related to the various stages of the rain-from the appearance of clouds to the stopping of the rain.” (Bisht, 1985)

Faqirullah has laid emphasis on it “When a Raga is sung at the appointed hour, its impression on the audience is total, but if the rule is not observed it fails to make any impression whatever.”<sup>1</sup>

Surveying the southern works of 16th and early 17th centuries, we find that they too connected the *ragas* to specific hours is evident from the testimony of Ramamatya’s *Swaramelakalanidhi* (1550), Somnatha’s *Raga Vibodha* (1620 A.D.) and Vyankatamakhi’s *Chaturdandi Prakashika* (17th C) etc. (Bisht, 1985).

“The 17th C authors of North Indian music have greatly advocated the time theory. Ahobala, in his *Sangita Parijata*, makes it a point to mention the time of the *Raga* even before describing it:

‘*Sarveshamapi raganam samayo atra nirupyate*’

Then he classifies the *ragas* into five groups in accordance with the time at which they are to be sung. Significance of the proper time of rendition is further stressed by his following remarks “*akalaraganena jatadosam haratyayam*” i.e., it (Megha Malhar) wards off the evils resulting from the singing of *ragas* at improper times. This remark confirms that rendering of *ragas* at improper time was strictly prohibited. Lochana (last quarter of the 17th century) and Bhavabhata (1674-1709) etc. are also unanimous on this point.” (Bisht, 1985)

“It is evident that the time theory has a very old tradition. In ancient times, it was not so elaborate, but by the medieval period it had become quite specific. At present, the theory is extant only in Hindustani Music.” (Bisht, 1985).

A tradition that originated in Vedic era and continued to evolve till the 20th century speaks volumes of advantages that must have been observed not only when the tradition was started but also in the duration of its detailed development extending over thousands of years. However, all these are only observational records about the time-*raga* association without

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any in depth elucidation of the reason thereof.

## **Search for Basis of Time-Theory**

Hindustani-musicologists have divergent views to explain the basis of time theory. According to Sir William Jones “the velocity or slowness of sounds must depend, in a certain ratio, upon the rarefaction and condensation of the air...” but disagreeing with him Capt. Willard says that it is the “usage of the country, established from time immemorial”. K.D. Banerji opines “The tradition of singing *Ragas* and *Raginis* at determined times of the day or night is purely a figment of imagination.”

In ‘An enquiry into *raga*-time association’ by Lath (1987), while discussing about the connection between musical forms (*gitis*) and an assigned hour of rendering them as given by Nanyadeva, the author interprets the word ‘*Shreyovisheshaya*’<sup>2</sup> of Nanyadeva as religious merit which is not so good a translation of the word ‘*Shreya*’ as the English word ‘good’. *Shreyovisheshaya* thus means ‘special goodness’ which could be indicative of the enhanced probability of achieving the desired objective via the maximality of impact. Again, at another place Mukund Lath interprets the word *Shreyovisheshaya* as ‘a little more auspiciousness’. It may be noted that auspicious also, though impliedly, means good. He says “A rule... and turns easily into established convention or customary practice.” Is not the entire human behaviour nothing but a sum of the established conventions and customary practices?

The variations observed in the detailed social practices in different geographical regions speak only of the merit ensuing from such variations in that particular locality. Wisdom lies not in rejecting those variations but investigating the basis of such merit. It is easier to demolish at any time an edifice built after centuries of constructive contributions made by stalwarts like *Nanyadeva*, *Sharngadeva*, *Ramamatya*, *Somnatha*, *Vyankatamakhi* and *Bhatkhande* etc. than to toil for working out the scientific basis if any.

Dr. Krishna Bisht rightly points out “..... this tradition would be more honoured in observance than the breach. T.S. Eliot has said that a tradition ought to be preserved when it is good. In my humble opinion the tradition of time theory is not merely good but very good – excellent, and therefore it must be preserved. So long as no happy results flow by demolishing a tradition, there is no point in such demolition. The *Ragas* are so numerous that their systematic classification into a few groups saves the learner from confusion and the concert from being a medley of *Ragas*. It prepares the mind of the listener. The deeply ingrained habit – the *Samskaras* - help create a mood and establish rapport between the artist and the audience... The very fact that the time theory has survived over the centuries speaks volumes in its favour.”

## **Influence of scientific advances**

The impact of recent scientific advances seems to have influenced musicians to also search for the rationalization of the time theory on factual scientific grounds instead of upholding it merely for reasons of ‘upholding the tradition’ for sentimental reasons.

According to Bhatkhande, (1974), “Stated times of the night and day are assigned to particular ragas, according to a design which might suggest a psycho-physiological basis.”<sup>3</sup>

However, Lath (1987) states, “He (Bhatkhande) never, so far as I know, spelt out what he wished to indicate by speaking of such a basis”<sup>4</sup>. He further points out that no one has ever tried to display and work out in proper empirical detail, the psycho-physiological basis which he believed was the ground for the raga-time connection. Mukund Lath seems to be satisfied only by raising the question rather than attempting to examine the inconstancy/constancy of the psychophysiology of man on which depends his entire expressive and cognitive activity. What Bhatkhande probably wished to indicate but could not spell out for want of familiarity with the shifting expressiveness and cognitive sensitivity of man as indicated by 24 hourly (circadian) and yearly (circannual) cycles of different indicator chemicals presented here-under after a brief resume of the time and the associated *raga* characteristics.

## **Time dependent grouping of the ragas**

In modern times, after making a detailed analysis of the *ragas* of North Indian system, the scholars have formulated two groups of *ragas* which are assigned to a particular time of the day or night. The *ragas* with *Komal Re Dha* and *Shuddha Ga Ni* come under the first and are to be sung at the commingling of day and night (*Sandhiprakash ragas*). The *ragas* with *Shuddha Re Ga Dha* come under the second category which are to be sung after the twilight *ragas*. The *ragas* having *komal Ga Ni* come under the third assemblage and are sung after the second category of *ragas*. Further *Tivra Madhyam* is indicative of the evening, while *Shuddha Madhyam* of the morning time. If the *Vadi* is in *purvanga*, it is an evening melody and if in the *uttaranga* then a morning one. However, there are some exceptions too.

Such results appear to emanate from an attempted analysis (by Bhatkhande according to Mukund Lath) after the tradition of singing *ragas* at prescribed time had established itself. This must have been due originally to the observed maximal effect and not because the *swaras* were ‘a-priori’ requirement of such *ragas* within any group as is usually implied.

Bhatkhande’s analytical study of the *ragas* resulting in pointing out the occurrence of certain particular *swaras* in the *ragas* sung at particular times could be analogous to working out

the grammatical rules after a language had established itself. Subsequently these rules are readily available for the ease of students who begin to learn the language.

The *ragas* that could not conform to the worked-out commonality continued to remain as exceptions.

In old texts, there has been a mention of some *ragas* which could be performed at any time (*Sarvakaliya*). For example, in *Sangita Parijata*, about a score of such *ragas* are mentioned.

This could further be indicative of the fact that the instances of *ragas* with almost the same impact irrespective of the time of their performance had to be designated as *Sarvakaliya* suggesting that no element of fanaticism or irrationality was allowed to influence the decision-making process involved in the grouping of *ragas* or working out their intra group commonality.

Earlier, musicians could not observe the time rule on All India Radio because round the clock broadcasts were not in vogue. However, later such broadcasts became a normal practice on All India Radio, resulting in such restrictions to fade away. Further an inconvenient fanatic adherence to the time theory need not necessarily be preferred over the convenience of the broadcasting timings. Adjustments are always conducive for the growth of any particular system.

In olden times also, the *raga*-time rule seems to have been allowed flexibility:

*“rangabhumau nripajnyam kaladosho na vidyate”*<sup>5</sup>

i.e., the law of time may be violated on the drama stage, or by the king’s order.

This is proof of the fact that as far as possible, it is better to adhere to the requirements of the time theory but not to the extent of irrational fanaticism.

However, the scientific basis of this requirement is to be thoroughly researched in the relevant physiological system for which the maximality of impact of music has to be created.

### **Human physiological processes in relation to time theory**

Moreover, a better approach for scientific study seems to be an extensive scientific search on the functioning of human physiological processes, particularly those which might serve as indicators of the effect of different times of the day and/or seasons of the year on the neuro-endocrinologically mediated changes on perceptual sensitivity and expressive activity.

Since the time theory advocates, though impliedly, that keeping the impactor(musician) and

the impacted(listener) constant, the *Raga* of the impacting material should, ideally speaking, change with time; the best approach to locate a scientific basis if any lies in ascertaining whether throughout the 24 hours, the impactor and the impacted also change physiologically, neurologically, psychologically and endocrinologically or not.

While quoting Ibn Sina, Curt Sachs writes, “As early a theoretician as Ibn-Sina (980-1037 A.D.) protests against comparing musical ratios with the stars or with mental states, since this is the habit of those who do not keep the various sciences apart nor know what they directly or indirectly include.”

Even this argument is outdated particularly in view of the grand unification theory as envisaged by Einstein foreseeing all time-space-causality created matter and energy as the non-dual singleness. The artificial boundaries that kept sciences apart are fast losing their distinctness as is evident by the appearance of many interdisciplinary fields of knowledge – biochemistry uniting biology and chemistry and bio-physics merging biology and physics respectively. A recent example is that of combining a fine art (music) with science (psychology) into psycho-musicology taught in Sweden and Germany. Ibn-Sina’s protest against comparing musical ratios with stars and mental states is justified because such comparisons are not substantiated by reason. But this must not be taken in any way as having any bearing on the validity of the time theory of Hindustani music, the sole objective of which is to recommend the time (of performance of *ragas*) most conducive for the production of desired impacting potential, keeping in view the circadian and circannual changes (indicative of the expressiveness of musician and sensitivity of the listener) within the human.

The inquisitiveness evoking ideas both for and against the time theory of Hindustani music (and recommendation to uphold it - Bisht 1985) have proved to be of immense value as a source of inspiration and stimulus for undertaking the extensive scanning of diverse scientific disciplines for explaining the underlying yet hitherto unidentified reasons that might have led to the origination, growth and development of what we call as the time theory of Hindustani music. This may not only result in specifying exactly Bhatkhande’s psycho-physiological basis, but also (what Mukund Lath calls) spell out the possible underlying ‘basis’.

### **Convention and its merit**

The foregoing discussion leads to the conclusion that

a. The initiation of a convention or customary practice (here the time theory) cannot

happen without any perceived advantage.

- b. The continuation and reinforcement of the convention or customary practice will depend on the continued concomitance or association of the advantage.
- c. The advantage for the allotment of time for performance of a *raga* must have been no other than the maximality of the impact/effect produced.
- d. Impact or effect emanates from and is received in the psychobiological system (here man) that changes internally with the time repeating itself in a circadian manner. Hence the term chronobiology suggestive of the internal biological clock within man.
- e. Therefore, the performance as also the sensitivity dependent effect of a particular *raga* will also change with the time because of the associated sensory or psychophysiological changes.

Hence, the test of the validity of time theory is the optimality of the effect on the audience.

### **References:**

1. Bisht, K. (1985) Justification of time theory in Hindustani classical music. *Bansuri*, 2,19-23.
2. Desai, Chaitanya Pundareek (1976) *Bharat Bhashyam* by Nanyadeva, Khairagarh: Indra Kala Sangeet Vishwavidyalaya.
3. Bhatkhande, V.N. (1974) *A short historical survey of the music of upper India*. Baroda: Baroda Indian Musical Society.
4. Lath, Mukund (1987) *Aspects of Indian music: a collection of essays*. New Delhi: Sangeet Natak Akademi.
5. Mishra Baldev (1934) *Raga Tarangini* by Lochana, Darbhanga: Raj Press.