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"COMPARATIVE STUDY OF FUNDAMENTAL ASPECTS OF INDIAN AND WESTERN MUSIC THEORY"

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ABSTRACT:

Music theory is the study of the practices and possibilities of music. It is derived from observation of, and involves hypothetical speculation about how musicians and composers make music. The term also describes the academic study and analysis of fundamental elements of music such as pitch, rhythm, harmony, and form, and refers to descriptions, concepts, or beliefs related to music. Because of the ever-expanding conception of what constitutes music. A more inclusive definition could be that music theory is the consideration of any sonic phenomena, including silence, as it relates to music.The present article is about music theory properly speaking, i.e. about theories, speculations and hypotheses made about the various aspects of music. It describes the elements of music only insofar as they give way to such theories;

Keywords : practices and possibilities of music , sonic phenomena.

INTRODUCTION:

For some, Western classical music is what plays in the background in elevators, reception rooms, and lounges. . We will try to go beyond these myopic perspectives and try to get a glimpse of what is great, enlightening, and thoroughly enjoyable about Western classical music. One way to do this is to shed light upon its contrasts with Indian classical music. The term "Classical music" originates from the Latin classicus, meaning first class, or for the Romans, artistry of the highest order. It encompasses a vast range of music styles over a period of 800 years. Sometimes, the term "Art music" is used. Western classical is just one among many different traditions of classical music, so when we're discussing Western classical music, we're specifically discussing European classical music. Indian classical music refers to Hindustani as well as Carnatic classical music. There are significant differences between the two, but for our current focus, they can be considered as one. Also, there are exceptions to every point below, what we are concerned with are broad differences.

FUNDAMENTALS OF INDIAN MUSIC:

Swaras: Indian music is melodic in nature, as opposed to Western music which is harmonic. Unlike the case in Western music, the musical notes used in Indian music are notat standardized frequencies. One may choose any frequency of convenience as thereference, and this frequency would then act as the tonic or base of reference for themusic to be presented. Before entering the realm of the *swara*s, we shouldunderstand the concept of octaves.

The Octavehile it may be convenient at first sight to see the entire gamut of notes on anyinstrument, for example the piano, as a sequential arrangement of different notes, I soon becomes apparent that there are notes that sound "similar", but are at differentfrequencies or pitches. pairs of such notes, where the frequency of the higher notes twice that of the lower note, define a range of notes called an octave. Such a highernote, and further notes that are at integral multiples of the frequency of the lower notereferred to, are called the harmonics of the lower note. Thus the entire range of notesavailable may be seen as a cyclical arrangement of octaves.
Microtones and Notes:It has been observed, by ancient Indian musicians as well as more recentmusicians and musicologists across the world, that the human ear is capable ofdistinguishing at the most 22 musically different or significant notes within any givenoctave. These notes are referred to as micronotes, or *shruti.* Seven of these notes areconsidered to be the basic notes or *swara*-s in Indian classical music. For this reason,an octave is called a *saptak*, meaning a group of seven notes. The basic reference note(the tonic) is called *shadja*(abbreviated as *sa*in singing and writing, as *S* here).While this could be at any frequency, let us consider it to be at 240 Hz (Hertz =4cycles per second) for the sake of illustration and further discussion. The octavespanning 240-480 Hz is then the *madhyasaptak*or middle octave, the range 120-240z is the lower octave or *mandrasaptak*, and the frequencies 480-960 Hz make up the*taarsaptak*or higher octave. The remaining notes in an octave are defined with reference to S, and are called *rishabh (ri or ray, R), gandhaar (ga, G), madhyam (ma,*a*M), pancham (pa, P), dhaivat (dha, D),* and *nishad (ni, N).* (These notes correspond approximately to the notes *C*, *D*, *E* , *F* , *G*, *A* and *B* in the Western music scale.) TheseSnext note would be the first note of the next octave, a *shadja*again, which is written a and the same sequence repeats for the higher notes. The ranges *S -M* and *P –S* arecalled the lower and upper tetrachords of the middle octave. The same pattern repeator the lower octave as well, with the notes written as, e.g., *N*. With *S* at 240 Hz, theHarmoinal frequencies of *R* , *G*, *M*, *P* , *D* and *N* are 270, 300, 320, 360, 405 and 450 Hz in the *shuddha*or pure scale of Indian music[3]. It is readily seen that thesefrequencies do not bear an additive relationship. The progression of notes isgeometric, being related by the fifth, i.e., $P/S = D/R = N/G = S.M = 1.5$terms of the micronotes, the difference or spacing between the above basic notes varies between two, three, and four. These basic notes are called the *shuddhaswara*-s,meaning pure notes. Of these notes, *S* , on account of its being the tonic, and *P*Perhaps to serve as a secondary reference at the middle of an octave, are considered tobe immobile, or *achalaswara*-s. Five additional notes are obtained by altering the

The importance of tonic note and drone:

With the notes defined as above, the importance of the tonic *S* cannot be understated. The tonic is, simply stated, the basis of the music. All the musical notes are defined with respect to

the chosen *S* . A musician has to continuously refer to the *S* to create the other notes, and to remain in tune or *shruti*(in the case of vocal music, and instruments without frets or keys for all the notes). In fact, the first exercise given a student is to sing repeatedly the notes *S* , *P* , *S* , in order to establish the *shruti.* Ths*hadja*is also the state of rest, which if not provided often could lead to a state ofunrest, unease, or confusion. While there can be no *raga* without the *shadja*as may be readily seen from the above discussion, it is sparingly used on purpose in the*raga Marva* to create the feeling of unrest to bring out the corresponding mood of lateafternoon, at which time it is to be sung.The continuous tonic required by an Indian musician is provided by a variety ofinstruments. The most commonly used drone, as such an instrument is called, is the*tambura*or *tanpura.* This is a stringed instrument, with four or five long strings on anunfretted board, ending in a large resonating chamber hollowed out of wood. A Pumpkin fruit is dried and processed and made hollow and attached to one end of wood. And strings are attached to thepumpkin and other end of wood.

Tala: Just as the concept of the octave breaks down the gamut of notes into cycles similar sounding" notes, the continuum of time is broken into cycles or *avartan*-s by the concept of the *tala[2]*. Simply stated, a *tala*is the beat given for timing notes and words in a musical composition. It is cyclical, and gives the musician the rhythm and tempo. In Indian classical music this is provided by different kinds of drums, knownas*tabla, pakhavaj,* and *mridangam.* While ancient books mention 108 different *talas,* only about a dozen of them are commonly used in current practice. The basic beat or *theka*of a *tala*is described using words called *bole* -s which relate to the different sounds of the *tabla.* The beat that starts a cycle is called the *sam*and marked with an (X). Another beat that is given importance is the *khali*(o), which is usually the beat at the beginning of the second half of the cycle. These two beats, which have distinct sounds in each *tala*aid the musician in remaining in *laya*or tempo. The most commonly used *tala*is the *teental*or *trital,* which has 16 beats or *matra*-s per cycle, broken into four sub-groups of four beats each.

FUNDAMENTALS OF WESTERN MUSIC:

Music is composed of aural phenomena; "music theory" considers how those phenomena apply in music. The Theory considers melody, rhythm, counterpoint, harmony, form, tonal systems, scales, tuning, intervals, consonance, dissonance, durational proportions, the acoustics of pitch systems, composition, performance, orchestration, ornamentation, improvisation, electronic sound production, etc.The basic elements of melody are pitch, duration, rhythm, and tempo. The tones of a melody are usually drawn from pitch systems such as scales or modes. Melody may consist, to increasing degree, of the figure, motive, semi-phrase, antecedent and consequent phrase, and period or sentence. The period may be considered the complete melody, however some examples combine two periods, or use other combinations of constituents to create larger form melodies.Pitch:Pitch is the lowness or highness of a tone, for example the difference between middle C and a higher C. Although pitch can be identified by specific frequency, the letter names assigned to pitches are somewhat arbitrary. For example, today most orchestras assign Concert A (the A above middle C on the piano) to the specific frequency of 440 Hz, rather than, for instance, 435 Hz as it was in France in 1859. In England, that A varied

between 439 and 452. These differences can have a noticeable effect on the timbre of instruments and other phenomena. Many cultures do not attempt to standardize pitch, often considering that it should be allowed to vary depending on genre, style, mood, etc. In historically informed performance of older music, tuning is often set to match the tuning used in the period when it was written. A frequency of 440 Hz was recommended as the standard pitch for Concert A in 1939, and in 1955 the Standardization affirmed the choice.A440 is now widely, though not exclusively, the standard for music around the world. In Western culture, there have long been several competing tuning systems, all with different qualities. Internationally, the system known as equal temperament is most commonly used today because it is considered the most satisfactory compromise that allows instruments of fixed tuning (e.g the piano) to sound acceptably in tune in all keys.

Scales and modes: Notes can be arranged in a variety of scales and modes. Western music theory generally divides the octave into a series of twelve tones, called a chromatic scale, within which the interval between adjacent tones is called a half step or semitone. Selecting tones from this set of 12 and arranging them in patterns of semitones and whole tones creates other scales.The most commonly encountered scales are the seven-toned major, the harmonic minor, the melodic minor, and the natural minor. Other examples of scales are the octatonic scale and the pentatonic or five-tone scale, which is common in musician blues. Indian and some other cultures often use scales that do not correspond with an equally divided twelve-tone division of the octave. Classical Ottoman, PersianIndian and Arabic musical systems often make use of multiples of quarter tones (half the size of a semitone, as the name indicates), for instance in 'neutral' seconds (three quarter tones) or 'neutral' thirds (seven quarter tones)—they do not normally use the quarter tone itself as a direct interval.In traditional Western notation, the scale used for a composition is usually indicated by a key signature at the beginning to designate the pitches that make up that scale. The interrelationship of the keys most commonly used in Western tonal music is conveniently shown by the circle of fifths. Unique key signatures are also sometimes devised for a particular composition. During the Baroque period, emotional associations with specific keys, known as the doctrine of the affections, but the unique tonal colorings of keys that gave rise to that doctrine were largely erased with the adoption of equal temperament.However, many musicians continue to feel that certain keys are more appropriate to certain emotions than others. Indian classical music theory continues to strongly associate keys with emotional states, times of day, and other extra-musical concepts and notably, does not employ equal temperament.

CONSONANCE AND DISSONANCE:

Consonance and dissonance are subjective qualities of the sonority of intervals that vary widely in different cultures and over the ages. Consonance (or concord) is the quality of an interval or chord that seems stable and complete in itself. Dissonance (or discord) is the opposite in that it feels incomplete and "wants to" resolve to a consonant interval. Dissonant intervals seem to clash. Consonant intervals seem to sound comfortable together.

Rhythm: Rhythm is produced by the sequential arrangement of sounds and silences in time. Meter measures music in regular pulse groupings, called measures or bars.

Melody:A melody is a series of tones sounding in succession that typically move toward a climax of tension then resolve to a state of rest. Because melody is such a prominent aspect in so much music, its construction and other qualities are a primary interest of music theory.

Chord:A chord, in music, is any harmonic set of three or more notes that is heard as if sounding simultaneously.[46][47] These need not actually be played together parpeggios and broken chords may, for many practical and theoretical purposes, constitute chords. Chords and sequences of chords are frequently used in modern Western, West African,[48] and Oceanian music, whereas they are absent from the music of many other parts of the world.The most frequently encountered chords are triads, so called because they consist of three distinct notes:. A series of chords is called a chord progression.

HARMONY:

In music, harmony is the use of simultaneous pitches (tones, notes), or chords.The study of harmony involves chords and their construction and chord progressions and the principles of connection that govern them. Harmony is often said to refer to the "vertical" aspect of music, as distinguished from melodic line, or the "horizontal" aspect.[54] Counterpoint, which refersto the interweaving of melodic lines, and polyphony, which refers to the relationship of separate independent voices, are thus sometimes distinguished from harmony.

ARTICULATION:

Articulation is the way the performer sounds notes. For example, *staccato* is the shortening of duration compared to the written note value, *legato* performs the notes in a smoothly joined sequence with no separation. Articulation is often described rather than quantified, therefore there is room to interpret how to execute precisely each articulation. The manner in which a performer decides to execute a given articulation is usually based on the context of the piece or phrase, but many articulation symbols and verbal instructions depend on the instrument and musical period.

TEXTURE:

In music, texture is how the melodic, rhythmic, and harmonic materials are combined in a composition, thus determining the overall quality of the sound in a piece. Texture is often described in regard to the density, or thickness, and range, or width, between lowest and highest pitches Common types included monophonic texture (a single melodic voice, such as a piece for solo soprano or solo flute), biphonic texture (two melodic voices, such as a duo for bassoon and flute in which the bassoon plays a drone note and the flute plays the melody), polyphonic texture and homophonictexture (chords accompanying a melody)

CONCLUSION.

We have studied in detail the fundamental aspects of Indian and western music theory. I would like to conclude my paper with the words of wisdom of great poet and composer Rabindranath Tagore: "For us, music has above all a transcendental significance. It disengages the spiritual from the happenings of life; it sings of the relationships of the human soul with the soul of things beyond. The world by day is like European music; a flowing concourse of vast harmony, composed of concord and discord and many disconnected fragments. And the night world is our Indian music; one pure, deep and tender raga. They both stir us, yet the two are contradictory in spirit. But that cannot be helped. At the very root nature is divided into two, day and night, unity and variety, finite and infinite. We men of India live in the realm of night; we are overpowered by the sense of One and Infinite. Our music draws the listener away beyond the limits of everyday human joys and sorrows, and takes us to that lonely region of renunciation which lies at the root of the universe, while European music leads us a variegated dance through the endless rise and fall of human grief and joy."

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