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Understanding Music with Respect to Mind

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ABSTRACT

The musicians are endowed with the unique faculty of learning, practicing and performing. Such performances require ordinarily less voluntary neuromuscular vocal control to be learnt by regular practice. All this is possible with the musician's genetic predisposition and environmental factors. Use of the brain (the physical structure), the mind (non-physical entity), the vocal chords, hands and feet (in case of instrumental music and dance) and the amygdela (the seat of emotions) together results into the sublime experience called MUSIC. Functioning of the mind is studied in the branch of science called Psychology. It opens new vistas for understanding how various functions of human being (along with music) are dependent upon and also governed by the mind. In this paper various school of thoughts on the mind have been interpreted in relation to the music.

KEYWORDS

Mind, Music, Psychology, Performance, Learning

Anyone attending a music (vocal, instrumental or dance) performance cannot fail to observe that there is a particular expression on the face of the performer accompanied by changing closure of the eyes, rhythmic movements of head, neck and other body parts as if musicality is being drawn from some deeper personality - constitution levels of the performer than the gross body. Similarly, the sensitive audience is also absorbed to the extent of exhibiting empathicity suggesting that the event (music perception) does not stop merely at the gross body level, but is going to the depths of the audience' s personality constitution. The store from where the performer draws and into which the audience receive the music, is mind. In fact, the words *'Manushya'* or man, are derived from *'Manas'* or mind. The body and the mind are so intimately interrelated that if the mind is quiet, the person is quiet, if mind is agitated, the person is agitated (Shankara, 1978). What are the laws of liking music. Music theories given are not only about music, but about how people process it (Minsky, 1982). All creativity and/or destruction of human beings is a reflection of the type or state of

mind within. But what is this stuff called mind? Is it matter, its product or its projector?

EARLY BEGINNING : Formal ideas about mind (and based on that the behaviour) in western culture began with the classical Greek philosophers (Schultz,1975: Havens, 1973) and have continued to this day as part of the fabrics partly, of philosophy. psychology (*Psyche* = mind and *logos* = discourse) as an empirical science splitted away from philosophy about 12-13 decades ago. The success of the experimental method in the physical sciences encouraged some philos1ophers to think that mind and behaviour could be studied by scientific methods. In 1879, the first psychological study laboratory was established at the University of Leipzig by the German philosopher - psychologist Wilhelm Wundt (1832-1920); in USA by his students, at John Hopkins University in 1883. Within a few years, most of the major Universities had psychology laboratories to study the mind. These empirical psychologists did experiments to find the laws relating events in the physical world to a person's 'in-mind' (mental) experience of those events. They studied attention (a major factor involved in performance and enjoyment of music), or the process through which we become aware of some external event (like music) and not others. They did many experiments on imagery, memory, thinking and feeling - all indispensable in music. Until recently, cognitive science looked primarily to language as a window into human mind; it is only in last thirty years or so, and especially in the last decade, that the comparative case of music has received substantial attention (Margulis, 2014).

In the first decades of the twentieth century, the new empirical psychologists came to hold different views concerning the nature of mind and the best ways to study it. About the same time, fundamental questions were raised about what should be studied in the science of mind or psychology. Should empirical psychologists study mind, should they study the behaviour (a function emanating from the mind), or should they study both? Influential psychologists of the time held different views on the nature of mind. Schools of thought formed around these leaders as their students adopted their ideas. These schools set the direction for much of the empirical research on mind and behaviour in the early years of this century. One early school of psychology was called 'structuralism'.

STRUCTURALISM: This school grew around the ideas of Wilhelm Wundt (in Germany) whose student, Edvard B. Titchener (1867-1927) carried it to Cornell University. Structuralists attempted to find the units, or elements, which make up mind our immediate CONSCIOUS EXPERIENCE. They thought that just as matter is constituted by 'particles', similarly, the first step in the study of mind should be a description of the basic or elementary, units of sensation, image and feeling which comprise it (the mind). For instance, they conducted experiments to take observations to find the elementary sensations such as fragrant, cold, red, sweet which provide the basis of more complex experience. Although this yielded information about the kind of sensations people have, yet, it was soon realised that the

IMMEDIATE EXPERIENCE or mind, could be understood by finding its elements and the rules for combining them. This encouraged some psychologists to turn away from describing the structure of the mind to, how it functioned. One such view is the GESTALTISM.

GESTALTISM: Some psychologists like Max Wertheimer (1880-1943) and his colleagues Kurt Koffka (1886-1941) and Wolfgang Kohler (1887-1967) opined that structuralism had been erroneous way of thinking mind as made up of elements or units because our immediate experience is not compounded from simple addition of elements, but, instead, it is the total perceptual configuration and the interrelation of its parts. To give a sample (……., ..., …. …. …. ….)16 dots, 8 pairs, 4 quartets are not the same. These very 16 dots may be arranged in a way to be perceived by mind as a square, or a rectangle or even a circle.

Similarly, in music, the *'ragas' Darbari* and *Adaana* have same notes (*'Swaras'*). Both are from *'Aasävari Thaat'*, have ga, dha, ni (komal), are kinds of *Kaanada*, have Pa *samvadi*, Ga Dha *vakra*, the note-assemblages Ga Ma Re Sa, Ni Pa Ma Pa and Sa dha Ni Pa. Still the overall nature (*prakriti*) or *'Gestalt'* differs to the extent/that *Darbaari* is *Gambheer* while *Adaana* is *Chanchalaa*. Similarly, *Bhoopali* and *Deshkaar* have Sa Re Ga Pa Dha-5 notes each, are *Audava-Audava* type, have Sa Dha Pa, Ga Pa Dha Pa Ga Re Sa and Ga Pa Dha Sa note assemblages and yet the overall effect of Gestalt differs to the extent of their being different *Raga*s, each carrying a tinge of its '*Thaata'- Bhoopaali* of the *Thaata Kalyaana* and *Deshkara* of *Bilaawala*.

Thus, according to this theory, the "whole' is not just the total of its components because these units or elements may combine and orientate differently to give different ' wholenesses' on which the mental experience depends. Patterning and organisation as well as the relation among elements are important and sensory experience is not just the sum of the parts of its elements. A *saptaka* having seven *swaras* gives an array of *'Raagas'* and tunes because of different patterns of combinations. Even the same '*Raaga*' sung by different musicians differs minutely in 'microgestalt' and hence conditioning quality. The mind experiences the same *raga* as being rendered by different *'gharanas'*.

Thus, the Gestalt psychology not only emphasized the study of mind, but it also applied the principles of organisation and patterns that make a particular wholeness. A tune, song or *Raaga* is identifiable wholeness irrespective of the *saptaka* (*madhya, mandra* or *tara*) in which it is rendered in spite of the differences in *swaras* (keys).

FUNCTIONALISM: While structuralism dealt with the 'units' and gestalt with the 'patterning' of these units, both, more so the former emphasized the 'what' of the mind. Psychologists like Dewey (1859-1952), James R. Angell (1869-1949) and their followers however felt that how mind functions is of more value than of what it is made. Hence more

emphasis should be laid on what mind and behaviour (the functioning of mind) DO rather than WHAT is mind. They recognised the fact that IMMEDIATE EXPERIENCE or MIND functions in a particular manner because of the adaptive value to the organism to more and more complex situations. Instead of limiting themselves to the description and analysis of sensory experience and mental context, the functionalists made empirical observations on how learning, motivation and problem-solving help people and animals adapt to their environments. In brief, as the name of the school implies, they studied the functions (or behaviour) of the mind. A musician according to this theory, takes to music because of the adaptive value of music - in making him fit for existence (survival and reproduction) in the situations he is.

Apparently, the musician has to learn how to perform with the maximal effectiveness to satisfy his motivational urge. He has to start with Sa, the fundamental *swara*; learning the art of the simplest *swara*, then gradually moving to more complex *Swaras* by way of associational relation to 'Sa'; thence to each other; next, their diverse combinations and finally other intricacies to take his music to the pinnacles of refinements. This takes us to what psychologists call 'associationism'.

ASSOCIATIONISM: Association means 'relation between ideas, events and feelings'. This is the main inner content of 'mind' which is studied in terms of learning, memory and behaviour, particularly the former two as exemplified by Thorndike's law of effect, Pavlov's law of reinforcement and Skinner' s studies through specifically designed box. The definition of learning always assumes a permanent change of behaviour, excluding changes resulting from such factors as maturation, sensory adaptation and fatigue.

The central question has always been that of differentiating learning from performance. The organism may acquire capabilities to perform some act through learning, but the act itself may not occur. The learning refers to long term changes of the organism produced by practice (in music, learning to some extent is proportional to practice) whereas PERFORMANCE refers to translation of learning into behaviour (in music, the act of singing before a gathering). Practice alone does not produce learning; it is necessary for some maintaining event to occur. It is necessary to add REINFORCEMENT, which is any event contingent upon the response of the organism, that alters the future likelihood of this response. Waah. Waah. by audience over a piece of performed music

Learning then, may be defined as a change in behaviour potential, resulting from reinforced practice. Reinforcement as so considered becomes an example of empirical law of effect (in psychology) that is basic to much of contemporary learning theory. The law of effect as stated by Thorndike, says that acts followed by a situation which the individual does not avoid, and which he often tries to preserve or attain, are selected and fixated, while acts followed by situations which the individual avoids or attempts to change are eliminated.

Rewarded responses are always strengthened, but punished responses do not always diminish in strength. There is thus, an emphasis on reward as a primary determinant of behaviour. The reward may be associated with the immediate response indirectly (via associating it with unreal stimulus) when the result is Pavlovian-, or directly (without tagging it with unreal stimulus) when it is instrumental or operant CONDITIONING. In the former case the bell becomes CONDITIONED stimulus because of its pairing with the unconditioned one (food) and results in response (salivation) in POSTCONDITIONED situation. However, when a freely moving organism emits behaviour that is instrumental in producing a reward, it is operant conditioning. For instance, a cat in a Thorndike puzzle box must LEARN to lift a latch in order to escape from the box; a monkey in an experimental chair must LEARN to press a lever to affect the presentation of food.

Pavlov (1927) noted that animals would respond to stimuli similar to the stimulus to which they were conditioned. This event, noted by other experimenters, was called by Thorndike "response by analogy" and by Pavlov, generalization. Through stimulus generalisation, it is possible to learn similarities. A child calls every quadruped as "doggie" but soon learns to DISCRIMINATE the quadrupeds to differentiate a dog, cow, or cat - all having 4 legs. Thus, stimulus generalisation and discrimination are the bases of 'higher learning' - an indispensability in music.

Initially *'raagas'* in a *'Thaat'* are all 'doggies' for the beginner. But soon he may learn to differentiate these *'raagas'* analogous to differentiate the quadruped dogies into dog, cow, cat etc. With more understanding, minute variations of the same *raaga*, become discernible just as different breeds of cows become distinctly recognisable. Thus, earning becomes a balance of generalization and discrimination, with conditioning leading to generalization of similar stimuli to the one conditioned and with discrimination leading to an extinction of responses to those stimuli, similar to the original, but not the actual conditioned stimulus.

While the functionalists emphasized the 'function' instead of the 'structure' of mind; behaviourism emphasizes behaviour.

BEHAVIOURISM: Tracing its origin to John B Watson (1879-1958), emphasized the study of 'mind' in terms of behaviour - the act of activities of people and animals. Other important characteristics of this school included emphasis on conditioned responses as the elements or building blocks of behaviour. Behaviourism in fact, was like structuralism in the sense that it holds that the complex processes are compounds of more elementary ones. Its element however, was the conditioned response, rather than a sensation, image or feeling. Watson maintained that the complex human and animal behaviour is made up almost entirely of CONDITIONED RESPONSES, unrewarded music will undergo senility and decay. The second closely related characteristic was its emphasis on learned rather than unlearned