

Manodharmam: A Scientific Methodology for Improvisation and Cognition in Carnatic Music

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Abstract : Music is ubiquitous in human lives. Ever since the fetus hears the sound inside the mother's womb and later upon birth, the baby experiences alluring sounds, the curiosity of learning emanates and evokes exploration. Music is an education than mere entertainment. The intricate balance between music, education, and entertainment has well been recognized by the scientific community and is being explored as a viable tool to understand and improve human cognition. There are seven basic swaras (notes) Sa, Ri, Ga, Ma, Pa, Da, and Ni in the Carnatic music system that are analogous to C, D, E, F, G, A, and B of the western system. The Carnatic music builds on the conscious use of microtones, gamakams (oscillation), and rendering styles that evolved over centuries and established its stance. The complex but erudite raga system has been designed with elaborate experiments on srutis (musical sounds) and human perception abilities. In parallel, 'rasa'- the emotions evoked by certain srutis and hence the ragas been solidified along with the power of language in combination with the musical sounds. The Carnatic music branches out as Kalpita sangeetam (pre-composed music) and Manodharma sangeetam (improvised music). This article explores the Manodharma sangeetam and its subdivisions such as raga alapana, swara kalpana, neraval, and ragam-tanam-pallavi (RTP). The intrinsic mathematical strategies in it's practice methods toward improvising the music have been explored in detail with concert examples. The techniques on swara weaving for swara kalpana rendering and methods on the alapana development are also discussed at length with an emphasis on the impact on the human cognitive abilities. The articulation of the outlined conscious practice methods not only helps to leave a long-lasting melodic impression on the listeners but also onsets cognitive developments.

Keywords : Carnatic, Manodharmam, music cognition, Alapana

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