

Changing the Face of Aging: Music and Medicine, Part One

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In our last column, we explored two archetypes of the divine feminine - Venus and Kuan Yin - and their relationship to Western ideas about physical beauty.

This month, from our joint perspective as Western classical musicians who have chosen a healing path that embraces Eastern philosophy, we offer for your consideration an exploration of the intimate links between music and medicine, with examples from both esoteric traditions.

Music and Healing

Many therapeutic schools have arisen in the West during the last century that have employed the qualities of musical compositions, customarily (but not exclusively) Western classical music, to effect psychospiritual healing (the most notable probably being the Well Springs program). In contrast, almost since the beginning of civilization, the structural constituents of music - its building blocks, in particular musical tone - have been understood to have a beneficial effect upon the human body and spirit.

Number, Interval and Healing Attributes

Crucial to any discussion of these inherent healing properties is a comprehension of certain key concepts. First, individual musical sounds consist of an infinite number of subsidiary tones, called overtones. If a gong, for example, tuned to a specific pitch, is struck at (or near) its center, a fundamental tone is emitted that is immediately palpable to human hearing. As the tone gradually resonates throughout the entire surface of the gong and travels through the surrounding air, other frequencies, overtones - also called harmonics - arise in due course (some almost instantaneously), most of which, however, are not readily detectable. Each of these harmonics relates to the fundamental tone through *numeric* proportion, and contributes to the overall sound, or timbre, of the gong. It is the combination of individual harmonics, as well as the nature of the resonator, i.e., metal, wood, flesh, etc., that gives each musical sound its distinctive character. These auditory mechanics function in the same manner for any kind of acoustic musical instrument.

The numeric relationship between a fundamental tone and its overtones was first ascertained by Pythagoras, and was probably his most enduring contribution to music theory. For any given vibratory medium, e.g., a string, a length of hollow tube, the vibratory surface of the human vocal cords, etc., the longer the medium, the deeper the sound, i.e., the longer the wavelength of the vibration. This is the reason the bass notes on the piano sound "lower"; they are generated by longer strings. Men's voices sound lower than women's voices because they have larger larynxes that accommodate larger vocal cords.

Pythagoras determined that certain intervals (an interval occurs when two musical tones are occurring simultaneously, or in close succession) are generated by vibratory media whose dimensions are in precise mathematical proportion.¹ For example, an octave is heard when there is

a 2:1 relationship in frequency between two sounds. This can only occur if one of the two resonators is twice the size of the other; activating it will create a sound that is an octave lower.

Moreover, the characteristic musical intervals of Western (and other types) music are also an intrinsic part of the overtone "series" of any given pitch, i.e., the octave is the first harmonic that resounds after a fundamental tone is generated, the perfect 5th is the second, etc. In effect, the overtone series generates musical harmony.

According to any number of sources, it is the overtones of musical sound that are responsible for healing effects.

"We are all Pythagoreans."

- Iannis Xenakis, 20th century Greek composer²

A Western Perspective: Pythagoras and Musical Medicine

It can probably be argued that the study of music in the Western world begins and ends with Pythagoras. According to the Pythagoreans, the laws of music were of paramount importance, for they governed the whole scope of the perceptible and even the imperceptible universe.

However, Pythagoras' biographer Porphyry tells us that Pythagoras also "soothed the passions of the soul and body by rhythms, songs and incantations," for Pythagoras considered himself above all a healer, and used music as a remedy for every manner of illness. The Pythagoreans distinguished between three kinds of music in their philosophy: these were, to use the nomenclature of a later era, *musica instrumentalis*, the ordinary music made by plucking the lyre, blowing the pipe, with the singing voice, etc.; *musica humana*, the continuous but unheard music made by each human organism, especially the harmonious (or inharmonious) resonance between the soul and the body; and *musica mundana*, the music made by the cosmos itself, which would come to be known as the "Music of the Spheres."

Since *musica instrumentalis* and *musica humana* were of the same essence, manifestations of the same truth, Pythagoras and his followers could arouse sympathetic vibrations in the human "instrument."

References

1. According to legend, Pythagoras made this discovery when he happened to be walking past a blacksmith's shop and heard hammers of unequal weight generating recognizable musical intervals when struck against the same anvil.
2. Quotation cited in James, Jamie. *The Music of the Spheres: Music, Science and the Natural Order of the Universe*. Grove Press, 1993.

DECEMBER 2004