

From Franz Schubert to Leonard Cohen: the chemical pleasure of listening to the voice in music

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In 2011 some Canadian scientists published in *Nature Neuroscience* an article entitled “Anatomically distinct dopamine release during anticipation and experience of peak emotion to music”. Their results indicated that the intense pleasure in response to music can lead to dopamine release in the striatal system. Moreover, the anticipation of an abstract reward can result in dopamine release in an anatomical pathway distinct from that associated with the peak pleasure itself. These findings have been known since long time for biological stimuli as hunger, sex, and fear which are associated to the instinct of survival and reproduction of the species and connected to the so-called reward circuits – expectation and reward – within the mesolimbic system, but it was the first time they were observed for a cultural stimulus as music is. This extraordinary discovery helps to explain why music is of such high value across all human societies and also suggests an intriguing consideration about music as a “biological” art, probably due to its relationship with the irreversibility of time. The lecture-performance proposed aims to describe in a popularised way these scientific results accompanying the audience in a promenade that visits maybe the most fascinating music, that is that involving human voices singing with instrumental accompaniment. The lecture explores the physics of the singing voice, its extension in frequency, its timbre, its capability to give to words apparently meaningless an incredible pathos, making the audience listening to many different voices – bass, baritone, soprano, rock and jazz singers, song-writer singers – and equally several “songs” – De André, Rossini, Saint-Saëns, Springsteen, Mozart, Marlen Dietrich, Giordano, Puccini, Lennon, Verdi, Stratos, Armstrong, Schubert, Cohen – and trying to make the audience to experience what the Canadian scientists found about chills, respiratory and heart rate, intense pleasure sensations. The message in bottle the lecture-performance would like to offer is the power of chemistry to play a fundamental role in some activities the conventional wisdom judges absolutely very far from it. Finally, the lecture-performance could also be considered as an excellent and low-cost drug to be taken after dinner for the following indications: it fights stress, malaise, bad mood, intolerance, annoyances, and whatever else makes life poor in joy; it deactivates the 72 muscles used to have the sulk, activates the 12 of them to have a smile, and distracts us from daily worries by providing us with pleasure.