Abstract

Title: **"Music and Memory: research and applications in Therapy"**

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Keywords: **Memory, science of music, dynamic systems, fractals, quantum transmission of the musical information, Stochastic resonance, Music and Memory.**

I. Abstract Body (up to 250 words)

Empirically, the role of Music in the mechanics of Memory was known since the dawn of mankind. Recent research shown the validity of these ideas; the physiological and psychological aspects of Music were studied and the results applied in various degrees by music-based therapies; the results are encouraging.

This presentation aims to introduce the issue to scientists in order to elicit further research and application in therapy.
Applications in early detection and cure of Alzheimer, ADD, learning and developmental disturbs will be presented.

Outline:

1. Music: definitions
2. Musical Information: structure of the musical information
3. Neuroscience of Music: an introduction
4. Memory: definitions
5. Models of memory
6. Neuroscience of Memory: Basic Notions
7. Music: dynamic systems, fractals, superposition; quantum transmission of the musical information.
8. Stochastic resonance, Music and Memory.

Specific Approaches:

1. **Psychological**
   Musical Meme; Learning; Developmental disorders
2. **Physiological**
   BMBO: transmission; re codification; distribution; feed forward; feed back
   Neuro plasticity; Storage and retrieval of the information; Alzheimer Disease and music. Early Detection and Prevention test.
3. **Biological**
   microtubules resonance; OrchOR

Research Proposals
Conclusions

Reference:

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-McDonnell, M.D., Abbott, D.: What is Stochastic Resonance? Definitions, Misconceptions, Debates and its Relevance to Biology
2009, PLOS Computational Biology Journal, Australia

-**Vaneechoutte, M. and Skoyles, J.: The Memetic Origin of Language: Modern Humans as Musical Primates**
1998, Journal of Memetics - Evolutionary Models of Information Transmission, 2.

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Biography:

Retired. Former Project Associate , The Hong Kong Polytechnic University, School of design.
Former Associate professor, University of Turin, Italy (Post graduate School in Health Psychology), Department of Psychology.
Dr. Graur specializes in composition, musicology and clinical music therapy.
He received a graduate degree in Composition-Musicology and a diploma in Medicine (P.A.P. - Physician Assistant in Psychiatry).
Since 1978, Dr. Graur has implemented the **Music Integrative Neurotherapy™,** an applied Neuroscience method combining Music, Psychiatry, Molecular Biology and Quantum Mechanics.
Former Editor-in-Chief, Journal of Biomusical Engineering (OMICS Group, Medical Sciences Journals).
A professional member of the New York Academy of Sciences.
Dr. Graur has had a long career as a soloist and composer (classical music) with performances and broadcasts of his works in Italy, Germany, Romania, Switzerland and the U.S. and is a recipient of numerous national and international prizes for interpretation
He has presented numerous workshops and seminars to audiences in Italy, China, Sweden, India, South Korea and the U.S.A.
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III. Presenting author details

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