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**THE WAYS OF MUSIC THERAPY:  
FROM THE TRAUMA,  
THROUGH THE RELEARNING  
TO THE INCLUSION**

Ph.D Thesis by  
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## Contents

Contents .....	2
Introduction.....	3
Pilot Study.....	4
Research method.....	5
Measuring instruments, monitoring methods .....	6
Research questions and answers .....	7
Conclusion .....	9
Reference Literature.....	10
Publications.....	11
International publications on the topic of the dissertation .....	11
Local publications on the topic of the dissertation .....	12
International lectures on the topic of the dissertation .....	13
Local lectures on the topic of the dissertation .....	14
Therapeutic aids edited on the topic of the dissertation.....	15
Other related lectures .....	15

## Introduction

My dissertation presents the multidisciplinary mechanism of action of music therapy, in which the fields of educational science, neuropsychology, cultural anthropology and neuropedagogy, among others, are connected. The dissertation gives an idea of the learning and re-learning the processes of living with disability, the educational and therapeutic possibilities by the aid of music, the related music pedagogical situations and equal opportunities (Vekerdy-Nagy, 2010).

In the theoretical introductory interdisciplinary network of the dissertation, firstly the general description of music therapy is emphasized. In addition to the use of music therapy in various pedagogical, special education, psychiatric and other health fields, the writing leads the reader to the field of neurorehabilitation. The neuro- prefix places a number of methods techniques, including pedagogy, rehabilitation, and music therapy in the neuroscience framework. Modern imaging procedures are open more and more ways to the neurological interdisciplinary dimension of disciplines related to such learning (Bangert et al., 2006). One of the main areas of the dissertation is the neurocognition-related aspect of music and music therapy and the related pedagogical implications.

The human voice which is like an instrument, is unique to every human body. It is an important basis for the dissertation, as all musical sounds are basically related to vocals, sound initiation, and acoustic self-expression (Wan, Rüber, & Hohmann, 2010). Using a modern imaging procedure, Stephan Koelsch et al. evidenced that similar neural formulas are activated while listening to music to real singing (Koelsch, Fritz, von Cramon, & Muller, 2006).

In the dissertation in addition to the neurological disfunctions and the neurological possibilities of music therapy, the neuroeducation and the transfer effect of music learning are also explained in the neurological aspect of singing. Singing as a blend of music and speech has many complex pedagogical, special education and therapeutic significance. Thus, singing a song can play an important role in stuttering, autism, and geriatric cases (Williams, Higgins, & Brayne, 2006). However, among the neurological disorders, aphasia and the disturbance of verbal functions are given special emphasis in the dissertation. In the framework of this concept, the feature of the combination of verbality and suprasegmental factors is explained, in which music and singing also have a speech therapy significance. (Schlaug, Marchina, & Norton, 2008)

At the same time, beside verbality, music also has a pre-speech, “pre-language” function. In this approach, the musical memories of the intrauterine stage are also decisive,

they function as a pedagogical and therapeutic starting point for life, as intersubjective self-sensation is formed during this period (Beebe & Lachmann, 1988). All further, interdependent learning processes are based on these anchored memories. Due to its neurological plasticity, music creates unique nervous system connections in everyone according to personal experience. These emerging, individually varying systems nowadays can be observed by a number of imaging procedures (Hüther, 2009). These can also be used as evidence, because due to neural plasticity, the “music-expert” brain is activated differently during singing than the brain of a rarely singing person. In the case of aphasia, regular singing and rhythmically intonated speech can create a spectacular neural change in the adult brain even in cases where the person concerned has not had musical proficiency previously. In addition to its therapeutic significance, therapeutic and pedagogical implications of music therapy require further research (Doidge, 2007).

In the music therapy profession, it is common for clients to try to reject therapy on the grounds of lack of musical ability. Based on unstructured interviews, it is often observed that these rejections may often be driven by previous music educational memories and may determine the patient’s music therapy attitude. As no research has been done so far, further study is needed to explore its background more accurately.

In rehabilitation, the concepts of segregation, integration and inclusion play a very important role in the learning process of living with disabilities (Könczei & Hernádi, 2011). In addition to neurological development and support, music also has psychosocial significance in the reintegration into the society. This is crucial in community music therapy. The integration into the community, the ceasing of barriers are realized by the aid of music, while the highest degree of integration into society, namely inclusion is established (Varga, 2015).

## Pilot Study

In the introduction of the dissertation, a smaller research is presented, which sheds light on the judgment of music therapy and the difference of opinion between non-music therapist and music therapist colleagues. The research was conducted using the Google Form online questionnaire which was answered by 52 respondents. According to the survey, in OORI in general, the problem of speech rhythm, air schedule, aphasia, and the problem of sound initiation are considered by the colleagues to be the most important indications for music therapy. Therefore, it can be stated that according to the majority of the colleagues, music therapy is basically grouped around speech and sound initiation. However, in an unstructured

interview which I conducted with music therapy trainees in 2015-2016, it turned out that they associated music therapy mainly with psychotherapy. They also mentioned the palliative care and the problem of sound initiation which may justify music therapy. Surprisingly, music therapists consider that the music therapy option is negligible when associated with aphasia. This opinion supports the fact which was also revealed from the interviews, i.e. there is currently little talk about aphasia in music therapy training.

While more than half of my close colleagues think that we develop patients using music therapy, do music exercises, correct mistakes like during a music lesson, the opinion of the music therapists who are now graduating is exactly the opposite. The latter group is much more distant from the teacher's attitude and place more emphasis on musical play and on indirect, not necessarily targeted development. Thus, it can be stated that while colleagues at OORI consider the direction of development to be important, the music therapy trainees consider the essence of psychic, supportive aid to be much more important in music therapy. The dissertation tries to synthesize the two approaches by long-term observation of the rehabilitation stages, in which the combination of the psychotherapeutic music therapy goals brought from the theory and the development of the neurological dysfunctions experienced in practice also appears.

One of the main objectives of this dissertation is to gain more recognition in Hungary for the complex field of music therapy combined with neurorehabilitation. Thus, the dissertation can contribute to a greater harmony between music therapy theory and practice.

## Research method

The aim of the central study of the dissertation is to present the complex mechanism of action of music and music therapy in the case of neurological injuries. It demonstrates cases with long-term observation, in which a slow, continuous, positive change, which does not exclude small fluctuations, can be observed. This is also the case for previously musically inactive people who have not studied music intensively (Koelsch, Gunter, Friederici, & Schröger, 2000)..

The dissertation examines rehabilitation in three stages. Firstly, the music therapy for the most severe, comatose, minimally conscious clients will be presented. The second cycle is the post-acute phase, the active and intensive rehabilitation phase. The third stage, the importance of music in helping and integrating patients into the community is also explained

by the presentation of the “Hangadó” (meaning: voice giving) Ensemble formed from people with aphasia. In the dissertation, the different sections are presented in three case studies.

In this healing process, the definition of music, the cultural differences in the concept of music, the personalized, individual approach are particularly important, therefore, small but important details do not crystallize out with measurement methods which require standardization. That is the reason why the choice fell on the tool of the case study (Golnhofer, 2001). However, the more spectacular evidences were also demonstrated among the strands of change with a quantitative measure.

### Measuring instruments, monitoring methods

The following measuring instruments and monitoring methods were used for the research:

1. Therapeutic diary based on video recording. An objective picture of the change emerged by post-commenting the recordings.

2. A version of the Glasgow Coma Scale (GCS) revised for musical modalities by the candidate (Teasdale & Jennett, 1974). In this scale, three pillars of human connection: eye contact, changes in movement and sound initiation were measured in musical approach in the following degrees:

- Eye opening: 4-spontaneous, 3-sound only, 2-movement, 1-nothing
- Sound trigger: 5-say the lyrics of known songs even with the help of a text image, 4-say the end of lyrics, 3- rarely audio fragments, 2-yawn, 1-nothing
- Movement: 5-moves to keep the pulsation of the music, 4-uses the instruments continuously outside the pulsation of the music, 3-uses the instruments rarely, 2-needs all the help to play the instruments, 1-needs full help to play the instruments

3. SAVS (Sung Automatic Verbality Scale) scale created by the candidate. This scale measured the client’s adequate articulation while singing, measured by every syllable. Two anonymous evaluators scored the audio recording of the automatic verbal production heard from the patient during singing. The evaluators didn’t know the client, their evaluation was based on their own everyday communication, commented on the intelligibility of the patient’s voice for each syllable using the scale below.

1. *No sound start*
2. *Inadequate sound start-up is experienced*

3. *Only the vowel is adequate*

4. *The whole syllable is adequate*

4. The presentation of the Hangadó Choir was based on unstructured interviews.

## Research questions and answers

In addition to the methods outlined above, the following research questions and answers provided the main guiding principle of the dissertation:

1. How can the significant effect of music therapy in neurorehabilitation be grasped?

In these case studies, music therapy primarily stimulated sound initiation due to neurological injury, sound initiation towards the patient's environment, adequate sound finding as well as targeted movement toward the instrument, i.e., **connection to the environment**, communication with the environment in any modality. However, in a broader sense, it aims at the patient's openness to its environment, the way out of isolation and motivation. That is to say, music therapy plays an important role in the reintegration of the patient.

This statement is also supported by the study with the previously mentioned measuring instruments, in which values according to the musical version of the Glasgow Coma Scale were compared during the first case study (Jennett, 2002). In this process, the regeneration of a vigilantly comatose patient severely injured in an accident is presented, in which the perspective of the targeted movement and sound initiation changes spectacularly when using the measuring device.

The same improvement process can be observed in the values of the SAVS scale, which was applied in the postacute phase. The dissertation presents the case of a client with global aphasia. If a numerical linear process is calculated from the averaged SAVS values, the patient's adequate sound finding during singing improved by 0.0038 SAVS-unit per day according to the SAVS values.

2. What are the possibilities and limitations of the therapeutic use of music in patients with severe brain injury?

In the severe phase of neurorehabilitation, music therapy is available on individual, hereafter individual and group occasions, in both structured and semi-structured, improvisational forms

with instruments and vocals. It can be a serious limitation for music therapy, if the patient has previously experienced frustration, e.g. carries a negative music pedagogical experience in relation to musical activity. Music therapy plays a key role in certain stages of neurorehabilitation, but it is not the only salvage method. It is important to see that it is a TEAM work where team members influence each other's work and where it can work effectively only in collaboration with other therapies (Kullmann, 2015).

3. In long-term perspective is the success of music therapy influenced by the patient's previous musical education ?

The success of music therapy is determined differently by all previous musical and even non-musical experiences, so music education can influence the success of music therapy (Dobszay, 1991). However, any other informal musical experience outside school is also a driving force for the neurorehabilitation therapeutic application of music. This requires that the therapist and the entire rehabilitation team to be aware of the patient's previous positive or even negative musical experiences as far as possible.

4. What are the links between music pedagogy and music therapy?

It can be stated that every music educator needs a music therapy approach and it is important for all music therapists to think with a music educator's eye. This requirement appears in the knowledge of songs, in the search for motivation, in the knowledge of the transfer effects of music (Kokas, 1972), which can be manifested in other - not directly musical - subjects, as well as in other therapies, because after the music therapy session the physiotherapist or the speech therapist can deal with the patient more easily.

On many occasions the growing child is also latently affected by sentences that later on are reflected in a positive or negative way (Gállné, 2008). In a broader sense, this can be said for all pedagogical areas. The educator is responsible for the openness to the subject and it is important to be aware of the further consequences, considering that the subject, the knowledge and the openness in the child - in this case to music - can even be a grip during an illness. The teacher's longitudinal way of thinking and their ability to get down to the heart of the matter are definitely decisive. These requirements also should play an important role in music teacher training.

5. Is inclusion achieved in these music therapy processes?



In the first two of the three case studies, there was no real inclusion, but in the third one, during the activities of the Hangadó Vocal Ensemble, inclusiveness for society as a whole has already been and is realized. When the aphasic person can step out of the asymmetrical, „needing help” role and connect with his peers in a more symmetrical perspective, when others listen to the person with a verbal communication disorder in the role of a performer or even „a helper” at the concert, inclusion takes place, as Aranka Varga states „mutual inclusion throughout the society ”is represented. (Varga 2015. p.12.)

However, further research is needed on these issues in order to receive a more secure foundation for the operation and efficiency of music therapy and music pedagogy. This topic also touches on the integration of the therapeutic perspectives in teacher training. In all these activities the interdisciplinary way of thinking and the cooperation with colleagues specialized in different sciences/ research areas are very important.

## Conclusion

Plato puts it this way: "Something about beautiful things should inspire their sight and hearing as a breeze from good-air landscapes brings health and from their childhood, imperceptibly form them like beautiful speech, instilling love and harmony in them." (Plato 1989. p. 117) These sentences confirm the same idea: the “sight and hearing” of the students must be inspired, since the attentive senses opened at a young age can be important, lifelong bases for them.

In summary, the music therapist should perform helpful work at any level of neurorehabilitation, the effectiveness of the therapy depends primarily on the therapist-patient coordination and connection. The sensitivity to the patient and the devotional attention are essential conditions for a music therapy encounter.

This sensitive ear is necessary in order to advance the patient’s rehabilitation by the aid of the helping chord accompaniment, the training and quality of the singing voice and the musical suggestivity. It does matter what the music therapist’s gestures are like, as that movement will be reflected in the patient’s voice initiation. It does matter how musically sensitive and demanding the session is. It does matter how much self-reflection the music therapist works with, what kind of empathy he / she approaches the patient with, how much he / she is aware of the impeding or insecure limits of help, how much he / she observes himself /

herself from outside, how much the therapist observes himself / herself from a different perspective.

Therefore, it is dangerous to describe any categorical system that ensures quality on a therapeutic occasion. In neurorehabilitation music therapy work does not require a reflex-like attitude following a rule or a protocol, but a highly creative, musically and non-musically attuned attention.

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In: 11th European Music Therapy Conference : Book of Abstracts  
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Budapest, Magyarország : Országos Orvosi Rehabilitációs Intézet (OORI) (2017) , 99 p.

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Budapest, Magyarország: Országos Orvosi Rehabilitációs Intézet (OORI) (2016), 27 p.

#### Other related lectures

Fekete, Zsófia ; Cselenák, Zsolt ; Eckhardt, Fanni (2019): Ismerkedés a looperrel  
In: Bódi, Zsófia; Cselenák, Zsolt; Eckhardt, Fanni; Fekete, Zsófia; Fülemile, Judit; Gál, Zsuzsanna; Jakab, Fruzsina; Kertész, Csaba; Szücs-Ittész, Zsuzsanna; Kassai, Réka; Kovács, Petra; Mike, Judit; Nyíri, N. József; Paár, Julianna; Stánicz, Nikolett; Sónfeld, Mátyás; Vadász, Piroska (szerk.) Duettek : Kapcsolódások a zeneterápiában pp. 53-53. , 1 p.